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## Health Promotion and Wellness Strategies and Self-Regulation Interventions for Occupational Therapy Assistant Program Graduates Preparing for the NBCOT Exam

Marcia Hamilton

University of St. Augustine for Health Sciences, mhamilton@usa.edu

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Critical Analysis of Capstone Project:

Health Promotion and Wellness Strategies and Self-Regulation Interventions for Occupational  
Therapy Assistant Program Graduates Preparing for the NBCOT Exam

Marcia A. Hamilton, MSHS, OTR/L, BCP

South University

Faculty Advisor: Dr. Stanley Paul, MD, Ph.D. OT, OTR/L

OTD Program Director

South University

On-Site: Subject Matter Expert: Dr. Tina Gelpi, OTD, MEd, OTR/L

Keiser University Ft. Myers

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### **Abstract**

New graduates of Occupational Therapy Assistant (OTA) Programs are challenged with the preparation and successful completion of the National Board for Certification in Occupational Therapy (NBCOT) Certified Occupational Therapy Assistant (COTA) examination. The threat of not passing this exam is intensified due to the cost of the exam and lack of provisional licensing. Anecdotal experience of faculty in an OTA Program supports concern for new graduates as they report feelings of distress and anxiety, as they enter the one- to two-month period prior to the exam. An occupational role shift must occur during this transitional period, as the new graduates are no longer attending classes or performing entry-level skills, as required during Level II Fieldwork. This pilot study utilized quantitative research to understand if health promotion and wellness strategies and self-regulation interventions provided in a seminar format could support self-efficacy of the new graduates. Methodology was developed to achieve maximal construct validity through quantitative analysis using scores on the General Self-Efficacy Scale (GSES) as a pre/post test measure. Activities of the seminar included the Wheel of Life Balance, a Wellness Action Plan, person-centered self-regulation activities, visual imagery, mirthful laughter, and familiar social connection of the new graduate's cohort. All activities of the seminar were designed to utilize social cognitive support of the group and promote management of neurophysiological symptoms of distress in attempt to maximize perceived self-efficacy. Pre/post test results indicated a statistically significant change in GSES scores following the seminar. This data suggested that the seminar using health promotion and wellness strategies and self-regulation interventions may contribute to gains in self-efficacy and should be further studied.

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Health Promotion and Wellness Strategies and Self-Regulation Interventions for Occupational  
Therapy Assistant Program Graduates Preparing for the Entry-Level Certification Exam

### **Chapter 1: Problem Statement**

Accredited Occupational Therapy Assistant (OTA) programs are rigorous and are designed to prepare students for entry-level practice as a Certified Occupational Therapy Assistant (COTA). The depth, scope, and rigor of the OTA program lie in the reality that the occupational therapy assistant student (OTAS) must be prepared as a generalists, educated to work with diverse populations. These populations may range in age from infants to elders and vary from those who face challenges in physical, developmental, emotional, and cognitive well-being (Accreditation Council of Occupational Therapy Education (ACOTE), 2012). Typically, an OTA Program student must complete 30-40 credits of core occupational therapy didactic course work, followed by two eight-week externships, referred to as Level II Fieldwork. Once completed, an Occupational Therapy Assistant Associate of Science degree is awarded and the new graduate is referred to as an Occupational Therapy Assistant (OTA). With completion of the degree, the OTA is eligible to take the National Board for Certification in Occupational Therapy (NBCOT), Certified Occupational Therapy Assistant (COTA) examination. This comprehensive, four-hour examination is the primary gateway into entry-level practice. The content of this examination is extensive, reflecting the breath, depth, and rigor of the education of the occupational therapy assistant. Based on anecdotal observations of faculty at an OTA Program, new graduates report significant concerns of anxiety, distress, and occupational role interruption during this critical one- to two-month period of exam preparation. Pressure to pass NBCOT COTA Exam is intensified by several factors including cost, lack of provisional licensure, and

need to provide for their family or gain financial independence, following a two-year period of being a full time student. Additionally, there is reported perceived psychological risk of failure. These complaints provided the impetus for seeking interventions that could help mitigate the distress and promote an increase in perceived self-efficacy and well-being as the new OTAs begin preparation for the NBCOT COTA exam.

In order to increase the OTA's feelings of capacity to plan and manage the challenge of examination preparation and the associated distress, a seminar was designed. This seminar provided education regarding health promotion and wellness strategies and the opportunity for identification of self-regulation interventions. The intended purpose of this seminar was to support self-efficacy and well-being of the new OTA graduate. The health promotion education utilized the health behavioral theories (HBT) of both social cognitive theory (SCT) developed by Albert Bandura (1986) and the transtheoretical model (TTM) of behavioral change (Prochaska & DiClemente, 1982). During this seminar, wellness strategies which included health coaching activities such as the Wheel of Life Balance (Kimsey-House, Kimsey-House, Sandahi, 2013), was used. Self-regulation interventions included visual imagery, use of mirthful laughter, and self-regulation techniques addressing life balance and neurophysiological symptoms of distress. This seminar incorporated a design to promote health and wellness, as well as self-regulation to support self-efficacy as the new OTA graduates approach this critical time in their lives. In attempt to determine if the seminar was helpful in addressing the new OTA graduates' concerns, this pilot study was designed. This research was directed at discovering if the new OTA graduates reported improved self-efficacy following this seminar.

Before presenting the research hypothesis, it is important to present the construct of self-efficacy and its relationship to health promotion and wellness strategies and self-regulation

interventions. The construct of self-efficacy is not new to the field of psychology, occupational therapy, and health promotion. Self-efficacy is described as the level of confidence a person has in their ability to adopt a behavior through building mastery and managing distress (Utzman & Cronin, 2016). Self-efficacy is further defined by Bandura as an “individual’s belief about oneself and includes the exercise of control over action but also with respect to self-regulation of thought processes, motivation, and affective and physiological states” (1997, p. 2). Perceived self-efficacy contributes to goal setting, effort, and persistence. As described by Bandura, self-efficacy is “people’s judgments of their capabilities to organize and execute courses of actions required to attain designated types of performances” (1997, p. 391). Within the construct of self-efficacy there is an assessment tool, referred to as the General Self-Efficacy Scale (GSES). This is a standardized, psychometric scale developed by Ralph Schwarzer that provides a self-report of perceived self-efficacy (Schwarzer, 1993). Based on promotion of health, use of wellness strategies, and self-regulation interventions, the construct of self-efficacy is well aligned. The GSES is able to provide an appropriate method of measuring this important capacity and was used in this pilot study. The GSES will be further discussed under the subsection of “Instruments” in the section of “Methodology” in this paper.

Following the theoretical construct of self-efficacy, the research question is: *Can new graduates of an OTA program who are preparing for the entry-level NBCOT COTA Certification Examination employ health promotion and wellness strategies, and self-regulation interventions for addressing life balance and neurophysiological symptoms of distress, respectively, resulting in increased self-efficacy?* The null hypothesis  $H_0$  is: *As a result of employing health and wellness strategies and interventions for improving self-regulation of distress, new graduates of OTA programs will not experience an increased sense of self-efficacy while preparing for the*



*entry-level NBCOT COTA Certification Examination.*

## **Chapter 2: Literature Review**

In order to determine justification for this research, a preliminary literature review was performed. The preliminary research review served to provide an understanding of the broad scope of the research problem. The research problem was negative stress or distress, associated with the challenge of preparing for and successfully completing the NBCOT COTA exam. There is a large body of evidence regarding the deleterious effect of stress or distress on multiple body organs, structures, and many other client factors across the lifespan of a human being (Utzman & Cronin, 2016). With the mission of this pilot study aiming to support the new OTA Program graduates in their transition from OTA to COTA, it was important to understand what could define improvement in anxiety and management of distress associated with this transition.

This preliminary literature review first came upon the serious issue of the impact of distress on human beings. Stress and anxiety and their relationship to health and well-being have been a topic of discussion since Hippocrates (Fine, 1991). For the sake of understanding this pilot study, an explanation of stress is provided. Stress is not always negative and can be the catalyst for change and growth. This is known as positive stress and is referred to as *eustress*. Eustress can promote positive change, adaptation, accommodation, and assimilation (Nathaniel, Schultz, & Draughn, 2015). Distress is defined as “an actual or perceived threat to the body’s ability to maintain stability or homeostasis” (Abreu et al., 2013, p.19). Both long-standing and current evidence-based literature regarding the effect of stress on both the body and mind supports the foundational understanding of the profound deleterious effect caused by both acute and chronic stress (Abreu et al., 2013; Fine, 1991; Govender, Pragashnie & Mikhabele, 2015; Lazarus & Folkman, 1984; Rakel, 2008; Selye, 1975). Research has indicated that there are

known maladaptive physiological changes that occur throughout the lifespan during periods of acute and chronic distress. Evidence supports an understanding of the negative impact on learning, memory, and cognitive performance (Abreu et al., 2013). Neural imaging has provided important capability to visualize neurophysiology during various states of neural processing, including changes resulting during periods of stress (Abreu et al., 2013). This has aided in increasing the understanding of the complex interaction of the hypothalamic-pituitary axis (HPA), driven by the sympathetic nervous system. During acute distress, the hypothalamus produces glucocorticoid manufacturing cortisol. This interferes with memory, via dendritic fracturing in order to protect the brain from the sensory experience of the trauma. During chronic stress, the presence of the glucocorticoid continues to dull and fragment new learning as well as short-term ability to recall (McEwen, 2001). Another component of the stress response is the catecholamine neurotransmitters which cause increases in heart and respiration rates and muscle tone (McEwen, 2001). The engagement of the sympathetic nervous system is important during periods of acute stress, such as having to flee or having to engage in fight. However, this is pathogenic when it occurs over a longer period of time, as in chronic stress (McEwen, 2001). The physiological burden of stress on an individual is referred to as allostatic load (Little, 2004). This load contributes to decreased immunity, atherosclerosis, obesity, bone density, and atrophy of brain cells causing decline in cognitive functioning (McEwen, 2004).

Negative stress, referred to as *distress* in this literature review, is associated with various disease processes, including depression, cardiovascular disease, autoimmune disorders, and respiratory conditions such as asthma and infection (Loy, 2014). According to the NIMH, 18 percent of the adults in the United States experience anxiety disorders which place the individuals at a higher risk of depression (National Institute of Mental Health {NIMH}, 2015). The

preliminary literature review also found that a positive association between academic stress and depression has been established (Lazarus & Folkman, 1984; Rogers, 2007). In addition, it presented an abundance of information associating the negative effects of acute and chronic stress on mental and physical well-being (Govender, Pragashnie, & Mikhabele, 2009; Rakel, 2006; Selye, 1975). This search for research also resulted in finding a significant amount of information regarding the neurophysiology of behavioral coping responses to daily events and stressors, which provides scientific support for the use of self-regulatory interventions proposed in this pilot study.

Another focus of the preliminary research review was the construct of self-efficacy. Strengthening self-efficacy relies on breaking a large task into smaller parts, building upon successes, and promoting a sense of competence about one's capacity resulting in improved mental and physical well-being. This state of well-being supports self-efficacy and facilitates optimal cognitive performance, while managing uncertainty (Bandura, 1997; Little, 2004). This literature review supports the need to further explore evidence of successful interventions used with new OTA graduates preparing for the NBCOT COTA exam.

The literature review was directed at finding evidence to justify the need for research regarding new OTA graduates as they prepare for the entry-level certification exam. Furthermore, it was directed at finding interventions supporting new OTA graduates in the transition from OTA to COTA. A focus on causal research facilitated the search for literature that addressed health promotion and wellness strategies and the identification of self-regulation interventions with new graduates of OTA Programs.

The primary literature review began using the Trip Medical Database. The name Trip itself is the acronym for the name Turning Research into Practice. This clinical search engine

provides a mechanism for conducting a search of interventions, their outcomes, and the populations with which the interventions were used. This is referred to as the Population, Intervention, Comparison, and Outcome (PICO) search.

The PICO search helps to define clinically-relevant evidence-based literature. The search included primary and secondary sources of research to explore clinical evidence of health and wellness interventions for new OTA Program graduates. Results of this search are summarized in Table 1 in the Appendix. There were no directly applicable sources of either primary or secondary research found through this search, establishing the need for new research to support new OTA graduates as they prepare for the entry-level certification exam.

The primary literature review was conducted to inform the research question regarding the utilization of health promotion and wellness strategies and self-regulation interventions and their capacity to increase perceived self-efficacy. This question is designed to assist in solving the research problem, which considers management of distress associated with the role interruption that the new OTA graduates are experiencing at this period of time. This literature review was directed at discovering if there was evidence of effective interventions designed to support new OTA Program graduates as they prepared for their certification exam through the use of health and wellness promoting strategies, self-regulation of neurophysiological symptoms of distress, and fostering a sense of self-efficacy. Based on the lack of evidence and specificity of the population, a second search was performed using Google Scholar. The key search terms were changed to (occupational therapy assistant students) AND (anxiety), 11,300 results were found. Relevance to the research question was established with the exception of occupational therapist as opposed to occupational therapy assistant. In order to further develop the evidence-based literature search, a ProQuest host search was conducted. The search terms used were

(occupational therapy students) AND (exam anxiety). This search produced 16,619 results. The results of the search were then evaluated for identification of primary studies and applicability to the research question. There were no sources of primary research found. There were 16,619 sources of secondary research found. Of the 16,619 sources found, 15,330 represented dissertations or theses.

The first 50 results were manually reviewed for applicability to the research question. Of direct match to the research topic and question was a thesis entitled *Stress Perceptions and Occupational Therapy Students in Traditional versus Distance Education*. This research was completed in 2007 and specifically sought to “determine the stress level of students, determine the existence of social provisions (social support) of the students, and determine the relationship between stress levels and selected predictors” (Rodgers, 2007, p.22). The Student-Life Stress Inventory and the Social Provisions Scale were used with both distance and on-ground students. Results found that there was no statistically significant differences of self-perceived stress by either group of students, however, all students reported moderate levels of stress (Rogers, 2007). Another relevant finding was a study conducted in South Africa. This study was titled *OT Students Experience of Stress and Coping* and involved 101 Occupational Therapy (OT) students. It was designed to determine stressors and coping strategies used by a cohort of OT students. The students’ most frequently used coping strategies included making a plan of action, developing solutions, and putting a plan into action. Overall conclusions suggested the importance of understanding and realizing the level of stress that exists within students and considering the overall health and well-being of the students in coping with tertiary health science programs (Govender, Pragashnie, & Mikhabele, 2015). This study provides evidence to support an important aspect of the intervention, the development of a Wellness Recovery Action

Plan (WRAP). Developed by Mary Beth Copeland, the process of constructing the WRAP encourages the participant to identify and understand “personal wellness tools.” The process of completing the WRAP and subsequent client-centered goal setting, corresponds with the achievement of health, well-being, and participation in life through productive engagement (Copeland, 2016).

A study conducted in 2014 demonstrated that psychological interventions can significantly reduce scores of test anxiety, psychological distress, and lack of motivation, and helped to improve student’s grade point averages (Govender, Pragashnie & Mikhabele, 2015). A randomized controlled trial of patients participating in outpatient cardiac rehabilitation demonstrated the effects of music therapy and positive health-related outcomes with its incorporation into daily routine. This research demonstrated a direct correlation with reduction in systolic blood pressure following the use of musical experiences, counseling, and Music Assisted Relaxation and Imagery. The research provided evidence to suggest that changes resulting from the self -regulation of physiology could be helpful in reducing anxiety and improving general health and social functioning for up to four months following the patient’s initial learning of the intervention (Mandel, Hanser, Secic, & Davis, 2007).

Another pilot study utilized two measures to conduct research on test anxiety and academic performance. This research explored the effects of deep muscle relaxation and study skills on test anxiety and academic performance (Rosado, 2012). Results of this study showed that there was a decrease in self-reported levels of general anxiety utilizing deep muscle relaxation and study skills, based on self-reported pre/post test measures. The reported gains in anxiety were measured on both the Westside Test Anxiety Scale and the Beck Anxiety Inventory, however, findings were not statistically significant (Rosado, 2012). This evidence

supports an understanding that various strategies can offer the new OTA graduates the ability to cope with anxiety and distress using health promotion and wellness strategies and self-regulation interventions.

Another area of potential relevance to this study is consideration of the concept of allostatic load. Allostatic load is the concept of physiological dysregulation related to “the cumulative impact of physiological stress responses that chronically exceed optimal operating ranges and cause wear and tear on the body’s regulatory systems” (Chyu & Upchurch, 2011, p. 580). Allosteric load is considered to be a measure of physiological dysregulation that includes cardiovascular markers such as blood pressure and pulse, metabolic markers such as body mass index, hemoglobin, lipoprotein, and inflammatory markers such as C-reactive protein and albumin (Chyu & Upchurch, 2011). Chyu and Upchurch provide important information about the deleterious effect of stress on biological processes.

Through understanding the importance of health promoting strategies to assist new graduates with establishing life balance and developing insight into effective tools for self-regulation, it is proposed that they may experience a greater sense of control, increasing self-efficacy and well-being. Evidence suggests that effective use of self-regulatory techniques can promote the Relaxation Response resulting in decreased heart rate, respiration, muscle tone, and metabolic rate (Rakel, 2008). Understanding the biomarkers of distress and evaluating the effect of self-regulation and promoting self-efficacy in that regard can offer the potential for valuable insight into self-determined health and wellness promoting strategies.

Based on the literature review, it may be concluded that there is a paucity of scholarly research regarding self-efficacy in new OTA or OTR graduates preparing for the entry-level certification exam. There is a much greater volume of literature discussing test anxiety or anxiety

of OT students. Additionally, in generalizing to new graduates of health care programs, there is an absence of literature supporting development of self-efficacy. However, current brain research provides a platform for understanding the complex phenomena occurring with both acute and chronic distress within the Autonomic Nervous System (ANS) and the link between the Hypothalamic Pituitary Adrenal System (HPA) and rest of the body (Little, 2004). Scientific advances in the areas of neurophysiology, neuroanatomy, neuropsychology, and psychoneuroimmunology have contributed to understanding the mechanism of action that occurs when dysregulation of the autonomic nervous system occurs, and the direct response of the HPA (Rakel, 2008). In addition, the impact of the neurotransmitters on cognitive function and recall has been established and directly correlates with the importance of self-regulation in the management of stress. The results of the literature review suggest that self-regulation can decrease autonomic nervous system dysregulation, thus decreasing anxiety and promoting working memory and cognitive performance. Furthermore, the use of social support and establishment of life balance through health and wellness promotion can promote self-efficacy. This can potentially have a positive impact on overall health and well-being. Based on results of the evidence new graduates of OTA Programs who are preparing for the entry-level certification exam may benefit from using self-determined health promotion and wellness strategies and self-regulatory interventions to support self-efficacy.

### **Chapter 3: Methodology**

#### **Participants**

Participants of this research were from one cohort within an ACOTE-accredited OTA Program at Keiser University - Fort Myers campus. The new OTA graduates had successfully completed their Level II Fieldwork, their application to sit for the NBCOT COTA Exam, and



their graduate seminar. Upon completion of the graduate seminar, the primary investigator described the pilot study and gave the new OTA graduates the opportunity to refuse or consent to participate. All 10 of the new OTA graduates consented to participate in the pilot study. Nine out of 10 graduates had spent as much as five hours per day, five days per week for a period of as many as 10-14 months together in academic classes. Three out of 10 participants were male and seven were female. Participants' ages ranged from 20 to 39 years. For three out of 10 participants, English was a second language, however, they participated in courses delivered in English throughout their OTA Program. For nine out of 10 participants, the principle investigator was their course instructor for the mental health course. In this course, the OTA students had learned about health promotion and wellness strategies as well as concepts regarding self-regulation. All of the students participated in a culture of support during class role play and presentations. They had opportunity during this class to complete the Wheel of Life Balance Exercise as well as their own Wellness Action Plan. One participant out of the 10 joined the cohort only for the graduate seminar and had not spent time as a student with this cohort.

### **Instrument**

A self-administered General Self Efficacy Scale (GSES) was used as a pre/post test measure (Schwarzer & Jerusalem, 2004). This 10-item scale takes approximately 3-5 minutes to complete. Respondents are asked to rank how they feel, on a scale of one to four, about their perception of themselves through the use of 10 different statements. The ratings describe frequency of feeling of self-efficacy, including (1) means not at all, (2) means rarely, (3) means moderately true, and (4) means exactly true. One example of a response question is, "I can remain calm when facing difficulties because I can rely on my coping abilities". Therefore, the respondent will indicate by number choice how they characterize their own feeling when faced

with difficulties. The GSES provides quantitative information about the beliefs of a person regarding their own capability to cope with the stress and life challenges. The GSE has been used in over 1,000 studies and provides access to an international data file with over 18,000 respondents in 28 different countries (Luszczynska, Scholz, & Schwarzer, 2005, p. 454). This measurement supports an understanding that general self-efficacy is connected to a broad range of psychological constructs that are related to well-being, health behaviors, and coping with stress (Luszczynska, Scholz, & Schwarzer, 2005). This measure was used to contribute to validity and generalizability of this pilot study.

### **Procedure**

Proper approvals were received prior to the research, including approvals from administrators, as well as the Institutional Review Boards of both Keiser University and South University. On April 21, 2017, the principle investigator introduced the study following the graduate seminar, and the new OTA graduates had the opportunity to participate or not. Ten out of 10 new OTA graduates consented to participate. The GSES was provided to the participants who also were given opportunity to ask questions, if necessary, regarding instructions for completing the GSES. Each pretest was coded with a number so it could be compared to the posttest scores upon completion of the seminar, while remaining anonymous. The principle investigator specifically requested that the participants not put their name on their GSES Pretest, in an effort to prevent bias. Next, the seminar was conducted. The seminar included student reflection upon the strength of their cohort, the participant's recollection of the 14 months of didactic coursework, and successful completion of the Level II Fieldwork. During this period, the new OTA graduates also identified acute and chronic stressors as well as concerns regarding preparation for the entry-level certification exam. An atmosphere of reflection by the principle

investigator as well as the participants provided support as concerns were addressed. Next, the participants completed a brief self-exploration and reflection exercise, the Wheel of Life Balance (Kimsey-House, Kimsey-House, & Sandahl, 2013). This purpose of this exercise is to create an image of life balance, through a self-assigned numeric rating of satisfaction in eight areas of life. These areas include career, family and friends, significant other and romance, fun and recreation, health, money, personal growth, and physical environment. This health coaching activity provides an understanding of life fulfillment at a given snap shot of time in one's life.

Participants reflected on how this had changed from when they completed this exercise during their mental health course, approximately nine months prior. Participants jokingly acknowledged how their money supply was lower, yet their personal growth was significantly improved. Next, the participants discussed the transtheoretical model of behavior change (TTM). This model is part of a larger group of health belief models (HBM) and incorporates an understanding that individuals value health and wellness. This model also incorporates an understanding of behavioral change, taking into account that it may not always be linear, as the practice self-evaluation reveals periods of mastery as well as setback (Stevenson, 2014). This model is closely aligned with the approach of a client-centered recovery model used in mental health (Manville, 2014). Next, participants had an opportunity to collect physiological measures such as heart rate, and explore the use of self-determined strategies to promote an effect on these physiological measures, supporting a sense of self-efficacy (Bandura, 1997). Recurring activities used in the mental health class, such as meditation, fostered a renewed understanding of how mindfulness can benefit regulation of the sympathetic nervous system. Recollection occurred of how simple practices discussed in the mental health class, such as taking a deep breath or utilizing a stretch, can relieve stress and promote coherence. Participants engaged in foreshadowing of how they

may be able to use these tool while studying or when they encountered a challenging question on the NBCOT COTA exam.

The new OTA graduates then constructed their own health promotion and wellness plan using the WRAP. This included consideration of increasing control over and improving health through working toward a state of well-being while minimizing the neurophysiologic effects of the stress response and coping with environmental challenges. Participants reviewed their qualitative and quantitative understanding of the potential benefit of health promotion and wellness strategies and self-regulatory interventions that can be used to reduce distress of OTA students while preparing to take the entry-level COTA Certification Exam. In the closing of the seminar, all of the participants were provided an environment of social support while giving them opportunity for cognitive appraisal of successes achieved and the challenges ahead. Through the seminar, participants were able to renew personal connection with their former instructor and cohort members. The activities of this seminar aligned with the social cognitive model and the theoretical construct of self-efficacy. The seminar concluded with the self-administered GSES as a posttest.

In conclusion, this study's methodology is sufficient to adequately test and address the hypothesis. The study's design and surveillance system addresses the hypotheses and meets the objectives for providing quantitative data regarding the participants' understanding of health promotion and wellness strategies, as well as self-regulation interventions designed to promote self-efficacy, in new OTA Program graduates.

#### **Chapter 4: Data Analysis**

A quantitative, matched paired sample-t test was conducted to compare participants' GSES scores before and after the seminar. This was done in an attempt to understand if there was

a causal relationship of using health promotion and wellness strategies and self-regulation interventions to improve perceived self-efficacy regarding upcoming exam preparation. The dependent variables are the scores on the GSES, as both the pretest and posttest measure. The independent variables are the health and wellness promotion strategies, the coaching techniques, following use of a seminar to incorporate health and wellness promoting and self-regulation strategies and interventions offered in the seminar. The results of the GSES pre/post test scores yielded 20 points of data. For the analysis, the *alpha* or significance level value was originally set at .05 but was then moved to .01. This experimental design meets requirements according to standard practice, as the sample data is matched pairs with the dependent variable being the score on the GSES posttest. There was a significant difference in the GSE scores; mean pretest value was pretest 35.4 and mean GSES posttest score was 38.8. All data was entered into the STAT Disc statistical program. The mean difference was -3.4 with a standard deviation of 2.590581. The test statistic was calculated as:  $t = (-4.15030)$  and the critical  $t = (-1.8331)$ . The study *p*-value was equal to 0.0012 and the corresponding 90% confidence interval value is  $-4.901709 < ud < -1.898291$ . The achieved *p*-value rejects the null hypotheses and a causal relationship is established in this small pilot study between the use of health promotion and wellness strategies and self-regulation interventions, and improvement in self-efficacy.

### **Chapter 5: Summary, Conclusions, and Recommendations**

This research has provided preliminary justification for further exploration into the use of health promotion and wellness strategies and self-regulation interventions for new graduates of OTA programs who are preparing for their entry-level certification examination. Statistical analysis in a matched paired *t*-test rejects the null hypothesis suggesting a significant causal effect in improving self-efficacy through the use of health promotion and wellness strategies and

self-regulation interventions. A risk benefit analysis supports further investigation as well. Based on the literature review and accepted understanding of the profound deleterious effects of distress and chronic stress on overall health and wellbeing, there is a potential benefit for occupational therapy practitioners to understand how to mitigate this outcome. Through understanding the importance of health promotion strategies to assist new graduates with establishing life balance and developing insight into effective tools for self-regulation, it is proposed that they may experience a greater sense of control, increasing self-efficacy and a sense of well-being. Evidence suggests that effective use of self-regulatory techniques can promote the relaxation response resulting in decreased heart rate, respiration, muscle tone, and metabolic rate (Rakel, 2008). Understanding the biomarkers of distress and evaluating the effect of self-regulation and promoting self-efficacy can offer the potential for valuable insight into self-determined health and wellness promotion strategies. The ability to help oneself fosters capacity to help others. In strengthening self-efficacy, individuals become more resilient. A workforce of practitioners equipped in their own self-care and self-regulation will potentially be able to help others develop effective health promotion and wellness strategies and self-regulation interventions to better be able to face and deal with challenges ahead of them. Enhancing these capacities can potentially have an impact on improving health of the general population.

A major limitation of this pilot study is the small sample size, ( $n = 10$ ). Another limitation is that the GSES mean pre/post test scores could not be compared to the international database, as gender and age of respondents were not collected on the response forms. Therefore, changing the methodology to incorporate recording of age and gender of participants, anonymously, on the pre/post test, will enable comparison of data to the international database with respect to mean values for gender and age on the GSES. Based on the heterogenous mean values of GSES scores

collected in this study, the new OTA graduates had a significantly higher mean GSES score both on the pre and the posttest scores. The mean pretest score was 35.4 and the mean posttest scores were 38.8. The mean adult heterogeneous GSES score on the international database is 29.28, (Schwarzer & Jerusalem, 1995). This is significantly lower than even the mean pretest GSES score. It seems very possible that the new OTA graduates were overall very optimistic since they had just completed their graduate seminar, signifying the completion of their associate level degree. Another threat to validity is that nine of 10 new OTA graduates all learned health and wellness promotion strategies as well as concepts regarding self-regulation during their core OTA education. Additionally, participants were former students of the primary investigator in the mental health course within the OTA program. In this course, students discussed self-efficacy and HBTs including social cognitive theory as well as the transtheoretical model of change. Benefits of spirituality or hope, meditation, yoga, exercise, stress reduction, nutrition, sleep, and life balance were all previously discussed nine months prior, through course curriculum. The attitudinal culture within this cohort of new OTA graduates is supportive of primary health promotion and prevention strategies to encourage positive outcomes and quality of life. This may have established a bias in favor of the strategies and interventions used during this seminar, however, it may be seen as a supportive indicator for inclusion of this content in occupational therapy curriculum, as mandated by the 2012 ACOTE Standards for Education.

An additional impact of this research is the potential benefit to academic programs providing education to all levels of occupational therapy students preparing for practice as a Registered Occupational Therapist or a Certified Occupational Therapy Assistant. As accredited through the ACOTE, OT and OTA Programs are assessed on success in major areas such as retention, pass rates in clinical externships or fieldwork, pass rates on the NBCOT Exam, and

employer satisfaction. It is possible that students and new graduates prepared with the knowledge of health promotion and wellness strategies and self-regulation interventions can in fact better cope with stresses of life and remain productively engaged when transitioning from the classroom to the clinic and the workforce. This ultimately could contribute to a tangible positive outcome measure for educational programs.

On a larger scale, the applied health promotion and wellness strategies and self-regulation interventions can potentially help improve quality of life not only for students or new graduates and their loved ones, but also for their patients. The American Occupational Therapy Association (AOTA) through the 2012 ACOTE Standards has identified the importance of health promotion and its importance in helping people achieve a state of well-being. Well-being is defined within the Occupational Therapy Practice Framework: Domain and Process (AOTA, 2014), as “contentment with one’s health, self-esteem, sense of belonging, security and opportunities for self-determination, meaning, roles, and helping others” (p. S4). Every aspect of the seminar conducted with the new OTA graduates in this research sought to help them establish a sense of well-being during this major life transition including the challenge of the exam, procuring employment, and beginning clinical practice as an occupational therapy practitioner. This can potentially support the 2025 Vision of the AOTA, “*Occupational therapy maximizes health, well-being, and quality of life for all people, populations, and communities through effective solutions that facilitate participation in everyday living*” (AOTA, 2017).

The primary objective of this study was to add evidence regarding the causal relationship between the use of health promotion and wellness strategies and the identification and use of self-regulation interventions for reducing physiological distress to increase new OTA graduates’ perceived self-efficacy. With proper operationalization of the study’s objectives through



planning and conducting the seminar, the new OTA graduates were able to construct the process of applying person-centered health promotion and wellness strategies and self-regulation interventions with an emphasis on life balance. Participants had an opportunity to envision an increased sense of personal control over the challenges that lie ahead and with a plan to manage the task of preparing for the NBCOT COTA Examination. The participants committed to working toward maintaining a state of well-being, while minimizing the neurophysiologic effects of the stress response, coping with environmental challenges of adult life, and arranging productive study time for mastery of exam preparatory materials. An overall conceptual understanding of self-efficacy can be described as “an individual’s beliefs in their capabilities to exercise control over challenging demands and over their own function. Self-regulation refers to any effort a person makes to alter his or her own responses, overriding impulses and substituting them with another response that leads toward the selected goal” (Luszczynska & Schwarzer, 2005, p. 441). Upon completion of the seminar, the new OTA graduates reflected upon this understanding.

Hopefully the participants will be able to approach the critical time period prior to the examination with strong self-efficacy. Self-efficacy, as described by Bandura (1997) includes observational learning, mastery experiences, improving physical and emotional states and use of positive verbal persuasion (Stevenson, 2014). Operationalized into every day living this equates to a person having the perception that they themselves have the ability to make a course of action to attain a desired goal (Snelling, 2014). It also implies the use of personal health promotion, wellness strategies and self-regulation interventions, to support optimal health and wellbeing. Based in true social cognitive theory, the successful preparation for the examination for participants can serve as a personal baseline, providing a source for strong personal self

affirmations.. Ultimately, succesful management of of the critical time preparing for the examination can provide a positive affirmational milestone, that can serve as a reference point for a lifetime (Fine, 1991; see also Nathaniel, Schultz, & Draughn, 2015).

The expiration of this research is March 14, 2018. Based on the small but impressive statistical significance and small risk analysis, it is the impression of this writer that this seminar should be offered to more cohorts using revisions regarding methodology to document both age and gender of respondents so comparisons can be made to larger scale studies using the GSES.

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## APPENDIX:

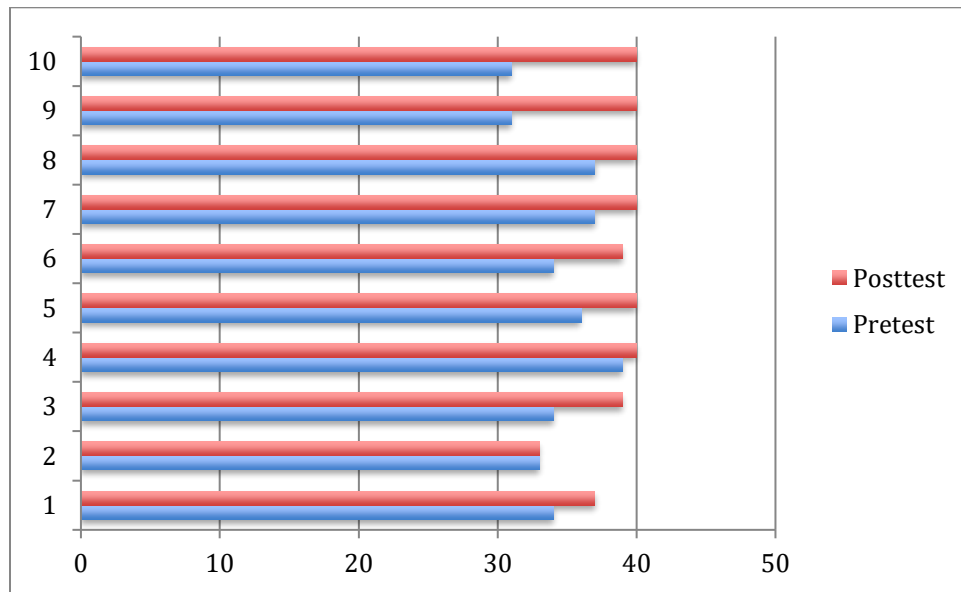
**Table 1. Population, Intervention, Comparison, Outcome (PICO) Search Results:**

<b>Population</b>	<b>Intervention</b>	<b>Comparison</b>	<b>Outcomes</b>	<b>Results</b>
Occupational Therapy Assistant Program Graduates	Health and wellness promotion prior to NBCOT Exam	Pre/Post Test: GSES	Increased sense of self efficacy	“0” primary evidence source matches “17” secondary sources with references to patient care and no reference to new graduates and the NBCOT Exam
Occupational Therapy Program Assistant New Graduates	Self regulation of distress prior to NBCOT Exam	Pre/Post Test: GSES	Reduction in self perceived stress	“0” primary or secondary sources with no reference to New Graduates and the NBCOT Exam
Occupational Therapy New Graduates	Health and Wellness promotion prior to NBCOT Exam	Pre/Post Test: GSES	Increased sense of self efficacy	“0” primary or secondary sources with no reference to New Graduates and the NBCOT Exam
Occupational Therapy New Graduates	Strategies to reduce anxiety prior to assessment.	Pre/ Post Test: GSES	Decreased self perceived anxiety	“0” primary or secondary sources with no reference to New Graduates and preparation for the NBCOT Exam
Occupational Therapy Assistant New Graduates	Strategies to promote self-efficacy	Pre/Post Test: GSES	Increased sense of well-being	“0” primary or secondary sources with no reference to New Graduates and preparation for the NBCOT Exam
Occupational Therapy Assistant Students	Strategies to promote self-efficacy	Pre/Post Test: GSES	No outcome specified	“0” primary or secondary sources with no reference to New Graduates and preparation for the NBCOT Exam

**Table 2: General Self-Efficacy Scale: Pre/Post Test Scores, Differences and Changes**

Student No.	Pre-Score	Post-Score	Difference	% Change
1	34	37	3	9%
2	33	33	0	0%
3	34	39	5	15%
4	39	40	1	3%
5	36	40	4	11%
6	34	39	5	15%
7	37	40	3	8%
8	37	40	3	8%
9	39	40	1	3%
10	31	40	9	29%

:



**Figure 1. Bar Chart of Individual New Graduates Pre/Post Test Scores on GSES:**

n=10, Horizontal axis=participants scores, ranging from a possible value of 10-40 The vertical axis represents two scores for each respondent.



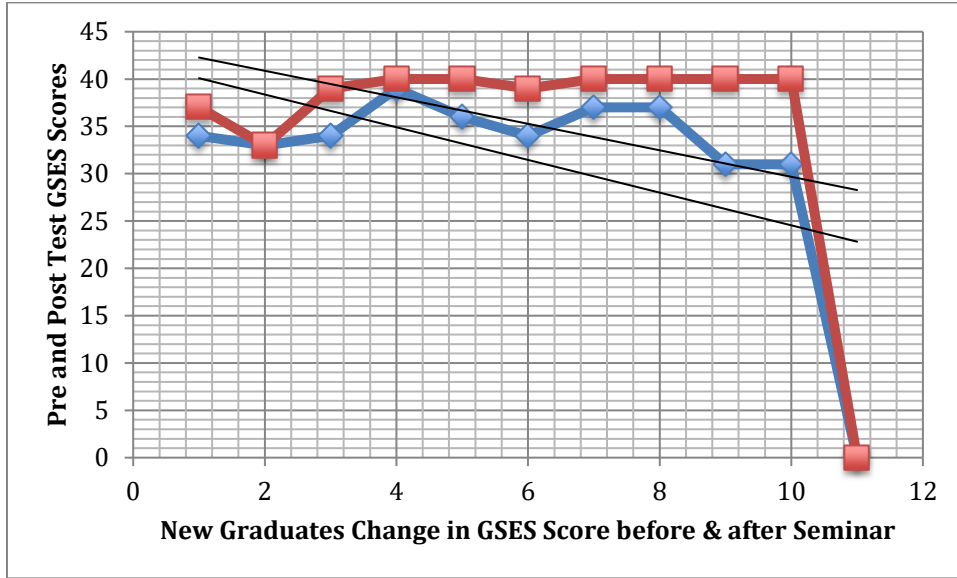


Figure 2: Directional change in GSES pre/post test scores

**General Self Efficacy Scale**

English version by Ralf Schwarzer &amp; Matthias Jerusalem, 1995

1	I can always manage to solve difficult problems if I try hard enough.
2	If someone opposes me, I can find the means and ways to get what I want.
3	It is easy for me to stick to my aims and accomplish my goals.
4	I am confident that I could deal efficiently with unexpected events.
5	Thanks to my resourcefulness, I know how to handle unforeseen situations.
6	I can solve most problems if I invest the necessary effort.
7	I can remain calm when facing difficulties because I can rely on my coping abilities.
8	When I am confronted with a problem, I can usually find several solutions.
9	If I am in trouble, I can usually think of a solution.
10	I can usually handle whatever comes my way.

1= Not at all true 2= Hardly true 3= moderately true 4 = Exactly True

Source: <https://userpage.fu-berlin.de/health/engscal.htm>

Consent Form:



**Keiser University  
Institutional Review Board  
Informed Consent Form**

<b>Researcher:</b>	Marcia Hamilton, MSHS, OTR/L,BCP	
<b>Title of Study:</b>	Health Promotion and Wellness Strategies for Self-Regulation Intervention for Occupational Therapy Program Graduates Preparing for the Entry-level Certification Exam	
<b>Degree Program</b>		
<b>Type of Degree</b>		<b>Field of Study</b>
Clinical Doctorate Occupational Therapy, OTD		Occupational Therapy
<b>Dissertation Chair/Research Mentor: Dr. Stanley Paul, MD, Ph.D., OTR/L email:</b>		
<b>IRB Certification</b>		
I understand that this research study has been reviewed and certified by the Institutional Review Board at Keiser University. For research-related problems, or questions regarding participants' rights, I can contact the Institutional Review Board through the IRB Chair at (954) 318-1620.		
<b>Invitation to Participate and Description of the Project</b>		
<b>Description of study:</b> This study explores the possibility of benefit or relationship between the utilization of health promotion and wellness strategies and self-regulation interventions for addressing life balance and neurophysiological symptoms of distress, respectively, resulting in increased self-efficacy for successful exam preparation for new graduates of the OTA programs that are preparing for the entry-level COTA Certification Exam.		
<b>Participants Role in the Study</b>		
Participants will attend a 30- minute seminar, with objectives as follows: 1. Participants, who are new graduates of the OTA Program, will have the opportunity to reflect upon health promotion and wellness strategies and identify acute and chronic stressors and concerns regarding preparation for their entry-level certification exam. 2. Participants will complete brief self-exploration and reflection exercises to increase personal use of effective strategies for improving their current life balance, named the Wheel of Life Balance (Kimsey-House, Kimsey-House, & Sandahi, 2011) 3. Participants will explore theories and models of promoting personal change, including self-		

efficacy and the use of the Trans-Theoretical Model of Health Coaching. 4. Participants will have an opportunity to collect physiological measures, such as heart rate and oxygen saturation, and explore the use of self-determined strategies to promote an effect on these physiological measures, supporting a sense of self-efficacy (Bandura, 1997). 5. Participants will be provided with an environment of the social support of their cohort, renewing personal connections and hope while strengthening the network of support, collectively. 6. Participants will construct the process of person-centered health promotion and wellness, starting with themselves. This will include consideration of increasing control over and improving health through working toward a state of well-being while minimizing the neurophysiologic effects of the stress response and coping with environmental challenges. 7. Participants will complete a General Self- Efficacy scale as a Pre/Post Test. This scale is attached, along with the standard permission for use.

#### **Risks and Inconveniences**

Risks are nothing more than could be encountered with participating in a seminar designed to promote health and wellness, focusing on themselves. There are no rigorous or challenging exercises performed. Activities to promote a sense of well-being and efficacy will be used.

#### **Benefits**

Benefits may include a sense of well-being and perhaps an atmosphere of fun and enjoyment may occur.

#### **Financial (or other) Considerations**

There are no financial benefits associated with participation in this study.

#### **Confidentiality**

**Your privacy and confidentiality will be protected. Your consent will remain in a locked file cabinet. Your responses on the activities will be your property. Only the results of the General Self-Efficacy Scale will be kept, however your responses will be anonymous**

#### **Voluntary Participation**

**Your participation in this study is entirely voluntary.** You may refuse to participate in this research. Such refusal will not have any negative consequences for you. If you begin to participate in the research, you may at any time, for any reason, discontinue your participation without any negative consequences

#### **Other considerations and Questions**

Please feel free to ask any questions about anything that seems unclear to you and to consider this research and consent form carefully before you sign.

#### **Authorization**

I understand the explanation provided to me. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this study. I

have been given a copy of this consent form. If I do not participate, there will be no penalty or loss of rights. I can stop participating at any time, even after I have started.

**I agree to participate in the study. My signature below also indicates that I have received a copy of this consent form.**

Participant's signature \_\_\_\_\_

Name (please print) \_\_\_\_\_

Date \_\_\_\_\_

*[If applicable, Signature of Person Obtaining Consent]*

If you have further questions about this research project, please contact the principal investigator, Marcia Hamilton, at [(239) 277-1336, e-mail: mahamilton@keiseruniversity.edu or the research supervisor at (561)273-6510, e-mail:stpaul@southuniversity.edu. If you have questions about your rights as a research participant or if you have a research related complaint please contact The IRB Chairperson at: (954) 318-1620.

The participant will be given one copy of this consent form. One copy of this form is to be kept by the investigator for the duration of the study.

### **Executive Summary**

New graduates of OTA Programs are challenged with preparation for the NBCOT Exam. The threat of not passing on the first attempt is intensified due to the cost of the exam and lack of provisional licensing. Anecdotal experience of faculty in an OTA Program supports concern for the new graduates as they enter the 1-2 month period prior to the exam. Occupational role adjustment occurs during this time, as graduates are no longer attending classes or performing entry-level skills as required during Level II Fieldwork. In order to promote self-efficacy, interventions to promote health, wellness, and self-regulation were designed for a seminar provided to the new OTA graduates. Self-efficacy, as defined by Albert Bandura, is the belief in one's capabilities to organize and execute a course of action required to produce a given goal (Bandura, 1997). Prior to beginning research, Institutional Review Board authorizations were obtained. Methodology and study design were developed to achieve maximal construct validity through quantitative analysis of the causal relationship between perceived self-efficacy, using a pre/post test measure.

Upon consent, a seminar was provided to new graduates of a single cohort of an Associate of Science Occupational Therapy Assistant Program (n=10). The seminar used self-assessment via the General Self-Efficacy Scale (GSES) as a pre/post test measure. Following this, respondents participated in health and wellness promoting strategies as well as self-regulation techniques. These included the Wheel of Life Balance, a Wellness Action Plan, self-determined self-regulation activities, social cognitive strategies, and mirthful laughter. All activities of the seminar were designed to address life balance and neurophysiological symptoms of distress in attempt to maximize perceived self-efficacy. The GSES Scale was used as a pre/post test measure to determine if there was a causal relationship with the utilization of health

promotion and wellness strategies and self-regulation interventions resulting in increased self-efficacy. Methodology included a matched pair t-test using the scores of the GSES, as a pre/ post test measure. All data was interpreted using STAT Disc. A matched pair t-test for dependent samples was compared to the null hypothesis, that there was no relationship to the use of a seminar with described interventions in perceived self-efficacy. Results indicated a significant difference in the GSES scores with pretest ( $M = 35.4$ ) and post-test ( $M = 38.8$ ). The mean difference was  $-3.4$  with an sd of  $.2590581$ . The *alpha* value set at  $.05$  and then  $.01$ , ultimately negating the null hypothesis with a value of  $0.0012$ . In conclusion, this research was directed at discovering effective interventions to promote health, wellness, self-regulation, and ultimately self-efficacy of new graduates of OTA Programs, at a critical time in life. Based on results of this research, additional data should be collected with more cohorts. The potential impact of this research suggests a seminar designed to promote health, well-being, and self-regulation to support self-efficacy should be further studied and used.

The larger impact of this research suggests that future OT practitioners will be able to practice these genuine health and wellness promotion strategies and self-regulation interventions supporting increased self-efficacy. Through their own practice, the new OT practitioners may be able to teach others, fostering improvement in population health supporting the 2025 Vision of the American Occupational Therapy Association (AOTA).