

Hospitalized Patients' Preferences, Beliefs, and Stated Willingness to Pay for  
Complementary and Alternative Medicine Treatments

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**Abstract (335 words: 300-word maximum)**

**Objectives:** Research demonstrates the benefits of Complementary and Alternative Medicine (CAM) in myriad environments, yet the majority of CAM services are offered in outpatient settings. Incorporating CAM into hospital settings may lead to increased patient comfort, well-being, and overall satisfaction with hospital admissions. Few studies have examined CAM services among hospitalized patients; therefore, the present study assessed hospitalized patients' preferences and beliefs regarding CAM as well as their stated willingness to pay for these services.

**Design:** Adult patients (n=100), ranging in age from 19-95 years ( $M= 53$ ;  $SD=19.2$ ), were recruited during their hospitalization in the University of California San Diego Healthcare System. The hospitalized patients completed a brief individual interview to gather their perspectives on common CAM services including acupuncture, aromatherapy, art therapy, guided imagery, healthy food, humor therapy, massage therapy, music therapy, pet therapy, Reiki, and stress management. Patients were asked which CAM therapies they perceived as being potentially the most helpful, their willingness to pay for those therapies, and their perceived beliefs regarding the use of those therapies.

**Results:** Hospitalized patients most commonly perceived healthy food (85%), massage therapy (82%), and humor therapy (70%) to be the most helpful CAM services and were most willing to pay for healthy food (71%), massage therapy (70%), and stress management (48%). Patients most commonly believed CAM treatments would provide relaxation (88%), increase well-being (86%), and increase their overall satisfaction with the hospitalization (85%).

**Conclusions:** This study suggests that CAM services may be a beneficial addition to hospitals as demonstrated by patients' interest and stated willingness to pay for these services. The findings from this study may help inform organizational choices regarding the development of CAM services within hospitals, particularly given the information about which treatments were perceived by patients as being the most beneficial or worthwhile. A significant percentage of patients reported that CAM services would increase their overall satisfaction with the hospitalization. This finding merits further attention given the need to increase cost savings while enhancing the overall patient experience in today's medical system marketplace.

## **Introduction**

Complementary and alternative medicine (CAM) (also known as integrative medicine in the allopathic medical setting) refers to care that is patient-centered and healing-oriented using therapeutic approaches originating from mostly Eastern, non-traditional medicine <sup>1</sup>. Complementary and alternative medicine treatments provide a holistic approach to healing, with an emphasis on each individual patient's needs. These treatments can often be provided at a lower cost, with less negative side effects, with the ultimate aim to relieve pain and improve patients' quality of life <sup>2,3</sup>

Food/nutrition, supplements, yoga, meditation, TCM/acupuncture, and massage are the most widely used complementary and alternative medicine therapies in the United States <sup>4</sup>. Currently, 63% of individuals self-refer for complementary and alternative medicine services in the medical setting and primarily receive services in an outpatient setting for preventive care and treatment of chronic ailments <sup>5</sup>. Many outpatient services such as acupuncture massage therapy, meditation classes, and mind-body therapies are most often paid out-of-pocket versus by insurance <sup>4</sup>. The demonstrated health benefits of outpatient complementary and alternative medicine services, coupled with patients' interest in paying for those services, has increased national attention regarding the successful provision of complementary and alternative medicines in hospital settings <sup>5</sup>.

Approximately 52% of the 29 large primary care centers sampled in the 2012 Bravewell report were currently offering inpatient complementary and alternative medicine services <sup>4</sup>. When available, common complementary and alternative treatment offerings in hospitals include: acupressure, aromatherapy, biofeedback, expressive arts, guided imagery, massage therapy, mind-body therapies, mindfulness therapy, music therapy, pet therapy,

relaxation therapy, and Reiki/Therapeutic Touch<sup>4,5</sup>. Hospitals often rely on patient demand, evidence of efficacy, and practitioner availability when choosing what services to implement and must rely on out-of-pocket payment or philanthropic funds to support complementary and alternative medicine services in the hospital<sup>5</sup>.

A small, but growing body of literature suggests there are significant health benefits, such as reductions in anxiety, distress, fatigue, nausea, and pain when patients are given the opportunity to receive complementary and alternative medicine services during their hospital stay<sup>6-9</sup>. St. John's Riverside Hospital in New York reported that when hospitalized patients (n=122) were offered complementary and alternative medicine therapies, the patients experienced decreased anxiety (40%), reduced pain (34%), and improved sleep (34%). The patients additionally reported finding new ways to cope with their illness (31%)<sup>10</sup>.

In regards to pain management, the Penny George Institute for Health and Healing in Minnesota reported a 55% reduction in self-reported pain among hospitalized patients (n=1,837) receiving complementary and alternative medicine services. The majority of these patients had never received complementary and alternative services prior to admission (66%). The patients receiving therapies also had a shorter length of stay in the hospital (average of 3.99 days versus 4.41 days for all patients at the hospital), although this finding was not statically significant<sup>11</sup>.

Furthermore, studies demonstrate significant cost savings related to complementary and alternative therapies, particularly with hospitalized oncology patients. An optimal healing environment, "Urban Zen" was created in the Beth Israel (New York) inpatient medical oncology unit. This study found the average medication cost was

reduced from \$889 per hospitalized patient for a 3-day stay to \$420 per patient (47% reduction in the mean cost of medication), with the most dramatic decreases found in anti-anxiety and anti-nausea medications <sup>12</sup>. These studies show promise for the ability of complementary and alternative medicine services to not only minimize hospitalized patients' anxiety and pain, but to also reduce their medication costs.

Although the benefits of providing complementary and alternative medicine services to hospitalized patients are increasingly evident, it can be difficult to begin offering such services in hospital settings. Common barriers include prohibitory hospital regulations or policies, a lack of understanding about complementary and alternative medicines among practitioners or administrators, and a lack of current insurance reimbursement for such services <sup>2</sup>. Furthermore, there appears to be a lack of knowledge regarding patients' preferences for complementary and alternative medicine services. Are patients interested in receiving these services during their hospital stay? If so, how do they believe these services would be helpful, and would they be willing to pay for these services out-of-pocket if necessary? The current study aims to address these questions, thereby increasing our understanding of hospitalized patients' perspectives regarding complementary and alternative medicine services, and in a larger respect, striving to improve the overall landscape of hospitalized patient care and satisfaction.

## **Materials and Methods**

### *Participants*

Participants were recruited from the University of California San Diego Healthcare System, Family Medicine Inpatient Service between November 2013 and

August 2014. Inclusion criteria were purposely broad so as to gather a wide array of patient preferences: being aged  $\geq 18$  years old, currently hospitalized, and the ability to conduct an individualized interview in English. Potential study participants were excluded if there was a current diagnosis of severe dementia, delirium, or other cognitive impairments. The research design, participant recruitment plan, as well as all other facets of the study were reviewed and approved by the Human Research Protections Program and Institutional Review Board at the University of California, San Diego.

### *Procedure*

This cross-sectional study utilized a researcher-derived individual interview to learn about the hospitalized patients' preferences for complementary and alternative medicine services, as well as their perspectives on how those services could be helpful, and whether they would be willing to pay out-of-pocket for those services if they were offered in the hospital. Patients were informed that these services were not currently offered in the University of California, San Diego hospital, but that the aim of the study was to learn more about what services, if offered, would be valued by patients.

During each interview, the researcher described 11 commonly provided complementary and alternative services: acupuncture, aromatherapy, art therapy, guided imagery, healthy food, humor therapy, massage therapy, music therapy, pet therapy, Reiki, and stress management<sup>4</sup>. Because patients had varying levels of familiarity with each of these services, a standardized definition and list of services was provided (please see Table 1 for a list of the treatment descriptions used). As each service was described, the patients were asked, "Do you think {these services} would be helpful to you during your hospital stay?" (Yes or No). If yes, the patient was asked, "Would you be willing to

pay for these services yourself?” (Yes or No). Patients were also asked to state whether they believed each service could: 1) help them relax, 2) help them recover more quickly, 3) help them cope with being in the hospital, 4) decrease their pain, 5) decrease emotional difficulties, 6) increase their sense of well-being, and 7) increase their overall satisfaction with the hospitalization (Yes or No). Each interview, lasting an average of 30 minutes, was conducted at the bedside of the patient and was administered by the research team of trained health professionals.

..... Table 1 About Here.....

## **Results**

A total of 100 hospitalized patients participated in the study (please see Table 2 for detailed patient demographics). The patients ranged in age from 19-95 years old ( $M=53$ ;  $SD=19.2$ ). A majority of patients (77%) were admitted to the hospital through the emergency room, whereas 19% were admitted as part of a planned visit. The average length of hospital stay was 6 days ( $SD= 10.0$ ; *Range* 1-86 days).

..... Table 2 About Here.....

Descriptive statistics were completed using SPSS Version 21. Patients most commonly reported that healthy food (85%), massage therapy (82%), and humor therapy (70%) would be helpful during their hospital stay. Additionally, patients indicated they would be most willing to pay out-of-pocket for healthy food (71%), massage therapy (70%), and stress management (48%). Figure 1 lists the percentage of patients' that stated

the complementary and alternative treatments or services would be helpful, and the percentage of patients who stated they would be willing to pay for these services.

..... Figure 1 About Here.....

Figure 2 presents the ways in which patients believed complementary and alternative medicine services would be of benefit, with the majority of patients indicating that complementary and alternative services could help them relax (88%), increase their well-being (86%), and increase their overall satisfaction with the hospitalization (85%).

..... Figure 2 About Here.....

**Discussion**

*Summary*

To our knowledge, this is one of few studies to examine hospitalized patients' preferences, beliefs, and willingness to pay for complementary and alternative medicine services. Our findings suggest that hospitalized patients are interested in complementary and alternative medicine services as part of their hospital stay and believe these services would be of benefit. Specifically, hospitalized patients reported the highest preferences for the incorporation of healthy foods, massage therapy, and humor therapy. Patients most commonly indicated that complementary and alternative medicine services could help them relax, increase their well-being, and improve their recovery. Patients also viewed complementary and alternative medicine services as being able to help them cope

with their hospitalization, and could increase their overall satisfaction with the hospitalization. All of these self-reported patient beliefs suggest a strong interest in complementary and alternative medicine services being provided within hospitals.

While many of the hospitalized patients in our study indicated an interest in complementary and alternative medicine services, health literacy may play an important role when assessing interest or implementation of complementary and alternative services among hospitalized patients. Inadequate health literacy affects 36% of Americans and is more prevalent among minority groups<sup>13</sup>. A recent study examining complementary and alternative medicine usage among hospitalized patients found that those with a higher health literacy utilized services more often than those with a lower health literacy<sup>14</sup>. Therefore, in order for complementary and alternative medicine services to be of benefit and utilized in hospitals, it is important that patients are provided education regarding complementary and alternative medicine treatments and that the modalities are tailored and designed for those with a lower health literacy in order to ensure successful implementation of services.

A significant number of patients reported that having a complementary and alternative medicine service would increase their overall satisfaction with the hospitalization experience. Given the increasing focus of hospital systems to increase patient satisfaction for reasons ranging from having shorter hospital stays, increased cost savings, fewer potential lawsuits, and increased competitiveness in the medical system marketplace this finding merits further study<sup>15, 16</sup>.

### *Limitations*

Although beneficial to hear about hospitalized patients' preferences and beliefs regarding complementary and alternative medicine services, there were several limitations when interpreting the results of this study. First, this study utilized a convenience sample of patients in one southern California hospital, and the relevance of these findings in other geographic regions is unclear. Also, although patients reported they would be willing to pay for services, the services were not currently being offered in the hospital. Thus, it is unclear if the patients would actually submit payment when called upon for service, and whether it would be feasible to charge a separate fee for complementary and alternative medicine services while in the hospital. Additionally, it is unclear *how much* the hospitalized patients would be willing to pay for each service, as we did not indicate a dollar amount regarding the price of the services when described to patients in the study.

### **Conclusions**

There is a dearth of literature currently available regarding hospitalized patients' preferences for complementary and alternative medicine and the successful implementation of those services. While various studies have examined the effects of complementary and alternative medicine therapies on specific symptoms such as anxiety, nausea, pain, and relaxation<sup>6-9, 17</sup> far fewer studies have examined hospitalized patients' beliefs and preferences for complementary and alternative medicine services and overall patient satisfaction. Furthermore, while our study patients expressed that complementary and alternative medicine services may lead to improvement in overall satisfaction with

hospitalization, little to no research has been able to determine a causal relationship between service provision and improved patient satisfaction<sup>18</sup>. The preference ratings for complementary and alternative medicine services reported in this study could help guide hospital administrators when deciding how to implement new inpatient programs. Future qualitative studies could examine how complementary and alternative medicine services enhance hospital satisfaction and why patients may feel more satisfied when hospitals offer these services.

Furthermore, it is unclear how complementary and alternative medicine services may impact hospitalized patients longitudinally. It may be important to develop complementary and alternative medicine hospital programs that allow for the maintenance of these services when patients are discharged to their respective outpatient settings, thereby allowing for even greater continuity of care. Nonetheless, the findings from this study may be valuable for those developing and implementing complementary and alternative medicine programs within hospital settings, particularly when aiming to provide services that are perceived to be beneficial by patients, and those that may enhance the overall patient experience.

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