The effect of cultural background on the use of Complementary and Alternative Medicine for Chronic Pain Management

Lisa Jones

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Advisor

Second Reader

Date
Abstract

Introduction: Chronic pain is a debilitating problem affecting more than 75 million Americans. Management of chronic pain includes pharmacologic methods, non-pharmacologic methods and complementary and alternative medicine (CAM). Complementary and alternative medicine is defined by the National Center for Complementary and Alternative Medicine (NCCAM), as a group of diverse medical and health care systems, practices, and products that are not considered to be part of conventional medicine. Recent studies have indicated that ethnic groups use different CAM modalities to manage a variety of medical conditions. For instance, black patients are known to use spiritual healing (prayer) as a form of CAM to manage medical conditions.

Objective: To describe the characteristics of the population that uses CAM for chronic pain and to determine whether there is a difference in the use of CAM for chronic pain between blacks and whites.

Methods: A cross-sectional survey examining the use of CAM among chronic pain patients at the Duke University Medical Center’s Pain and Palliative Care Clinic. The Institutional Review Board at the Duke University School of Medicine approved this study and signed informed patient consent was obtained.

Results: A total of 50 surveys were collected. Ninety percent of chronic pain patients report using CAM for pain control. Blacks and whites were equally likely to use CAM for pain control. Mean pain scores at rest (0-10 scale) were significantly higher for blacks than whites. There was a small difference in the use of prayer for pain control between blacks and whites that did not reach statistical significance.

Conclusion: There is a high prevalence of CAM use among both blacks and white attendees at a university chronic pain clinic. The use of prayer for pain control is similar for both groups though this maybe due to the importance of religion among these groups in the South. Larger studies sampling patients across different geographic regions are needed to draw further conclusions.
Introduction

Chronic pain is a major public health problem associated with severe disabling physical and emotional symptoms (1). In the US, it is estimated that anywhere from 75–150 million people suffer from a chronic pain disorder (2,3). Pain-related problems account for up to 80% of visits to primary care physicians (4). According to 1995 analyses, the severity of the disease and decreased quality of life are major reasons why 2.9 million (2.5%–5% of chronic pain patients) people seek treatment by pain specialists (5). It costs the U.S. economy more than $90 billion per year in medical expenditures, disability payments, and productivity. Of that, approximately $61 billion dollars were attributed to losses in productive work time losses due to chronic-pain related issues. (6,7). Those afflicted with chronic pain report a reduction in social and psychological functioning as well as impairment of a variety of quality of life measures (8). In addition, 58% of patients with chronic pain experience coexisting symptoms of depression or anxiety. The complex physical, emotional and social abnormalities associated with chronic pain often complicates clinical management of these patients.

Management of Chronic Pain: Conventional Therapies

Conventional management of pain includes the use of pharmacologic and non-pharmacologic therapies such as surgical interventions and physical therapy.
Major classes of pain medications are nonsteroidal antiinflammatory drugs (NSAIDs), opioids and tricyclic antidepressants. Newer, more novel analgesics include tramadol (Ultram), and anticonvulsants (8). The World Health Organization has established guidelines for cancer pain relief that can be applied for the relief of chronic non-malignant pain. It entails using a ladder approach for the pharmacologic treatment of pain. The administration of nonopioid medications should be attempted first, followed by the use of milder opioids for mild pain. For more severe pain, stronger opioids can be prescribed (9). Despite the various pharmacologic treatments available, chronic pain patients still report being under-treated. This is partly due to the fact that the mechanism of chronic pain is not well understood. Patients also report physical dependence and addiction to the opioid medications and, as described in current literature, even the intake of NSAIDs can result in serious adverse effects (10).

Management of Chronic Pain: Complementary and Alternative Therapies

Complementary and alternative medicine (CAM) can be defined as “a single procedure or group of procedures that either substitute for or add to more conventional medical practices in the diagnosis/treatment or prevention areas of health” (11). Other definitions consider CAM as treatments that are “not considered a part of conventional medicine or methods that are not widely taught by US medical schools or used by US hospitals” (12). In this report complementary and alternative medicine will be used interchangeably with “alternative therapies” and “non-traditional therapies.” NCCAM divides CAM
therapies into five categories. The categories include alternative medical systems (such as homeopathic medicine, or traditional Chinese medicine); mind-body interventions such as biofeedback, prayer, meditation; biologic-based therapies such as herbs, foods and vitamins; manipulative and body-based methods (chiropractic medicine, massage) and energy therapies such as Reiki and magnets (13).

The interest and use of these therapies has increased in the US since the 1990s (12,13). In 2002 the Center for Disease Control and Prevention’s National Health Interview Survey found that more than 62% of US adults ages 18 years and older use some form of complementary and alternative medicine. The most commonly used CAM therapies were prayer for one’s own health (43%), prayer by others for one’s own health (24.4%) and natural products (18.9%) (14). Prior to the study, there had not been such a thorough, large (N=31,000) examination of the extent of CAM usage by Americans. With the rise in interest in these modalities came a concurrent rise in out-of-pocket expenditures on CAM. It was estimated that in 1997, Americans spent $36-47 billion on CAM therapies (15). Reasons for interest in these therapies varies and include the users’ belief that the combination of CAM plus conventional medicine would help their ailment, recommendation from a medical professional, and the belief that conventional medicines would not help them (12,14, 15).

Patients utilize CAM to treat a variety of medical conditions. Astin and colleagues found that 37% of patients using CAM cited chronic pain as the health problem they treated most with this form of medicine (16). The study also found
that level of education and income predicted use of alternative medicine. Race
was not predictive, however the author noted that the sample sizes of certain ethnic
groups were too small to be statistically significant. Previous studies on CAM
therapies indicated that blacks are more likely to use spiritual therapies for health
reasons than white adults (14). African-Americans also tend to agree more than
Caucasian-Americans that pain medication did not control their chronic pain (17).
No studies have described the population, treated by pain specialists, that uses
CAM to specifically for chronic pain. This study will describe the population of
patients who uses complementary and alternative medicine for chronic pain
management. In this population, we expect to find high rates of CAM usage. Our
hypothesis is that the chronic pain population has high rates of CAM usage, and
that there will be a difference between blacks and whites in the rates of CAM
usage.
Materials and Methods

This preliminary cross-sectional, questionnaire-based study was conducted between August 2004 and June 2005 at the Duke University Medical Center’s Pain and Palliative Care Clinic. The clinic utilizes a multi-disciplinary approach to chronic pain management. Specialists at the center work in the fields of neurology, neurosurgery, anesthesiology, psychiatry, psychology, rheumatology, and orthopedics. At the time of this report, demographic information about the clinic’s patient population available. The Duke University School of Medicine and the University of North Carolina School of Public Health Institutional Review Boards approved this study. Informed consent was obtained from each subject.

Recruitment and Description of Subjects

Patients seeking medical care at the Duke University Medical Center Pain and Palliative Care Clinic were asked to participate in the study. Physicians at the clinic gave permission to approach patients for this study. Patients were eligible if they were at least 18 years old, were diagnosed with a chronic pain condition by a physician or reported a history of pain for three months or more. In order to participate, patients were also required to be English-speaking and free of cognitive, auditory, visual or motor impairments that would preclude completion of the questionnaire. After check-in procedures, the patient was placed in a private room and the co-principal investigator (LMJ) administered the questionnaire either before or after the patient visited with their physician (Appendix). Patients were first given a brief statement about the purpose of the study and were given
time to read through the consent form. Those who agreed to participate were asked to sign a consent form. Copies of the consent form were given to subjects (Appendix). Subjects chose to either fill out the questionnaire or respond verbally to the questions.

_Instrument_

There were no previous published surveys on complementary and alternative medicine and chronic pain. The survey was created after careful reading of the literature and modifying information from previous surveys on chronic pain, surveys on complementary and alternative medicine, and the author's own original questions (14,16,18). Further input was provided by the principal investigator's mentor and physicians specializing in chronic pain.

The survey is divided into four sections. The first includes questions on general demographic information such as age, gender, race, income and education. Next, patients are asked about the current state of their chronic pain. This section includes the 11-point numeric rating scale (NRS-11) that asks patients to rate their pain intensity from 0 (no pain) to 10 (worst pain possible). The widely-used and standardized pain scale has been validated and its sensitivity to treatment effect has been well documented (19,20). The third section on pain control methods asks participants to identify the conventional medications they have used in the past and/or are currently using for pain control. The pain medications were classified as NSAIDS or by the different schedules of the drugs defined by the Drug Enforcement Agency (21). Other pain medications choices
were acetaminophen (Tylenol) and the novel analgesics noted above. They were also asked to estimate the average monthly out-of-pocket costs paid per month for medications. The fourth section of the questionnaire asked participants about the specific methods of CAM used (prayer, vitamins, acupuncture, chiropractic medicine, biofeedback, hypnosis, diet-based strategies, herbal medicine etc), reasons for using CAM, and the perceived effectiveness of the type of CAM used. Patients were once again asked to estimate out-of-pocket costs associated with CAM.

Data Management and Analysis

Survey responses were coded and entered into Excel software program to provide frequencies and item response means. Data was entered into a password-protected Microsoft Excel spreadsheet. Data analysis was completed using STATA Version 8.0.

The primary outcome measure is the difference in CAM use between ethnic groups. Secondary analysis focused on detecting if a difference exists in the use of prayer as a form of CAM between blacks and whites.

Data collected was analyzed using descriptive statistics. Frequencies, means, and standard deviations were calculated for the socio-demographic and the clinical characteristics of the sample. Statistical differences in CAM use by demographic characteristics were conducted using T-tests for continuous variables and Chi-square testing for categorical variables. A two-sided p value equal or less than 0.05 was considered statistically significant. We predicted that a
sample size of 300 will give adequate power (80) to detect differences in the various characteristics between racial groups.

**Results**

**Patient demographics**

Fifty patients participated in the study out of 68 approached (74%). Sixty-four percent of patients were women and 36% were men. Seventy-eight percent were white, 18% were black and 4% self-identified themselves as Native American, Asian or Hispanic. The mean age for participants was 47 years. Ninety-six percent of patients completed high school, 43% completed college and 20% hold a graduate degree. Approximately 40% of patients reported a household income of $60,000 or greater. Detailed demographic data is presented in Table 1.

**Chronic Pain**

Table 2 describes the results of the chronic pain assessment portion of the survey. The results indicate that the average duration of patients report experiencing chronic pain is 9.2 years. Twenty patients (40%) report having low back pain and 26 patients (52%) report having pain in more than 2 locations. On the NRS-11, patients report an average pain score of 5.12 at rest, and an average score of 7.5 during activity.
Pain Control Methods: Conventional

Ninety-eight percent of patients have used medications for pain control (Table 3). Previous use of opioid and NSAIDs was reported by 80% of patients, respectively. The average out-of-pocket costs for prescription medications was $108 per month.

Overall, 54% of patients report being satisfied or very satisfied with the pain control garnered from these medications.

Pain Control Methods: Alternative Therapies

Ninety percent of patients report the use some form of complementary and alternative medicine for pain control; 70% report past use of two or more alternative therapies (Table 4). Patients used non-traditional therapies for pain control for an average of 5.27 years. The most frequently used forms of alternative therapies used were massage therapy (53.5%), chiropractic medicine (39.5%), vitamin and mineral supplements (37.2%) and spiritual healing (51.2%). When asked to choose among specific reasons for CAM usage, respondents stated that “conventional therapies did not help” (29%), “it complements the medications” (15.8%) and “[they] needed more control of their treatment” (15.8%). Seventy percent of patients stated that they had discussed their use of alternative therapies with their physician. This was either initiated by them or by their physician. Patients reported that there was a lack of discussion because they were “afraid [the physician] would laugh”, “the [alternative] therapies weren’t working” and they “didn’t think it was important”. Those who used CAM used
CAM report paying an average of $60.70 monthly for alternative therapies with 56.4% reporting full or partial insurance coverage of the therapies. Sixty percent of those who used complementary and alternative therapies were satisfied or very satisfied with the level of pain control achieved. The difference in the percent of CAM users who satisfied or very satisfied with CAM therapies compared to conventional therapies was not significant.

Bivariate analysis

Bivariate analysis was used to assess the relationship between blacks and whites and various characteristics. The analysis was completed only compared the white and black samples because the samples for other ethnic groups were too small.

Eighty-seven percent of blacks and 89% of whites use alternative therapies for pain. This difference did not reach statistical significance (p=.871). There was also a non-significant difference in the use of one type of CAM, spiritual healing (prayer), for pain control (57% of blacks, 47% of whites, p=.627). Black patients report significantly higher mean pain scores at rest when compared to whites (7.22 vs 4.58, p=.006). The difference was statistically significant. Similar percentages of blacks and whites reported past use of opioid analgesics for pain control (100% vs 74.3%, p=.088)
Regression analysis

Regression analysis could not be performed using this data because there were not enough observations to run the analysis.

Discussion

There is a high percentage of CAM users among those with chronic pain attending a university-based pain clinic. This result is not surprising considering the severity of pain experienced by chronic pain patients and the close collaboration pain specialists often have with alternative therapy practitioners. Interestingly, black patients appear to have higher pain scores compared to their white counterparts. To our knowledge, this is the first study to describe the cultural background of the population that uses complementary and alternative medicine for chronic pain control.

Unlike studies that describe CAM users in the general population, we did not find that gender or education is associated with CAM use (14,16). The small sample size has limited the ability to observe an association. The most widely used therapies include massage therapy, chiropractic medicine and spiritual healing. The popularity of massage therapy and chiropractic medicine probably represents the wide interest in and availability of these therapies. The use of massage therapy and chiropractic medicine is also expected given the large proportion of low-back pain sufferers within the study group.

The high proportion of college-educated and higher earning individuals is expected in this population. Patients referred to specialty clinics incur costs
associated with the consultation. In addition, pain specialists often offer procedure-based therapies that may only be affordable to those earning high incomes.

Effectiveness of Conventional Therapies and Complementary and Alternative Medicine

This study did not intend to determine if CAM is effective for treating chronic pain. However, patients in this study who visit pain specialists reported their perception that these therapies worked for the management of their chronic pain. The current evidence on these therapies indicates that there is not a collective stance on the effectiveness of this type of medicine (22, 23). Patients were equally satisfied with conventional medications offered by their pain specialists. It is possible that the satisfaction with these two modes of pain control is as a result of overall treatment satisfaction with pain specialists. Our findings are similar to a recent report that compared to the baseline visit, patients who visited pain specialists were either satisfied or extremely satisfied with their pain control and experienced a reduction in pain and pain-related depression and anxiety after receiving treatment (24).

Difference in Use of CAM between blacks and whites

Our study did not find a statistically significant difference in the use of complementary and alternative medicine between blacks and whites, however our sample size was smaller than expected (see appendix for further discussion).
Bivariate analysis does not indicate that difference exists in the socioeconomic status, income and education, between blacks and whites in this study (Table 5).

This data is consistent with other studies that report that blacks and whites equally use these therapies (14,16). Contrary to our hypothesis, the inclusion of prayer in the study did yield a difference in percent CAM users between blacks and whites. A difference was expected given prior evidence that blacks are more likely than whites to use CAM when prayer is included (16). The first reason for this finding could be attributed to the relatively small sample of blacks within this study (n=9). Spiritual healing or prayer is often used as part of the healing regimen for many African Americans. The importance of religion and spirituality in the black community was also demonstrated in a multi-center study. When compared to their white counterparts, African American patients were more willing to trade time spent discussing on medical issues with their physician for discussing religious/spiritual issues (22).

Another explanation for this finding could be due to the culture of the geographic area in which the study was conducted. North Carolina is considered part of the “Bible Belt,” an area that includes a number of southern states in which evangelical Protestantism remains a pervasive part of the culture after colonial foundations implantation of state religions in the region (26).

Thirdly, the choices of complementary and alternative medicine practices in the study survey may have been too limited and perhaps, the inclusion of other cultural healing practices and folklore would give a more accurate picture of ethnic minority use (27). More geographic variability and increased participation
of patients from other ethnic groups could have also been useful in generating more definitive conclusions about CAM use and ethnicity.

Differences in Chronic Pain experience by race

Our results are also consistent with several studies reporting that that African Americans report higher pain scores and find that pain medications are less effective for pain control (28,29).

One study examined the difference in the pain experience between blacks and whites seeking chronic pain management from pain specialists. The study found that blacks reported higher pain severity and higher levels of disability. They are also more likely to report that a major contributor to financial problems was the associated costs due to chronic pain management. (29). Studies on several medical conditions indicate that blacks may experience more severe symptoms before seeking treatment or being referred to a specialist (30,31,32,33,34). The delayed treatment pattern seen in other medical conditions may be similar for black patients seeking care for chronic pain and therefore may appear distressed. In addition, race may exist as a marker for un-measurable social, emotional and psychological influences that may contribute to these differences. Our study did not investigate psychosocial factors and beliefs about pain and other self-management indicators that may have been helpful in determining why these differences exist. Perhaps, a survey administered to physicians might have added more insight as differences in care based solely on race has been demonstrated in other medical specialties (33).
In *Race, Ethnicity and Health*, it was reported that local pharmacies in a minority-dense neighborhood did not have adequate stock of opioid analgesics when compared to non-Hispanic white neighborhoods (35). The lack of availability of appropriate medications to control severe pain may also contribute to the higher pain scores. Future research utilizing a well-designed survey with larger sample sizes maybe able to discern if the lack of pain control directly contributes to an increase the use of complementary and alternative medicine in this group.

**Limitations**

Our results are limited by the relatively small sample size of the study. In addition, the proportion of black patients is small compared to the white population. Generalizability of the results may be limited due to administration of the survey in one geographic region. Patients in this study are seeking care from pain specialists in a tertiary referral center and as such, the results may not be generalizable to chronic pain patients in the community. Biases in this study related to survey-based research include non-response and perhaps those who answered this survey were healthier than those who did not participate. Also, since only English-speaking patients could participate, it is possible that lack of enrollment of participants of other ethnicities reduced our ability to fully describe this population.
Future Research and Public Health Implications

In summary, CAM is widely used in patients with chronic pain syndromes. Black patients appear to experience greater pain intensity than their white counterparts. Although the study did not find a difference in the use of CAM between blacks and whites, interesting trends may exist in the use of prayer for pain control among blacks and whites. Further studies with larger sample size studies are warranted to examine these relationships. Knowledge gained from this and other studies of its kind will aid in increasing physician’s awareness of CAM usage among chronic pain patients and incorporating CAM therapy in the overall management strategy to better satisfy the patient's needs.
References


2) Harstall, C. How prevalent is chronic pain? Pain: Clinical Updates, XI (4)


   


Table 1. Patient Characteristics (n=50)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Number or Mean(SD)</th>
<th>Percent(%)</th>
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</thead>
<tbody>
<tr>
<td>Age, mean, years</td>
<td>47.4 (13.7)</td>
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</tr>
<tr>
<td><strong>Gender:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>18</td>
<td>36</td>
</tr>
<tr>
<td>Female</td>
<td>32</td>
<td>64</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>39</td>
<td>74</td>
</tr>
<tr>
<td>Black</td>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td>Other*</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td><strong>College Graduates</strong></td>
<td>21</td>
<td>43</td>
</tr>
<tr>
<td><strong>High School Graduates</strong></td>
<td>16</td>
<td>33</td>
</tr>
<tr>
<td>Household income greater than $60,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(n=48)</td>
<td>20</td>
<td>42</td>
</tr>
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</table>

*other includes Native American, Asian, Hispanic and multi-ethnic individuals

Table 2. Chronic Pain Assessment (n=50)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Mean(SD) or Number</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean duration of pain, years</td>
<td>9.22 (7.86)</td>
<td></td>
</tr>
<tr>
<td>Mean pain score at rest</td>
<td>5.12 (2.67)</td>
<td></td>
</tr>
<tr>
<td><strong>Location of pain</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low back</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td>&gt; 2 sites</td>
<td>26</td>
<td>52</td>
</tr>
<tr>
<td>Other back</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>Extremities</td>
<td>22</td>
<td>44</td>
</tr>
<tr>
<td>Head</td>
<td>7</td>
<td>14</td>
</tr>
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Table 3. Conventional Pain Control Methods (n=50)

<table>
<thead>
<tr>
<th>Pain Control Method</th>
<th>No. or Mean(SD)</th>
<th>Percent (%)</th>
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<tbody>
<tr>
<td>Schedule III, III, IV Narcotics ever used</td>
<td>40</td>
<td>80</td>
</tr>
<tr>
<td>NSAIDS ever used</td>
<td>39</td>
<td>79.6</td>
</tr>
<tr>
<td>% Taking medications as prescribed</td>
<td>41</td>
<td>87.2</td>
</tr>
<tr>
<td>Average Out-of-pocket prescription medication costs, mean (n=43))</td>
<td>$108.07(195.22)</td>
<td></td>
</tr>
<tr>
<td>% Satisfied or better with prescription meds</td>
<td>27</td>
<td>54</td>
</tr>
<tr>
<td>Characteristics</td>
<td>No. or mean(sd)</td>
<td>Percent (%)</td>
</tr>
<tr>
<td>-----------------------------------------------------</td>
<td>-----------------</td>
<td>-------------</td>
</tr>
<tr>
<td>% CAM usage (n=50)</td>
<td>43</td>
<td>89.6</td>
</tr>
<tr>
<td>% Using at least 2 CAM therapies (n=50)</td>
<td>35</td>
<td>70</td>
</tr>
<tr>
<td>Percent satisfied or better (n=40)</td>
<td>24</td>
<td>60</td>
</tr>
<tr>
<td>Average Cost, mean (n=43)</td>
<td>60.67(97.63)</td>
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</tr>
<tr>
<td>Discussed use of CAM with physician (n=43)</td>
<td>30</td>
<td>70</td>
</tr>
<tr>
<td>Reasons for CAM usage (n=38)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conventional meds did not help</td>
<td>11</td>
<td>29</td>
</tr>
<tr>
<td>Therapies complements conventional meds</td>
<td>6</td>
<td>15.8</td>
</tr>
<tr>
<td>Need for more control over treatment</td>
<td>6</td>
<td>15.8</td>
</tr>
<tr>
<td>Average duration of CAM usage, mean, years (n=43)</td>
<td>5.27 (6.77)</td>
<td></td>
</tr>
<tr>
<td>Most commonly used therapies (n=43)</td>
<td></td>
<td></td>
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<tr>
<td>Massage Therapy</td>
<td>23</td>
<td>53.5</td>
</tr>
<tr>
<td>Chiropractic Medicine</td>
<td>17</td>
<td>39.5</td>
</tr>
<tr>
<td>Vitamin/Min supplements</td>
<td>16</td>
<td>37.2</td>
</tr>
<tr>
<td>Spiritual Healing</td>
<td>22</td>
<td>51.1</td>
</tr>
<tr>
<td>% Satisfied or Very Satisfied with CAM therapies, n=40</td>
<td>24</td>
<td>60</td>
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Table 5. Bivariate analysis of Patient Characteristics and Race

<table>
<thead>
<tr>
<th>Variable</th>
<th>White patients No(%) or Mean (SD), n=38</th>
<th>Black patients No (%) or Mean (SD), n=9</th>
<th>P-value</th>
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<tr>
<td>CAM usage</td>
<td>34(89.5)</td>
<td>7(87.5), n=8</td>
<td>.871</td>
</tr>
<tr>
<td>Use of Spiritual Healing</td>
<td>16(47.1)</td>
<td>4(57.1)</td>
<td>.627</td>
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<tr>
<td>Narcotic usage</td>
<td>29(74.36)</td>
<td>9(100)</td>
<td>.088</td>
</tr>
<tr>
<td>Pain Score</td>
<td>4.58(2.51)</td>
<td>7.22(2.48)</td>
<td>.006</td>
</tr>
<tr>
<td>% College educated</td>
<td>18(46.15)</td>
<td>2(25), n=8</td>
<td>.495</td>
</tr>
<tr>
<td>% Income &gt;$60,000</td>
<td>16(42)</td>
<td>3(37.5), n=8</td>
<td>.336</td>
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<tr>
<td>Age</td>
<td>49.33(13.97)</td>
<td>47.43(13.53)</td>
<td>.707</td>
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*P value <.05 is considered statistically significant
Appendix

Script

My name is Lisa Jones and I am a medical student at Duke University School of Medicine and a graduate student at the UNC School of Public Health. I am conducting a research study on the use of complementary and alternative medicine for chronic pain management. The purpose of the study is to find out who uses complementary and alternative medicine for pain control. Complementary and alternative medicine includes acupuncture, massage therapy, hypnosis, diet and herbal medications and others.

Your participation is strictly voluntary and will require only 15 minutes of your time. The information you give will be coded to protect your identity.

Before completing the questionnaire, I would like you to read and the sign the consent form. A copy of the consent form will be provided for you.

Conducting Survey-Based Studies: Lessons Learned

The process of executing survey-based research in a clinic setting has been a learning experience. The small sample size was partly due to issues with the logistics of conducting such research. First, to execute questionnaire-based research in a clinic setting, an in-depth understanding of the basic characteristics of the clinic is vital. Knowledge of the patient flow will aid the researcher in determining which days will yield the most responses. For instance, at the Duke Pain and Palliative Care clinic, Mondays, Tuesdays and Wednesdays are the best days for data collection because there are several physicians in the clinic.
For this study, a thorough evaluation of all services offered at the clinic beforehand could have aided with survey-design and reduce confounding factors. For instance, biofeedback, a popular CAM therapy was offered at the clinic. Knowing the demographics of the patient population will aid in the description of the external validity of the study. It would have helped in assessing the sample size needed for this study and would have helped the author describe the generalizability of the results. Lastly, it is imperative that researchers build rapport with the physicians, nurses and administrators at the clinic.

One should be familiar with all HIPAA regulations and the clinic’s own regulations pertaining to conducting research. In addition, physicians and nurses may be able to assist with the identification of eligible patients. Overall, evaluating the setting in which survey-based research is conducted will reduce the likelihood of unexpected events which may hinder data collection.
Chronic Pain Management Questionnaire

Introduction: The goal of this questionnaire is to better understand who uses alternative methods to control chronic pain. Please mark with a ✓ the most accurate choices for each question below. All the information you provide will be kept confidential.

*Please do not fill this out if you have previously.

General Information

1) What is your age in years? ____________

2) What is your race (check one)? □ Black □ White □ Hispanic □ Asian □ Native American □ Others

3) What is your gender (check one)? □ Male □ Female

4) What is the highest level of education you completed (check one)? □ Middle School □ High School □ College □ Graduate Degree

5) What is your household income?
   □ Less than $12,500 □ $12,500-24,999 □ $25,000-39,999 □ $40,000-59,999 □ $60,000-99,999 □ Greater than $100,000

Chronic Pain Assessment

1) Have you been diagnosed with a chronic pain disorder by a physician? □ Yes □ No

2) Where is your chronic pain? ____________

3) How long have you had this pain? ____________

4) How much pain are you having right now? (please check one)
   □ 0 (no pain) □ 1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □ 8 □ 9 □ 10 (Worst pain possible)

5) How much pain do you have when you are at rest? (please check one)
   □ 0 (no pain) □ 1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □ 8 □ 9 □ 10 (Worst pain possible)

6) How much pain do you have during activity?
<table>
<thead>
<tr>
<th>Pain Control Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Have you used medications to control your pain? (if no, skip to the next page).</td>
</tr>
<tr>
<td>□ Yes □ No</td>
</tr>
<tr>
<td>2) What medications have you taken for your pain? (Choose all that apply).</td>
</tr>
<tr>
<td>□ Motrin, Advil, Celebrex, Goody's Powders, Aspirin, etc</td>
</tr>
<tr>
<td>□ Acetaminophen (Tylenol)</td>
</tr>
<tr>
<td>□ Darvocet, Tylenol III, Vicodin</td>
</tr>
<tr>
<td>□ Oxycontin, MSContin, Durasgesic Patches</td>
</tr>
<tr>
<td>□ Demerol, Morphine, Percocet/Oxycodone, Dilaudid</td>
</tr>
<tr>
<td>□ Elavil, Gabapentin</td>
</tr>
<tr>
<td>□ Ultram</td>
</tr>
<tr>
<td>□ Alcohol, Marijuana, Heroin, Cocaine</td>
</tr>
<tr>
<td>□ Others ____________________</td>
</tr>
<tr>
<td>3) What medications are you currently taking? (Choose all that apply)?</td>
</tr>
<tr>
<td>□ Motrin, Advil, Celebrex, Goody's Powders, Aspirin, etc</td>
</tr>
<tr>
<td>□ Acetaminophen (Tylenol)</td>
</tr>
<tr>
<td>□ Darvocet, Tylenol III, Vicodin</td>
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<tr>
<td>□ Alcohol, Marijuana, Heroin, Cocaine</td>
</tr>
<tr>
<td>□ Others ____________________</td>
</tr>
<tr>
<td>4) Do you take all the pain medications that the doctors prescribed?</td>
</tr>
<tr>
<td>□ Yes □ No, if not, why? ____________________</td>
</tr>
<tr>
<td>5) How much do you pay on average a month for the pain medications your doctors prescribed? $ ______</td>
</tr>
<tr>
<td>6) Overall, how satisfied were you with your pain control with the pain medications your doctor prescribed?</td>
</tr>
<tr>
<td>□ Very satisfied □ Satisfied □ Neither satisfied or dissatisfied</td>
</tr>
<tr>
<td>□ Dissatisfied □ Very Dissatisfied</td>
</tr>
</tbody>
</table>
Complementary and Alternative Methods of Pain Control

1) Have you used other methods for pain control? □Yes □No (If yes, please proceed to the next question)

2) What methods have you used? (Check all that apply)
   □Herbs (teas, extracts, oils, powders)
   □Acupuncture/acupressure
   □Massage Therapy
   □Garlic preparations
   □Chiropractor
   □Traditional Chinese Medicine
   □Aromatherapy
   □Vitamin/Mineral Supplements
   □Special Diet
   □Spiritual Healing (includes prayer)
   □Reflexology
   □Others (please specify) ________________________________

3) Do you have a preference of the types of alternative therapies?
   Please indicate your top three preferences
   1. ____________
   2. ____________
   3. ____________

4) Do your doctor ask you about your use of alternative therapies such as herbal medicines? (Please check one) □Yes □No

5) Do you tell your doctor about your use of alternative therapies?
   (Please check one) □Yes □No □Don’t Know
   a. If no, why not?
      ____________________________________________________________

6) What do you spend more of your own money on per month? (Please check one)
   □Prescription medications □Over the counter drugs
   □Complementary and alternative medicines
7) How much do you pay on average a month for alternative therapies
$________________

8) Does your health insurance cover your alternative therapy treatment?
   (please check one) ☐Yes  ☐No  ☐Portion of it  Please state a
   percentage______%  

9) How long have you used any nontraditional remedy for your pain?
   _______ Months  OR  _________ Years

10) Why do you use alternative therapies for your pain? (Check all that
     apply).
     ☐Alternative therapies are safer than the medicines my doctor
        prescribes
     ☐Alternative therapies relieves my pain better than than the
        medicines my doctor prescribes
     ☐Conventional medicines did not help
     ☐I do not believe in conventional medicines
     ☐I need more control of my treatment
     ☐Alternative therapies are less expensive
     ☐Another reason (Please specify).

11) Overall, how satisfied are you with the following methods of pain
    control

    Alternative therapy? (please check one)
    ☐Very Satisfied  ☐Satisfied  ☐Neither satisfied or dissatisfied
    ☐Dissatisfied  ☐Very Dissatisfied

    Traditional therapy? (please check one)
    ☐Very Satisfied  ☐Satisfied  ☐Neither satisfied or dissatisfied
    ☐Dissatisfied  ☐Very Dissatisfied
Consent Form

You are being asked to take part in this research study because you have chronic pain. Research studies include only people who choose to take part. Please read this consent form carefully and take your time making your decision. As your study doctor or study staff discusses this consent form with you, please ask him/her to explain any words or information that you do not clearly understand. The nature of the study, risks, inconveniences, discomforts, and other important information about the study are listed below.

You have been asked to participate in a study about chronic pain management. The purpose of this study is to find out which patients are more likely to use complementary and alternative medicine (CAM) to manage their chronic pain and your attitude towards CAM. CAM includes prayer, vitamins, acupuncture, chiropractic medicine, biofeedback, hypnosis, diet and herbal medicines. The study is being conducted by Dr. Tong Gan and is funded by Department of Anesthesiology, Duke University Health System (DUHS).

You are one of approximately 300 subjects that will take part in this study. You will be asked a confidential questionnaire once. The questionnaire should take about 15 minutes to complete. The study personnel will be available to assist you with the questionnaire.

There are no physical risks associated with this study. There is, however, the potential risk of loss of confidentiality. Every effort will be made to keep your information confidential, however, this cannot be guaranteed. Some of the questions we will ask you as part of this study may make you feel uncomfortable. You may refuse to answer any of the questions and you may take a break at any time during the study.

It is important that you read and understand several general principles that apply to all those who take part in these studies:

1. Taking part in this study is entirely voluntary. You may refuse to participate or withdraw from the study at any time without interfering with your regular medical treatment
2. Personal benefit may not result from taking part in this study, but knowledge may be gained that will benefit others in the future.
3. There will be no charge to you for taking part in the study. However, you or your insurance company will be charged or held responsible for the costs of your routine care (the care you would have received if you were not in this study). Study records that identify you will be kept confidential as required by law. Federal Privacy Regulations provide safeguards for privacy, security, and authorized access. Except when
required by law, you will not be identified by name, social security
number, address, telephone number, or any other direct personal
identifier in study records disclosed outside of Duke University Health
System (DUHS). For records disclosed outside of DUHS, you will be
assigned a unique code number. The key to the code will be kept in a
locked file in Dr. Gan’s office.

4. You may choose not to be in the study, or, if you agree to be in the
study, you may withdraw from the study at any time. If you withdraw
from the study, no new data about you will be collected for study
purposes. You may withdraw your authorization for us to use your
data that have already been collected (other than data needed to keep
track of your withdrawal), but you must do this in writing.

5. Your decision not to participate or to withdraw from the study will not
involve any penalty or loss of benefits to which you are entitled, and
will not affect your access to health care at Duke. If you do decide to
withdraw, we ask that you contact Dr. Gan in writing and let him
know that you are withdrawing from the study. His mailing address is
Duke University Medical Center, Box 3094 Med Ctr Durham, NC
27710. At that time we will ask your permission to continue using all
information about you that has already been collected as part of the
study prior to your withdrawal.

6. The study results will be retained in your research record for at least
six years or until after the study is completed, whichever is longer. At
that time either the research information not already in your medical
record will be destroyed or information identifying you will be
removed from such study results at DUHS. Any research information
in your medical record will be kept indefinitely.

7. Your records may be reviewed in order to meet federal and state
regulations. Reviewers may include the Duke University Health
System Institutional Review Board. If your research record is reviewed
by any of these groups, they may also need to review your entire
medical record. If this information is disclosed to outside reviewers for
audit purposes, it may be further disclosed to them and may not be
covered by the federal privacy regulations.

8. Immediate necessary medical care is available at Duke University
Medical Center in the event that you are injured as a result of your
participation in this research study. However, there is no commitment
by Duke University, Duke University Health System, Inc., or your
Duke physicians to provide monetary compensation or free medical
care to you in the event of a study-related injury. Further information
concerning this and your rights as a research subject can be obtained
from the Duke University Health System Institutional Review Board
(IRB) Office at (919) 668-5111.

For questions about the study or a research-related injury, contact Dr. Gan at
(919) 681 4660 during regular business hours or pager (919)970-6771 after
normal office hour. For questions about your rights as a research participant, contact the Duke University Health System Institutional Review Board (IRB) Office at (919) 668-5111.

Statement of Consent

"I have read the above and have been given the opportunity to discuss it and to ask questions. I have been informed that I may contact Dr. Gan or Lisa Jones (919)382-8913 to answer any questions I may have about the investigation. I agree to participate as a subject with the understanding that I may withdraw at any time without interfering with my regular care. I have been told that I will be given a signed copy of this consent form"

_____________________________   ______________________
Signature of Subject  Date

_____________________________   ______________________
Signature of Person Obtaining Consent  Date
Acknowledgements

I would like to thank Dr. Tong Joo Gan for his guidance and support during the conduction of this study. I would also like to thank Dr. Kathym Andolsek and Dr. Kathryn King for their assistance with the editing of this document. In addition, Dr. Timothy Carey was instrumental in assisting with the design and editing of this document. Thanks also to the staff and faculty, most notably Dr. Billy Huh and Dr. Anne Fras, of the Duke Pain and Palliative Care Center for providing additional logistical support for this study.