

## Sigma's 30th International Nursing Research Congress

### Music Therapy to Improve Collateral Damage in Breast Cancer Survivors

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#### **Purpose:**

The National Coalition for Cancer Survivorship defines the term survivorship as - applying to individuals anywhere along the trajectory from the cancer diagnosis until death. Family members, friends, and caregivers are also considered part of the survivorship experience. Due to improvements in cancer screening and treatment, millions of people live many years after their cancer diagnosis. This number is expected to grow to over 20 million by 2026 (NIH, 2016). With these increases, it is important to understand the survivorship experience and the effects of a cancer diagnosis and treatment. The numbers also highlight the need to address persistent and late-occurring effects, and the value of integrated care (Anglade, 2018).

The 2005 Institute of Medicine's report, *From Cancer Patient to Cancer Survivor: Lost in Transition*, recommended that that patients completing primary treatment be provided and clearly explained a comprehensive "Survivorship Care Plan". This plan is expected to take place within 6 months of treatment completion and include long-term & late-side effects of cancer or treatment (IOM, 2005). Rather than late/long term side effects Dr. Susan Love (MD), One of the founders of the National Breast Cancer Coalition and author of "Dr. Susan Love's Breast Book", used the term "Collateral Damage" as a better description from a patient perspective (Love, 2018).

*Chemobrain, a collateral damage also known as, chemotherapy related cognitive impairment (CRCI) is a toxicity of chemotherapy treatment that impacts cognitive abilities. CRCI is a common complaint among those who have received chemotherapy treatments. Studies show that up to 75% of patients who have received chemotherapy treatments, complain about issues with cognition and up to 35% still show symptoms many years following treatment (Janelsins et al., 2014). Since CRCI can manifest differently from person to person, there is no standardized treatment and patients often complain of feeling helpless in addressing this significant symptom. When patients complain about CRCI to physicians, they are often prescribed "brain training" exercises such as crosswords, puzzles, etc., with the understanding that exercising said cognitive skills is the fundamental treatment for counteracting CRCI. In cancer centers around the US, music therapy is applied as a way to assist patients through the treatment process, applying music-based activities to address the physical, emotional, social and cognitive aspects of cancer care. There have been promising results to support the use of individualized piano instruction (IPI) on improving cognitive skills among children and elder adults (Bugos et al., 2014) with current research addressing *cognitive impairment* in medical populations such as Parkinson's (Lesiuk, Bugos, & Murakami, 2018). There is limited research to support the use of IPI in maintaining or improving cognitive skills when the cause of CI is related to chemotherapy. Despite its common practice in the clinical setting, the use of music therapy to address cognitive skills in a cancer center needs further research and support. The use of IPI to address CRCI can significantly impact cancer populations by providing a positive tool that can potentially impact cognitive skills but also quality of life and mood.*

#### **Methods:**

This was a Small Feasibility study (Rodriguez-Wolfe & Anglade, 2018), used as the first step to develop and test the piano intervention. This study involved six-weeks of piano lessons and two-weeks of assessments on cognitive measures for a total of eight-weeks of enrollment. The program comprised of

three data collection time points at baseline, mid, and post intervention. The intervention included: a participant selected music piece; a warm-up period play; and the piano course.

*To quantify the impact of IPI on CRCI, the study measures included cognitive and psychosocial assessments which included: the NIH Toolbox - Cognitive Function Battery (NIHTB-CB) to measure fluid & crystallized neurocognitive abilities; the Functional Assessment of Cancer Therapy - Breast (FACT-B) version 4 to measure quality of life; Functional Assessment of Cancer Therapy - Cognition (FACT-Cog) version 3 to measure perceived cognitive disturbances; Generalized Anxiety Disorder-7 (GAD-7) to measure self-reported anxiety; the Patient Health Questionnaire-9 (PHQ-9) to measure self-reported depression; and a researcher-designed demographics and questionnaire.*

### **Results:**

*Feasibility was established through analysis of the six participants' compliance with attendance, homework requirements, and self-reporting of program feasibility and acceptability. All but one completed all eight piano sessions. Of the participants, 60% reported practicing 20 or more minutes per day. Cognitive and psychosocial benefits were established with significant improvement in overall cognition and in self-reported measures of quality of life, depression, and anxiety.*

### **Conclusion:**

This study was a collaborative effort between nursing and music therapy with the advanced practice nurse as the primary referral source. Nurses play a significant role in developing and implementing the recommended cancer survivorship care plan. Nurses at all levels of care who interact with breast cancer patients and survivors are encouraged to learn about treatment options available to address issues such as CRCI and incorporate them into the patients' survivorship care plan.

*This feasibility study looked to establish that music making can impact cognitive skills in a breast cancer population therefore adding to the literature on music and cognition yet addressing a significant gap in the literature related to effective interventions for CRCI.*

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### **Title:**

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### **Keywords:**

Breast cancer, Chemobrain and Piano instructions

### **References:**

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### **Abstract Summary:**

Chemobrain is a collateral damage from chemotherapy treatment which impacts cognitive abilities. Individual piano instructions are found to have a positive impact with significant improvement in overall cognition and in self-reported measures of quality of life, depression, and anxiety.

### **Content Outline:**

Introduction

Methods

Results

Conclusion

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**Author Summary:** Dr. Anglade serves as Assistant Professor at University of Miami School of Nursing and Health Studies with over 35 years of nursing experience. Her research interest includes evaluation of patient safety, health outcomes, and healthcare quality. She currently teaches undergraduate classes and has a shared role at UM Hospital and Clinics as nurse research scientist. collaborating with staff through the Research and Evidence Based Practice Council in building a program of nurse led interdisciplinary research.

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**Author Summary:** Marlen is a board-certified music therapist currently practicing in Querétaro, Mexico. She received her undergraduate degree from Berklee College of Music in Boston and completed her internship at Shriners Burns Hospital. She is master's prepared from the University of Miami where her thesis focused on the use of preferred music to manage acute pain. She created the music therapy program at Sylvester Comprehensive Cancer Center and is director of the Latin American Music Therapy Network.