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Empowering Low-Income Women with Breast Cancer: Promoting Acupuncture at Community Health Fairs

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Empowering Low-Income Women with Breast Cancer: Promoting Acupuncture at Community Health Fairs

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Abstract

While research has explored the positive effects of acupuncture on cancer and cancer treatment symptoms, a notable gap exists in understanding its impact on lower-income populations. These individuals encounter barriers to accessing acupuncture, such as limited availability, cost, and provider knowledge. This longitudinal study aims to assess the impact of community health fairs, featuring acupuncture information for breast cancer and chemotherapy-induced symptoms, on the acceptance and utilization rates of acupuncture among low-income women with breast cancer. Collaborating with the Women's Cancer Resource Center and a local non-profit integrative cancer care clinic in Oakland, we will conduct a three-day health fair focused on providing resources for people with cancer. Participants will receive information on acupuncture, counseling on non-profit acupuncture sites, and fill out questionnaires on their beliefs (Acupuncture Beliefs Scale) and quality of life (EORTC Quality of Life questionnaire and Functional Assessment of Cancer Therapy-General) at the beginning and end of the fair. Follow-ups will be conducted at 3 months, 6 months, and 1 year. The study aims to enroll at least 100 participants (n = 100), with primary outcome measures being acceptance and usage rates of acupuncture. Statistical analyses, including paired t-tests and regression analysis, will be employed to evaluate the differences in rates pre and post-tests, as well as the relationships between the demographic data and the numeric scores from the questionnaires. If successful, this research could support the use of community health fairs to enhance acupuncture acceptance and utilization rates among low-income women with breast cancer, contributing to improved health education and literacy for underserved populations. Nurses could apply this information to enhance patient education, delivering additional resources and increased support throughout the cancer treatment process.

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Problem Statement

According to the CDC, about 240,000 women are diagnosed with breast cancer (BC) every year in the United States (CDC, 2023). The condition comes with many stressors, notably many reports of pain and fatigue. The first-line treatment for most patients is chemotherapy, hormone therapy, targeted therapy, immunotherapy, or a combination of these. Chemotherapy is a drug treatment that uses powerful chemicals to kill fast-growing cells in one's body (National Cancer Institute, 2022). The treatment's adverse effects pose a significant burden, impacting multiple facets of these women's lives, including challenges in daily activities, reduced social functioning, disrupted sleep patterns, and compromised cognitive abilities (Yang et al., 2021). Complementary and alternative medicine (CAM), defined by the National Center for Complementary and Integrative Health, is a group of various medical and healthcare practices that are not currently considered part of conventional medicine (NCCIH, 2021). Acupuncture, one of the major modalities of CAM, uses thin, sterile needles in specific body points guided by the principles of meridians and channel theory (Yang et al., 2021). In a randomized control trial assessing the effectiveness of acupuncture for cancer-related fatigue, results showed improvements in physical and mental fatigue, anxiety and depression, and quality of life (Molassiotis et al., 2012). Another randomized control trial has shown the benefits of acupuncture in improving cancer patients' vasomotor symptoms, cancer-related pain, nausea, and vomiting (Walker et al., 2010).

Research on acupuncture for symptom management is growing, but access to acupuncture treatment remains a challenge, and acceptance of these therapies is limited. Among

patients with low socioeconomic status, only 20.6% embraced integrative medicine, while non-poor adults showed a higher utilization rate of 38.4% (Saper, 2016). This discrepancy underscores the barriers faced by the economically disadvantaged in accessing acupuncture as a form of treatment. An article published in Global Public Health studies the prevalence of traditional, complementary, and alternative medicine used by cancer patients in low-income counties. Their results found that data on the prevalence of Traditional and Complementary Alternative Medicine (TCAM) for cancer was available in only one-tenth (3 out of 31) of low-income counties (Hill et al., 2019). The primary barriers to seeking acupuncture among cancer patients include limited availability, lack of provider knowledge, and endorsement (Liou et al., 2020).

Empowering underserved communities involves organizing community health fairs with booths staffed by subject-matter experts and featuring compelling exhibits or live demonstrations. This approach effectively disseminates vital information, breaks down CAM barriers, and enhances health literacy and service awareness, ultimately contributing to community well-being. Mexican American Women's National Association (MANA) is an example of an organization that has routinely and successfully held health fair programs in community centers with breast health screening, vaccination services, and providing information on different sources (Murray et al., 2014). While there are studies on the impact of community health fairs to increase awareness of cancer screening and other health issues, it remains to be seen how they can be used to increase awareness and acceptance of acupuncture among low-income women with BC. Community health fairs offer the potential to improve this population's comprehension of how acupuncture can help manage the adverse effects of

chemotherapy and disease symptoms. Additionally, they can serve as a means to connect individuals to local free and low-cost acupuncture services.

Purpose Statement

This study aims to investigate the effect on acupuncture acceptance and utilization rates of a community health fair intervention that (a) promotes acupuncture for managing BC and cancer treatment symptoms and (b) connects attendees with free or reduced-fee acupuncture service providers. The study will specifically focus on the acceptance and acupuncture rates from women of low socioeconomic status within a year.

Research Question

Does attendance at community health fairs that include exhibits and demonstrations about acupuncture for symptom management for people undergoing treatment for breast cancer increase acupuncture acceptance and utilization rate among low-income women after one year?

Hypothesis

Attendance at community health fairs featuring exhibits and demonstrations on acupuncture for symptom management in individuals receiving breast cancer treatment will lead to increased acupuncture acceptance and utilization rates among low-income women within a one-year timeframe.

Literature Critique

The goal of this literature review is to examine if exposure to community health fairs focused on the use of acupuncture for chemotherapy-induced side effects can increase its acceptance and usage rates among low-income women with BC. The articles were found through Dominican University of California's Archbishop Library database, specifically from CINAHL, PubMed, and Iceberg. The key search terms used included: "cancer patients", "acupuncture",

“chemotherapy”, “pain”, “complementary”, “low income”, “community health fair”, “access”, “barriers”, and “health beliefs”. A Literature Review Table can be viewed in Appendix A.

The following criteria needed to be met by all articles to be part of the literature critique:

- Published between 2018 and 2023
- Peer reviewed
- Primary research articles

The six articles are categorized into three distinct thematic groupings:

- Acupuncture improving chemotherapy side effects
- Barriers to receiving complementary therapies
- Effectiveness of health fairs to reduce adverse social determinants of health

Acupuncture Improving Chemotherapy Side Effects

This portion of the literature critique contains articles examining the effectiveness of acupuncture on different chemotherapy-induced side effects.

Jeong et al. (2018) performed a prospective, single-arm, pilot trial and an observational study to evaluate the safety and feasibility of acupuncture therapy (AT) for treating chemotherapy-induced peripheral neuropathy (CIPN) in Korean BC patients. The sample size consisted of 10 Korean women who provided written consent and were patients experiencing symptoms of peripheral neuropathy due to their chemotherapy treatment for BC. The participants received 12 sessions of AT performed by Traditional Korean Medicine physicians for 4 consecutive weeks and then had 4 weeks of follow-up after the final treatment. The severity of CIPN was measured by the Neuropathic Pain Syndrome Inventory (NPSI), a questionnaire used to examine the symptoms of neuropathic pain), and Nerve Conduction Study (NCS), a more objective measurement with the use of a Medelec Synergy electromyography machine. The

participants' quality of life (QoL) was assessed using the 36-Item Short Form Health Survey (SF-36), a patient-reported survey that measures different health concepts including physical functioning, role limitations due to physical health problems, role limitations due to personal problems, energy and fatigue levels, emotional well-being, social functioning, bodily pain, and general health perceptions (Jeong et al., 2018).

The results of the study showed that AT reduced symptoms of CIPN among their BC patients, as well as enhanced their QoL. The NPSI scores of all participants were statistically significantly reduced after treatment ($p = 0.003$). The effects of AT on the NPSI score were persistent with the scores 4 weeks after the last AT session. Quality of life assessed by the SF-36 was greatly improved specifically in aspects of physical functioning, role limitations resulting from physical health issues, social functioning, and general health perceptions ($p = 0.042$, $p = 0.008$, $p = 0.007$, and $p = 0.003$, respectively). There were no statistically significant changes in the NCS results from baseline to immediately post-treatment. The main strength was the use of validated outcomes measurements (NPSI, NCS, and SF-36) to collect both subjective and objective data. The participants adhered well to the study protocol by providing data at all collection points. The small sample size of 10 and a non-randomized trial without a control group limits the generalizability of the results because the findings may not be representative of a larger population (Jeong et al., 2018).

Employing a quasi-experimental design with a pre/post-test survey and a pain assessment using visual analog scales (VAS), Fink et al. (2020) assess the consistency of integrative therapies, specifically massage and acupuncture, in reducing cancer-related symptoms. The study population was 4,367 Aurora Center Clinics patients, each of whom underwent AT. AT was performed mainly in group settings with the use of distal acupuncture points in patients'

arms/hands, legs/feet, and/or head/ears. Patients used a scale from 0 [least] to 10 [worst] to rate their perceived levels of pain, stress, nausea, and neuropathy before and after AT. Patients were also provided visual analog scales (VAS) to refer to. Clinicians collected data voluntarily returned by patients across the different Aurora Cancer Clinic locations (Fink et al., 2020).

Results of the study found that AT significantly decreased cancer-related symptoms throughout many of the Aurora Clinics. Acupuncturists reported decreases in pain, stress, and neuropathy of 61.7%, 68.8%, and 47.9%, respectively before and after AT. A limitation of the study was its reliance on self-reported data. Patients' personal beliefs about the effectiveness of acupuncture, as well as their experiences with individual therapists, could have contributed to confirmation bias in their reports. The fact that the outcome measures were collected by providers also could have led to reporting bias. By including many sites and sampling a large number of participants, the researchers provide generalizability, in that their data can be applied to different populations (Fink et al., 2020).

Barriers in Receiving Complementary Therapies

This section of the literature critique seeks to recognize the various perceived obstacles and deterrents that influence the utilization of acupuncture among diverse groups of cancer patients and survivors.

Through a cross-sectional analysis, Bao et al. (2018) examine the perceived barriers to AT among BC survivors while also looking at possible sociodemographic variations of those barriers. The participants of the study were chosen from a previous longitudinal prospective study performed by Wellness after Breast Cancer Research assistants approached potential subjects in the waiting area of oncology clinics. After receiving written informed consent, the assistants asked the patients to complete a self-report survey on perceived barriers to acupuncture

usage. Barriers were measured using a modified Attitudes and Beliefs about Complementary and Alternative Medicine (ABCAM) instrument. Participants responded to the description of each barrier described in the survey with a score between 1 and 5, with 1 corresponding with "strongly disagree" and 5 with "strongly agree." Demographic information such as age, race, education level, and employment status were also collected through patient self-report (Bao et al., 2018).

Out of the 593 surveys returned, the top three perceived barriers to AT use were (a) lack of knowledge about (AT) (42.6%); (b) lack of insurance coverage for AT (25%); and (c) concern for high cost of AT (22.3%). Those with high school or less education had a significantly increased perceived barrier score of 4.23 ($P < 0.001$), compared to those with a graduate degree. These findings strongly support the need for interventions to educate women with BC about ways to access and benefit from AT. This study has certain limitations worth noting. First, it lacks a qualitative analysis component, which could have provided deeper insights into the experience of the participants. Second, there is the possibility of social desirability bias, as the study relied on self-reporting, which might lead participants to respond in ways they believe are socially acceptable rather than expressing their true experiences. Additionally, recall bias could also be a concern, as participants may not accurately recall past experiences or events. Lastly, it is important to acknowledge that the study's population was limited to BC survivors. Consequently, the findings may not be directly applicable to other cancer populations, and generalizing the results should be done with caution. Strengths of this study are its consistency with past literature on barriers to acupuncture among minority populations as well as it being the first study to reveal that a lack of knowledge about AT is the most common reason why BC survivors do not use this treatment (Bao et al., 2018).

Jones et al. (2018) assessed the knowledge and utilization of complementary and alternative medicine (CAM), obstacles to CAM use, and interest in using CAM therapies among 165 cancer patients at Lyndon Baines Johnson General Hospital. After patients were approached and enrolled, study coordinators individually sat with participants in the waiting areas of their clinics. The study used a customized app to display graphics to illustrate each CAM therapy, which included acupuncture, aromatherapy, herbal therapy, massage, and other CAM modalities. As each therapy was shown, the coordinator would explain the therapy followed by a series of predetermined questions on whether they knew what the therapy was, if they currently use it, if they would be interested in using it if made available, and what reasons would discourage them from using it. The answer options about discouragement included inadequate knowledge about the therapy, prohibitive cost, distrust in its effectiveness, and other reasons (Jones et al., 2018).

Responses related to acupuncture show that 50% of patients reported a high level of interest in utilizing acupuncture. However, 21% cited a lack of knowledge and 19% of patients cited a lack of trust in AT as being what discouraged them from pursuing it. The research was conducted at a clinic caring for minority and medically underserved oncology patients and half of them expressed interest in trying acupuncture symptom management. Consequently, introducing acupuncture to similar patient populations is likely to be well-received. Nevertheless, the study has limitations, including its cross-sectional design, which only provides a snapshot of beliefs and attitudes at the time of the survey and not the effect of the teaching module on AT uptake over time. Furthermore, it features a small sample size, and the survey instrument was developed exclusively for this study, lacking prior use in clinical trials. Despite these limitations, the strength of this style of data collection and intervention is the app's potential scalability. The

intervention can have broader applications as a waiting room kiosk with the means to assess, address, and resolve knowledge deficits about CAM (Jones et al., 2018).

Impact of Community Health Fairs

This section of the literature critique examines the use of two types of health fairs and their impact on their respective communities.

Fritz et al. (2023) conducted a cross-sectional study to evaluate the effectiveness of a community health fair developed by the University of Texas Health Science Center for UTHealthCare. In particular, they wanted to understand factors that influence healthcare access. As they were leaving the health fair, participants had the option to fill out a questionnaire. They were asked to complete rating scale questions, interval scale questions, free response questions, and yes/no questions. The questionnaire's contents included items on satisfaction with the health fair, comfort with each booth's activities [vitals and body mass index (BMI), dental care, vision care, blood glucose, and accessing health info], topics the health fair did not include but the participant would like to see, health services participants would like more access to, barriers to access, and more. Volunteers of the health fair collected the completed questionnaires and the data was transcribed into an electronic format (Fritz et al., 2023).

UTHealthCare volunteers were able to collect 91 complete responses from 111 total health fair participants. A mean response of 4.62 out of five, showed high satisfaction among the community health fair participants. The responses on comfort in managing health-related areas after the health fair ranged from 4.82 to 4.87 out of five, with five meaning "very comfortable." These findings align with other studies that showed participants had improved health knowledge after attending other health fairs (Salerno et al., 2018). A limitation of this study was its focus on only the Eastex-Jensen area. The researchers hope to broaden their outreach, increasing the

sample size and collecting more data in future studies. The lack of randomization is another limitation. The strength of this study is its inclusion of open-ended questions for qualitative data collection and analysis(Fritz et al., 2023).

Ginzberg et al. (2023) in collaboration with The Community of Compassion, aimed to provide cancer screening through a comprehensive health fair for a West Philadelphia community that has encountered substantial barriers in obtaining medical care. The fair aimed to implement a structured follow-up plan for participants regarding their test results. The number of screenings and tests was recorded by the radiologists and other volunteers. Qualitative unblinded feedback was given by a small group of fair attendees as well as faculty involved in the form of a survey sent by email (Ginzberg et al., 2023).

A total of 232 screening tests were conducted, including mammography, and diagnostic breast imaging recalls, and about half of those screened also received individual healthcare financial counseling or healthcare assistance counseling. Those surveyed stated that the greatest strength of the fair was the multiple on-site screening and modalities provided. To further improve engagement before and after the fair, organizers agreed to invite participants to additional health-promoting events. The strengths of the study were its promotion of trust between the community and the involved institutions, as well as the preliminary data obtained for ideas for future events. A limitation of the study was the inability to get an exact count of the fair attendees. A blind survey could be added to collect feedback to make a more reliable study, eliminating possible response bias (Ginzberg et al., 2023).

Discussion

This literature review, along with the findings of each included article, aligns with the objectives of this paper. First, it is important to have evidence of acupuncture’s ability to

alleviate certain chemotherapy-induced symptoms as well as enhance the overall QoL of women with cancer. In the trial by Jeong et al. (2018), the BC patients reported statistically significant reduced severity of CIPN after receiving AT. The patients also reported QoL improvements including physical functioning, role limitations, social functioning, and general health perceptions. Fink et al. (2020) found that all symptoms of pain, neuropathy, stress, and nausea were scored lower after receiving AT. The compelling evidence of acupuncture's effectiveness provides a strong foundation for advocating its incorporation into community health fairs tailored for underserved women.

It is essential we understand the barriers to acupuncture. Bao et al. (2018) show that the most common barriers in their studied population are the lack of knowledge on the treatment, lack of insurance coverage, cost, and difficulty finding qualified acupuncturists. The study done by Jones et al. (2018) also had reports of lack of knowledge and lack of trust as deterrents to utilizing acupuncture. By understanding these barriers, we work to overcome them. By understanding the extent of AT-related knowledge deficits, we can provide meaningful educational opportunities. By understanding cost and insurance coverage, we can allocate appropriate resources to free clinics of acupuncture and other CAM, as well as counseling on other necessary resources.

With the knowledge gleaned from past fairs, we are well-situated to build on what worked and avoid what did not work. Health fair attendees are typically motivated to adopt healthy behaviors and seek community support for improved well-being and longevity. UTHealthCare community health fair had an average response of 4.62 scores out of five for satisfaction with the fair, with reports of participants also becoming more comfortable with managing health-related areas after completing the fair (Fritz et al., 2023). Ginzberg et al. (2023)

had a total number of 120 participants who visited all eight core stations and a total number of 232 screening tests completed. These numbers show the impact and outreach these fairs have on their respective communities. More data from the studies give us information on what could have been done to improve their study, such as increasing outreach before and after the fair and having a blind survey to collect feedback.

In summary, these studies illuminated the power of AT to alleviate distressing symptoms related to cancer treatment and feedback from oncology patients and health fair attendees that will be acceptable and feasible to disseminate information about AT to medically underserved populations. The following research proposal addresses the gap in the literature by investigating the impact of health fair exhibits designed to provide education and facilitate access to AT. The study will particularly focus on reaching low-income women with cancer, aiming to assess the effectiveness of these health fair experiences in increasing awareness and utilization of acupuncture as a complementary treatment.

Proposal for Further Study

Theoretical Framework

The Health Promotion Model (HPM) by Nola Pender is centered on enhancing individuals' well-being and equipping healthcare providers with resources to assist patients in making positive behavior-specific changes (Pender, 2011). This model applies to this study in how we understand how community health fairs can promote the acceptance and usage of acupuncture as a complementary treatment for chemotherapy-induced symptoms among low-income women with cancer. The model's key components consist of individual characteristics and experiences, behavior-specific cognitions and affect, and the behavioral outcome or health-promoting behavior (See Appendix C).

Emphasizing the HPM's constituent on individual characteristics and experiences, this study begins with examining the health fair participants. Through the HPM, the study will explore the personal characteristics and experiences of women in the community, all of whom share the common factor of low socioeconomic status. This model also allows for the exploration of their existing knowledge of acupuncture, attitudes toward complementary therapies, personal experiences with chemotherapy-induced symptoms, and their history with traditional and nontraditional cancer treatments.

Turning to the component of behavior-specific cognitions and affect in the HPM, we can recognize its significance in the study's efforts to enhance the acceptance and usage rates of acupuncture. In this regard, we delve into the cognitive and emotional aspects that shape these rates. The study will assess the participants' perceived benefits and barriers associated with acupuncture as an additional cancer treatment. This portion will also examine their self-efficacy and emotional responses toward acupuncture, all of which fall under the scope of the HPM.

Finally, we turn to the HPM's component of assessing the behavioral outcomes or health-promoting behavior. The study aims to measure the community health fair's success in promoting acupuncture as an additional treatment option. In this phase, we examine the actual behavioral outcomes among low-income women in the community. The HPM not only provides guidance for this process but also supports the study's exploration of both short-term and long-term outcomes, covering immediate acceptance during the fair and the sustained usage of acupuncture over time.

Research Design

This longitudinal research aims to evaluate how a community health fair, which (a) promotes acupuncture as a complementary treatment for managing BC and chemotherapy

symptoms and (b) connects participants with free or reduced acupuncture service providers, influences the acceptance and utilization rates of acupuncture. The study will observe the changes in acceptance and acupuncture rates within a year. This research will use a quantitative phase to illuminate the statistics. The qualitative data obtained will be used for thematic analysis in future studies.

Ethical Considerations

To protect the participants' privacy, any personal and identifying data will be anonymized. We will submit an application for ethical approval by the Institutional Review Board (IRB) at Dominican University of California. Participants' written and informed consent will be collected before the initiation of questionnaires and interviews.

Sample

The target population includes low-income women diagnosed with BC and are undergoing chemotherapy. This study uses convenience sampling, focusing on low-income communities. The fair will be promoted two months before the event. It will be advertised on the Women's Cancer Resource Center website. Fliers will be posted at local hospitals, mainly on oncology floors. The goal is to have 150 total health fair participants, with at least 100 participants filling out the provided questionnaires regarding acupuncture.

Intervention

In collaboration with the Women's Cancer Resource Center and a local integrative cancer care clinic based in Oakland, we will host a local community health fair for three days with a focus on providing resources for people with cancer. At these events, we will set up a booth that provides information and education about acupuncture as an additional treatment option for cancer and chemotherapy symptoms. Visitors will be able to explore the different exhibits of the

booth and engage with visual materials, pamphlets, and other informative displays. A specific area of the booth will be used for live demonstrations of acupuncture techniques performed by licensed staff. Visitors are welcome to ask questions during the demonstrations. Information sessions on the benefits of acupuncture and ways to get connected to non-profit acupuncture sites near participants will be conducted, following a flexible schedule. Staff will also be readily available for one-on-one discussions throughout the fair. Seating will be made available to encourage comfortable spaces for counseling sessions as well as to allow visitors to sit down while engaging with materials or staff members. We will also offer free or subsidized acupuncture sessions to interested participants. To ensure each person is counted, registration and a sign-in system will be implemented at the entrance of the booth.

Quantitative Phase. To obtain baseline data, we will gather essential demographic information, such as age, income level, education, and cancer treatment status. We will assess participants' awareness, acceptance, and utilization of acupuncture as a treatment option. We will document their current symptom severity and QoL. To ensure accessibility, participants can access questionnaires using QR codes linked to Google Forms. To ensure participants can be reached throughout the year, we will collect multiple points of contact including phone numbers, email addresses, and secondary contacts such as family members. There will also be an option on the Google Form to note that an attendee may not have BC but would provide information to a family member or friend with the diagnosis.

At the end of each health fair, we will administer a questionnaire to assess participants' immediate thoughts on acupuncture after their attendance. Intermediate follow-ups will be collected at intervals of three months and six months, to make certain of which participants are utilizing acupuncture. One year after the health fairs, we will re-administer the same

questionnaires and assessments as in the baseline phase. Participants will be reached through the various points of contact collected at baseline. This will allow us to evaluate changes in awareness, acceptance, and usage of acupuncture among the participants. Additionally, we will measure any changes in symptom severity and QoL.

Qualitative Phase. We will gather qualitative data through semi-structured interviews with a subset of participants immediately after their interaction with the booth. These interviews will provide in-depth insights into their experiences with acupuncture, the community health fairs, and any barriers or facilitators to its adoption. The content captured in these interviews will be used for thematic analysis for future qualitative studies.

Data Collection

To collect data on the participants' beliefs and possible perceived barriers to acupuncture immediately as they enter the fair, we will administer the Acupuncture Beliefs Scale (ABS), a 36-item self-report scale on the effectiveness of acupuncture (Dennehy et al., 2002).

To measure the QoL, we will be using two different standardized scales at the beginning of the fair, the immediate end of the fair, and a year after the fair (See Appendix B). The first is the EORTC Core Quality of Life questionnaire (EORTC QLQ-C30), which measures cancer patients' physical, psychological, and social functions (Kaasa et al., 1995). The second is the Functional Assessment of Cancer Therapy-General (FACT-G), which measures the four domains of physical, social, emotional, and functional well-being (Yost et al., 2013).

Analysis

The outcome measure of this study will be the rates of acceptance and usage of acupuncture a year after the implementation of the community health fair. The study will use a

paired t-test to compare the before and after scores of all participants. If the t-test shows a p-value is less than 0.05, we can reject the null hypothesis.

Regression analysis will be used to examine the relationship between the demographic data of the participants and their numeric scores from the questionnaires.

Limitations

The design of this proposed study allows for the potential introduction of various forms of bias. Selection and sample bias from using convenience sampling of low-income communities could affect the generalizability of the results. Social desirability can also skew the results to make the health fair seem more effective than it actually is because the participants responded to the survey in a way they perceive others will find socially desirable versus how they actually felt. Without a control group, it is difficult to determine if the observed changes are due to the intervention of the health fair or because of other unseen influences. A one-year follow-up period may be too soon to assess the long-term changes that the health fair had on the participants.

Conclusion

This study could show the potential of community health fairs to boost acupuncture acceptance and utilization rates among low-income women with breast cancer. The possible positive outcomes highlight the effectiveness of this intervention in breaking down barriers and improving health literacy within underserved populations. The findings also offer valuable insights for nursing practice, empowering healthcare professionals to enhance patient education and deliver more comprehensive, patient-centered care. These fairs can also become crucial places for nurses to connect with patients, address misconceptions, and facilitate informed decision-making regarding complementary therapies.

Future studies can use randomized controlled trials and diverse sampling strategies in order to create a more established causal relationship between the fairs and the usage and acceptance rates of acupuncture. Investigating the long-term impact of community health fairs by having future studies use follow-ups extending beyond one year would advance our understanding of this educational intervention and its implications.

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Appendix A

Literature Review Table

Citation: Bao, T., Li, Q., DeRito, J. L., Seluzicki, C., Im, E. O., & Mao, J. (2018). Barriers to Acupuncture Use Among Breast Cancer Survivors: A Cross-Sectional Analysis. Integrative cancer therapies, 17(3), 854–859. https://doi.org/10.1177/1534735418754309 Title: Barriers to Acupuncture Use Among Breast Cancer Survivors: A Cross-Sectional Analysis Purpose/Objective of the study: The purpose of this study was to evaluate perceived barriers to acupuncture use among breast cancer survivors while exploring the sociodemographic variations of those barriers. Sample- population of interest and sample size: 593 postmenopausal women with a hx of stage I-III hormone receptor-positive BC Study Design: Cross-sectional study Study Methods: Used modified Attitudes and Beliefs about Complementary and Alternative Medicine instruments. Multiple linear regression analysis was done to determine socio-demographic facts. Major Findings: Most common barriers - lack of knowledge about acupuncture (41.6%), concern for lack of insurance coverage (25.0%), cost (22.3%), and difficulty finding qualified acupuncturists (18.6%). Minority patients had higher perceived barriers compared with White patients. Strengths: Findings consistent with past literature on perceived barriers to acupuncture amongst minority populations. Limitations: No qualitative analysis. Possible social desirability and recall bias with the use of self-reporting. Population limited to BC survivors, may not be applicable to other cancer populations. Nongeneralizability due to the majority of study patients being White.
Citation: Fink, J., Burns, J., Perez Moreno, A. C., Kram, J. J. F., Armstrong, M., Chopp, S., Maul, S. J., & Conway, N. (2020). A Quality Brief of an Oncological Multisite Massage and Acupuncture Therapy Program to Improve Cancer-Related Outcomes. Journal of Alternative

& Complementary Medicine, 26(9), 820–824. https://doi-org.dominican.idm.oclc.org/10.1089/acm.2019.0371

Title: A Quality Brief of an Oncological Multisite Massage and Acupuncture Therapy Program to Improve Cancer-Related Outcomes.

Purpose/Objective of the study: The objective of this study is to assess the consistency of integrative therapies, specifically massage and acupuncture) in reducing cancer-related symptoms.

Sample- population of interest and sample size: Aurora oncology patients, n = 4,367

Study Design: Cross-sectional

Study Methods: Patients rated 0-10 scale of pain, stress, nausea, and neuropathy before and after acupuncture therapy (AT) and massage therapy (MT).

Major Findings: Before and after AT mean scores for pain were 2.99 (pre) versus 1.42 (post), neuropathy 2.75 versus 1.66, stress 3.02 versus 1.18, and nausea 0.45 versus 0.31; AT effective at decreasing both pain and stress, closely followed by neuropathy.

Strengths: Multisite design and large encounter size.

Limitations: Self-reported data (biased). Patients' beliefs about the effectiveness of acupuncture and MT and experiences with individual therapists may influence reports. Outcomes measures collected by providers. Not a randomized trial.

Citation: Fritz, C. D., Khan, J., Kontoyiannis, P. D., Cao, E. M., Lawrence, A., & Love, L. D. (2023). Analysis of a Community Health Screening Program and the Factors Affecting Access to Care. Cureus, 15(7), e41907. https://doi.org/10.7759/cureus.41907

Title: Analysis of a Community Health Screening Program and the Factors Affecting Access to Care

Purpose/Objective of the study: The purpose of this study is to assess the impact of UTHealthCares community health fair's effectiveness and to analyze the different factors that affect participant's access to healthcare services.

Sample- population of interest and sample size: 91 people who participated in the health fair

Study Design: Mixed-methods

Study Methods: Optional questionnaires were given to participants after completing the health fair. Items assessed satisfaction with the health fair, improvements in managing health, and access to resources.

Major Findings: Average response of 4.62 out of five for satisfaction with health fair. The mean response to questions assessing comfort in managing health-related areas ranged from 4.82 to 4.87 out of five after completing the health fair.

Strengths: Open-ended questions in questionnaires for qualitative data. Responses provided deep insights into the population. Serves a medically underserved area.

Limitations: Non-random population to complete the questionnaire. Nongeneralizability due to the study mainly only for the Eastex-Jensen area, a neighborhood planning area in Northern Houston.

Citation: Ginzberg, S. P., Edmonds, C. E., Dako, F., Donnell, T., Washington, A. L., Elmore, L. C., Lee, D. J., Vachani, A., Mincarelli, D., Zeballos Torrez, C., McCormick, T. M., Rodriguez, V., Nguyen, V., Oliva, C., Atherholt, B., Gaiser, R., Congiu, L., Grant, B., Gungor, M., Englander, B. S., … Nunes, L. W. (2023). Together We Go Farther: Improving Access to Cancer Screening Through a Multidisciplinary, One-Stop-Shop Approach. Academic radiology, S1076-6332(23)00390-2. Advance online publication. https://doi.org/10.1016/j.acra.2023.07.021

Title: Together We Go Farther: Improving Access to Cancer Screening Through a Multidisciplinary, One-Stop-Shop Approach

Purpose/Objective of the study: The objective was to provide cancer screening access to a West Philadelphia community that has faced significant obstacles in receiving medical care by organizing a comprehensive health fair.

Sample- population of interest and sample size: 350 participants attended a health fair

Study Design: Mixed-methods

Study Methods: Participants were given a “community health fair passport” to keep track of all the different stations they visited. Radiologists and other professionals kept track of the number of screenings and tests performed. Qualitative unblinded feedback was given from a small group of health fair attendees and faculty involved through surveys sent by email.

Major Findings: 120 participants visited all eight core stations, 73 participants received individual healthcare financial counseling, and 26 received counseling on obtaining healthcare assistance. A total of 232 screening tests were completed.

Strengths: Promoted trust between community and institution. Provided data for what improvements can be made for future events.

Limitations: Could not get an exact number of participants who attended the fair; need to implement a blind survey to collect feedback.

Citation: Jeong, Y. J., Kwak, M. A., Seo, J. C., Park, S. H., Bong, J. G., Shin, I. H., & Park, S. H. (2018). Acupuncture for the Treatment of Taxane-Induced Peripheral Neuropathy in Breast Cancer Patients: A Pilot Trial. Evidence-Based Complementary & Alternative Medicine (ECAM), 1–11. https://doi-org.dominican.idm.oclc.org/10.1155/2018/5367014

Title: Acupuncture for the Treatment of Taxane-Induced Peripheral Neuropathy in Breast Cancer Patients: A Pilot Trial.

Purpose/Objective of the study: The objective of this study is to evaluate the safety and feasibility of acupuncture for treating chemotherapy-induced peripheral neuropathy in Korean Breast Cancer patients.

Sample- population of interest and sample size: Korean Breast Cancer Patients; 10 women

Study Design: Prospective single-arm, pilot trial and observational study

Study Methods: Participants received 12 sessions of acupuncture, 3 times a week for 4 weeks. Evaluated once before acupuncture, once a week during treatment, at the end of treatment, and 4 weeks after final treatment.

Major Findings: Severity of chemotherapy-induced peripheral neuropathy (CIPN) assessed by NPSI significantly reduced at the end of tx ($p = 0.003$); CIPN assessed by NCS no significant change; Quality of life (QoL) assessed by questionnaire improved physical functioning, role limitations, social functioning, and general health perceptions ($p = 0.043$, $p = 0.008$, $p = 0.007$, and $p = 0.003$).

Strengths: Use of validated outcome measurements [Neuropathic Pain Symptom Inventory (NPSI) and Nerve Conduction Study (NCS)].

Limitations: Small sample size. Non-randomized, single-arm study without control group
Citation: Jones, D., Cohen, L., Rieber, A. G., Urbauer, D., Fellman, B., Fisch, M. J., & Nazario, A. (2018). Complementary and Alternative Medicine Use in Minority and Medically Underserved Oncology Patients: Assessment and Implications. Integrative cancer therapies, 17(2), 371–379. https://doi.org/10.1177/1534735417735892 Title: Complementary and Alternative Medicine Use in Minority and Medically Underserved Oncology Patients: Assessment and Implications. Purpose/ Objective of the study: To assess knowledge and utilization of complementary and alternative medicine (CAM), obstacles to CAM use, and interest in using CAM therapies. Sample- population of interest and sample size: 165 cancer patients at Lyndon Baines Johnson General Hospital Study Design: Cross-sectional study Study Methods: Patients were recruited and gave informed consent. Patients were interviewed using an electronic application based on specific CAM therapies. Major Findings: 21% of patients reported not knowing enough as a deterrent to using acupuncture. 19% of patients reported a lack of trust in therapy as a deterrent to using acupuncture. Strengths: Study done on medically underserved patients. Results show high use and high interest in CAM. Limitations: Cross-sectional design, relatively small sample size, use of a new non-standardized survey instrument.

Appendix B

Assessment Tools

Domains/summary scores	Questionnaire: EORTC QLQ-C30, four multi-item functioning scales[a] plus one global health/QOL scales[b]	Questionnaire: FACT-G, four multi-item well-being scales[c] plus total score
Physical	Physical functioning (five-item scale) Do you have any trouble doing strenuous activities like carrying a heavy shopping bag or a suitcase Do you have any trouble taking a *long* walk Do you have any trouble taking a *short* walk outside of the house Do you need to stay in bed or a chair during the day Do you need help with eating, dressing, washing yourself or using the toilet	Physical well-being (seven-item scale) I am forced to spend time in bed Because of my physical condition I have trouble meeting the needs of my family I feel ill I am bothered by side effects of treatment I have lack of energy I have pain I have nausea
Role/functional	Role functioning (two-item scale) Were you limited in doing either your work or other daily activities Were you limited in pursuing your hobbies or other leisure time activities	Functional well-being (seven-item scale) I am able to do work (include work at home) My work (include work at home) is fulfilling I am enjoying the things I usually do for fun I am able to enjoy life I have accepted my illness I am sleeping well I am content with my quality of life right now
Social	Social functioning (two-item scale) Has your physical condition or medical treatment interfered with your family life Has your physical condition or medical treatment interfered with your social activities	Social well-being (six- or seven-item scale [one optional item] I feel close to my friends I get emotional support from my family I get support from my friends My family has accepted my illness I am satisfied with family communication about my illness I feel close to my partner (or person who is my main support) I am satisfied with my sex life (optional)
Emotional	Emotional functioning (four-item scale) Did you feel tense Did you feel irritable Did you worry Did you feel depressed	Emotional well-being (six-item scale) I feel nervous I worry that my condition will get worse I worry about dying I felt sad I am satisfied with how I am coping with my illness I am losing hope in the fight against my illness
Global	Global health/QOL (two-item scale) How would you rate your overall quality of life during the past week How would you rate your overall health during the past week	Total score (27 items)

Abbreviations: QLQ-C30, Quality of Life Questionnaire Core 30; FACT-G, Functional Assessment of Cancer Therapy—General; EORTC, European Organisation for the Research and Treatment of Cancer; QOL, quality of life.

[a] Four-point scale with response categories: ''not at all,'' ''a little,'' ''quite a bit,'' and ''very much.''

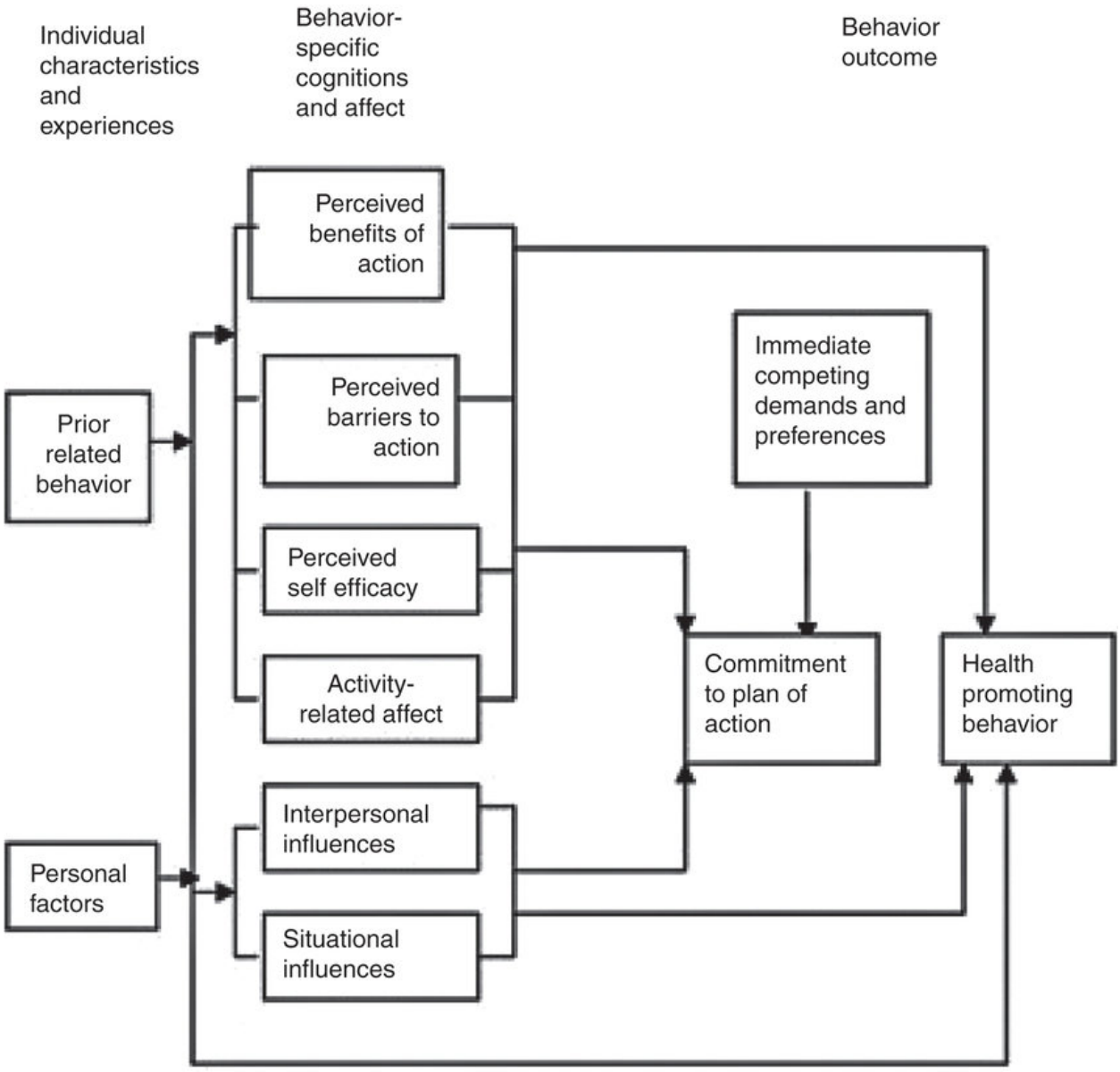
[b] Seven-point numeric rating scale, ranging from 1 (anchored with the phrase ''poor'') to 7 (''excellent'').

[c] Five-point scale with response categories: ''not at all,'' ''a little bit,'' ''somewhat,'' ''quite a bit,'' and ''very much.''

Appendix B. EORTC QLQ C-30 and FACT-G (King et al., 2014).

Appendix C

Nola Pender Health Promotion Model



Appendix C. Nola Pender's Health Promotion Model (Khoshnood et al., 2018).