2017 Belmont University Research Symposium

Belmont Honors Program Research Track 1: Natural Sciences

Moderator: Jonathan Thorndike

April 20, 2017
3:30-5:00pm
IHSB 142

3:30pm-3:45pm

The Effects of Routine Music Listening on Compassion Fatigue in Healthcare Workers

Cassandra Canaday
Faculty Advisor: Lori McGrew, Ph. D.

Compassion fatigue, or Secondary Traumatic Stress Disorder, is a condition that affects persons in caretaker roles. Sometimes called "the cost of caring," it occurs when the knowledge of another's trauma and suffering and the desire to help the sufferer negatively impact caregivers, causing symptoms similar to those of PTSD. This similarity to PTSD makes compassion fatigue a prime candidate for treatment with music therapy, which has been effective in treating PTSD since its genesis. Though there has been little research on the efficacy of music or music therapy interventions as a treatment for compassion fatigue, much of the existing literature is promising. This study asked healthcare workers to construct a playlist of songs they found calming, relaxing, or cathartic and listen to them every day for two weeks. Participants were assessed for compassion fatigue before and after the trial period, and the results were compared. The study was conducted completely online using a website, digital survey technology, and email, and generated several technological tools that will be useful in further study, including digital formats of the Professional Quality of Life scale (ProQoL) and the Short Test Of Music Preferences (STOMP).

3:45pm-4:00pm

Enhancing Resilience: The Impact of a Compassion Fatigue Prevention Program on Undergraduate Nursing Students

Julia Sherwood
Faculty Advisor: Beth Hallmark, PhD

Nurses are expected to provide safe, competent care while showing compassion to their patients and families. The constant need for nurses to demonstrate compassion often leads to a phenomenon referred to as compassion fatigue. Compassion fatigue has detrimental effects on nurses, patients, and employers. Compassion fatigued nurses are less likely to provide compassionate, safe, quality patient care. Compassion fatigue decreases productivity and increases turnover rates and the use of sick days. Nursing literature on compassion fatigue is focused on causes and treatment, rather than prevention. Nursing school curricula does not equip students with techniques to prevent compassion fatigue in their future nursing practice. This

research will address the results of the implementation of a compassion fatigue prevention program into an undergraduate nursing school. In this initial study, we present a novel evidence-based program that consists of lecture, discussion, and completion of a self-report survey. The sample consisted of 95 undergraduate nursing students at a southeastern university. Results indicate that a compassion fatigue prevention program prepares undergraduates to reduce their risk of experiencing compassion fatigue. Students that practice self-care had lower levels of burnout and moderately higher levels of compassion satisfaction on the Professional Quality of Life Scale. Students who identified themselves as being at high risk for experiencing compassion fatigue had higher levels of burnout and secondary traumatic stress. This study contributes to the nursing literature on compassion fatigue with the addition and emphasis on prevention, and to nursing education with considerations on compassion fatigue prevention in nursing school curricula.

4:00pm-4:15pm

The Measure of Functional Movement in Recreational Cyclists and Climbers using FMS™

Kristen Koch
Faculty Advisor: Dr. Nick Bacon

The Functional Movement Screen™ consists of seven tests that expose weaknesses, imbalances, asymmetries and limitations in individual components of movement such as strength, flexibility, balance, coordination and motor control. The primary objective of this study was to establish and compare FMS™ scores in recreational cyclists and climbers. A total of 19 cyclists (6 males, 13 females; mean age= 31 ± 11 yrs.) and 13 climbers (7 M; 6 F mean age 24± 4 yrs.) volunteered for the study. Climbers scored significantly higher in the deep squat (climbers= 2.46 ± 0.52, cyclists= 1.95 ± 0.52; $p < 0.05$), inline lunge (climbers= 2.85 ± 0.38, cyclists=2.47± 0.51; $p < 0.05$), hurdle step (climbers= 2.46 ± 0.519, cyclists=1.84 ± 0.375; $p<0.001$) and total composite scores (climbers= 17.15 ± 1.95, cyclists=15.16 ± 1.83; $p < 0.01$) in comparison to the cyclists. The rock climbers scored significantly higher than the cyclists in each of the higher-level movement patterns (Overhead Squat, Hurdle Step, Inline Lunge), supporting that the demands of rock climbing require higher levels of neuromuscular control, coordination and stability.

4:15pm-4:30pm

The Effects of Nature-Based Sounds in Combination with Nature-Based Images on Decreasing Stress Behaviors of Children in a Daycare Setting

Rebecca Hall
Faculty Advisor: Dr. Angela Lane

It has long been known that children experience levels of daily stress that could cause significant physical and psychological health problems if not resolved. Specifically, the daycare setting has been shown to be a breeding ground for increased levels of toxic stress for children. Despite the evidence supporting the use of colored images and music on decreasing stress behaviors in adults, there was a huge gap in evidence regarding the effectiveness of these interventions combined on decreasing stress behaviors in children. In fact, no study had combined both nature-based sounds and colorful-nature based images as a means to decrease the amount of stress behaviors of children. Therefore, this study examines the ability of nature-based sounds in

combination with colorful nature-based images to decrease the number of stress behaviors demonstrated by children in a daycare setting. This study focuses on the population of one-year-olds to five-year-olds. The evidence from this study shows that there is a positive correlation between the use of nature-based sounds and colorful nature-based images on decreasing stress behaviors in children. The research also demonstrated that the intervention decreased both active and passive stress behaviors in the children. The results of this study could be valuable to daycare settings in the future, as the use of nature-based sounds in combination with nature-based images could be the key to decreasing stress levels in children so that the adverse effects of stress do not manifest by way of negative health outcomes in the future.