THE ATTITUDES OF PRIMARY CARE PROVIDERS IN SOUTH CENTRAL PENNSYLVANIA TOWARDS COMPLEMENTARY AND ALTERNATIVE THERAPIES IN MIGRAINE TREATMENT

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Abstract

Migraines are a common and debilitating medical issue. Many patients are turning to complementary and alternative medicine to either augment or replace conventional medical treatment for this. However, it is unclear what their primary care providers' attitudes are toward the use of CAM and the PCP's knowledge base in this area. This study was designed to determine PCPs' attitudes towards CAM and if a brief educational presentation regarding CAM modalities frequently used for migraines had any impact on their attitude towards CAM. There was a pre survey, a Power Point presentation discussing common CAM used for migraines, and a post survey. This was a small study, with 13 participants completing the pre survey and 10 completing the post survey. There was no significant difference between the pre and post intervention groups ($p=0.46$, significance level of <0.05). However, both groups had a mostly favorable attitude towards CAM. Gender, work setting, and credentials did not impact attitudes towards CAM. Acupuncture, relaxation therapy, massage, and chiropractic care were the CAM modalities that the providers felt the most comfortable discussing. The findings from this study can be used as a guide for future educational offerings and CAM services in the area. Suggestions for future research include offering a continuing medical education credit to boost participation.

Keywords: Complementary and Alternative Medicine, Migraines

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Chapter 1

Introduction

Migraine is a common and debilitating neurological disease. It also causes significant absenteeism and healthcare costs. It is estimated in 2016 that 36 billion dollars was spent on indirect and direct costs for treatment in the United States (Bonafede, et al., 2018). Anxiety and depression are common comorbidities associated with migraine. There are many treatments involving conventional medicine, but many patients also turn to complementary and alternative medicine (CAM) for migraine prevention and acute treatment.

Background of the Problem

Patients are utilizing complementary and alternative migraine treatments to replace or augment their conventional medical treatment. Reasons for this include side effects, cost, and disappointment with the results of their medications (Peters, Abu-Saad, Vydelingum, Dowson, & Murphy, 2004). Data was compiled from the 2007 National Health Interview Survey regarding migraines and CAM use. It was noted that migrainuers are more likely than the general population to use CAM. Almost half of these adults tried a complementary or alternative therapy for migraines. The patients using CAM had a higher education level, a history of anxiety and/or back pain, and tended to live in the Western United States (Wells, Bertisch, Buettner, Phillips, & McCarthy, 2011). The patients preferences for treatment do not always align with the health care providers beliefs or recommendations (Wahner-Roedler, et al., 2006).

Statement of the Problem

In previous studies is other parts of the United States and other countries, there have been a lot of variations in health care providers regarding the use of CAM treatments for various ailments, including migraines (Wahner-Roedler, et al., 2006).

Research Question

What impact does education about popular complementary and alternative medicine modalities have on primary care provider attitudes towards CAM to augment or replace conventional medical treatment for migraines?

Definition of Terms

- **Migraine:** a disorder of attacks which are recurrent. Migraine headaches occur over a period of hours to days and are generally accompanied by other symptoms including nausea, vomiting, photophobia, phonophobia, and some sufferers also report having an aura prior to the start of the pain (Cutrer, 2018).
- **Complementary and alternative medicine (CAM)**: includes treatments that are not part of conventional medical treatment. Complementary treatments are those that augment conventional medicine and alternative therapies are used as a replacement to conventional treatments (Wells, Bertisch, Buettner, Phillips, & McCarthy, 2011)
- **Conventional medical treatment:** for the purpose of this study conventional medical treatment refers to migraine treatments, both prophylactic and abortive therapies.
- **Integrative medicine:** integrative medicine is a combination of alternative and conventional medicine in a coordinated manner. It focuses on the patient as a whole (Chow, Liou, & Heffron, 2016).
- **Primary care provider:** primary care includes Internal Medicine, Family Practice, and Pediatrics.

- **Health care provider:** for the purpose of this study, this includes Medical Doctors (MD), Doctor of Osteopathic Medicine (DO), Nurse Practitioner (NP or CRNP), and Physician's Assistants (PA).

Assumptions

Assumptions for this study included that the participants would answer the questions truthfully. To aide this, the participants were informed that their answers were anonymous. The study was designed to assess attitudes of primary care providers in a specific geographical region and the survey was distributed via email specifically to primary care providers. Another assumption was that all participants work in primary care including Family Practice, Internal Medicine, and Pediatrics.

Limitations

The limitations of the study were related to the number of participants out of the possible participants. The study was designed to assess a specific geographical area that covers rural, suburban, and some urban populations. The results of the study were not generalizable to larger areas.

Summary of the Problem

Chronic and episodic migraines are a serious health concern globally, and South-Central Pennsylvania is certainly affected. Due to physical limitations, depression and anxiety (Amoozegar, 2017), lost wages, poor productivity, and mounting medical bills are some of the plights these patients can experience (Migraine Research Foundation, 2019).

Patients are utilizing complementary and alternative migraine treatments to replace or augment their conventional medical treatment. Reasons for this include side effects, cost, and disappointment with the results of their medications (Peters, Abu-Saad, Vydelingum, Dowson,

& Murphy, 2004). Is there a disconnect between patients and their primary care providers regarding the use of CAM for migraine treatment? This subject was explored using the knowledge to action theoretical framework. The study was to learn if after reviewing a Power Point presentation about why migraine patients use CAM and what methods they are using, they were more receptive to discussing CAM with their migraine patients. The next chapter discusses what information is already known about CAM use in migraineurs and the knowledge of, and attitudes towards CAM use. The information represents the United States and other countries.

Chapter 2

Review of Related Literature

This chapter will discuss what is already known about CAM use among migraineurs and also the attitudes of health care providers towards CAM. It is important to understand the rationale for the opinions of each party.

Why Patients Use CAM

Several themes emerged when reviewing literature about migraines and CAM. Many patients turned to CAM because they were not satisfied with the results of their conventional treatment (Peters, Abu-Saad, Vydelingum, Dowson, & Murphy, 2004). This resonated in the articles by D'Onofrio, Raimo, Spitaleri, Casucci, & Bussone (2017), Posadzki, et al. (2015), Wells, Bertisch, Buettner, Phillips, & McCarthy (2011), and Goksel (2012) as well. Concerns about medication side effects was also a concern for many patients (Grazzi, Egeo, Liebler, & Padovan, 2017). While some CAM methods are costly, other patients turned to CAM because the cost of the prescribed medications was too high. Many patients use conventional medicine, but also use complementary and alternative treatments to augment the results (Wells, Bertisch, Buettner, Phillips, & McCarthy, E, 2011). Lastly, some patients believe that all natural medicine is good. While this is not entirely true, they would like to avoid conventional medicine related to the belief that CAM is better (D'Onofrio, Raimo, Spitaleri, Casucci, & Bussone, 2017).

Wells, Bertisch, Buettner, Phillips, & McCarthy (2011) compiled data from the 2007 National Health Interview Survey regarding migraines and CAM use. They found that migrainuers are more likely than the general population to use CAM and 49.5% of these adults tried a complementary or alternative therapy for migraines. Commonly, the patients using CAM

had a higher education level, a history of anxiety and/or back pain, and tended to live in the Western U.S.

Types of CAM Used for Migraines

Complementary and alternative therapy defines a broad spectrum of treatments that include neutraceuticals (D'Onofrio, Raimo, Spitaleri, Casucci, & Bussone, 2017), vitamin supplements (Goksel, 2012), Homeopathy (Jong, Lundqvist, & Jong, 2015), chiropractic care (Peters, Abu-Saad, Vydelingum, Dowson, & Murphy, 2004), massage (Posadzki, et al., 2015), traditional Chinese medicine (Posadzki, et al., 2015), and relaxation techniques (Goksel, 2012).

Yang, et al. (2012) conducted a research study concerning accupunture with 31 participants. They were divided into 3 groups: traditional accupunture, control accupunture, and migraine group (no treatment). Positron emision tomography – computed tomography (PET-CT) scanning was used to assess brain metabolism in each group. The results of this small study showed that the traditional accupunture group had less pain and increased glucose metabolism in pain related brain areas than the control accupunture and the no treatment group (migraine group). In a study by Wahner-Roedler, et al. (2006) 66% of physicians with the Mayo Clinic health system that were surveyed reported that the understood the medical use of accupunture and 21% felt very comfortable discussing this method of CAM with their patients. The respondents were not asked specifically about migraine treatment, but did represent primary care and a wide range of specialities.

Chiropractic care is another CAM method that is popular. In the same study by Wahner-Roedler, et al. (2006), 76% of respondents understood the medicinal use and 38% felt comfortable discussing and recommending this treatment to their patients. Biofeedback and massage were the only methods that the providers felt more comfortable discussing at 47% and

41% respectively. Wells, Bertisch, Buettner, Phillips, & McCarthy, (2011) found similar results when reviwing the National Health Interveiw Survey to see what CAM methods migraneurs use. Massage and chiropractic care were the most common manipulative theparies used.

Herbal therapies and supplements that were mentioned frequently include magnesium (Goksel, 2012), riboflavin (D'Onofrio, Raimo, Spitaleri, Casucci, & Bussone, 2017), Co Enzyme Q 10 (Wells, Bertisch, Buettner, Phillips, & McCarthy, E, 2011), Feverfew (D'Andrea, Cevoli, & Cologno, 2014), and Butterber (Wells, Bertisch, Buettner, Phillips, & McCarthy, E, 2011).

Magnesium deficiency has been implicated in migraine headaches. While an optimal dose was not established, intravenous and oral magnesium has been shown to reduce migraine frequency, improvement of symptoms, and reduction in disease burden. Riboflavin, vitamin B2, has been shown to help with migraine prevention (D'Onofrio, Raimo, Spitaleri, Casucci, & Bussone, 2017). Goksel (2012) felt that riboflavin had level III evidence of efficacy which could be from a report of an expert committee or descriptive study. In their meta-analysis, beta blockers were 55% in effective in cutting migraines in half and riboflavin was 53% effective at the 400 mg dose. This was not found to be effective in children.

Coenzyme Q10 is an antioxidant that is felt to play a role in migraine prevention. There is level III evidence for adults and level II evidence for children. The theory is that coenzyme q 10 helps with mitochondrial dysfunction that is thought to be related to migraine. In the studies reviewed by Goksel (2012), there were no adverse effects in the two studies reviewed and 61.3% of patients were able to reduce their migraine days by at least 50%.

Butterber is an herbal supplement derived from a plant of the same name. The intact plants contain elements that have carcinogens and hepatotoxic properties. However, the commercially prepared products have these elements removed for safety (Goksel, 2012). It has

been shown in studies to reduce the number of migraines in both adults and children (D'Onofrio, Raimo, Spitaleri, Casucci, & Bussone, 2017).

Feverfew is the last supplement that is frequently mentioned in literature. This is a natural anti-inflammatory agent which should not be taken by patients who are pregnant or taking anti-coagulants. There is also a phenomenon called "post feverfew syndrome" which is said to include insomnia, headaches, muscle and joint stiffness, and anxiety which occurs after long term use. The mechanism of action is believed to include platelet aggregation, inhibition of prostaglandin synthesis, inhibition of histamine release, and inhibition of serotonin release from platelets (D'Andrea, Cevoli, & Cologno, 2014).

Three other methods are biofeedback, non-invasive vagus nerve stimulation, and Botox. Botulinum toxin A, Botox, is a neurotoxin used to temporarily paralyze muscles. This method has been well studied and per Goksel (2012), has level I evidence of effectiveness meaning that there have been sufficient double-blind studies. The FDA approved Botox for the treatment of chronic migraine in 2010, however, there is not enough evidence to support use in episodic migraine patients. Biofeedback is a method that involves monitoring physiologic processes with the intent of gaining voluntary control. Per Goksel (2012), this has level II evidence of effectiveness. Finally, in a preliminary study by Grazzi, Egeo, Liebler, & Padovan (2017), non-invasive vagus nerve stimulation (nVNS) was well tolerated and effective in the 47 teenage participants. Twenty-two of them did not need any abortive migraine medication, which was 46.8%. The other 25 participants took rescue medication within an hour of treatment, citing fear of the migraine worsening. The researchers noted that invasive stimulators have been studied further, they were trying to develop a device that could be used externally.

Barriers to CAM Use

Various complementary and alternative medicine methods and their benefits have been discussed. There have been various barriers to CAM use cited in the literature. One theme that emerged is that not all of the methods have evidence of efficacy or they have conflicting evidence (Posadzki, et al., 2015). Lack of knowledge about CAM was cited as a reason that nurses in Sweden (Jong, Lundqvist, & Jong, 2015) and physicians in the Mayo Clinic health system (Wahner-Roedler, et al., 2006) for not recommending any CAM to their patients. Cost of complementary and alternative therapies was another theme. Peters, Abu-Saad, Vydelingum, Dowson, and Murphy (2004) noted in their qualitative study that several of the participants were interest in various CAM treatments, but they were too expensive to pursue.

Importance of CAM Knowledge for Primary Care Providers

Nationally, there is an increasing interest in CAM amongst health care providers. In an analysis by Cowen and Cyr (2015), 66 out of 125 medical schools researched had CAM-related content. Chow, Liou, and Heffron (2016) stated schools are offering these courses because there is an increased interest in learning about CAM amongst medical students. The combination of conventional and complementary medicine can facilitate the body's natural healing response. An integrative approach facilitates patient autonomy and shared decision making, which can improve provider and patient relationships. The authors also stated "because many CAM systems grew out of ancient traditions, exposure to integrative medicine practices can help students view health and illness through the lens of other cultures."

Pediatric health care providers are not excluded from discussion of CAM with patients and their parents. It was noted by Sawni and Thomas (2007) that 84% of the United States pediatricians they surveyed wanted access to continuing medical education on CAM, 49%

reported that they personally used CAM, and 80% felt that CAM should be taught in medical school.

Finally, CAM is being increasingly embraced in the field of nursing. Some nursing programs are viewing CAM as another facet of hollistic care that is a hallmark of the nursing model. While Helm (2006) felt that it was important for nurses to be knowledgable about the benefits of CAM modalities, she warned that contraindications and interactions needed to be discussed as well.

This chapter reviewed what is known about migraine patient use of CAM and attitudes of health care providers towards and knowledge of the use of CAM in other areas of the country and the world. The next chapter discusses the methodology that was used to gain knowledge about health care providers's attitudes towards CAM in South Central Pennsylvania.

Chapter 3

Methodology

The purpose of this chapter was to describe the research method, sampling, gathering of data, and statistical analysis of the data. The information obtained was used to determine the comfort levels of primary care providers in South Central Pennsylvania in discussing CAM therapies with their migraine patients.

Research Design

The interventional study was experimental and quantitative. Hundreds of primary care providers in South Central Pennsylvania were invited to participate. The invitation to participate included a cover letter, a pre-survey, a Power Point presentation on CAM use for migraines, and a post-survey. Participants were given an initial survey to complete. In the pre survey, six questions about the participants practice setting, credentials (MD, DO, CRNP, or PA), years of practice, and gender was asked. This survey had questions regarding the providers' attitudes towards and knowledge about CAM use in general, along with questions about specific CAM modalities.

The participants were asked to review a Power Point presentation about why patients choose CAM to augment or replace conventional medical treatment for migraines and various CAM modalities that are used. Several popular modalities were discussed.

After reviewing the Power Point presentation, the participants were asked to complete a post survey. The post survey included the same nine questions about the attitudes towards and knowledge of various CAM modalities for migraines. Demographics were not asked again. The participants were asked if and how the presentation may have influenced their opinions on CAM treatment for migraines.

Setting

The survey was distributed via email to primary care providers in the WellSpan Health network. This included the following Pennsylvania counties: Adams, Cumberland, Franklin, Lancaster, Lebanon, and York. The survey was completed on the provider's computer or smartphone, wherever they chose to complete it.

Sample

The survey was distributed to primary care providers in 5 counties South Central Pennsylvania. This was a convenience sample determined by permission from WellSpan Health which is based in York, Pennsylvania. Within WellSpan Health, there are currently 320 family practice providers, 108 internal medicine providers, and 45 pediatric providers. In total, 473 providers received invitations.

Ethical Considerations

The survey was completely anonymous. The participants were advised at the beginning of the survey that no identifying information was collected. Clarion University IRB approval was obtained.

Instrumentation

The primary investigator collected data using Microsoft Forms, an online survey platform. The survey tool was an abridged version of a survey developed by Wahner-Roedler, Vincent, Elkin, Loehrer, Cha, & Bauer which was used in a study they published in 2006. Permission to use and modify the survey was granted via email by two of the authors. The online survey format was chosen because a URL could be shared with hundreds of primary care providers in the South-Central Pennsylvania area very quickly. Authorization was also granted by WellSpan Health to distribute the survey.

The pre-intervention instrument was a 14-question survey. The first section contained 6 questions about the demographics of the participant. The second section contained 8 questions regarding utilization and outcomes. The questions discussed overall opinions about CAM, opinions about specific treatments, how in office discussions about CAM are initiated, and what factors would aid a provider in wanting to discuss CAM further with their patients. After viewing the Power Point presentation on CAM, the post intervention survey contained the same 8 questions about knowledge and attitudes towards CAM. The demographic questions were not asked a second time.

Data Analysis

After the data was collected, then the process of data analysis began. A multivariate analysis was used. The results compared the pre- and post-survey results to determine if the intervention influenced the attitude of the participant towards CAM. Multivariate analysis was chosen because this type of analysis examines the relationships between more than one variable (NCSS, 2019). One of the goals was to determine if the participant's gender, practice setting, and credentialing influenced their choices. For example, would a Nurse Practitioner in Family Medicine be more likely to recommend CAM than a Medical Doctor in Internal Medicine? Does gender affect the likelihood of recommending CAM? However, for gender, there was an option for "prefer not to say" and for practice setting there was an option for "other." In the case of a participant selecting "prefer not to answer", that value would have received its own column. If a participant would have answered "other" for practice setting this would have been tallied in the "other" row unless a significant theme would have emerged, then it would have been listed separately. The survey was distributed to primary care providers who are a Medical Doctor, Doctor of Osteopathy, Nurse Practitioner, or Physician's Assistant, but may unintentionally also

be completed by someone with other credentialing. A list serve email list with family practice, internal medicine, and pediatrics were used.

Summary of Methodology

This descriptive study was designed to determine the opinions of primary care providers in South Central Pennsylvania regarding the use of complementary and alternative medicines for the treatment of migraines before and after reviewing a presentation on CAM modalities commonly used for migraines. The data was also used to determine relationships between the participants practice setting, credentials, and opinions. The survey was distributed and analyzed using an online survey platform.

Chapter 4

Results and Discussion

Results

The survey was sent to 320 family practice, 108 internal medicine, and 45 pediatric providers. In total, 13 participants completed the pre study and 10 participants completed the post study. There were 5 MD's, 3 DO's, 4 CRNP's, and 1 PA, consisting of 5 men and 8 women. While all answers were anonymous, the credentials and practice setting were paired with the gender of the participant. Most of the participants work in family practice with one internist and one pediatric provider who answered the survey. The years of practice ranged from 1-25 with the mean being 14.38 years. None of the nurse practitioners had formal CAM training previously and 3 MD's, 2 DO's, and the PA did. The types of training included acupuncture, Reiki, osteopathic manipulative treatment (OMT), and seminars on alternative medications.

Table 1: Demographics of participants

	MD	DO	NP	PA
Total:	5	3	4	1
Practice setting				
FP	3	3	3	1
IM	1	0	1	0
Peds	1	0	0	0
Gender				
Male	4	0	1	0
Female	1	3	3	1
Attended CAM training				
Yes	3	2	0	1
No	2	1	4	0

Chart 1:

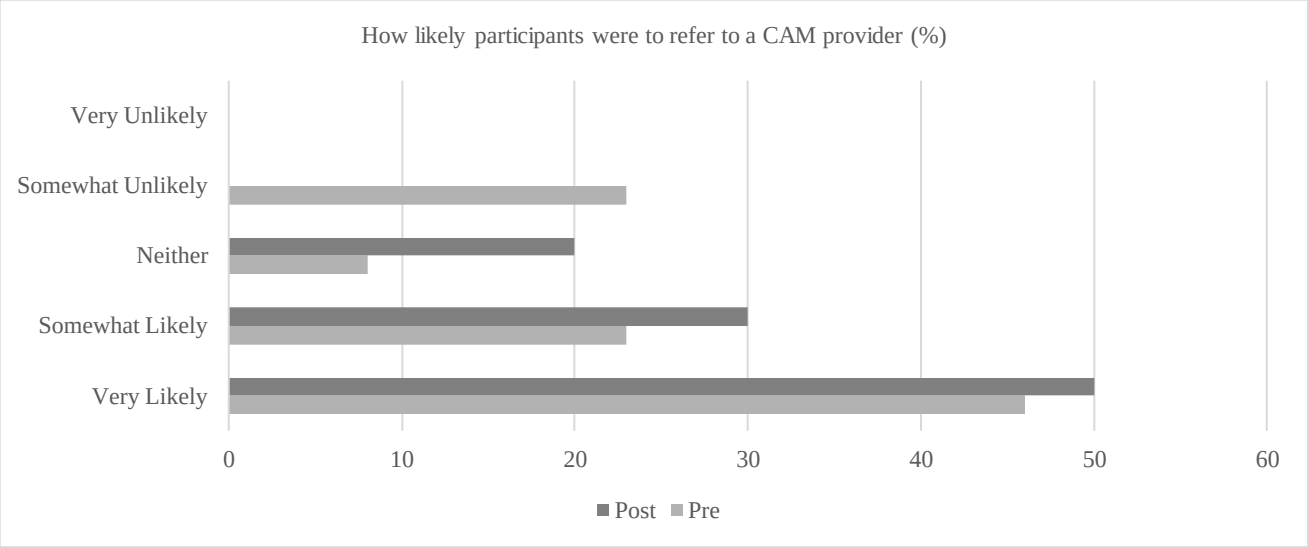


Chart 2:

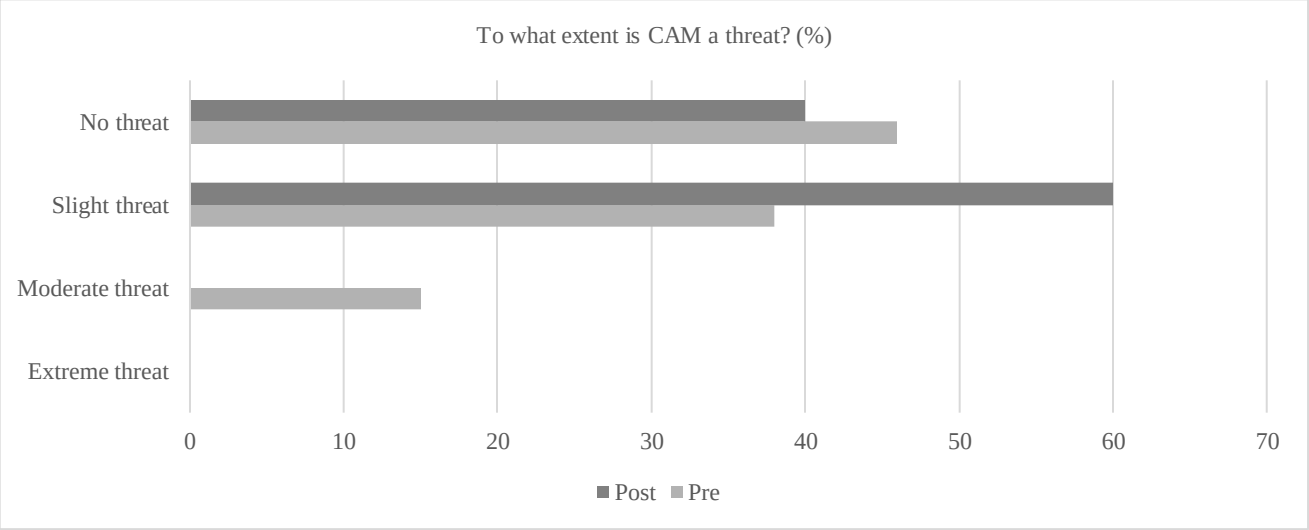


Chart 3:

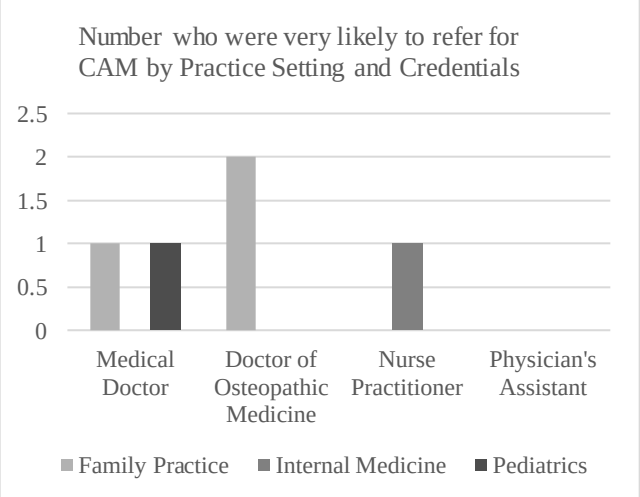
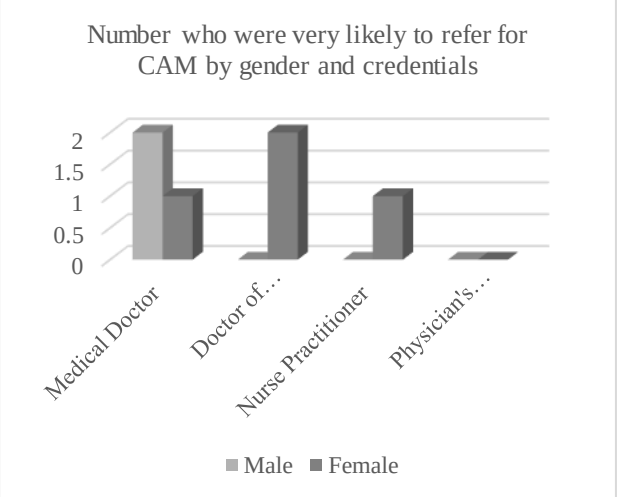


Chart 4:



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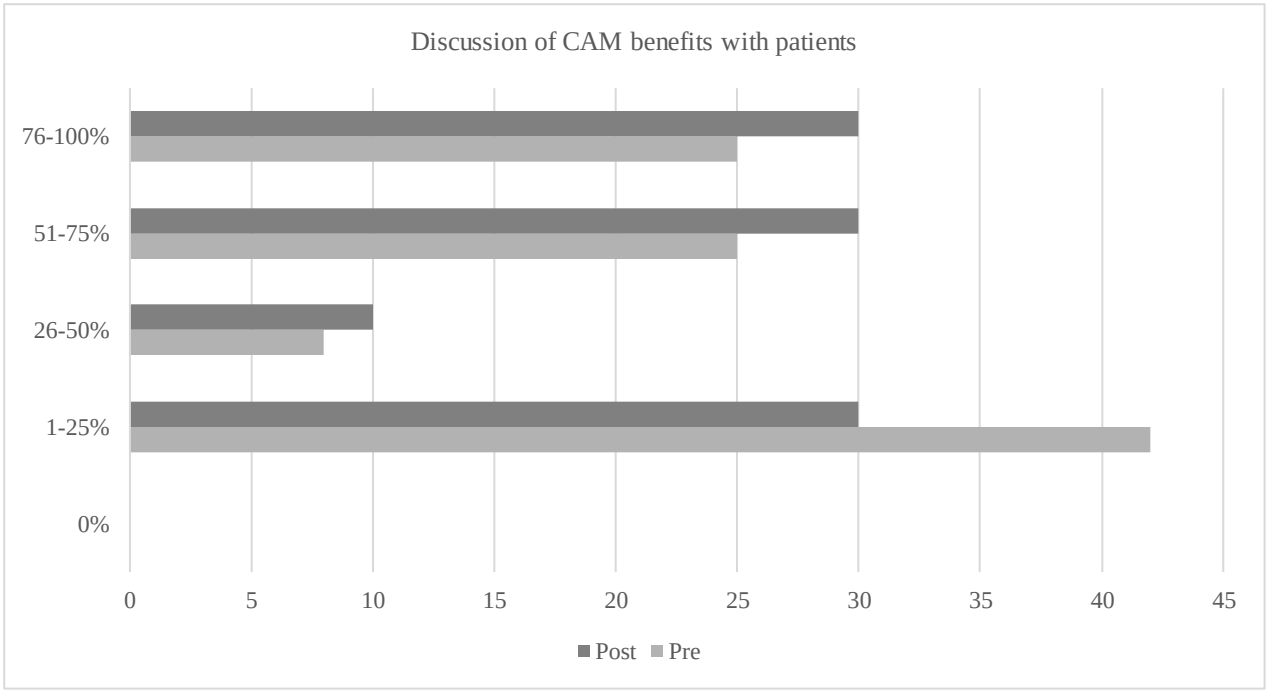

Chart 6:

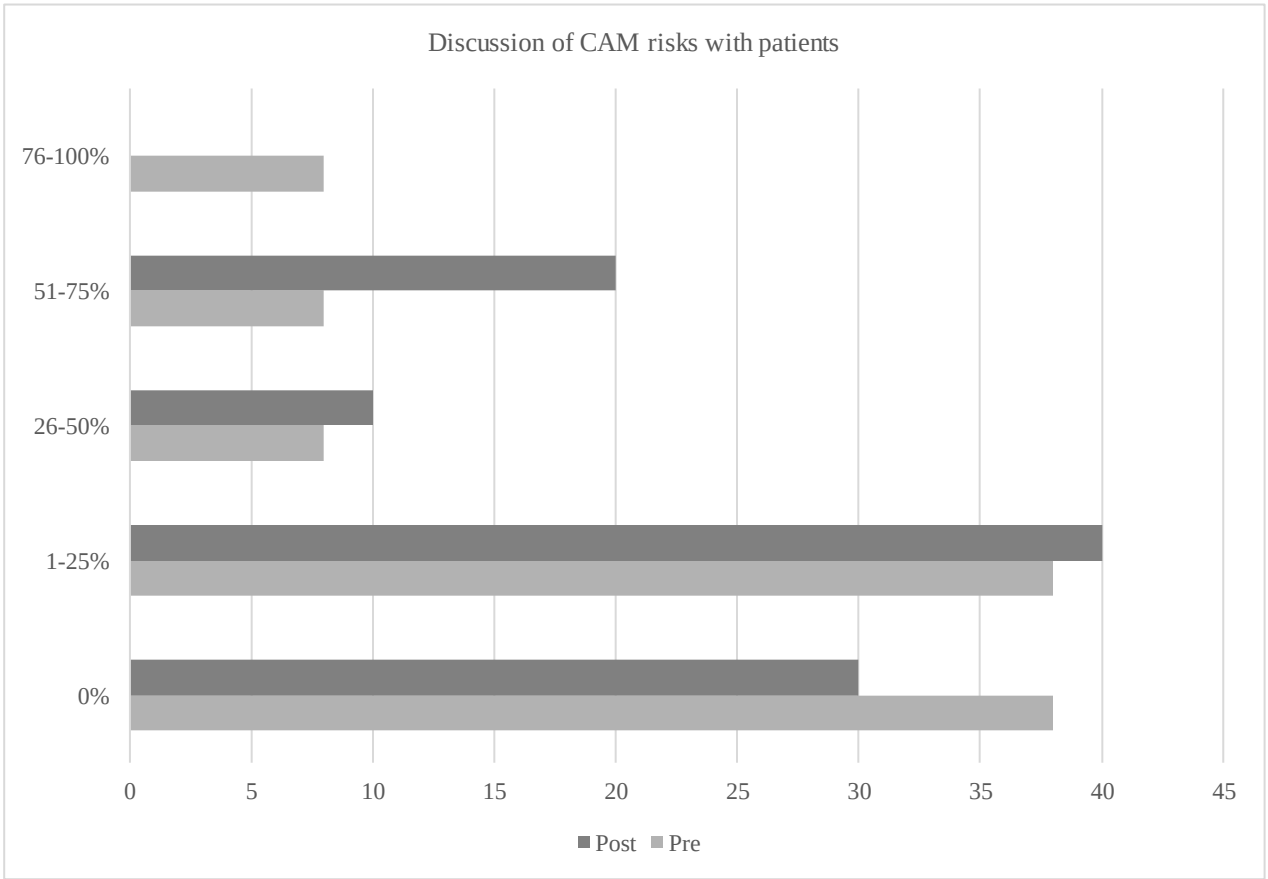

Table 2: Familiarity with CAM methods and comfort in discussing them with patients.

	I am unfamiliar with this therapy	I have limited familiarity with this therapy	I understand medicinal uses, but do not feel comfortable counseling patients	Understand medicinal uses of this therapy and feel comfortable counseling patients.
Acupuncture				
Pre	0	23.1	23.1	53.8
Post	0	10	30	60
Chiropractic				
Pre	0	15.4	7.7	76.9
Post	0	10	20	80
Massage				
Pre	0	0	23.1	76.9
Post	0	0	20	80
Homeopathy				
Pre	7.7	61.5	15.4	15.4
Post	0	50	40	10
Herbal				
Pre	0	69.2	0	30.8
Post	0	50	30	20
Megavitamin				
Pre	15.4	61.5	15.4	7.7
Post	10	40	40	10
Biofeedback				
Pre	7.7	53.8	30.8	7.7
Post	10	30	50	10
Spiritual				
Pre	15.4	38.5	23.1	23.1
Post	30	20	30	20
Aromatherapy				
Pre	0	69.2	23.1	7.7
Post	20	60	20	0
Energy Healing				
Pre	46.2	42.2	0	7.7
Post	44.4	44.4	11.1	0
Magnetic				
Pre	38.5	53.8	7.7	0
Post	33.3	55.6	11.1	0
Naturopathy				
Pre	15.4	61.5	23.1	0
Post	30	40	30	0
Relaxation				
Pre	0	23.1	23.1	53.8
Post	0	10	30	60

Table 3: Factors that impact attitudes towards CAM

	No impact	Minimal impact	Moderate impact	High impact	Definite impact
Personal experience					
Pre	7.7	0	23.1	30.8	38.5
Post	0	0	20	40	40
Recommendations family/friends					
Pre	0	0	61.5	23.1	15.4
Post	0	10	40	10	40
Recommendations Colleagues					
Pre	0	0	38.5	46.2	15.4
Post	0	0	30	30	40
Recommendations Specialist					
Pre	0	0	38.5	30.8	30.8
Post	0	0	30	50	20
Case CAM journal					
Pre	0	41.7	25	16.7	16.7
Post	10	30	20	40	0
Case medical journal					
Pre	0	23.1	15.4	46.2	15.4
Post	10	10	30	40	10
Retrospective case/journal					
Pre	0	0	38.5	53.8	7.7
Post	0	10	20	60	10
Prospective trials					
Pre	0	0	7.7	61.5	30.8
Post	0	10	10	60	20
Evidence physiologic mechanism					
Pre	0	0	30.8	61.5	7.7
Post	0	0	66.7	22.2	11.1
Clinical experience					
Pre	0	0	30.8	30.8	44.4
Post	0	0	11.1	44.4	38.5

Table 4: Provider Beliefs

	Strongly agree	Somewhat agree	Neither	Somewhat disagree	Strongly disagree
Patients whose physicians are knowledgeable about CAM practices, in addition to conventional medicine, have better clinical outcomes than those whose physicians are only familiar with conventional medicine.	Pre 23.1 Post 40	Pre 69.2 Post 60	Pre 0 Post 0	Pre 0 Post 0	Pre 0 Post 0
The spiritual beliefs and practices of PROVIDERS play an important role in healing.	Pre 38.5 Post 20	Pre 15.4 Post 20	Pre 23.1 Post 30	Pre 15.4 Post 10	Pre 7.7 Post 20
The spiritual beliefs and practices of PATIENTS play an important role in healing.	Pre 53.8 Post 80	Pre 46.2 Post 20	Pre 0 Post 0	Pre 0 Post 0	Pre 0 Post 0
Providers should have knowledge about the most prominent CAM treatments.	Pre 38.5 Post 70	Pre 61.5 Post 30	Pre 0 Post 0	Pre 0 Post 0	Pre 0 Post 0
I believe that CAM treatments have true impact on the treatment of symptoms, conditions, and/or diseases.	Pre 46.2 Post 50	Pre 38.5 Post 40	Pre 15.5 Post 10	Pre 0 Post 0	Pre 0 Post 0
While we need to be cautious in our claims, a number of CAM therapies hold promise for the treatment of symptoms, conditions, and/or diseases.	Pre 38.5 Post 30	Pre 61.5 Post 70	Pre 0 Post 0	Pre 0 Post 0	Pre 0 Post 0

Analysis of Results

The results were tallied within Microsoft Forms. A paired t-test or similar analysis was considered and attempted, but due to the small sample size this was not found to be effective or appropriate. The data was analyzed by comparing percentages for each answer from the pre- and post- survey results.

Discussion

The likeliness of referring to a CAM provider (Chart 1) was assessed in the pre- and post-survey. Prior to the intervention, 46% of the respondents were very likely to refer to a CAM

provider and 23% were somewhat unlikely to make this referral. However, after the intervention, 50% of the respondents were very likely to refer to a CAM provider and no one responded "somewhat unlikely". The overall shift in the measure was a positive one. There was also a decrease in the perception of threat from CAM modalities (Chart 2). Initially, 15% of the respondents felt that CAM represented a moderate threat, 60% felt that it was a slight threat, and 46% felt that CAM was no threat. In the post survey, no one felt that CAM was a moderate threat, 40% felt that CAM represented no threat and 60% felt that CAM was a slight threat.

When looking at the likelihood of referring to a CAM provider in regard to gender, practice settings, or credentials, prior to the intervention, 2 MD's, 2 DO's, and 1 CRNP were already very likely to refer to a CAM provider. The demographics were only asked in the pre intervention survey. Out of this group, 3 were Family Practice, 1 Internal Medicine, and 1 in Pediatrics. Ten of the thirteen participants work in a Family Practice setting, so this could be a factor in why more Family Practice respondents felt this way. Out of the 6 respondents who were "very likely" to refer to a CAM provider, 4 of them were women and 2 were men. However, out of the 13 respondents to the initial survey, 8 were women and 5 were men. The survey showed that there were men and women who had favorable opinions of CAM, but due to the small sample size it could not be determined if gender was influential.

Next, there is a question of how many participants discuss risks (Chart 4) and benefits (Chart 3) of CAM with their patients. To maintain continuity with the questions, the participants were asked in both surveys how often they discuss the risks and benefits of CAM with their patients. Initially, 50% of the respondents spoke about CAM benefits 50% of the time or less. This dropped to 40% in the post survey. Because the first survey, intervention, and second survey could all be conducted in one sitting, the participants did not have time to change their

practices. Two of the possible explanations for this change could be that there were 3 less respondents to the second survey and after the intervention, more providers may have been more inclined to have the conversation with their patients. In regards to discussion of CAM risks, 8% stated that they do this 76-100% of the time and 8% stated that they do this 51-75% of the time. In the post survey, no one stated that they had this discussion 76-100% of the time and 20% stated that they had this discussion 51-75% of the time. CAM treatments are not without risk at all. For example, in the Power Point, it was discussed that Butterbur can be hepatotoxic. It may be of concern that there is not as much discussion about potential harms. This may also be partly due to limited knowledge on the providers' parts about various CAM modalities.

Table 2 outlines the respondents' level of familiarity with various CAM treatments. This was also derived from the Mayo Clinic survey that was used, so most, but not all the methods are ones that are commonly used for migraine specifically. Categories that showed improvement in familiarity were acupuncture, chiropractic care, megavitamin therapy, and biofeedback. A lower percentage of participants reported no or limited familiarity with these modalities and a higher percentage reported that they understood the medicinal uses. The scores regarding familiarity with aromatherapy dropped from the pre to post surveys. It is possible that since 13 people answered the first survey and only 10 answered the second, that some of the participants that were familiar with this did not complete the second survey.

Factors that impact attitudes towards CAM is displayed in Table 3. In the post survey, personal experience (40%), recommendations from family or friends (40%), recommendations from colleagues (40%), and clinical experience (38.5%) had a "definite impact" for several of the respondents. A large number of respondents felt that following were "high impact": recommendations from a specialist (50%), case in a CAM journal (40%), and retrospective case

study in a journal (60%). This information is important to determine was factors are truly influential to primary care providers and the use of CAM.

There was a question regarding beliefs of the respondents. There were 6 statements about spirituality and beliefs about CAM and the responses that were offered were on a 5-point Likert scale. The results are shown in Table 4. All of the participants either somewhat or strongly agreed with "Patients whose physicians are knowledgeable about CAM practices, in addition to conventional medicine, have better clinical outcomes than those whose physicians are only familiar with conventional medicine.", "Providers should have knowledge about the most prominent CAM treatments.", and "While we need to be cautious in our claims, a number of CAM therapies hold promise for the treatment of symptoms, conditions, and/or diseases." The thoughts on the importance of the spiritual beliefs of the providers varied wildly. Those that strongly agreed dropped from 38.5% to only 20% in the post survey while those that strongly disagree rose from 7.7% to 20%. In regard to the spiritual beliefs of the patients being important, the percentage that strongly agreed went from 53.8 to 80% and the remaining respondents all somewhat agreed.

Limitations

The study was quite limited because there was a relatively small number of respondents. Out of 473 invitations, 13 responded to the first survey and only 10 completed the second one. The COVID 19 pandemic was likely a factor because many providers were either out ill or distracted by additional or a change in responsibilities. It also appears that as a baseline, many of the providers taking the survey already were recommending at least one CAM modality to their patients. It is possible that providers that do not have favorable opinions of CAM decided not to participate. The email invitations for this survey included a link to the pre survey, instructions to

open the Power Point attached to email and review it, and the link of the post survey. It is possible that some of the participants did not scroll down to the second survey link. It is also possible that not everyone reviewed the Power Point.

Summary

While the intervention did not prove the intervention to be effective, it did show that many of the respondents already had a favorable opinion towards some CAM modalities. Information on what influences opinions regarding the effectiveness of CAM were also determined and can be used to guide complementary and alternative services within the health system and the geographical area.

Chapter 5

Conclusion

Summary of Findings

Many patients are utilizing complementary and alternative migraine treatments to replace or augment their conventional medical treatment and migraineurs are more likely to use CAM than the general population (Wells, Bertisch, Buettner, Phillips, & McCarthy, 2011). This study was conducted to both learn about the attitudes of primary care providers in South Central Pennsylvania and to determine if a brief intervention discussing common CAM modalities that are used for migraine influenced their attitudes towards CAM. Overall, the intervention did not have a statistically significant effect on the participants' attitudes, but several of the participants were already recommending at least some CAM modalities to their patients. Also, gender, credentials, and practice setting did not appear to have an impact on the respondents on CAM for migraine treatment in this group. Personal and clinical experience with CAM were the most impactful on the providers' attitudes towards CAM and recommendations from colleagues and case studies were the second most impactful. Not many of the providers were discussing potential harms from CAM, but many were already discussing the potential benefits.

Implications for Nursing

Implications for nursing and healthcare include the possibility of offering more CAM training either in workplaces or in nursing, medical, or physician assistant programs. Many of the respondents felt that providers should have knowledge about common CAM modalities. Health systems in the area may be inclined to offer more CAM services and/or work with insurance companies to have some coverage for services. Knowing that the providers in this study were

influenced by personal experience, case studies, and recommendations from colleagues, as possible future intervention could include the opportunity for the providers to experience some CAM modalities and could help guide CAM related publications in the future.

Recommendations for Further Research

For future research, it may be more beneficial to provide the intervention in some sort of credited medical education credits to encourage participation. This could be done in an online or in person format. A pre and post survey could be completed at that time. The survey for this study was an abridged version of a preexisting survey. Creating a custom survey may be more specific to the diagnoses being studied and/or the CAM modalities being discussed. Future research could also include questions about CAM use for other diagnoses, including fibromyalgia, back pain, or anxiety. Migraines are a common problem nationwide and many patients are turning to CAM due to dissatisfaction with conventional medical treatments (Peters, Abu-Saad, Vydelingum, Dowson, & Murphy, 2004). Based on the findings in this small scale survey there is a possibility that more primary care providers in the area may be eager to refer patients for CAM treatments and perhaps complete additional training regarding CAM themselves.

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