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A Retrospective Chart Review on the Effects of CAM on Pain and/or Anxiety in the Oncology and Bone Marrow Transplant Population

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DNP Final Project Report

A Retrospective Chart Review on the Effects of CAM on Pain and/or Anxiety

in the Oncology and Bone Marrow Transplant Population

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Dedication

This work and my DNP project is dedicated to God and a handful of people. I give honor and glory to God for giving me this opportunity and allowing me to complete this program. I pray that it allows me to do His work. To my husband, my best friend, thank you for doing more than your fair share to allow me to pursue my dreams. Thank you for picking up my slack around the house and raising our girls. I was gone many nights and left you to parent them alone, you've done an amazing job with them and have done so without complaint. Thank you for your understanding when we have had to put multiple things on hold for the sake of a better future. You support has been immeasurable, your ability to step into any situation and tell me to go study has been a breath of relief on numerous occasions. Without you, I could never have done this. You are amazing and I am better for having married you—I love you. To my amazing daughters, Kailani and Leila—this journey has taken up most of your young lives, but has always been intended to better all of ours. Thank you for loving me unconditionally, and not crying too much when I left to go study. Thank you both for being my motivation and my main reason for embarking on this journey. Thank you for your love and your hugs and your smiles, they kept me going when I wanted to quit. To my fellow tri-pod members, Kristyn Clark and Whitney Spear. The laughs, the tears, the late nights, the coffee. I would not have wanted to do this with anyone else, and I don't think I could have if I had tried. You both inspire me to be a better me. Tri-pod for life. To my mom, your belief in me surpasses my own. Thank you for always knowing I could do it and reminding me, too. Dad, you passed before you could see me graduate and call me Doctor, but you have been with me every step of this journey. I hope I made you proud.

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Abstract

PURPOSE: The purpose of this study was to promote integrative medicine by evaluating the efficacy of Complementary Alternative Medicines (CAM) on pain and/or anxiety reduction in the oncology and bone marrow transplant population. The four modalities of CAM were Massage, Jin Shin Jyutsu (JSJ), Aromatherapy and Narrative Medicine.

METHODS: The design was single center, retrospective chart review, focusing on medications for pain, medications for anxiety, self-reported pain levels, self-reported anxiety levels, chronicity of pain and acuity of pain prior to and after the CAM modality/s implementation.

RESULTS: Due to the lack of electronic documentation of Massage, Aromatherapy and Narrative medicine, JSJ was the only modality included in the study. The sample consisted of 59 patients and 104 JSJ encounters for the period June 2016 to June 2017. Pain and anxiety were significantly reduced after the implementation of JSJ. Pain and anxiety acuity and chronicity and medications used to treat them were not documented. The average pain score was 4.4 before CAM intervention and 2.8 after CAM intervention. The average anxiety/stress rating was 4.6 before CAM intervention and 2.2 after CAM intervention.

CONCLUSION: Decrease in pain and anxiety scores were both statistically significant after the implementation of JSJ in the oncology and bone marrow transplant population.

Introduction

The widespread use of complementary/alternative medicine (CAM) has acquired national attention, and the value of CAM continues to grow. A 2002 study showed the general population has an interest in some form of CAM. When the definition of CAM included prayer, specifically for health reasons, 62% of adults stated they used it in the past 12 months. When prayer was excluded from the definition of CAM, 36% of adults used some form of CAM during the last 12 months. The 10 most commonly used forms of CAM were: prayer for self, prayers by others, natural products, deep breathing, participation in prayer group for self-health, meditation, chiropractic care, yoga, massage, and diet-based therapies. CAM use differs by sex, race, health insurance status, hospitalization, geographic region and tobacco or alcohol use (Barnes, 2008).

A 2014 study describing nurse practitioners' (NPs) beliefs in effectiveness, knowledge, referral and use of CAM showed that 95% of NPs believe that they should have knowledge of the most common CAM practices and 81% of the NPs surveyed believe CAM treatments have a legitimate use in allopathic medicine (Geisler, 2014). But it is not just NPs who desire the merge between CAM and traditional medicine. In a 2006 self-administered survey of 112 community clinicians in 32 rural counties in eastern Kentucky, 94% of clinicians reported patient use of CAM and most clinicians reported recommending CAM to patients. Although most of these clinicians reported that they would recommend CAM to patients, 70% also expressed an interest in learning more about CAM through continuing education. These surveyed clinicians stated they are motivated to learn more so they can appropriately advise their patients on evidence-based, clinically relevant CAM to provide better care (Flannery, Love, Pearce, Luan, & Elder, 2006).

With CAM becoming more readily accessible and accepted by mainstream society, non-pharmacologic treatments need to be further researched and evaluated for efficacy on pain and anxiety reduction. If research yields that these CAM options are effective in the treatment of pain and anxiety in the inpatient oncology and bone marrow transplant population, then primary care providers should be educated on this evidence-based practice so they may better serve their patient population with a variety of outpatient options other than pharmaceuticals. Practitioners that are not educated in, or not comfortable with referring patients to CAM practitioners may be unintentionally leaving these options off the table for their patients.

Since the guideline treatment for the assessment and management of pain as stated in recommendation 3.2 by the National Guideline Clearinghouse includes an evaluation of any non-pharmacological (physical and psychological) interventions for effectiveness and the potential for interactions with pharmacological interventions, Primary Care Providers (PCP) need to be aware of the use of CAM for pain and/or anxiety in this patient population (Clearinghouse, Assessment and Managment of Pain, 2013). The Guideline Treatment for the Screening, Assessment and Care of Anxiety and Depressive Symptoms in Adults with Cancer: an American Society of Clinical Oncology guideline adaptation recommends proper screening for anxiety and consideration of pharmacologic and/or nonpharmacologic interventions delivered by appropriately trained individuals. The recommended treatment plan states that proper management must be individually tailored to patients, who should be informed fully of their options (Clearinghouse, Screening, Assessment, and Care of Anxiety and Depressive Symptoms in Adults with Cancer: an American Society of Clinical Oncology Guideline Adaptation., 2014).

Using a multidisciplinary team to maximize the options of treatment is the most desired form of collaborative exploration of treatment options. Practitioners should not only be able to educate their patients about CAM, but also encourage their patients to seek non-pharmacologic options such as CAM if their patients so desire. Anxiety is highly treatable, yet only approximately one-third of patients suffering from anxiety receive treatment (National Institute of Mental Health , 2016).

Background

Jin Shin Jyutsu (JSJ) is an ancient Japanese healing art that helps to balance the vital energy of the whole person (mind, body and spirit) with a hands-on technique of a non-massage form of shiatsu. JSJ belief states that the human body has its own revitalizing energy that flows up the back and down the front of the body and can become blocked in 26 different places. JSJ theory believes that the blockages occur due to fatigue, tension or illness, and can trap energy in these safety energy locks. The purpose of JSJ is to unblock the trapped energy by harmonizing the flow of energy through the body. JSJ uses fingertips over clothing in certain areas, or the holding of a toe to relieve pain and/or reduce muscle tension to bring release and calmness to the body. JSJ also brings balance to the body's energy, which promotes optimal health and wellbeing, and facilitates the body's own healing capacity (LLC, n.d.). In a 2013 retrospective study using data from 51 cancer participants treated with JSJ for pain and/or stress, 39 were positive for pain and 48 were positive for stress. Pre-session pain scores were 4.0 on a 0-10 scale and post session were reported to average 2.0 on a 0-10 scale. The pre-session stress scores were on average, a 5.7 and post-session dropped to an average of 1.8 (Garrett, 2015).

Similar to JSJ, but with a more hands-on approach; massage therapy is a group of systematic and scientific manipulations of body tissues performed with the hands of a trained and certified therapist to affect the nervous and muscular systems and improve general circulation (Deng, 2005). In a literature review compiled by Falkensteiner, et al on the use of massage on oncology patients, it was found that five of the six studies examined pain. In four of the five studies, the analgesic effect of massage therapy was measured in oncological patients receiving palliative care. In four of the studies, there was a statistically significant reduction in the amount of pain the patient reported. In addition to the pain-reducing effect of massage therapy, the change from constant pain to intermittent or episodic perception was also measured and found to occur in 14% of the study participants. The effects of massage were also measured to last up to 18 hours and the patients' perception of anxiety decreased statistically significantly immediately after the intervention (Falkensteiner, 2011).

A randomized controlled trial in four United Kingdom cancer centers and one hospice setting tested the effectiveness of supplementing usual supportive care with aromatherapy massage in the management of anxiety and depression in cancer patients. Two hundred eighty-eight cancer patients with clinical anxiety and/or depression were referred to complementary therapy services, and then allocated randomly to a course of aromatherapy massage or usual supportive care alone. Patients who received aromatherapy massage had significant improvement in clinical anxiety and/or depression at the 6-week mark, but not the 10-week mark. However, patients receiving aromatherapy massage also described greater improvement in self-reported anxiety at both six and ten weeks post randomization. In this study, aromatherapy massage did not appear to benefit cancer patients' anxiety and/or depression in the long-term, but is was associated with a clinically important benefit up to 2 weeks after the intervention. (Wilkinson, 2007)

The use of essential oils for aroma therapy and treatment for anxiety has become increasingly popular and is often seen used in conjunction with massage therapy. Essential Oils (EOs) are natural occurring compounds found in the seeds, bark, roots, peels, leaves, flowers, stems and other parts of plants. Many aromatherapists found in the United States are also massage therapists. EOs can be applied topically, inhaled or diffused into the air, and have a variety of different symptoms they are said to manage. Each oil is believed to possess different properties that are reported to work for various ailments. EOs can be used alone or in combination, and may require a few weeks of a patient's time to find a blend they feel is good for them, as each person and their reaction to an EO can vary greatly (Bollinger, n.d.).

Very different from the above-mentioned modalities, is narrative therapy. Narrative therapy is a collaborative and non-pathologizing approach to counseling and community work, which centers people as the experts of their own lives. As the patient writes a self-story and as the patient's story evolves, the hope is that the realization that the problem is the problem and not the person as the problem will occur. This therapy allows the patient to look at their life through a third person view rather than a first person's view and helps them to better understand and feel in control of their life, which decreases stress or anxiety (Narrative Therapy Centre of Toronto, n.d.).

Purpose

The overall goal of this project is to promote integrative medicine by studying the use of CAM on pain and anxiety. According to the available research, CAM can provide pain and anxiety reduction via non-toxic and non-habit-forming interventions. The purpose of this study is to evaluate the efficacy of CAM on pain and/or anxiety reduction in the oncology and bone marrow transplant population at the University of Kentucky Markey Cancer Center.

Methods

This study was comprised of a single center, retrospective chart review and was planned to be followed by a comparison study to determine the efficacy of the varied CAM treatments received at the University of Kentucky Markey Cancer Center on reduction of pain and anxiety. At the time of the study, only JSJ had been documented into the electronic medical records (EMR) system. The documentation of Massage Therapy, Aromatherapy, and Narrative Therapy had only been manually documented on paper. It is the goal of the professionals administering the CAM treatments to have the manual documentation entered in the EMR within the next year.

Setting

The University of Kentucky Markey Cancer Center (MCC) is the site of Kentucky's only National Cancer Institute (NCI)-designated center, offering state-of-the-art cancer care for over 20 years. In addition to being NCI-designated, in August 2017, the U.S. News & World Report named Markey as one of the Top 50 Cancer Centers in the Nation. Available options for cancer care include four Complementary Alternative Medicine (CAM) modalities geared to reduce pain and anxiety. These modalities include: Massage Therapy, JSJ, Aromatherapy and Narrative Medicine. MCC was chosen for this project due to the well-established CAM treatment options already in place and being utilized.

Sample

The sample consisted of the medical records of 59 patients for the modality of JSJ. There were no electronic documentations for Massage Therapy, Aromatherapy, or Narrative Medicine at the time of the data analysis as these modalities are currently only being manually documented by the providers who hope to enter them into the system in the next year. The patient population

of interest included patients diagnosed with the following types of cancer: brain, lung, breast, rectal, renal, leukemia, lymphoma, myeloma, tongue, cervical, larynx, colon and bladder, as well as bone marrow transplant recipients. The records of all patients who met the inclusion criteria between June 2016 and June 2017 were included. Both pre-CAM and post-CAM reported pain and/or anxiety scores were measured. The different modalities were unable to be compared to show which was more effective in the desired outcome, as only one modality was electronically documented.

Features

JSJ: An ancient Japanese healing art that helps to balance the vital energy of the whole person (mind, body, and spirit) with a hands-on technique of a non-massage form of shiatsu. The purpose is to bring balance to the body's energy to promote well-being and facilitate the body's own healing capacity.

Aromatherapy: At the time of this data collection all treatments and outcomes were being recorded manually in paper documentation form. The intent to upload data into the EMR in set for the next year.

Massage: Systematic and scientific manipulations of body tissues performed with the hands of a trained and certified therapist to affect the nervous and muscular systems and improve general circulation.

Narrative: At the time of this data collection all treatments and outcomes were being recorded manually in paper documentation form. The intent to upload data into the EMR in set for the next year.

Data Collection

Approvals from the University of Kentucky Institutional Review Board and the Norton Healthcare Office of Research and Administration were obtained prior to the collection of data. This study was based on a retrospective chart review. Patient charts were obtained from the MCC electronic patient database. Charts were identified using the demographic and clinical characteristics of the study sample listed in Table 1. During data collection, patient records were accessed using the patient medical record number, and data was abstracted and transferred to an electronic spreadsheet. Please refer to Table 2 for the paired sample statistics of pain and anxiety before and after CAM treatment.

Data Analysis

The demographics used in this study included: Age, Race, Sex, and Cancer Type. Cancer types were grouped together and can be viewed in Table 1. A paired t test was run to see if there was a significant decrease in pain as well as anxiety in two observations on the same patient. A Pearson's correlation test was run to see if there was a correlation between age and pain and the degree of change, as well as age and anxiety and the degree of change.

<div align="center">

Results

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Pain Level

Of the 104 JSJ encounters included in this study, 92 (88.5%) reported pain prior to JSJ therapy. Of those 92 encounters the average pre-JSJ pain level on a scale of 0-10 was 4.391 and the average post-JSJ pain level was 2.79. The paired t test was run to see if there was a statistically significant decrease in pain in two observations on the same person. The range of number of encounters was 1-5. The average pain score decreased by 1.6 points and is considered statistically significant and is shown in Table 3.

Anxiety Level

Of the 104 JSJ encounters included in this study, 94 (90.4%) reported anxiety prior to JSJ therapy. Of those 94 encounters the average pre-JSJ anxiety level on a scale of 0-10 was 4.63 and the average post-JSJ anxiety level was 2.21. The paired t test was run to see if there was a statically significant decrease in anxiety in two observations on the same person. The range of number of encounters was 1-5. The average anxiety score decreased by 2.4 points and is considered statistically significant and is shown in Table 3. Also, to be noted: out of 104 JSJ encounters, 67 reported both pain and anxiety shown in Figure 2.

Sample Characteristics

A total of 59 patient charts were reviewed, accounting for 104 JSJ treatments. The mean age was 55.8 years old, with most patients being Caucasian (89.8%) and female (55.9%) and most of cancers were blood cancers (55.9%) as seen in Table 1.

Discussion

The purpose of this study was to evaluate the efficacy of CAM on pain and/or anxiety reduction in the oncology and bone marrow transplant population. The location for the study was the University of Kentucky's Markey Cancer Center (MCC) in Lexington, Kentucky. The reason for choosing this location was the large, established population of CAM patients. The four modalities of CAM to be assessed were Massage, JSJ, Aromatherapy and Narrative Medicine.

Although the original study was to include all four of the above listed modalities of CAM, only JSJ was included in this study as it was found to be the only modality currently documented in the EMR at MCC. The other three modalities are currently being manually documented with the plan to upload into the EMR in the next year. During the retrospective chart

review, it was noted that 1.7% of the study sample was part of a vulnerable population. There was no correlation between either sex or age and degree of change in either pain or anxiety.

The data collected show statistically significant reduction in both pain and anxiety via a non-pharmacologic method. With the multiple side effects of pain and anti-anxiety medications, it is reassuring to see that pain and anxiety can be reduced quickly, effectively and without harmful side effects to an already ill and often immunocompromised population.

Limitations and Implications for Future Research

Several limitations were identified in the design of this study. Due to the retrospective aspect of the chart review, there was no way to verify reported results. The major limitations for this study were: the study occurred at a single center with a small population, there was a lack of electronic documentation on three of the four modalities and there was a lack of tracking for outpatient use of pharmaceuticals for pain and/or anxiety.

Implication for future research includes teaching classes on JSJ self-holds for patients/family members. This would allow them to utilize the CAM for pain or anxiety at their convenience when not able to ask for JSJ treatment from a provider. The majority of CAM techniques can be modified for self-use. CAM has minimal risk and can be used as standalone therapy or in conjunction with pharmacological interventions.

Tracking patient controlled analgesic pump use for 24 hours before and after JSJ treatment for pain could be an effective and quick way to measure efficacy of CAM. If this shows a decrease in pain medication it could help decrease the addiction and misuse of narcotics. The tracking of pharmaceutical use of as needed pain and anxiety medications in the inpatient setting could be looked at more in depth. This would occur through the EMR and would give a

clear view of efficacy of CAM versus pharmaceutical use for pain and anxiety reduction. This could also be done in the outpatient setting through medication logs, self-reported documentation and through the state's electronic scheduled prescription reporting system.

Conclusion

The purpose of this study was to promote integrative medicine by studying the efficacy of CAM on pain and/or anxiety. During the selected year of encounters of retrospective charts that were reviewed, both pain and anxiety showed a statistically significant decrease. This decrease in both pain and anxiety was directly attributed to the CAM methodology of JSJ. The ability to significantly reduce pain and anxiety in a holistic, non-pharmaceutical manner calls for a broader education for both patients and providers. The promotion of integrative medicine is evidence based and should emphasize a multi-disciplinary team approach for the patient's overall health and wellbeing. It could be deduced from the results of this study that continued efforts of CAM use can be effective to reduce pain and anxiety. This could be crucial in helping with the current epidemic of abuse and addiction that is plaguing this country, especially in major cities. This decrease may be seen in strength and/or frequency of dose for both pain and anti-anxiety medications.

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Table 1. Demographic and clinical characteristics of the study sample (N=)

	Mean (SD) or n (%)
Age	55.88 (13.38)
Gender	
Female	33 (55.9%)
Male	26 (44.1%)
Race	
Caucasian	53 (89.8%)
African American	3 (5.1%)
Asian	1 (1.7%)
American Indian/Native Alaskan	1 (1.7%)
Hispanic	1 (1.7%)
Diagnosis	
Lymphoma, Leukemia, AML, ALL (Blood)	33 (55.9%)
GI/GU	7 (11.9%)
Lung/Brain	5 (8.5%)
Breast	5 (8.5%)
Larynx/Tongue	3 (5.1%)
Brain	1 (1.7%)
Carcinoid	1 (1.7%)
Liver	1 (1.7%)
Melanoma	1 (1.7%)
Thoracic	1 (1.7%)
Adenocarcinoma	1 (1.7%)

Table 2. Paired Samples Statistics of pain and anxiety before and after CAM treatment

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-CAM Pain	4.391	87	2.9819	.3197
	Post-CAM Pain	2.79	87	2.557	.274
Pair 2	Pre-CAM Anxiety	4.63	86	2.782	.300
	Post-CAM Anxiety	2.21	86	2.076	.224

Table 3. Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Pre-CAM Pain - Post-CAM Pain	1.5977	1.4821	.1589	1.2818	1.9136	10.055	86	.000
Pair 2	Pre-CAM Anxiety - Post-CAM Anxiety	2.419	1.662	.179	2.062	2.775	13.491	85	.000

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Figure 1. Comparison of pain and anxiety before and after JSJ treatment. (Average pre-JSJ pain score 4.4 post-JSJ pain score 2.8. Average pre-JSJ anxiety score 4.6, post-JSJ score 2.2)
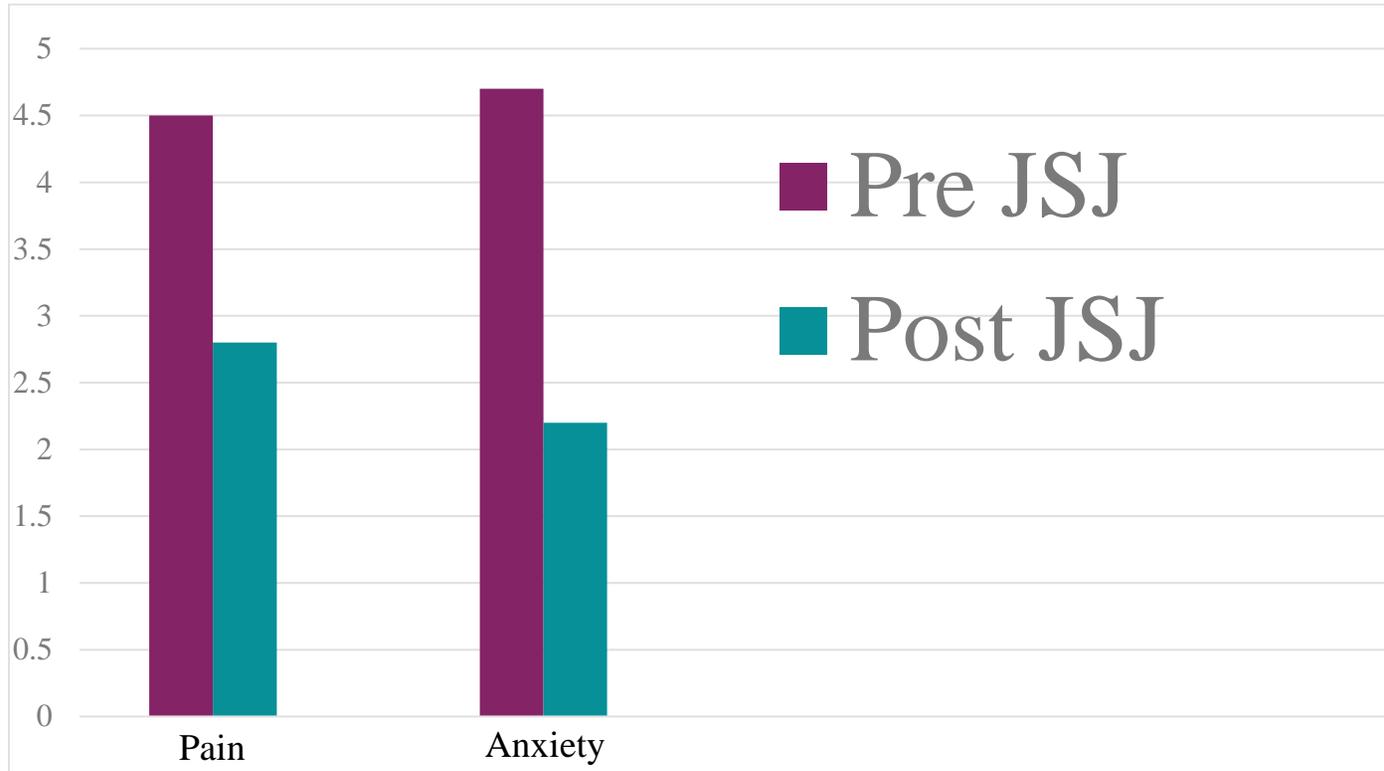
Figure 2. Comparison of encounters with pain, anxiety or both. (10% pain only, 13% anxiety only, 77% both pain and anxiety)

Pain 10%

Pain and Anxiety 77%

Anxiety 13%