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Introduction of Auricular Acupuncture

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Introduction of Auricular Acupuncture

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Abstract

The overall purpose of this quality improvement project was to assess if there was an interest to add auricular acupuncture to a substance abuse program. The two guiding questions of the Doctor of Nursing Project were (a) how can auricular acupuncture be helpful when treating patients with substance abuse in a selected organization? (b) what information is needed for both staff and patients to make an informed decision regarding auricular acupuncture? The Promoting Action on Research Implementation in Health Services (PARiHS) framework was used as the theory framework for implementation of evidence-based research into an organization. The facilitator in the PARiHS framework used the Adult Learning Theory when teaching the staff and patients about an implementation change in the selected organization. The Adult Learning Theory principles were applied during the facilitation of the presentation “Introduction of Auricular Acupuncture” to the staff and patients of the non-profit substance abuse agency located in an urban Midwestern city. The Adult Learning Theory was utilized to assess if there was an interest in implementing auricular acupuncture in the agency’s rehabilitation and detoxification programs. The outcome of the project had clarification for the DNP student and the organization that there is a significant level of interest in implementing and including auricular acupuncture in the patients’ treatment plan while the patient is going through detoxification or the rehabilitation process from illicit drugs or alcohol. Several staff members expressed interest to be trained to do the auricular acupuncture procedure. The cost of training the staff is the largest hurdle in a non-profit organization. Further investigation is needed to see if auricular acupuncture could be a billable item to insurance companies for reimbursement.

Key words: auricular acupuncture, acupuncture in substance abuse, introduction of auricular acupuncture, quality improvement project.
Acknowledgements

My son and daughter

Andrea C. Bostrom, PhD
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Introduction of Auricular Acupuncture

**Introduction and Background**

**Auricular Acupuncture Used in the Drug and Alcohol Detoxification Process**

The World Health Organization (WHO, 2017) states that there are at least 29.5 million adults that have drug dependence disorder globally. Opiate use accounted for 70% of the drug dependence world-wide. There is injection drug abuse reported in 148 countries. Alcohol abuse affects health and brings social and economic loss to the individual and society globally. The WHO (2017) states that 3.3 million deaths related to alcohol abuse were reported in 2012 globally. Alcohol misuse cost the United States 249 billion dollars in 2010. The use of alcohol and illicit drugs causes significant health and social concerns for the abuser. There are only an estimated 1.7 drug treatment beds per 100,000 people available in current rehabilitative treatment centers worldwide. Only 30% of current countries have effective medication available to treat the individual in detox centers (WHO, 2017).

Auricular acupuncture has been a standard treatment for alcohol and drug abuse for centuries in Chinese medicine. Western countries started to use it in the 1970’s in drug treatment centers (Courbasson, de Sorkin, Dullerud, & Van Wyk, 2007). Patients experience less craving, anxiety, and depression when one is detoxifying with acupuncture treatment from a drug or alcohol. Drug treatment is also associated with high relapse rates and auricular acupuncture can decrease relapse rates (Courbasson et al., 2007).

The National Acupuncture Detoxification Association (NADA) protocol targets mental health disorders such as addiction and co-occurring disorders. It is a holistic approach in which five sterile acupuncture needles are inserted just on the skin surface in specific sites on each ear. The patient is then asked to sit quietly for 30 to 45 minutes while in a group setting with soft
relaxing meditative music. Ideally, it is performed two to three times a week. Auricular acupuncture has been shown to reduce cravings and withdrawal symptoms from the drug of choice along with improved engagement and retention of the patient. It also has shown decreases in depression, anxiety, fatigue, body aches and headaches (Carter & Olshan-Perlmutter, 2014). In the United States, 500 state addiction treatment centers use the NADA protocol. Over 1,500 addiction programs use it worldwide (Carter & Olshan-Perlmutter, 2014).

Auricular acupuncture is commonly used for the patient with an addiction to drugs or alcohol to decrease cravings and reduce withdrawal symptoms during the detoxification process. Several studies have shown that auricular acupuncture decreases cravings and withdrawal symptoms from alcohol and illicit drugs during rehabilitation treatment as well (Carter, Olshan-Perlmutter, Norton, & Smith, 2011; Chang, Sommers, & Herz, 2010).

Auricular acupuncture has already been used for several decades in rehabilitation drug treatment centers. It is non-invasive, inexpensive, and safe with minimal adverse side effects (Tan, Molassiotis, Wang, & Suen, 2014). With rising costs of healthcare related to substance abuse, auricular acupuncture needs to be considered as a choice for patients in their treatment plan.

**History of Auricular Acupuncture in Substance Abuse**

Auricular acupuncture has been used in Chinese medicine for the last 2500 years. The ear is thought to be connected to 12 meridians in the body and stimulating the ear can restore balance in the body (Hou et al., 2015). In Europe in 1957, auricular acupuncture started to be used after Dr. Nogier discovered that the ear points of stimulation looked like an inverted fetus (Hou et al., 2015). In Hong Kong in 1972, auricular acupuncture was used in drug treatment programs for the first time to alleviate drug withdrawal symptoms (Brumbaugh, 1993). Dr. Wen and Dr.
Cheung in 1973, incidentally discovered after utilizing auricular acupuncture on a heroin addict during surgery that it also alleviated drug withdrawal symptoms (Brumbaugh, 1993). In the 1970’s, the Lincoln Hospital in New York started using five-point auricular acupuncture in their clinic on clients addicted to heroin and alcohol (Brumbaugh, 1993). In 1985, Dr. Smith finalized the National Acupuncture Detoxification Association (NADA) protocol. This protocol consists of 5 specific sites on the ears which reduce cravings and withdrawal symptoms when detoxifying from addictive substances (Carter & Olshan-Perlmutter, 2014; Motlagh, Ibrahim, Rashid, Seghatoleslam, & Habil, 2016).

**Literature Review/ Evidence-Based Initiative**

The purpose of the literature review was (a) to perform a literature review on auricular acupuncture’s use in substance abuse and (b) answer the question if auricular acupuncture has enough strong evidence to support its use for substance abuse.

Auricular acupuncture has been shown to reduce cravings and withdrawal symptoms for alcohol and illicit drugs when utilized as part of the plan during substance abuse treatment (Alster, 2010; Blacker, 2008; Carter et al., 2011; Courbasson et al., 2007). Auricular acupuncture has also been shown to increase retention rates and decrease readmission rates while in a substance abuse treatment program (Otto, Quinn, & Sung, 1998; Shwartz, Saitz, Mulvey, & Branningan, 1999; Washburn et al., 1993). It has a high acceptance rate when used during substance abuse treatment by patients (Kunsook, 2000). A systematic review found that there was a correlation between an individual’s expectations of auricular acupuncture and its response or effect during treatment (Prady, Burch, Vanderbloemen, Crouch, & MacPherson, 1996). The NADA protocol is considered the gold standard when using auricular acupuncture as a treatment for substance abuse (Margolin, Avants, Birch, Falk, & Kleber, 1996). There were
minimal side effects from auricular acupuncture. They were mild such as tenderness at the needle insertion site in the ear, light bleeding, dizziness, and nausea. Most of the side effects resolved quickly and were tolerated by the patient. There no adverse events that required an emergency room visit nor hospitalization (Tan et al., 2014). Please refer to the evidence table at the end of this document (Appendix A).

**Craving and Withdrawal Symptoms**

Common withdrawal symptoms from alcohol, opiates, or other illicit drugs are anxiety, depression, mood swings, decreased focus, fatigue, insomnia, racing heart rate, myalgias, tremors, sweating, nausea, diarrhea, and dizziness.

Blacker (2008) performed a clinical audit to assess the efficacy of auricular acupuncture to relieve symptoms from withdrawal from alcohol or drugs. The sample size consisted of 53 clients with substance abuse in a substance abuse treatment facility in the United Kingdom. The audit was done by four certified acupuncturists and focused on three questions: (a) is auricular acupuncture effective in the treatment of clients with substance abuse, (b) what benefits does auricular acupuncture provide in regards to symptoms associated with withdrawal from the drug of choice, and c) what could be improved when providing auricular acupuncture to the clients (Blacker, 2008). The NADA protocol was utilized when administering auricular acupuncture to the clients and they were asked to remain seated with the needles in place for 40 minutes. The average number of auricular acupuncture treatments was 15 over six months (Blacker, 2008). The outcome measure was a questionnaire that assesses the severity of each symptom pre and post auricular acupuncture treatment. The results revealed that regular auricular acupuncture significantly decreased many of the symptoms associated with withdrawal of alcohol and drugs. It is a safe and cost-effective treatment for substance abuse (Blacker,
The following effects on symptoms were reported after receiving auricular acupuncture (a) 48% of clients reported decreased levels of stress, (b) 22% reduction in mood swings, (c) 54% improvement in sleep, (d) 44% reduction in anxiety, (e) 63% increase in appetite, (f) 19% reduction in depressive thoughts, (g) 18% reduction in panic attacks and anxiety, (h) 15% reduction in body aches associated with withdrawal, (i) no improvement in paranoia and obsessive thoughts, (h) subjective improvement with energy level with some clients but no clear pattern, and (j) no reduction in cravings of their drug of choice (Blacker, 2008). A limitation of the study was that it was a clinical audit and not a randomized study and the sample size was small (Blacker, 2008).

Courbasson et al. (2007) conducted an exploratory study that administered auricular acupuncture on 185 women with substance abuse, anxiety, and depression in a 21-day outpatient structured psychotherapy-based treatment program. Two aims of the study were: (a) to assess if the addition of auricular acupuncture as an adjunctive therapy in a substance abuse program for women would be therapeutic compared to traditional treatment, and (b) would there be a reduction in the overall dropout rate from the program (Courbasson et al., 2007). Trained acupuncturists performed auricular acupuncture three mornings per week for 45-minute sessions to the women in the treatment plus acupuncture group (n=84). The acupuncture sessions were done in groups while sitting in chairs in a quiet setting. Women in both treatment groups completed the Beck Depression Inventory, Beck Anxiety Inventory, Reflective Activity Scale, and the Drug-Taking Confidence Questionnaire. Data were collected pre-treatment and post-treatment at one month and at three months. They utilized repeated measures analysis of variance (Courbasson et al., 2007). They found that the 84 women in the acupuncture group plus the treatment group were less depressed, less anxious, and had decreased cravings for their drug of
choice (p= 0.04) when compared to 101 women in the control group. Women in the treatment group and the control groups were not on anti-depressants (Courbasson et al., 2007). A limitation of the study was that there was poor follow up of the clients at the three-month post treatment data collection point.

Carter et al. (2011) conducted a nonrandomized prospective study at a 28-day substance abuse treatment program on 167 clients with substance abuse over a three-month period. Clients had the choice of receiving conventional substance abuse treatment (n=64) or conventional treatment plus National Acupuncture Detoxification Association (NADA) acupuncture (n=103). Conventional treatment consisted of an intake assessment, physical exam, nursing care, administration of prescription medication, referral to urgent or emergency treatment if indicated, referral for psychiatric services, educational groups, individual and group counseling, 12 Step meetings, dual diagnosis group, aftercare planning and referral, and daily study hall. The acupuncture technique followed the NADA protocol by using the five-point ear acupuncture method while sitting in a large group of up to 20 participants. The conventional treatment group and the conventional treatment plus the NADA acupuncture group had sessions twice a week at the same time of the day conducted simultaneously (Carter et al., 2011). The acupuncture treatments were performed by acupuncture detoxification specialists who were certified by NADA. Outcome measures were measured by a change in symptom severity from the client’s baseline on a 10-point Likert scale. The following symptoms were assessed and scored: (a) cravings, (b) depression, (c) anxiety, (d) anger, (e) body aches and headaches, (f) concentration, and (g) decreased energy (Carter et al., 2011). The t-test was used for data analysis. The results revealed that there was a significant (p=0.0001) decrease in cravings, depression, anxiety, anger, myalgias, and headaches in those who received auricular
acupuncture while in treatment for substance abuse. They also found that they had increased concentration and energy levels. A limitation of the study was that it was neither randomized nor blinded and subjects were self-selected.

Alster (2010) conducted a qualitative case study to evaluate the use of auricular acupuncture to assist clients in the detoxification process from alcohol, illicit drugs, and tobacco use. The NADA auricular acupuncture protocol was utilized in the study on each client three times a week for one year in an outpatient substance abuse treatment center. However, the clients averaged acupuncture one to three times a week for a total of three to twelve sessions (Alster, 2010). The outcome measure was an interview/survey of both clients (n=100) and staff (n=not listed) in regard to their experience of auricular acupuncture (Alster, 2010). The interviews inquired about benefits versus drawbacks of the auricular acupuncture used during substance abuse treatment (Alster, 2010). The clients’ perceived benefits were: (a) feeling of contentment, (b) enjoyment, (c) relaxation, (d) reduced cravings, (e) reduced anxiety, and (f) improved mood. The staff’s perceived benefits were: (a) calm environment, and (b) an opportunity to introduce mindfulness. The drawbacks for both clients and staff were: (a) clients falling asleep, (b) fitting time in the busy schedule for acupuncture and, (c) needle phobia (Alster, 2010). Limitations of the study: (a) the number of staff members who participated were not listed in the study, and (b) the author states that they needed to keep better records for the number of participants attending the acupuncture sessions (Alster, 2010).

In contrast, Bearn et al. (2008) conducted a randomized controlled trial to evaluate if auricular acupuncture would lead to reduced severity of opiate withdrawal symptoms and cravings when used as an adjunct therapy to Methadone detoxification. The sample consisted of 82 opiate dependent people in an inpatient detoxification facility. They were randomized to the
auricular acupuncture group or the placebo group (Bearn et al., 2008). The outcomes were daily measures of withdrawal severity and cravings using the Short Opiate Withdrawal Scale and an eight-item craving questionnaire. A t-test, logistic regression analysis and odds ratio were used for the data analysis (Bearn et al., 2008). The results revealed there was no difference over 14 days in mean craving scores between the auricular acupuncture group and the placebo group (t59=1.08, p=2.83; effect size, d=-0.28 (-0.79, 0.23). The mean craving score for the acupuncture clients was 14.6 (SD=5.6) and mean for the placebo clients was 13.1 (SD=4.6) (Bearn et al., 2008). There was no significant difference in severity of opiate withdrawal symptoms scores between the acupuncture group and the placebo group studied over 14 days (Bearn et al., 2008). The limitations of the study were that the authors only evaluated withdrawal symptoms over the first 14 days of treatment without long term follow up. The authors felt that the outpatient auricular acupuncture therapy may have revealed different results if followed for more than 14 days (Bearn et al., 2008).

Black, Carey, Webber, Neish, and Gilbert (2011) conducted a randomized controlled trial to evaluate if auricular acupuncture reduces anxiety and withdrawal symptoms from a drug of choice. The sample had 101 clients recruited from an addiction treatment service. They were randomized into three groups (a) NADA protocol auricular acupuncture group, (b) sham acupuncture (fake) group, and (c) relaxation group. The primary outcome measures were the Spielberger State-Trait anxiety test and the Anxiety Inventory. Secondary outcome measures were changes in the heart rate and blood pressure before and after treatment (Black et al., 2011). They attended treatment in the randomized groups for three days. The Chi-square, Fisher’s exact test, one-way analysis of variance, and mixed model analysis were used for data analysis (Black et al., 2011). The results revealed that there were no significant differences in the groups
regarding a reduction in anxiety (p>0.38). There was a significant decrease in anxiety scores (7.7 points) after treatment (t=5.96, p<0.001, 95% CI=5.2 -10.2) but across all groups not just the auricular acupuncture group. There was an insignificant decrease in both systolic and diastolic blood pressure of 1.9 mmHg and 1 mmHg, respectively after treatment, again across all groups. There was no difference between the three groups regarding a decrease in anxiety (p>0.21) One limitation of the study was that it had a small sample size.

**Effect on Retention and Readmission Rates**

The retention and readmission rates must be taken into consideration in substance abuse treatment programs. Ideally, patients would stay in treatment for the granted amount of time to withdraw and recover from their drug of choice. Unfortunately, many patients leave early from their treatment program and relapse. This frequently results in readmission, which requires patient to restart the treatment program again.

The Washburn et al. (1993) study was a single blind clinical trial with 100 intravenous heroin users in a substance treatment facility in the San Francisco area. Participants had to meet two selection criteria: a history of heroin intravenous use with evidence of recent track marks on their body and not currently enrolled in a methadone detoxification program. Clients were excluded if they were pregnant or if they were on probation or parole. The authors explored if auricular acupuncture influenced treatment retention among opiate users when compared to placebo acupuncture treatment. Subjects were randomly assigned to either the acupuncture group or the sham (fake) acupuncture group. Fifty-five clients received auricular acupuncture and 45 received the sham (fake) treatment. Sham acupuncture is used as a control in scientific studies to test the efficiency of acupuncture. The needles are inserted in non-traditional sites. The approach is not real but “sham.” The sham acupuncture needles are usually blunt tipped needles and do
not penetrate the skin as well as traditional acupuncture needles. Measured outcomes included: attendance, median number of days on treatment, median last day (21 days of treatment), number of clients staying in treatment beyond 21 days, and urine drug sample. They performed a two-way ANOVA and found those clients in the auricular acupuncture group attended more clinic days \( (p < 0.05) \) and stayed in treatment longer \( (p < 0.0001) \) than the placebo acupuncture group. Limitations in the study were that there was 25% drop out rate in both groups after two weeks and no long term follow up after the 21-day substance treatment program (Washburn et al., 1993).

In another study, Otto, Quinn, and Sung (1998) conducted a randomized controlled single blind study to evaluate if auricular acupuncture decreases cocaine cravings, increases retention time in treatment, and prevents relapse. The sample size consisted of 36 cocaine dependent veterans on a substance abuse unit. They were randomly divided into a treatment group of 25 patients and a control group of 11 patients. Auricular acupuncture treatments were given in three phases. Phase one consisted of auricular acupuncture treatments five days a week for 30-45 minutes each treatment. Phase two consisted of treatments three times a week for two weeks for the second part of inpatient treatment. Phase three treatments were given once a week for eight weeks after discharge. A team of blind raters assessed the patients for depression, anxiety, cocaine cravings, and general well-being using the SCL-90 self-assessment scale, the Hamilton Depression and Anxiety scales, and the Halikas Drug Impairment Rating Scale for Cocaine. The urine drug screens were collected semi-weekly on each patient (Otto et al., 1998). No incentives were offered to the patients because it was an unfunded study. The t-test statistical analysis was utilized with a \( p \)-value of 0.05 to be statistically significant. The study failed to show a difference between the acupuncture group and the control group \( (p > 0.05) \). However, the patients in the
treatment arm of the study remained in treatment longer than those who did not receive acupuncture (p<0.05) (Otto et al., 1998). The limitations of the study were that the sample size was small and there was a high dropout rate of patients towards the end of the study (Otto et al., 1998).

In another early study, Shwartz, Saitz, Mulvey, and Brannigan (1999) conducted a retro-prospective cohort study of 6907 clients in four free-standing detoxification programs and of 1,104 from an acupuncture detoxification program for substance abuse in Boston between January, 1993 and September, 1994. The purpose of the study was to compare baseline characteristics and detoxification readmission rates of clients treated at the outpatient acupuncture programs and short-term residential programs for substance abuse. The measured outcomes: readmission rates measured over six months starting with the date of the admission to the program. The variables recorded at admission were used as covariates in the multivariate models: gender, race/ethnicity, education, employment status, yearly income, insurance, living situation (with child, with other adult no child, alone), residence (street or shelter, institution, boarding house, private residence), prior mental health treatment (yes or no), primary drug of choice (alcohol, cocaine, crack, heroin, or marijuana), and prior substance abuse history. They performed chi-square tests and multivariate logistic regression. They found that acupuncture clients were less likely to be readmitted to detox within six months (OR 0.71, 95% confidence ratio, CI 0.53-0.95) The researchers analyzed a subsample of clients with similar baseline characteristics and found similar results (OR 0.61, 95% CI 0.39-0.94). Therefore, acupuncture programs are a useful component of a substance abuse treatment program. A limitation of the study was that the clients were assigned to the acupuncture group by preference.

**Experience, Expectations, and Beliefs of Auricular Acupuncture**
Auricular acupuncture has a high acceptance rate as a treatment method for substance abuse (Kunsook, 2000). The following studies discuss the experience, expectations, and beliefs of the benefits when receiving auricular acupuncture during treatment for substance abuse.

Prady, Burch, Vanderbloemen, Crouch, and MacPherson (1996) conducted a systematic review to explore if there is correlation between a person’s expectations of auricular acupuncture and its response. They also evaluated the effects of the outcomes of auricular acupuncture. They reviewed 58 randomized controlled trials and found that there is some evidence that the person’s expectation of the auricular acupuncture interacts with the response and outcome of the treatment (Prady et al., 1996). There was a wide variety of measurement tools used. There was evidence that some of the response scales influenced the measurement of expectations which was a limitation in the systematic review (Prady et al., 1996). They suggested that further research be done on response expectancies of auricular acupuncture when using a measurement tool such as the Acupuncture Expectancy Scale (Prady et al., 1996).

Kunsook (2000) conducted a qualitative study using Giorgi’s phenomenological model to explore client’s interpretation of experience while receiving acupuncture during substance abuse treatment. Only eight clients with a current diagnosis of substance abuse participated in the study. Participants volunteered to participate in the study. The main exclusion was that they had not received acupuncture in the past (Kunsook, 2000). They were admitted to an inpatient substance abuse program that offered acupuncture therapy as part of their treatment plan along with the traditional 12 step program (Kunsook, 2000). Acupuncture was offered once a week in a group setting. The outcomes were measured using interviews, field notes, and data from medical records. The interviews lasted 45-90 minutes allowing the participants to describe their experience when receiving acupuncture during substance abuse treatment (Kunsook, 2000). The
Giorgi modification method was utilized for data analysis (Kunsook, 2000). The findings revealed seven major themes from the interviews: anticipation of pain from the acupuncture needle, apprehension of participating in a new treatment for substance abuse, elevation of mood, the experience was indescribable, physical sensation in the body, relaxation, and improved sleep patterns (Kunsook, 2000). The results revealed a positive acceptance of the acupuncture treatment method. Emotional and physical relaxation was the most common theme reported. A positive mood elevation experience with the acupuncture was reported as a natural feeling. Seven out of eight participants reported higher quality of sleep with fewer insomnia symptoms (Kunsook, 2000). The researchers found the themes to be intertwined (Kunsook, 2000). A large limitation of the study was that there were only eight participants and replication of this study with a larger sample is recommended (Kunsook, 2000).

Lua and Talib (2013) conducted a prospective, longitudinal, open-labeled and randomized study with one intervention group and one control group with a total of 69 male clients in a Methadone clinic. The purpose was to compare the clinical outcomes of methadone alone (n=40) to methadone and auricular acupuncture (n=29), evaluate health related quality of life (HRQoL) pre and post intervention, and determine client’s acceptance of auricular acupuncture. They also assessed if there was a reduction in cigarette consumption among the two groups. The outcome measures were questionnaires that the researchers developed and WHO Quality of Life-BREF (WHOQOL-BREF). The Mann-Whitney U test and Wilcoxon Signed Rank test for within group analysis were used for data analysis (Lua & Taliba, 2013). The results revealed a decrease in number of cigarettes smoked and reduced methadone dose in both groups post-intervention (p<0.05) but no difference of relapse rate among the groups (p>0.05). None of the HRQol parameters (health related quality) in the Methadone only group did not change over time but in
the Methadone plus auricular acupuncture the psychological domain improved (small to medium effect size 0.41 to 0.66). A total of 93% of the Methadone plus auricular acupuncture stated that the auricular acupuncture improved their overall health and condition during substance abuse treatment. There was a 95% acceptance rate for auricular acupuncture and clients would recommend it for substance abuse treatment (Lua & Talib, 2013). The limitations in the study were that they felt it was unethical to have an auricular acupuncture alone and to withhold Methadone treatment, there was a high dropout rate and small sample size.

Lua, Talib, and Ismail (2013) conducted a randomized controlled trial to compare the clinical outcomes of Methadone alone to Methadone and auricular acupuncture and the client’s satisfaction and coping mechanisms pre and post treatment. The researchers used the same sample (69 men) as the prior study (Lua & Talib, 2013) from a Methadone clinic in Malaysia. They were required to be dependent on opiates, age 18 years old or older, and speak and write the Malay language. They were excluded from the study if they exhibited violent behavior, suicidal thoughts, or had any psychotic diagnosis. They were randomized to receive either Methadone maintenance therapy alone (n=40) or Methadone maintenance therapy plus auricular acupuncture per the NADA protocol (Lua et al., 2013). The outcome measures utilized the Patient Satisfaction with Pharmaceutical Care Questionnaire using the Likert scale (1-5) and the Malay Brief COPE-27 instrument. The Malay Brief COPE-27 instrument is divided into two themes: (a) problem focused coping that referred to coping strategies that were used for problem solving, ans (b) emotional coping mechanisms such as humor, reframing, religion, and support from others (Lua et al., 2013). The Shapiro-Wilk test, Mann-Whitney U test, and Wilcoxon Signed-Rank test were utilized for data analysis. Prior to the study there were no significant differences in the patient satisfaction scores when the two groups were compared
(p>0.05). Post-intervention both groups again did not differ in their satisfaction scores. However, coping strategies were more significant and more frequent regarding their substance use in the Methadone Maintenance Therapy and auricular acupuncture group when compared to the Methadone Maintenance Therapy group (p<0.05). At two months post-intervention there was no difference between the two groups regarding patient satisfaction and coping strategies (Lua et al., 2013). The limitations of the study were (a) all male sample, (b) small sample, and (c) high dropout rate although adequate for analysis.

**Assessing Potential Benefits of Auricular Acupuncture**

LaPagila, Bryant, and Serafini (2016) performed a cross sectional mixed methods study to evaluate if auricular acupuncture decreases the cravings and amount of crack and cocaine used by clients that have dependence. The NADA protocol for auricular acupuncture was utilized. The sample size consisted of 55 clients recruited from two community mental health centers. They were required to attend at least one auricular acupuncture session. Twenty-five percent spoke only Spanish (LaPagilia et al., 2016). The outcome measure was a survey using the Likert scale (in English or Spanish) that contained ten items (five quantitative and five qualitative): (a) identification by code, (b) number of acupuncture sessions completed, (c) enjoyable, (d) beneficial, (e) likelihood of attending future acupuncture sessions, (f) benefits perceived during the acupuncture, (g) benefits perceived after the acupuncture, (h) how it affected their relationship with the providers and staff, (i) did it help them reach their treatment goals and (j) did they have any concerns about the acupuncture (LaPagilia et al., 2016). The quantitative data were analyzed using the t-test and the qualitative data were assessed by critiquing the content and themes and coding them. The results revealed, per a five-point Likert scale, that the participants found the auricular acupuncture beneficial (mean 4.35; standard deviation 0.78;
Data from the qualitative questions were analyzed and revealed two themes (a) relaxation and (b) improved focus and concentration (LaPaglia et al., 2016). The limitations of the study were (a) there was no long-term follow-up with clients after discharge from the facility and (b) there were no comparison of auricular acupuncture and to traditional psychotherapy (Lapagilia et al., 2016).

NADA Protocol

The NADA Protocol is the gold standard to use when performing auricular acupuncture on an individual. Margolin et al. (1996) compared an electric device used for auricular acupuncture to the standard NADA protocol on 34 patients with a cocaine addiction. The NADA Protocol utilized by a trained individual was recommended instead of an electric acupuncture device (p<0.0001).

Ahlberg, Skarberg, Brus, and Kjellin (2016) conducted a randomized controlled trial to evaluate short and long-term effects of auricular acupuncture on anxiety, sleep, drug use and addiction treatment utilization in clients with substance abuse. The sample was 280 adults with substance abuse were randomized to (a) the NADA auricular acupuncture group (n=80), (b) the acupuncture group local protocol (n=80), and (c) the relaxation group (n=120). The outcome measures were the Beck Anxiety Inventory (BAI), and the Insomnia Severity Index (ISI) (Ahlberg et al., 2016). The Chi-square, analysis of variance, Kruskal Wallis, repeated measures of analysis of variance, eta square, and Wilcoxon signed ranks test were used for data analysis (Ahlberg et al., 2016). The results showed no significant difference among all three groups in the BAI and ISI (p=0.569). However, all three groups improved on scores significantly on the BAI and ISI (p<0.001). There were no differences between the two acupuncture groups and the control group (relaxation group) regarding sleep, anxiety, or drug use (p>0.05). A limitation of
the study was that they had to stop recruiting at 280 participants due to funding. They desired a larger sample (Ahlberg et al., 2016).

**Adverse Effects of the Auricular Acupuncture**

Potential adverse events or side effects of auricular acupuncture are often a concern raised by both providers and patients. Tan et al. (2014) conducted a systematic review of adverse side effects of auricular acupuncture therapy. The most frequently reported side effects were tenderness or pain at the needle insertion site, dizziness, local discomfort, minor bleeding, and nausea. Most side effects were mild, short-lived, and tolerable by the patient. No adverse events that required either an emergency room visit or hospitalization were found in the systematic review. Therefore, auricular acupuncture is relatively safe to use with rare adverse events and minimal side effects.

The research in this literature review does not reveal strong evidence that auricular acupuncture can be effective in the treatment of substance abuse. Many studies had small sample sizes and high dropout rates. However, the evidence did reveal that there is a high acceptance rate of auricular acupuncture, patients stayed in substance abuse treatment longer, and it was safe with rare adverse and minimal mild side effects. Further studies with larger sample sizes and higher quality methodology are warranted to offer auricular acupuncture as a strong evidence-based treatment in substance abuse treatment facilities.

The literature also offers guidance for the best methodology for delivering auricular acupuncture. Although it can be provided on an individual basis, the procedure can be done in a group setting to increase effectiveness of the intervention and cost efficiency. The room should have a pleasant ambience with low lighting, comfortable seating, comfortable temperature, quiet music, and little risk for distractions. Acupuncture needles should be placed following the
NADA protocol by a certified acupuncturist. A time period from 30-45 minutes should be available for the needles to stay in place. Optimally, two to three sessions per week for at least four to six weeks should be offered.

**Conceptual Models**

**Promoting Action on Research Implementation in Health Services (PARiHS)**

The Promoting Action on Research Implementation in Health Services (PARiHS) framework is often utilized when implementing research into practice in an organization (Kitson et al., 2008; Rycroft-Malone, 2004). The main components of the PARIHS framework are evidence, context, and facilitation. A successful implementation of research into practice in an organization is dependent on those three components (Kitson et al., 2008; Rycroft-Malone, 2004). This can be visualized in the following equation:

\[
SI = f(E, C, F),
\]

where

\[
SI = \text{successful implantation}, \quad f = \text{function of}, \quad E = \text{evidence}, \quad C = \text{context}, \quad F = \text{facilitation}
\]

The evidence consists of (a) translated research that is easily understood, (b) practitioner expertise and experiences, (c) groups and communities who need to be included in the decision making, and (d) local context and environment along with the organizational culture. The strength of the evidence is crucial for the implementation plan to be successful.

The context is the setting or environment in which the change is to be implemented. Important factors that influence the context are (a) understanding the present organizational culture, (b) current leadership roles, (c) the organization’s approach to evaluation, (d) relevance of the proposed change to the organization, (e) the implemented change is a good fit to the organizational structure and current procedures, (f) there are adequate resources that would be
allocated for the proposed change, and (g) a multi-disciplinary focus during implementation of the change (Kitson et al., 2008; Rycroft-Malone, 2004).

Facilitation is described as the support needed to facilitate changes in attitudes, practice, and current thinking. A facilitator is a person that helps others change their current practice and helps achieve the desired goal or outcome (Kitson et al., 2008; Rycroft-Malone, 2004). The facilitator is deemed to have the skills, personal attributes, and knowledge base to assist with the change of practice. The facilitator empowers and supports others during an implementation change in an organization (Kitson et al., 2008; Rycroft-Malone, 2004).

The PARiHS framework was developed to assist in the change process when implementing research into actual practice. The three main elements of the framework are evidence, context, and facilitation as described previously (Kitson et al., 2008; Rycroft-Malone, 2004). There are sub-elements of each main element. Evidence consists of research evidence, clinical experience, patient experience, and local data or information. Context consists of culture, leadership, and evaluation. Facilitation consists of purpose, role, skills, and attributes. The elements are rated on a scale of high to low. The higher the rating the more successful the implementation will be in theory (Kitson et al., 2008; Rycroft-Malone, 2004). Therefore, when the evidence is strong, there is strong leadership, the culture is accepting of change, and there is an appropriate evaluation system, the implementation of a change is likely to be more successful (Kitson et al., 2008; Rycroft-Malone, 2004).

In regard to this DNP project, the evidence is on the weaker side due to small sample sizes and high drop-out rates. The context relates to the organization in which the project took place. The organization was conducive and open to holistic approaches to treat substance abuse. The facilitator was the DNP student who provided information about auricular acupuncture
through an educational presentation to patients and staff. The facilitator assessed if there was an interest to add auricular acupuncture to the patients’ treatment plan in the future.

**Adult Learning Theory**

Andragogy is the “teaching of adults” versus pedagogy which is “teaching of children.” The theory states that adults learn differently than children (Welty, 2010). The adult learning principles are (a) the goal is to enable growth and development that impact the professional, social, and political facets of adult learners, (b) an adult perspective is to be used when formulating teaching plans and presentations, (c) adults are self-directed, (d) adults draw from life experiences, (e) social roles affect the adult’s readiness to learn, (f) adults are more problem-centered than subject-centered, (g) adults are internally motivated to learn, and (h) adults need to know the relevance of teaching material before it is taught (Finn, 2011). The adults’ life experiences and their interests motivate them to learn (Finn, 2011). As the adult matures the readiness and self-direction to learn increases (Welty, 2010). Life experiences are the base for the adult learner. One relates to past experiences when learning new material. It is also important to consider the environment for successful learning such as room size, temperature, lighting, acoustics, seating arrangements, and access to appropriate technology (Finn, 2011).

The facilitator in the PARiHS framework used the Adult Learning Theory when teaching the staff and patients about an implementation change in the selected organization (Rycroft-Malone, 2004). The Adult Learning Theory principles were applied during the facilitation of the presentation “Introduction of Auricular Acupuncture” to the staff and patients of the non-profit substance abuse agency in the urban Midwestern city. The Adult Learning Theory was utilized to assess if there was an interest in implementing auricular acupuncture within the agency’s rehabilitation and detoxification programs. An education hand-out (Appendix B) was presented
by the facilitator to both staff and patients. A pre-test and a post-test (see Appendix C) was given to assess if the presentation increased their knowledge about auricular acupuncture and if there was an interest to add an auricular acupuncture program.

**Problem Statement and Purpose**

The guiding questions of this Doctor of Nursing Practice (DNP) Project were (a) how can auricular acupuncture be helpful when treating patients with substance abuse? (b) what information is needed for both staff and patients to make an informed decision regarding auricular acupuncture? An educational presentation was given to 25 patients and 25 staff members. The outcome of the project informed the DNP student and the organization of what level of interest in implementing and including auricular acupuncture in the patients’ treatment plan while they are going through the detoxification or rehabilitation process from illicit drugs or alcohol.

**Description and Analysis of the Organization**

An organizational assessment is a comprehensive method of assessing an organization for both strengths and weaknesses. It is an evaluation of the organization as an open system and how it interacts with other systems (Levinson, 2002). It is a systematic gathering of information for the sole purpose of organizational change (Levinson, 2002). The Open Systems Theory and Tool was utilized in a non-profit substance abuse facility to ask the following two questions: (a) how can auricular acupuncture be helpful when treating patients with substance abuse? (b) what information is needed for both staff and patients to make an informed decision regarding auricular acupuncture?

**Open Systems Theory and Tool**
An organization is a whole system of interrelated sub-systems that are interdependent while being part of a larger system (Levinson, 2002). The organization on a whole depends on its sub-systems to support it. The organization is thought of as an organism that requires three main criteria to survive a) among its internal sub-systems, b) between itself as a system and the other system, and c) between itself and the larger systems (Levinson, 2002). The sub-systems of the organization have different theories of working, different education, past experiences, and different personalities (Levinson, 2002). The differences among the groups cause different styles of functioning within the groups and each group has its own process to make it through the workday. The process is considered a system which contains interrelated steps, functions, and activities that have an end outcome (Levinson, 2002). The balance of the organization is achieved with healthy boundaries, work-life balance of the employees, open communication, rewarding the members, and proper adjustments in a timely manner when change occurs to the workflow systems (Levinson, 2002). To maintain equilibrium or balance, the organization needs to prevent a decline or collapse of the sub-systems. Therefore, adaptation, discord, or imbalance can be caused by sub-systems that do not function well together as a team and the environment that they work in changes so rapidly that they can cannot adapt and remain in equilibrium (Levinson, 2002). In the Open Systems Theory, each organization and their sub-systems function uniquely and rely on each other to maintain balance (Levinson, 2002).

The organizational assessment tool (Appendix D) consists of the three components: (a) The organizational background includes key identifying information and historical data, (b) A description and analysis of the organization includes the formal organizational chart, the building and equipment, policies and procedures, timing and rhythms of the organization, communication systems, management of the information systems, key stakeholders, and attitudes and
relationships. (c) The organizational assessment plan includes the analysis of the assessment data, SWOT analysis, and recommendations with a problem statement and plan (Levinson, 2002). The consultant performing the organizational assessment must be honest, respect others, and have integrity. A system-oriented assessment requires (a) an organization to attempt to maintain equilibrium when adapting to internal and external stimuli or events, and (b) the consultant to remain outside the system to keep one’s perspective and professional boundaries.

The goals of the consultant for this organizational assessment are (a) how can auricular acupuncture be helpful when treating patients with substance abuse? (b) what information is needed for both staff and patients to make an informed decision? The consultant should avoid any bias or transference when doing the organizational assessment (Levinson, 2002).

**Identifying Information and Historical Data**

The substance abuse treatment facility is located in a midsize Midwestern city providing treatment of substance abuse disorders since 1973. It is a Christian based agency with the mission to empower people to overcome addictions and reconnect with life. They have 17 sub-acute medical detoxification beds, 28 short-term residential treatment beds, and outpatient group/individual therapy for all substance abuse disorders. This past year they have started an outpatient Suboxone Clinic for opiate abuse addiction disorders. The average stay for medical detoxification is three to five days. The average stay for short-term residential treatment varies from five to thirty days. The agency serves approximately 2000 people per year. The program is accredited by the Joint Commission and licensed by the State of Michigan.

**Formal Organization**

A formal organizational chart of the non-profit substance abuse facility is in Appendix E.
A total of between 31 to 41 staff, depending on the number of direct care staff, support administrative and clinic functions of the agency.

**Building and Equipment**

The entrance of the building has a small public parking lot with both steps and a handicap ramp that leads to the entrance. There are often old cigarettes on the sidewalk and in the corner of the steps. It is a non-smoking facility. The second door is locked and requires the staff to keycard the patients through. The medical detoxification unit is set up like a ward. The female unit is to the left of the building and the male unit is to the right. The nurses’ station is in the front of both units. It is small with one small window facing the outside. The nurses chart on both desktop and laptop computers. They have traditional medication carts, that one would see in long term care facilities, that are used to pass medications. The therapists’ offices are in a nicely remodeled area with cubicle style office setting with adequate computer technology. The Suboxone Clinic is in a closed private remodeled room in the front of the building by the therapist’s offices. The equipment is not new but seems to be adequate for patient care and documentation. The building does have occasional issues such as water leaks, and cooling and heating problems which are fixed in a timely manner. The building is over 40 years old.

**Financial Structure**

The agency is a non-profit religious-based organization. They participate with most insurance companies and most county/state funded programs such as Network 180. They also take self-pay patients. They rely on the traditional fundraising from the famous Salvation Army “ring of the bell with the red kettle during the Christmas season” and, of course, donations.

Auricular acupuncture is traditionally billed to insurance at $60.00 per person per session. It is performed for several patients at a time in a quiet group setting with soothing music for 30-
45 minutes two to three times a week. The non-profit rehabilitation would most likely include the cost in the patient’s treatment plan at no cost. Yoga is currently included at no cost in the treatment plans. Not all patients have insurance at this rehabilitation facility. It would not be ethical to offer auricular acupuncture for those only with insurance.

**Human Resources**

The team consists of a management team, a medical director, nurse practitioners, physician assistants, nursing staff, therapists, and treatment coordinators (see Appendix E for the number of employees in each job category). The management team consists of an executive who is the business director. There is one quality and compliance manager. There is one finance and billing manager and a coder/biller. They are available if patients or staff have questions.

The medical director provides admission and discharge orders along with detoxification treatment plans according to the patient’s drug of choice. He also runs a group on addiction for the patients one day a week. He runs the Suboxone Clinics. The treatment plan for the patients with substance abuse is initiated by the therapists and is approved for funding by the Community Mental Health Organization of the county in which they reside. Patients with substance abuse often have a diagnosis of depression, anxiety, bipolar I and II, along with personality disorders. A psychiatric evaluation called a “co-occurring” is often done when the patient is in the residential unit. Pertinent psychiatric medications are initiated patients according to their diagnosis. Patients then follow up in four to six weeks with psychiatry or their primary care provider for medication adjustments and monitoring.

There is one nurse practitioner and one physician assistant. These providers perform history and physical examinations and manage minor daily medical patient concerns. The
providers also perform a psychiatric evaluation for patients called a “co-occurring” as described earlier.

The nursing staff ranges from five to nine nurses. They are licensed practical nurses (LPNs). They work 12-hour day and night shifts including holidays and weekends. They often pick up extra shifts to cover the schedule. They perform nursing intake assessments when patients arrive and pass medications to patients in the morning, afternoon, and before bed. Patients discuss any ongoing medical needs with them. They in turn address these issues with the providers. There is a nursing clinical supervisor who manages the schedule and everyday clinical issues while providing nursing care. The nursing clinical supervisor is a licensed practical nurse (LPN). There is also a nursing manager who manages the staff, every day clinical issues and disciplinary issues with the nursing staff. The nursing manager is a registered nurse (RN).

There are five to eight therapists and one intake coordinator. The therapists are social workers by education. There is one therapists’ supervisor. The therapists perform an intake assessment and treatment plan for the patient within the first 48 hours of admission. They coordinate outpatient therapy or 30-90-day rehabilitation programs for the patient. They run group therapy. They assist the patient in obtaining Medicaid insurance during the admission if they are uninsured. They work closely with the nursing staff to achieve the established treatment plan. They work during the day from 8 am to 6 pm including weekends. There is a therapist that is on call for 24 hours/day.

There are eight to eleven treatment coordinators and one treatment coordinator supervisor. The treatment coordinators work closely with the patients to help them get to group therapy, activities, and meals. They enforce proper boundaries amongst the patients and appropriate behavior. They run some group therapy sessions. Some of the treatment coordinators
have abused drugs or alcohol and are now recovered, while others are medical social work or psychology college students.

The varying numbers of staff are due to the high turnover of nurses and therapists. The reasons for the high turnover rate over the last year include: the hours are long, the environment can be demanding and stressful, and at times the patients can be a difficult and challenging patient population. The nursing staff have the highest turnover rate. The therapist group has a lower turnover rate than nursing. The current therapist group has been consistent. There is also very little turnover in the treatment coordinator group.

There is disciplinary action for those with frequent tardiness and absences. The staff do receive a full orientation before they are on their own with a mentor or preceptor. The organization is non-union. Full time employees receive medical insurance and paid sick time and vacation time off. There is an annual review and a raise in compensation. As a reminder, this is a non-profit agency so the pay and raises cannot be compared to a large hospital setting.

**Policies and Procedures**

Policies and procedures are written by the executive director, the medical director, the business director, and the quality and compliance manager. They are updated as needed and have an annual review. If there is change in the policies or procedures they are brought to the director, business manager, medical director, and the quality and compliance manager.

**Timing and Rhythms of the Organization**

The timing and rhythms of the organization can be described as both constant and erratic. The admissions are usually scheduled throughout the day and then urgently throughout the night and early morning hours. The nurses first will do the intake for the inpatient, the medical staff perform a history and physical, and then the therapist meets with the patient. The patients are
sometimes early, on time, or late for their intake assessment which then puts strain on the staff. If the patient’s blood alcohol level is 0.35 or above (per breathalyzer) on arrival to the intake, then the patient needs to be transferred to the emergency room for observation and intravenous fluids. This places a strain on the nurses since they coordinate care to get the patient to the emergency room and organize transportation per ambulance. It is difficult to gather the nurses, therapists and staff in a group setting due to the busy and erratic environment.

A typical day for patients varies if they are on the detoxification unit versus the rehabilitation unit. The patients in the detoxification unit are having withdrawal symptoms from their drug of choice and often are resting in bed except for meals. They can go to group therapy if they are feeling well enough. The medical director determines the detoxification protocol upon admission for the patients. Patients can receive medication for their withdrawal symptoms per their treatment plan. The LPN uses the Clinical Opiate Withdrawal Scale (COWS scale) or the Clinical Institute Withdrawal Assessment for Alcohol (CIWA) protocol and administers medication according to the scores.

The patients in the rehabilitation unit are up early for breakfast at 7 am. Group therapy starts after breakfast and goes throughout the day with different themes until dinner. They have a lunch break. They do have some free time to play games, read, and do adult coloring. There is a phone available in the rehabilitation unit for patients to call family members and reschedule appointments.

Since January of 2018 the agency became a non-smoking facility. Most of the patients smoke cigarettes. Prior to January of 2018, the patients were allowed three to four smoke breaks outside with a staff member. The patients are now given nicotine patches and the dose is given according to their daily use. The patient schedule is now easier to coordinate since the change
occurred. However, the patients prefer the smoking breaks that existed in the past. On Sunday mornings, the staff take patients to church if the patient desires to attend.

**Communication Systems**

Communication systems are in the form of memos, staff meetings, and face-to-face. The organization is small, so face-to-face communication is realistic and seems to be the most effective. The medical director often uses telephone communication with the nurses after hours as he is on call for urgent issues. He provides the orders for admissions during the night. There is an email system used for communication but not utilized on regular basis.

**Management Information Systems**

The organization utilizes both an electronic medical record and paper chart. The nurse intake assessment, history and physical, and therapy notes are done in the electronic medical record. There is someone available from informational technology (IT) during the day and on-call if the system is down and one is not able to use it for charting. The information does not interlink well with the different disciplines. The patient often answers the same questions asked by each discipline during admission. The current technology does not support Power Point for a group educational presentation.

**Attitudes and Relationships**

The staff practice patient-centered care as a team. Their overall goal as a team is to help the patient with safe substance abuse detoxification and successful rehabilitation. The environment can be stressful and places a strain on the staff at times. Overall, staff communicate well with each other and work as a team despite the stress of the job. The management team supports the staff well and helps the staff members to succeed in their role.
The staff and the management are supportive of holistic interventions. The staff adapt to change quickly if they perceive the change to be a benefit to the patients and themselves.

**Stakeholder Support**

The key stakeholders were (a) the director of the identified organization who is the preceptor to the DNP student, (b) the nursing staff, (c) the therapists, (d) the treatment coordinators, (e) the patients, (f) the community mental health system for the county and surrounding counties who provide funding, and (g) the donators to the organization.

**SWOT Analysis of the Introduction of Auricular Acupuncture**

The strengths for the addition of auricular acupuncture to the patient’s treatment plan are (a) the staff and management team are supportive and open to holistic interventions that could benefit the patients with substance abuse, (b) the staff adapt to change quickly if they perceive it is a benefit to the patient and themselves, (c) the staff and management team already support yoga and auricular acupuncture which have the same holistic philosophy, (d) it could be introduced in a group setting like the yoga sessions, (e) the staff and management practice patient-centered care as team, and (f) the cost after training the staff would be minimal for auricular supplies.

If the auricular acupuncture was included in the patient treatment plan at the non-profit rehabilitation center it would have the following potential benefits: (a) decreased withdrawal symptoms in patients, (b) decreased cravings associated with substance abuse, (c) decreased anxiety associated with substance abuse, (d) potential increased commitment to substance abuse treatment, and (e) decreased depressive thoughts in the patients.

The weaknesses for the addition of auricular acupuncture to the patient’s treatment plan are (a) if the patient desires auricular acupuncture then it would take extra coordination between
the nurses and patient treatment coordinators, (b) therapist(s), nurses, or staff performing the auricular acupuncture would need to fit time into their schedule to administer the auricular acupuncture during their day, (c) training cost for the employees to become certified to perform auricular acupuncture would cost $500-$600 per person, and (d) there would be an additional minimal fee for acupuncture needles.

The opportunities for the addition of auricular acupuncture to the patient’s treatment plan are: (a) potential stand-alone outpatient auricular acupuncture therapy clinic while continuing inpatient auricular acupuncture sessions, (b) attract therapists and staff who are interested in a holistic approach while treating substance abuse, (c) market to future patients that auricular acupuncture can be offered in their treatment plan, (d) provide high quality holistic care to patients with substance abuse, (e) further studies could be done, and (f) patient and staff satisfaction rates could increase by using auricular acupuncture during the substance abuse treatment process.

The threats for the addition of auricular acupuncture to the patient’s treatment are (a) high turnover of nursing staff and therapists would prevent consistent use of auricular acupuncture in group sessions for the patients, (b) turnover of staff would cost the non-profit organization $500-$600 for each new employee to be certified and trained in auricular acupuncture, and (c) potential demand for auricular acupuncture could grow too rapidly before the need could be met by training more staff. Therefore, the therapy could be delayed or not provided on a consistent basis.

**SWOT Analysis**
### STRENGTHS

**Auricular Acupuncture**
- Decreased withdrawal symptoms in patients
- Decreased cravings associated with substance abuse
- Decreased anxiety associated with substance abuse
- Decreased depressive thoughts
- Auricular acupuncture can be easily added to the schedule in a group setting as a treatment modality

**Non-profit Rehabilitation Center**
- Staff are open to holistic interventions
- Management is open to holistic interventions
- The staff practice patient-centered care as a team
- The staff adapt to change quickly if they perceive it a benefit to the patients and themselves
- The staff already support and include yoga in the group therapy sessions and auricular acupuncture would have the same holistic philosophy
- The cost after training of the staff is minimal for the auricular supplies.

### WEAKNESSES

- If patient desires auricular acupuncture it would take extra coordination of care between the nurses and patient team coordinators
- Therapist(s), nurses, or staff performing auricular acupuncture would need to fit time into their schedule to administer the auricular acupuncture either individually or with groups
- Training cost for employees to become certified to perform auricular acupuncture would cost around $500-$600 per person.
- There would be an additional minimal fee for acupuncture needles

### OPPORTUNITIES

- Future outpatient auricular acupuncture therapy clinic could stand alone while continuing administration in group settings
- Attract therapists and staff that are interested in holistic approach when treating substance abuse
- Market to future patients that auricular acupuncture is offered in their treatment plan
- Provide high quality holistic care to patients with substance abuse.
- Further studies could be done
- Patient and staff satisfaction would increase if auricular acupuncture was implemented in this nonprofit rehabilitation facility

### THREATS

- Turnover of staff would cost the non-profit organization $500-$600 for each new employee to be certified in auricular acupuncture
- High turnover of nursing staff and therapists would prevent consistent auricular acupuncture in groups for the patients.
- Demand for auricular acupuncture could grow too rapidly before the need could be met by training more staff. Therefore, the therapy would be delayed or not done on a consistent basis.
Overall, this non-profit rehabilitation agency and its staff have struggles with a busy environment and turnover with nurses, therapists, and staff. However, the staff and management team are open to new holistic interventions to include in patients’ treatment plans.

**Project Plan**

**Purpose of the Project with Objectives**

The two guiding questions of the Doctor of Nursing Practice Project were (a) how can auricular acupuncture be helpful when treating patients with substance abuse in a selected organization? (b) what information is needed for both staff and patients to make an informed decision regarding auricular acupuncture? The outcome of the project was intended to clarify for the DNP student and the organization if there is enough interest in implementing and including auricular acupuncture in the patient’s treatment plan while they are going through detoxification or the rehabilitation process from illicit drugs or alcohol. The objective for the DNP student was to recruit at least 25 staff members and 25 patients for the DNP project. The overall objective was met by offering the presentation with two to five patients at a time in a small informal group setting until a total of 25 patients participated. The educational presentation for the staff was offered individually due to the busy and erratic environment. A total of 25 staff members participated.

**Ethics and Human Subjects Protection**

The DNP project was a quality improvement project. The project only needed to be approved through the Grand Valley State Institutional Review Board (IRB). The substance abuse facility did not require a separate IRB review through their agency. A letter from the Office of Research Compliance & Integrity determined that the project was a quality improvement project proposal and not research (Appendix F).
Type of Project

This DNP project was a quality improvement project.

Setting

The substance abuse treatment facility is an urban non-profit organization that resides in a Mid-western city.

Resources and Budget

Table 1 shows the cost of the DNP project. The resources utilized were (a) paper and pens, (b) a laptop computer (the DNP student’s laptop computer) to make handouts, poster, pre and post-tests, and evaluations, (c) the DNP student’s auricular acupuncture kit that contains acupuncture needles and an ear model, and (d) the DNP student’s time. The student’s time is estimated at $50.00/ hour which is the mid-range salary for a DNP in the current health care arena. However, the student’s time for this project was free. Table 1 reveals that the labor cost would be most of the expense for a DNP implementation project like this for another organization.

Table 1

<table>
<thead>
<tr>
<th>Resources</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>White and colored paper</td>
<td>$15.00</td>
</tr>
<tr>
<td>Black pens-large package</td>
<td>$ 7.00</td>
</tr>
<tr>
<td>Student’s Dell laptop computer</td>
<td>$ 0.00</td>
</tr>
<tr>
<td>Auricular acupuncture kit</td>
<td>$50.00</td>
</tr>
<tr>
<td>Estimated DNP student’s time</td>
<td>$4000.00</td>
</tr>
<tr>
<td>(80 hours x $50/hr)</td>
<td>(student’s time was free)</td>
</tr>
</tbody>
</table>

| Total cost                      | $4022.00  |

Table 2 shows the estimated cost for the next step to implement auricular acupuncture training for the staff in this non-profit organization. According to the Michigan Department of
Community Health (2012) auricular acupuncture may be performed by (a) a physician, (b) a registered acupuncturist, or (c) an individual who holds a certificate of training in detoxification acupuncture issues by NADA and has a collaborating agreement with a person licensed to practice medicine in the state of Michigan. The supervising physician does not need to be trained in acupuncture nor be on site when the procedure is performed. A 3-day training in NADA auricular acupuncture is required to become certified. Three staff members are an estimated to achieve the training at an affordable cost. In theory, they would be able to perform auricular acupuncture two to three times a week for 30-45 minutes for multiple patients in a group setting. If the training was not available in the city where the organization resides then travel and hotel fees would need to be added to the $500-600 training cost. The DNP student suggests that the management team create on contract with the staff who desire to be trained and become certified in auricular acupuncture. The contract would require that they work as an employee for at least two years if their training is paid by the facility.

Table 2
Implementation Cost of Auricular Acupuncture: The Next Step

<table>
<thead>
<tr>
<th>Resources</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>NADA 3-day auricular acupuncture training</td>
<td>$1800.00 ($600 x 3 staff members)</td>
</tr>
<tr>
<td>Auricular acupuncture kit</td>
<td>$ 0.00 (included in training)</td>
</tr>
<tr>
<td>Extra acupuncture needles box of 500</td>
<td>$25.00</td>
</tr>
<tr>
<td>Staff time</td>
<td>$ 0.00 (integrated into schedule)</td>
</tr>
<tr>
<td>Cotton balls/alcohol swabs</td>
<td>$ 0.00 (in stock)</td>
</tr>
<tr>
<td>Staff avg wage: $17/hour x 8 hours x 3 days of training x 3 staff members</td>
<td>$1,224.00</td>
</tr>
</tbody>
</table>

Total cost                                     $3,049.00

Design for the Evidence-based Initiative
A short (20 minute) educational presentation was given to at least 25 patients in small groups and 25 staff members individually (see Appendix B). The outcome of the project helped the DNP student and the organization assess the level of interest in implementing and including auricular acupuncture in a patient’s treatment plan while the patient is going through the detoxification or rehabilitation process from illicit drugs or alcohol. There was no financial incentive for participants to attend the educational presentation.

**Participants**

The first group to be recruited to attend the educational presentation consisted of 25 patients from both the detoxification and rehabilitation units. The patient’s drug of choice often consisted of one or several of the following (a) alcohol, (b) heroin/opiates, (c) cocaine/crack, or (d) methamphetamines. Both female and male patients who were 18 years or older participated.

There are ten male and seven female beds for detoxification patients. There are eighteen male and ten female beds available on the rehabilitation floor of the facility. All these patients were eligible and were included. The facility is usually at the capacity with all the beds full. All participants volunteered to attend the educational presentation.

The second group recruited consisted of 25 staff members. These participants included management team members, nurses, therapists, and patient care coordinators at the non-profit substance abuse treatment facility. Staff members volunteered to participate.

**Measurement: Sources of Data and Tools**

The measurement instrument consisted of a pre-test prior to the educational presentation given by the DNP student. A post-test was given after the educational presentation to see if knowledge had increased about auricular acupuncture. The education presentation, pre and post surveys, and evaluation were created to read in the fifth-grade reading level for the patient.
audience at the substance abuse facility. The pre and post-test surveys were on different colors of paper for the patients and staff members. The survey questions were the same. There was no informed consent, but the following statement was on the bottom of the pre and post-test surveys:

This is a quality improvement project being conducted by Monica Lyons DNP student, from Grand Valley State University, at the Salvation Army Turning Point. The purpose of this project is to determine if the education presented is effective. There will be a pre and post survey. You do not have to participate, but if you do, the results will be used in a DNP project paper as well as to develop programming at the Salvation Army Turning Point. If you choose not to participate, just leave the form blank. No names or identifiers will be collected.

No identification was placed on the pre and post surveys. An evaluation of the presentation was requested after the post-test (Appendix G).

**Steps for Implementation of Project with Timeline**

**Patients**

The DNP student posted a recruitment poster a week prior to the educational presentation (Appendix H) for patients to see on both the first floor and second floor of the substance abuse treatment facility. The DNP student used the following recruitment script when each patient or staff member was approached: “Do you have time to listen to an educational presentation about auricular acupuncture? The goal of the presentation is to see if there is an interest in providing auricular acupuncture in the future as part of the patient’s treatment plan. There is a pre and post test to see if you have increased your knowledge about auricular acupuncture.” The DNP student met with patients between 6p-7p or from 8p-9p. This was their daily scheduled free time. She met with 2-5 patients nightly over an eight-day period. She recruited 25 patients for the sample.
The educational presentation’s goal was to assess interest in adding auricular acupuncture as an adjunct treatment to the patient treatment plans in the future. Many of patients who were going through the detoxification process on their first day of admission did not want to participate due to not feeling well. The educational presentation was done in the group area where the patients have their group therapy sessions. There was a table and chairs already set up. They were very eager to learn more about auricular acupuncture. The recruitment was not difficult.

**Staff**

The DNP student met with 25 staff members individually for the educational presentation to assess interest in adding auricular acupuncture for patients in the future. Because the staff were scattered and often pulled in different directions during the workday, the DNP student came during various shifts and times to recruit management, nursing staff, therapists, case management, and patient care coordinators over eight days. The same recruitment script was utilized for staff as for the patients. The same educational presentation was given to the staff and they were asked to do the same pre and post-test survey.

**Educational Presentation**

1. The DNP student introduced herself and discussed if the patient or staff member(s) had previous experiences with auricular acupuncture.

2. The DNP student reviewed the goals (a) how auricular acupuncture is helpful when one is undergoing treatment for substance abuse, (b) provided information about how auricular acupuncture is performed on the ear, (c) discovered if there is an interest amongst patients with substance abuse and staff to implement auricular acupuncture.

3. The staff member or patient completed the pre-test questionnaire. At the end of the educational presentation, the staff member or patient was given the same questionnaire to
see what impact the in-service had on gaining knowledge related to auricular acupuncture.

4. The overall goal was met by performing the presentation with two to five patients at a time in a small informal group setting. The presentation for the staff was performed individually due to the busy and erratic environment. A handout was given to the participants and reviewed in the same order and manner each time.

5. The DNP student reviewed what auricular acupuncture was and how it was performed. A plastic ear model with the acupuncture needles in the five insertion points of the ear was shown to the staff member or patient. They were shown how and where the small needles are inserted just under the skin of the ear. They were told that the procedure would require the patient to sit for 30-45 minutes in quiet setting and have it repeated two to three times a week.

6. The DNP student reviewed that auricular acupuncture is commonly added as adjunct treatment when treating an individual with substance abuse.

7. The DNP student reviewed that auricular acupuncture can help reduce cravings for the drug of choice and withdrawal symptoms when being treated for substance abuse.

8. The DNP student reviewed the side effects of mild pain and potential mild bleeding at the needle insertion site. If the patient was prone to fainting, then the acupuncture can be done lying down.

9. The DNP student reviewed the contraindications: severe needle phobia or on any type of blood thinner medication like Coumadin.

10. The DNP student reviewed that auricular acupuncture can decrease depressive and anxious thoughts.
11. The DNP student allowed for questions and answers at the end of the presentation.

12. The patient filled out the post-test questionnaire and a brief presentation evaluation (Appendix G).

13. The DNP student thanked the participants for their time.

**Project Results**

**Data Analysis and Results**

The data analysis utilized in the (DNP) project was descriptive statistics for quantitative data. The data that were examined included staff and patient gender, staff and patient age, and staff and patient race. The staff (n=25) consisted of nurses, therapists, patient treatment coordinators, and management. The patients (n=25) surveyed were in either the detoxification or the rehabilitation unit. There were eight questions on the pre and post- test to evaluate if there was (a) increased knowledge about auricular acupuncture and (b) an interest to add it to patient’s treatment plan while the patient is in the substance abuse rehabilitation facility. An evaluation of the auricular presentation was distributed at the end of the education presentation.

**Sample Characteristics**

The sample characteristics are displayed in Table 3. Overall, the staff sample had more females than males. The ages were diverse, with the 31-40 years old age category consisting of the largest proportion of staff (36%). Most of the staff (80%) participants were White/Caucasian. In the patients’ sample there were males (48%) and females (52%) which were represented in similar proportions. Their ages were also diverse, but most patients were in the two age groups 18-30 years old (36%) and 31-40 years old (24%). Most of the patients were either White/Caucasian (44%) or Black (40%). The patients’ sample had a more diverse group regarding race when compared to the staff sample.
Table 3
Sample Characteristics for Staff (n=25) and Patients (n=25)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Staff n (%)</th>
<th>Patients n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>8 (32%)</td>
<td>12 (48%)</td>
</tr>
<tr>
<td>Female</td>
<td>17 (68%)</td>
<td>13 (52%)</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-30</td>
<td>2 (8%)</td>
<td>9 (36%)</td>
</tr>
<tr>
<td>31-40</td>
<td>9 (36%)</td>
<td>6 (24%)</td>
</tr>
<tr>
<td>41-50</td>
<td>4 (16%)</td>
<td>3 (12%)</td>
</tr>
<tr>
<td>51-60</td>
<td>6 (24%)</td>
<td>5 (20%)</td>
</tr>
<tr>
<td>61-70</td>
<td>4 (16%)</td>
<td>2 (8%)</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White/Caucasian</td>
<td>20 (80%)</td>
<td>11 (44%)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1 (4%)</td>
<td>2 (8%)</td>
</tr>
<tr>
<td>Black</td>
<td>2 (8%)</td>
<td>10 (40%)</td>
</tr>
<tr>
<td>Asian</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>American Indian</td>
<td>1 (4%)</td>
<td>2 (8%)</td>
</tr>
<tr>
<td>Other</td>
<td>1 (4%)</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>

Pre and Post-test Knowledge Responses for Staff

The pre and post-test knowledge responses for staff are listed in Table 4. Most of the staff knew that auricular acupuncture could be utilized in substance abuse (n=14, 56%) and what it was (n=17, 68%) prior to the DNP’s educational presentation. The 25 staff post-test responses regarding auricular acupuncture’s use in substance abuse improved to 25 (100%). There was an increase in knowledge of 44%. After the educational presentation, all staff (100%) knew what auricular acupuncture treatment is and how it is used in treatment. There was an increase of 44% and 32% respectively. The staff’s lowest pre-test score related to the side effects of auricular acupuncture was (n=2, 8%). The post-test response was (n=24, 96%) which indicated an increase in knowledge of 88%.
The seventh survey item stated: “I believe auricular acupuncture can decrease anxiety and depressive symptoms.” Sixteen (64%) of the staff answered yes on the pre-test with 24 (96%) responding yes on the post-test. There was an increase in knowledge of 32%. The eighth survey item stated: “I am interested in including auricular acupuncture in the detoxification and rehabilitation treatment plan for substance abuse.” The pre-test response for yes was 24 (96%) and the post-test results were 25 (100%). This revealed that all the staff surveyed would like auricular acupuncture added to the patient’s treatment plans.

Table 4

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Increase in Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>yes  n (%)</td>
<td>no  n (%)</td>
<td>yes  n (%)</td>
</tr>
<tr>
<td>1. I know what auricular acupuncture is</td>
<td>17 (68%)</td>
<td>8 (32%)</td>
<td>25 (100%)</td>
</tr>
<tr>
<td>2. I know how auricular acupuncture is performed</td>
<td>11 (44%)</td>
<td>14 (56%)</td>
<td>25 (100%)</td>
</tr>
<tr>
<td>3. I know that auricular acupuncture can be used in patients with substance abuse</td>
<td>14 (56%)</td>
<td>11 (44%)</td>
<td>25 (100%)</td>
</tr>
<tr>
<td>4. I believe that auricular acupuncture can decrease cravings from the patient’s drug of choice</td>
<td>16 (64%)</td>
<td>9 (36%)</td>
<td>24 (96%)</td>
</tr>
<tr>
<td>5. I believe that auricular acupuncture can decrease withdrawal symptoms from a drug or alcohol</td>
<td>16 (64%)</td>
<td>9 (36%)</td>
<td>24 (96%)</td>
</tr>
<tr>
<td>6. I know the side effects of auricular acupuncture</td>
<td>2 (8%)</td>
<td>23 (92%)</td>
<td>24 (96%)</td>
</tr>
<tr>
<td>7. I believe that auricular acupuncture can decrease anxiety and depressive symptoms</td>
<td>16 (64%)</td>
<td>9 (36%)</td>
<td>24 (96%)</td>
</tr>
<tr>
<td>8. I am interested in including auricular acupuncture in the detoxification and rehabilitation treatment plan for substance abuse</td>
<td>24 (96%)</td>
<td>1 (4%)</td>
<td>25 (100%)</td>
</tr>
</tbody>
</table>


Pre and Post-test Knowledge Responses for the Patients

The pre and post-test knowledge responses for the patients are listed in Table 5. About half the patient sample (n=12, 48%) knew what auricular acupuncture was prior to the presentation. The post-test revealed that 25 (100%) patients were aware of what auricular acupuncture was after the presentation. There was an increase in knowledge of 52%. The patients’ pre-test response of yes response for “knowing how acupuncture was performed” was 6 (23%) and the post test response was 24 (96%). There was an increase in knowledge of 72%.

Table 5

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Increase in Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>yes n (%)</td>
<td>no n (%)</td>
<td>yes n (%)</td>
</tr>
<tr>
<td>1. I know what auricular acupuncture is</td>
<td>12 (48%)</td>
<td>13 (52%)</td>
<td>25 (100%)</td>
</tr>
<tr>
<td>2. I know how auricular acupuncture is performed</td>
<td>6 (23%)</td>
<td>19 (76%)</td>
<td>24 (96%)</td>
</tr>
<tr>
<td>3. I know that auricular acupuncture can be used in patients with substance abuse</td>
<td>1 (44%)</td>
<td>14 (56%)</td>
<td>25 (100%)</td>
</tr>
<tr>
<td>4. I believe that auricular acupuncture can decrease cravings from the patient’s drug of choice</td>
<td>17 (68%)</td>
<td>13 (52%)</td>
<td>24 (96%)</td>
</tr>
<tr>
<td>5. I believe that auricular acupuncture can decrease withdrawal symptoms from a drug or alcohol.</td>
<td>11 (44%)</td>
<td>14 (56%)</td>
<td>24 (96%)</td>
</tr>
<tr>
<td>6. I know the side effects of auricular acupuncture</td>
<td>3 (12%)</td>
<td>22 (88%)</td>
<td>24 (96%)</td>
</tr>
<tr>
<td>7. I believe that auricular acupuncture can decrease anxiety and depressive symptoms</td>
<td>7 (28%)</td>
<td>18 (72%)</td>
<td>22 (88%)</td>
</tr>
<tr>
<td>8. I am interested in including auricular acupuncture in the detoxification and rehabilitation treatment plan for substance abuse</td>
<td>22 (88%)</td>
<td>3 (12%)</td>
<td>25 (100%)</td>
</tr>
</tbody>
</table>
and the post-test response was 24 (96%). There was an increase in knowledge of 72%. The yes response to “I know the acupuncture side effects of auricular.” The pre-test response for yes about the side effects of auricular acupuncture was 3 (12%) and the post-test response was 24 (96%). There was an increase in knowledge of 84%. This was the largest increase in knowledge on the patients of all eight survey items. The staff increase in knowledge was very similar on this item was 88%. The eighth survey item was:” I am interested in including auricular acupuncture in the detoxification and rehabilitation treatment plan for substance abuse.” The pre-test yes response for the eighth item was 22 (88%) and the post-test response was 25 (100%). This reveals that all the patients surveyed would like auricular acupuncture in their treatment plan once they have learned about it.

**Presentation Evaluation**

Table 6 and 7 summarize the responses to the evaluation questions about the most interesting and least interesting information in the presentation, respectively. The patients and staff (n=50) found the information that it can decrease anxiety and depression 20 (40%), and it decreases cravings and withdrawal symptoms 16 (32%) the most interesting. Most of the 50 participants stated “nothing” was the least interesting. Several (n=10, 20%) wished that a demonstration had been performed on an actual person rather than on an ear model.

**Table 6**

<table>
<thead>
<tr>
<th>Response type</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>It can decrease anxiety and depression</td>
<td>20 (40%)</td>
</tr>
<tr>
<td>It decreases cravings and withdrawal symptoms</td>
<td>16 (32%)</td>
</tr>
<tr>
<td>How it is performed</td>
<td>10 (20%)</td>
</tr>
<tr>
<td>The side effects</td>
<td>2 (4%)</td>
</tr>
<tr>
<td>That is available to use in substance abuse treatment</td>
<td>2 (4%)</td>
</tr>
</tbody>
</table>
Table 7
Responses to the Least Interesting Information that I learned from the Presentation (staff and patient n=50)

<table>
<thead>
<tr>
<th>Response type</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nothing</td>
<td>34 (68%)</td>
</tr>
<tr>
<td>Perform on an actual person</td>
<td>10 (20%)</td>
</tr>
<tr>
<td>Paperwork</td>
<td>2 (4%)</td>
</tr>
<tr>
<td>Needles are involved</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>Cannot use it on patients on blood thinners</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>No cost discussed</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>Side effects</td>
<td>1 (2%)</td>
</tr>
</tbody>
</table>

Table 8 contains the staff and patients’ (n=50) responses to “what other information would you add to the presentation in the future.” The greatest interest was in seeing the procedure performed on a person (n=20 40%). Several also expressed interest in the cost (n=10 20%), the training (n=10, 20%), and availability after discharge (n=5,10%).

Table 8
Responses to What Other Information Would You Add to the Presentation in the Future? (staff and patient n=50)

<table>
<thead>
<tr>
<th>Response type</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrate on a person</td>
<td>20 (40%)</td>
</tr>
<tr>
<td>Cost</td>
<td>10 (20%)</td>
</tr>
<tr>
<td>Information on training</td>
<td>10 (20%)</td>
</tr>
<tr>
<td>Availability after discharge</td>
<td>5 (10%)</td>
</tr>
<tr>
<td>Nothing</td>
<td>2 (4%)</td>
</tr>
<tr>
<td>How it affects the brain</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>More information on use in substance abuse treatment</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>More information on paperwork</td>
<td>1 (2%)</td>
</tr>
</tbody>
</table>

In Table 9 are the summary of the presentation responses by the staff and patients (n=50) to “did you find this presentation helpful.” The participants (n=40, 80%) overwhelmingly found the presentation helpful.
Table 9
Responses to “Did You Find This Presentation Helpful?” (staff and patient n=50)

<table>
<thead>
<tr>
<th>Response type</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>40 (80%)</td>
</tr>
<tr>
<td>Yes, would like it added to the treatment program</td>
<td>5 (10%)</td>
</tr>
<tr>
<td>Yes, would like to do the training to perform it</td>
<td>5 (10%)</td>
</tr>
</tbody>
</table>

Discussion

In reflection, the two questions of (DNP) Project were (a) how can auricular acupuncture be helpful when treating patients with substance abuse? (b) what information is needed for both staff and patients to make an informed decision regarding auricular acupuncture? An educational presentation was given to 25 patients and 25 staff members. The outcome of the project informed the DNP student and the organization of the level of interest to implement and include auricular acupuncture in patients’ treatment plans while they are going through the detoxification or rehabilitation process from illicit drugs or alcohol.

There was an increased knowledge regarding what auricular acupuncture is when comparing the pre-test and post-test survey results in both staff (32%) and patients’ (52%). The side effects of auricular acupuncture revealed the lowest pre-test scores in both the staff (n=2, 8%) and patients (n= 3, 12%) but there was an increase in knowledge post-test of staff (88%) and patients (84%). All 50 staff and patients who participated in the DNP project responded yes to the statement “I am interested in including auricular acupuncture in the detoxification and rehabilitation treatment plan for substance abuse.”

The evaluation of the educational presentation revealed that the staff and patients learned about how auricular acupuncture can help with the cravings and withdrawal symptoms and help decrease anxiety and depression with minimal side effects. They expressed in their evaluation
that they wanted a live demonstration on a real person, a discussion about the cost of the auricular acupuncture, and information on how to continue the auricular acupuncture after treatment is completed.

Limitations

The sample groups were voluntary and not randomly sampled. There was short window of time in the evening that the patients were available to listen to the DNP educational presentation, which limited the sample size. It was also a challenge to do the 1:1 educational presentation for the staff due to their busy workload and erratic schedule. Nevertheless, the project reached the number of patients identified in the objectives and almost all the agency staff. A DNP project with a larger sample size in the future should be considered. In the future obtaining more information about the participants on the pre-test survey would be helpful. This information could include if the patient is on the detoxification unity or the rehabilitation unit and the level of education achieved by the patient.

Conclusion

Auricular acupuncture has been used for many years to assist patients in substance abuse treatment to ease withdrawal symptoms from alcohol and illicit drugs. The guiding questions of the DNP Project were (a) how can auricular acupuncture be helpful when treating patients with substance abuse? (b) what information is needed for both staff and patients to make an informed decision regarding auricular acupuncture? There was an increased knowledge regarding what auricular acupuncture is when comparing the pre-test and post-test survey results in both staff (32%) and patient’s (52%). The side effects of auricular acupuncture revealed the lowest pre-test scores in both the staff (n=2, 8%) and patients (n=3, 12%) but there was an increase in knowledge post-test of staff (88%) and patients (84%). The results of the project informed the
DNP student and the organization that there is a high level of interest in both staff (100%) and patients (100%) in implementing and including auricular acupuncture in the patient’s treatment plans while they are going through the detoxification or rehabilitation process from illicit drugs or alcohol. The evaluation of the presentation revealed that the staff and patients learned about how auricular acupuncture can help with the cravings and withdrawal symptoms and help decrease anxiety and depression with minimal side effects. They expressed in their evaluation that they wanted a live demonstration on a real person, discuss cost of the auricular acupuncture, and how to continue the auricular acupuncture after treatment is completed. In conclusion, the staff and patients at this non-profit substance abuse facility desire to add auricular acupuncture to the patients’ treatment plan.

**Implications for Practice**

Auricular acupuncture is commonly used for the patient with an addiction to drugs or alcohol to decrease cravings and reduce withdrawal symptoms during the detoxification process. Several studies have shown that auricular acupuncture decreases cravings and withdrawal symptoms from alcohol and illicit drugs during rehabilitation treatment (Carter et al., 2011; Chang et al., 2010). Auricular acupuncture has already been used for several decades in rehabilitation drug treatment centers. It is non-invasive, inexpensive, and safe with minimal side effects (Tan et al., 2014). With rising costs of healthcare related to the diagnosis of substance abuse, auricular acupuncture needs to be considered as a choice for patients in their treatment.

A DNP will help lead and strategize to implement auricular acupuncture in the substance abuse facility described in this DNP project. A DNP needs to facilitate this work through several activities. The first is exploring funding. The second activity is analyzing the revenue lost to the facility since several patients per week leave after their first day of treatment.
Further, the DNP can provide evidence-based research that shows that auricular acupuncture can increase retention rates in substance abuse treatment, decrease anxiety and depressive symptoms and decrease cravings and withdrawal symptoms from illicit drugs or alcohol. The DNP would establish and evaluate measures of retention rates, anxiety, depression, cravings, and withdrawal symptoms along with patient and staff satisfaction after implementation of the auricular acupuncture.

**Plans for Dissemination of Outcomes**

The plan for dissemination of the outcomes will be to present findings to the organization and staff, present to the DNP students and faculty, and publish in Scholar Works.

**Sustainability Plan**

There was significant interest in adding auricular acupuncture to the patient’s treatment plan among both the patients and the staff. Several staff members expressed the desire to be trained to do the auricular acupuncture. The cost of training the staff is the largest hurdle in a non-profit organization. The cost is around $500-600 per staff member. The cost of the acupuncture needles, alcohol swabs, and cotton balls is minimal. It would need to be added to the patient’s daily group schedules for at least 30 minutes three times a week. There would need to be further investigation to determine if the auricular acupuncture could be a billable item in the treatment plan for the patient’s substance abuse.

**Reflections on DNP Essentials**

The DNP Essentials outline the requirements and competencies for a Doctor of Nursing Practice degree. A reflection of how the DNP essentials were incorporated in the DNP project will be discussed (American Association of Colleges of Nursing, 2006).

**Essential I: Scientific Underpinnings for Practice**
The DNP student met the scientific underpinnings for practice by developing and initiating the quality improvement project called “Introduction to Auricular Acupuncture” at a Mid-western non-profit substance abuse facility. A literature review (Appendix A) was performed prior to the quality improvement project to identify and evaluate the evidence-based research supporting the implementation of auricular acupuncture.

**Essential II: Organizational and System Leadership for Quality Improvement and Systems Thinking**

The DNP student utilized Levinson’s organizational assessment framework to perform an organizational assessment of the Mid-western non-profit substance abuse facility. It is an Open Systems Theory that states an organization is a whole system of interrelated subsystems that are interdependent while being part of a larger system (Levinson, 2002). The DNP student utilized the implementation model called the Promoting Action on Research Implementation in Health Services (PARiHS) for the DNP quality improvement project. The evidence in the evidence-based literature review about the benefits of auricular acupuncture in substance abuse treatment was on the weaker side due to small sample sizes and high drop-out rates. The context which is the organization in which the project took place was conducive and open to holistic approaches to treat substance abuse. The facilitator was the DNP student who provided information about auricular acupuncture through educational presentations to patients and staff. The facilitator assessed the level of interest among patients and staff to add auricular acupuncture to the patient’s treatment plan in the future. The DNP student obtained a SWOT analysis with the organizational assessment to analyze the strengths, weaknesses, opportunities, and threats of the organization prior to the quality improvement project. The evidence-based literature review helped the DNP student to develop the problem statement with the goal of
improving quality of care for those seeking treatment for substance abuse. The first step of the sustainability plan was to introduce auricular acupuncture to the non-profit substance abuse facility. The next step would be to facilitate training staff members who are interested to performing the auricular acupuncture and becoming certified through identification of funding and training programs. The supply cost is minimal. The auricular acupuncture could be easily administered in a group therapy time slot or the patient free time slot two to three times a week.

The plan for dissemination of the outcomes will be to present findings to the organization and staff, present to the Doctor of Nursing Practice students and faculty, and publish in Scholar Works.

**Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice**

The DNP student implemented a quality improvement DNP project explore interest in adding auricular acupuncture to patients’ treatment plans while they were going through detoxification or rehabilitation in a substance abuse treatment facility. The results of the project informed the DNP student and the organization that there is a high level of interest in both the staff (100%) and the patients (100%) in implementing and including auricular acupuncture in patients’ treatment plans.

**Essential IV: Informational Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care**

The DNP student utilized informational technology to create the quality improvement project including: the pre and post survey tool and evaluation of the presentation tool. The DNP student did not utilize the substance abuse treatment facility’s electronic medical record (EMR) to access any information. All answers on the surveys were voluntary. A documentation tool would need to be added to EMR if auricular acupuncture was added to the treatment plans for
patients with substance abuse. The DNP student utilizes the EMR system on a daily basis in clinical practice as a full-time family nurse practitioner. She attends EMR classes to help integrate quality but concise documentation in the daily charting system.

**Essential V: Health Care Policy for Advocacy in Health Care**

The DNP student reviewed health care policies and laws regarding auricular acupuncture in the state of Michigan and took this into consideration during the quality improvement project. The DNP student has attended several professional nursing advocacy day conferences in the capital of the state in which she resides. The DNP student often writes letters to legislative leaders regarding policies concerning nurse practitioners, mental health policies, access concerns, and funding.

**Essential VI: Inter-professional Collaboration for Improving Patient and Population Health Outcomes.**

The DNP student met this essential by collecting data during her quality improvement project. The student coordinated time to meet with all staff members and collaborated with patient treatment coordinators, nurses, psychologists, social workers, management, therapists, advisor, preceptor, and DNP committee members. The staff were excited about this project and assisted the student obtaining the needed sample size needed. The DNP student has practiced full-time as a family nurse practitioner since 1998 and collaborates with various professionals to achieve high quality care on a daily basis. The DNP student has worked with various healthcare professionals on quality improvement projects in her current full-time practice.

**Essential VII: Clinical Prevention and Population Health for Improving the Nation’s Health.**
The DNP student achieved this essential by analyzing the evidence with a literature review on auricular acupuncture in substance abuse and by performing the organizational assessment to assess the organization. The patients in the DNP project were a vulnerable population. Many do not have insurance and are homeless. The DNP project’s defense addresses that there is an interest to add auricular acupuncture to the patients’ substance abuse treatment plans to improve quality of health care and health care outcomes in this vulnerable population.

**Essential VIII: Advanced Nursing Practice**

The DNP student met this goal by performing a systematic organization assessment of the non-profit substance abuse facility where her quality improvement project was done. The student plans on assisting the non-profit substance abuse facility in adding auricular acupuncture to the patient’s treatment after graduation. The overall goal is to improve quality and healthcare outcomes with the implementation of auricular acupuncture for patients treated in this facility in the DNP project.

The DNP student has been practicing as an expert family nurse practitioner in a family practice setting since 1998. She has been a preceptor for several nurse practitioner students since the year 2000. She attends evidence-based conferences several times per year to keep current on evidence-based practice. She is active in committees in her full-time job to improve patient outcomes and provide high quality care in her current practice.
References


Michigan Department of Community Health (2012). *Bureau of substance abuse and addiction*


trial. *Journal of Substance Abuse Treatment, 10*, 345-351. doi:10.1016/0740-5472(93)90019-X


Appendices

Appendix A

Evidence Table

<table>
<thead>
<tr>
<th>Citation</th>
<th>Design</th>
<th>Sample</th>
<th>Measurement</th>
<th>Data Analysis</th>
<th>Conclusions/Results</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahlberg, Skarberg, Brus &amp; Kjellin (2016)</td>
<td>RCT</td>
<td>Adults with substance abuse N=280 80=acupuncture NADA 80=acupuncture Local protocol 120= relaxation (control)</td>
<td>Beck Anxiety Inventory (BAI) Insomnia Severity Index (ISI)</td>
<td>-Chi-square -Analysis of variance -Kruskal Wallis -Repeated measures analysis of variance -Eta square -Wilcoxon signed Ranks Tests</td>
<td>No significant difference among the 3 groups in the BAI and ISI. All 3 groups improved in significantly on the BAI and ISI. There were no significant difference in the two acupuncture groups in regards to sleep, anxiety or drug use.</td>
<td>They had to stop recruiting at N=280 due to lack of funding. They desired a larger sample</td>
</tr>
<tr>
<td>Alster (2010)</td>
<td>Case Study</td>
<td>100 clients with substance abuse at a substance abuse rehab center – voluntary Acupuncture = 1-3x week/3-12 total sessions</td>
<td>Survey/interview clients and staff about both positive and negative experiences</td>
<td>Qualitative analysis</td>
<td>Clients: Perceived benefits: -feeling of contentment -enjoyable -relaxation -reduced cravings -reduced anxiety -improved mood Staff: Perceived benefits: -calm environment -opportunity to introduce mindfulness Drawbacks: -clients falling asleep -fitting time for acupuncture in a busy schedule</td>
<td>Have certified auricular acupuncturist performing the NADA protocol</td>
</tr>
<tr>
<td>Bearn et al. (2008)</td>
<td>RCT</td>
<td>82 drug misusers for opiate dependence</td>
<td>Survey/interview clients and staff about both positive and negative experiences Daily measures of withdrawal severity and cravings using the Short Opiate withdrawal scale and an eight-item craving questionnaire</td>
<td>t-tests logistic regression analysis Odds ratio</td>
<td>Auricular acupuncture had no effect on withdrawal responses during opiate detoxification It also had no effect on severity of opiate withdrawal symptoms or craving responses when provided as an adjunct to a standard methadone detoxification treatment</td>
<td>Observations were only taken the first 14 days of detoxification</td>
</tr>
<tr>
<td>Bergdahl, Berman &amp; Haglund (2014)</td>
<td>Qualitative</td>
<td>15 patients in an addiction outpatient clinic associated with a university hospital 4 men:13 women</td>
<td>Interviews by a third author, nurse, and PhD with extensive experience in conducting research interviews. Interviews were auto-recorded</td>
<td>Content Analysis</td>
<td>Positive experiences: -peacefulness -harmony -relaxation -well being -reduced cravings for alcohol and drugs</td>
<td>-Small sample -First author performed the acupuncture- there could be bias</td>
</tr>
<tr>
<td>Study</td>
<td>Design</td>
<td>Purpose</td>
<td>Participants</td>
<td>Interventions</td>
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<td>Berman et al. (2004)</td>
<td>Prospective, single blind, with random assignment to treatment with repeated measures</td>
<td>Evaluate viability of auricular acupuncture in prisons for alleviating inmates symptoms of psychological and physical discomfort and reducing their drug use. They compared two auricular acupuncture treatment protocols: 1. NADA acudetox 2. The Edge treatment (on the helix of the ear)</td>
<td>163 men and women in 2 prisons with self-reported drug use</td>
<td>Drug use questionnaire, Acupuncture Treatment Assessment Scale, Symptom Check List 90</td>
<td>Repeated Measures Analysis of Variance</td>
<td>No differences in auricular acupuncture methods were found (p&lt;0.10). The authors did find a significant positive reduction over time in both physical and psychological discomfort along with improved sleep. No negative side effects for either method were found.</td>
</tr>
<tr>
<td>Black et al. (2011)</td>
<td>Randomized Controlled Design</td>
<td>Does auricular acupuncture reduce anxiety from withdrawal from the dependent drug?</td>
<td>101 clients recruited from an addiction treatment center</td>
<td></td>
<td>Chi-square, Fisher’s exact test, One way analysis of variance, Mixed model analysis</td>
<td>The NADA acupuncture protocol was not more effective than the sham (fake) acupuncture or relaxation in decreasing anxiety</td>
</tr>
<tr>
<td>Blacker (2008)</td>
<td>Clinical audit</td>
<td>To assess the efficacy of auricular acupuncture to relieve symptoms from withdrawal</td>
<td>53 clients with substance abuse</td>
<td>Questionnaire with severity of each symptom pre and post auricular acupuncture</td>
<td>Pre and post Clinical audit</td>
<td>Regular auricular acupuncture significantly ameliorated many of the symptoms associated with withdrawal of alcohol and drugs. It was safe and efficacious.</td>
</tr>
<tr>
<td>Study</td>
<td>Design</td>
<td>Purpose</td>
<td>Methods</td>
<td>Findings</td>
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<tr>
<td>Boyuan, Yang, Ke, Xueyong, &amp; Sheng (2014)</td>
<td>Systematic review and meta-analysis</td>
<td>Assess the clinical evidence for and against acupuncture as a treatment for psychological symptoms associated with opioid addiction</td>
<td>16 databases Chinese and English Literature review: 1200 English and 838 Chinese studies</td>
<td>Review RevMan Software Was used. Pooled Data Random Effects Model Forest plots to present pooled effect size and individual study effect sizes</td>
<td>There was a significant positive difference between the treatment and control group for anxiety and depression associated with opioid addiction. The groups did not differ in regards to opioid cravings. Quality of methodology was poor in all of the studies</td>
<td></td>
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<tr>
<td>Brewington, Smith, &amp; Lipton (1994)</td>
<td>Literature Review</td>
<td>Analysis of controlled research in human and animal studies: Does acupuncture alleviate withdrawal symptoms?</td>
<td>Controlled studies only No databases listed</td>
<td>Varied by study</td>
<td>Results from controlled studies support that acupuncture can be effective in assisting active drug and alcohol abusers become abstinent No statistical Analysis tests were conducted to evaluate group differences</td>
<td></td>
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<tr>
<td>Bullock et al. (1999)</td>
<td>RCT Single-blind Randomized Placebo-controlled study</td>
<td>The authors performed two linked but concurrent studies. Study one’s purpose was to evaluate the efficacy of acupuncture with conventional substance abuse treatment. It had 236 clients with cocaine addiction. They were randomized to three treatment groups: conventional psychosocial model, conventional treatment and sham (fake) acupuncture</td>
<td>438 clients with cocaine dependency in a rehabilitation treatment facility Study one: 236 Study two: 202</td>
<td>Medical Outcome Study (SF-36) The Addiction Severity Index Self-reported cocaine craving tool Urine drug screens</td>
<td>There were no statistically significant differences between Acupuncture and psycho-therapy and no difference between the acupuncture and the sham (fake) acupuncture (location of needles and frequency). There were also no differences among the three dose levels of auricular acupuncture in study two. - All the groups did improve overall but there were no differences. - No post treatment follow up was not done Auricular acupuncture was not evaluated alone as a treatment for substance abuse</td>
<td></td>
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</tbody>
</table>
The acupuncture groups were scheduled to receive 28 sessions over an eight week period of time. Study two’s purpose was to evaluate the dose-response effect of auricular acupuncture. There were 202 clients in the day treatment program for cocaine addiction. They were randomized to one of three groups: 28 auricular acupuncture sessions over eight weeks, 16 auricular acupuncture treatments over eight weeks, and eight treatments over eight weeks. No Sham (fake) acupuncture was utilized in study.

Bullock et al. (2002)  RCT Purpose: Efficacy of auricular acupuncture on alcohol dependence

503 patients with alcohol dependence in an inpatient recovery facility -randomized to 1 of 4 treatment groups:
1. Conventional treatment
2. Non-specific acupuncture
3. Specific acupuncture
4. Symptom-based acupuncture

- Addiction Severity Index
- Alcohol Dependence Scale
- Breathalyzer
- Beck Depression Scale
- Medical Outcome Study - Short Form Self-rating Anxiety Scale

Covariance ANCOVA

Significant improvement was shown in all four groups in regards to measured outcomes. However, 49% of subjects reported decreased desire for alcohol in the acupuncture groups. The symptom based acupuncture group was superior to the other groups at the post 12 month mark.

The study did not have a "no treatment group"
<table>
<thead>
<tr>
<th>Study</th>
<th>Design</th>
<th>Participants</th>
<th>Intervention</th>
<th>Outcome Measures</th>
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</thead>
<tbody>
<tr>
<td>Carter et al. (2011)</td>
<td>Prospective</td>
<td>167 patients with DSM IV diagnosis of substance</td>
<td>Change in symptom severity from baseline on a</td>
<td>t-test analysis using SAS statistical software Version 9.1</td>
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<td>trial in self-</td>
<td>abuse</td>
<td>10 point Likert scale:</td>
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<td>selected</td>
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<td>- Cravings</td>
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<td>- Depression</td>
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<td>non-randomized</td>
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<td>- Anxiety</td>
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<td>patients</td>
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<td>- Anger</td>
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<td>- Body aches and headaches</td>
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<td>- Concentration</td>
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<td>- Decreased energy</td>
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<td>substance use.</td>
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<tr>
<td>Chang, Sommer &amp; Herz (2010)</td>
<td>RCT</td>
<td>67 Veterans with substance abuse</td>
<td>Craving rating score (0-6)</td>
<td>Regression Analysis</td>
</tr>
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<td>Purpose:</td>
<td>randomized to: -acupuncture -relaxation response</td>
<td>Anxiety score (1-4)</td>
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<td>Evaluate the</td>
<td>- usual group therapy</td>
<td>Quality of life Scales:</td>
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<td>substance abuse.</td>
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<tr>
<td>Chang &amp; Sommers (2014)</td>
<td>RCT</td>
<td>67 Veterans with substance abuse</td>
<td>Single item craving scale</td>
<td>Two sided t-test</td>
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<td>Purpose:</td>
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<td>(1-10)</td>
<td>Mixed effects regression analysis</td>
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<td>To compare</td>
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<td>The State-Anxiety Inventory for Adults</td>
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</tbody>
</table>

- Subjects were self-selected for the study
- No long term effects were evaluated
- Small groups
<table>
<thead>
<tr>
<th>Study</th>
<th>Design Type</th>
<th>Purpose</th>
<th>Participants</th>
<th>Outcome Measures</th>
<th>Methodology</th>
<th>Results/Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Courbasson, deSorkin, Dullerud &amp; Van Wyk (2007)</td>
<td>Exploratory</td>
<td>Evaluated the benefits of adding auricular acupuncture to a 21 days outpatient structured treatment program for women with concurrent substance abuse, anxiety, and depression</td>
<td>286 women 185 -received acupuncture group 101-control group</td>
<td>Beck Depression Inventory  -Beck Anxiety Inventory  -Reflective Activity Scale  -Drug-Taking Confidence Questionnaire</td>
<td>Repeated Measures Analysis of Variance</td>
<td>The women receiving auricular acupuncture had reduced cravings for substances, less depressed, less anxious, and were better to reflect on and resolve difficulties than women in the control group. There was no follow up at the one and three month follow up. The results still showed reduced anxiety and depression.</td>
</tr>
<tr>
<td>Janssen et al. (2012)</td>
<td>RCT</td>
<td>To test the ability of maternal acupuncture treatment among mothers who use illicit drugs to reduce the frequency and severity of withdrawal symptoms among their newborns</td>
<td>Chemically dependent pregnant women 50 women-acupuncture 39 women-standard care</td>
<td>Beck Depression Inventory  Mann-Whitney U test  Kruskal-Wallis test  Fisher’s exact test</td>
<td>Repeated Measures Analysis of Variance</td>
<td>There was a reduction of 2.1 to 1.5 days in length of newborn withdrawal symptoms. There was no difference in admission rates or transfer to foster care between the two groups (P&gt;0.05). Small sample size -more than half of the pregnant women were noncompliant in the acupuncture group.</td>
</tr>
<tr>
<td>Kunsook (2000)</td>
<td>Qualitative</td>
<td>To explore the meaning of substance abusers' experience while receiving acupuncture</td>
<td>8 clients with substance abuse in an inpatient substance abuse facility</td>
<td>Giorgi's Modification of Phenomenological Method</td>
<td>-Positive acceptance of the new treatment method -Positive mood elevation -Positive relaxation</td>
<td>Small sample</td>
</tr>
<tr>
<td>LaPaglia, Bryant &amp; Serafini (2016)</td>
<td>Cross sectional mixed methods study</td>
<td>Evaluate</td>
<td>55 patients enrolled in community health centers</td>
<td>Satisfaction survey</td>
<td>t-tests</td>
<td>Patients reported they found acupuncture beneficial in regards to No long term follow up</td>
</tr>
<tr>
<td>Study</td>
<td>Design</td>
<td>Participants</td>
<td>Methods</td>
<td>Findings</td>
<td>Complications</td>
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<tr>
<td>Lipton, Brewington &amp; Smith (1994)</td>
<td>RCT</td>
<td>155 patients seeking treatment for crack and cocaine</td>
<td>Auricular acupuncture versus sham acupuncture, interviews, urine drug screen for crack/cocaine</td>
<td>The auricular acupuncture group using the NADA protocol had lower levels of the cocaine metabolite than the sham (fake) auricular acupuncture group (F=5.92, P&lt;0.05)</td>
<td>No long term effects measured</td>
<td></td>
</tr>
<tr>
<td>Lua &amp; Talib (2013)</td>
<td>Prospective, longitudinal, open-labeled and randomized study</td>
<td>69 male clients in a methadone clinic</td>
<td>Questionnaires, interview, urine drug screen for crack/cocaine</td>
<td>All HRQoL parameter (health related quality) in the Methadone plus auricular acupuncture group improved their overall health and condition during substance abuse treatment.</td>
<td>No long term effects measured</td>
<td></td>
</tr>
<tr>
<td>Lua, et al. (2013)</td>
<td>RCT</td>
<td>69 male patients in a Methadone Clinic</td>
<td>Pharmaceutical Care Questionnaire, Malay Brief COPE-27</td>
<td>Patient satisfaction was not increased post auricular acupuncture and Methadone but there were increased coping and less substance abuse compared to Methadone only group</td>
<td>All male sample - Small sample - High dropout rate - Same study as above but different measured outcomes.</td>
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<tr>
<td>Study</td>
<td>Study Type</td>
<td>Participants</td>
<td>Intervention</td>
<td>Outcomes</td>
<td>Conclusions</td>
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<tr>
<td>Margolin et al. (1996)</td>
<td>RCT</td>
<td>34 clients on methadone maintenance for cocaine addiction</td>
<td>-Needle insertion in “the active zones” using NADA protocol</td>
<td>-Skin discoloration with active zones when compared to control zones (p&lt;0.001)</td>
<td>There were significant differences between the active and the control zones in which the active zones produces more electrical activity (p&lt;0.001). Needle insertion in “the active zones” using NADA protocol -Needle insertion in the “control zones” -Non-needle puncture -Relaxation group</td>
<td>-Small sample size -Each method was different and difficult to insert the acupuncture needle exactly in the same spot of each ear</td>
</tr>
<tr>
<td>Otto, Quinn, &amp; Sung (1998)</td>
<td>RCT – single blind study</td>
<td>36 cocaine dependent inpatient veterans on a substance abuse unit</td>
<td>-SCL-90 self-assessment scale -Hamilton Depression and Anxiety scales - Halikas Cocaine Craving Scale - Halikus Drug Impairment Rating Scale</td>
<td>The study failed to show a difference between the acupuncture group and the control group. However the patients in the study remained in treatment longer than those who did not receive acupuncture</td>
<td>-Small sample size -High dropout rate</td>
<td></td>
</tr>
<tr>
<td>Prady et al. (2015)</td>
<td>Systematic Review</td>
<td>58 RCTs</td>
<td>Cohen’s Kappa Likert Scale</td>
<td>There is evidence that response expectancies interact with outcomes in acupuncture trails</td>
<td>Expectation questions need to be on scale or tool for further studies</td>
<td></td>
</tr>
<tr>
<td>Shwartz et al. (1999)</td>
<td>Retro Prospective Cohort study</td>
<td>6907 clients in detox programs</td>
<td>Six month detox readmission rates from time of admission to the end of the program -gender, race/ethnicity, education, employment status, yearly income, insurance, living situation (with child, with other</td>
<td>Acupuncture clients were less likely to be readmitted to detox within 6 months Odds ratio=0.71 95% confidence ratio CI 0.53-0.95</td>
<td>The clients were randomized to the acupuncture group by preference</td>
<td></td>
</tr>
<tr>
<td>Study</td>
<td>Literature Review</td>
<td>Purpose</td>
<td>Type and frequency of the auricular therapy related adverse events were the two main outcomes.</td>
<td>Review</td>
<td>Data analysis not available due to heterogeneity of the type of disease.</td>
<td>Future research on auricular therapy should include a safe assessment outcome.</td>
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<tr>
<td>Tan et al. (2014)</td>
<td>Literature Review</td>
<td>Evaluate the literature on adverse events associated with auricular acupuncture therapy.</td>
<td>-32 RCT -5 uncontrolled clinical trials -4 case reports -2 controlled clinical trials -13 electronic bases -7 Chinese journals</td>
<td>Two experts in auricular therapy critically reviewed the data.</td>
<td>Type and frequency of the auricular therapy related adverse events were the two main outcomes.</td>
<td>Most of the adverse events were transient, mild and tolerable. Auricular therapy is a safe approach and no serious adverse events were identified.</td>
</tr>
<tr>
<td>Washburn et al. (1993)</td>
<td>A single blind clinical trial</td>
<td>Does auricular acupuncture have an effect on treatment retention and on opiate use when compared to placebo (sham) treatment acupuncture</td>
<td>100 IV heroin abusers in a treatment facility near the San Francisco area. 55 clients received auricular acupuncture and 45 received the sham treatment.</td>
<td>-attendance -median number of days in treatment -median last day (of 21 days) -number of clients staying in treatment beyond 21 days. -urine drug sample</td>
<td>Two way ANOVA</td>
<td>Those in the auricular acupuncture attended more clinic days and stayed in treatment longer than the placebo (sham) acupuncture. 25% drop out rate in both groups after 2 weeks.</td>
</tr>
</tbody>
</table>
Do you have any previous experiences with auricular acupuncture?

What is Auricular Acupuncture?
- Auricular (ear) acupuncture involves placement of five small needles just under the surface of the skin in specific sites of the ear for 30-45 minutes in a quiet environment two to three times a week. It is administered by a person that is certified in auricular acupuncture.
- Auricular acupuncture is commonly used for the patient with an addiction to drugs or alcohol to decrease cravings and reduce withdrawal symptoms during the detoxification and rehabilitation process.

What are the Side Effects and Contraindications?
- Side effects of auricular acupuncture are mild pain and potential minimal bleeding at the needle insertion site. If the patient is prone to fainting then it can be performed with the patient lying down comfortably.
- A contraindication would an excessive fear of needles or on blood thinners such as Coumadin.

How can it help when used in substance abuse treatment?
- Acupunctural acupuncture can decrease depression, anxiety and help alleviate withdrawal symptoms associated with the detoxification or rehabilitation process.

Are you interested in including auricular acupuncture in your treatment plan?

Questions and Answers

Thank you!
Appendix C

Pre and Post Test

Male____ Female____
Age 18-30 yo___ 31-40 yo___ 41-50 yo ___ 51-60 yo____ 61-70__ 71-80 yo ____
White/Causasion___ Hispanic/Latino/Spanish___ Black/African American___
Asian___ American Indian ___ Other____

Auricular Acupuncture Pre and Post Test

1. I know what auricular (ear) acupuncture is? Yes No

2. I know how auricular acupuncture is performed. Yes No

3. I know that auricular acupuncture can be used in patients with substance abuse? Yes No

4. I believe that auricular acupuncture can decrease cravings from the patient’s drug of choice? Yes No

5. I believe that auricular acupuncture can decrease withdrawal symptoms from a drug or alcohol Yes No

6. I know the side effects of auricular acupuncture. Yes No

7. I believe that auricular acupuncture can decrease anxiety and depressive symptoms? Yes No

8. I am interested in including auricular acupuncture in the detoxification and rehabilitation treatment plan for substance abuse? Yes No

This is a quality improvement project being conducted by Monica Lyons DNP student, from Grand Valley State University, at the Salvation Army Turning Point. The purpose of this project is to determine if the education presented is effective. There will be a pre and post survey. You do not have to participate, but if you do, the results will be used in a DNP project paper as well as to develop programming at the Salvation Army Turning Point. If you choose not to participate, just leave the form blank. No names or identifiers will be collected.
Appendix D

Levinson’s Open Systems Organizational Assessment Tool

Organizational Background

1. Identifying information and historical data

2. Description and analysis of the organization
   a. Formal organization
   b. Building and equipment
   c. Financial structure
   d. Human resources
   e. Policies and procedures
   f. Timing and rhythms of the organization
   g. Communication systems
   h. Management information systems
   i. Key stakeholders
   j. Attitudes and relationships

3. Organizational Assessment plan
   a. Analysis of assessment data
      1. SWOT analysis
   b. Recommendations
      1. Problem statement with plan
Appendix E

Organizational Chart
DATE: June 27, 2019

TO: Andrea Bostrom
FROM: Office of Research Compliance & Integrity
PROJECT TITLE: Introduction of Auricular Acupuncture
REFERENCE #: 19-359-H
SUBMISSION TYPE: IRB Research Determination Submission

ACTION: Not Research
EFFECTIVE DATE: June 27, 2019
REVIEW TYPE: Administrative Review

Thank you for your submission of materials for your planned scholarly activity. It has been determined that this project does not meet the definition of research* according to current federal regulations. The project, therefore, does not require further review and approval by the IRB. Scholarly activities that are not covered under the Code of Federal Regulations should not be described or referred to as “research” in materials to participants, sponsors or in dissemination of findings. While performing this project, you are expected to adhere to the institution’s code of conduct and any discipline-specific code of ethics.

A summary of the reviewed project and determination is as follows:

The overall purpose of this quality improvement project proposal is to assess the interest of staff and patients in the use of auricular acupuncture as a treatment method within a substance abuse program. While this is a systematic investigation, it is not designed to develop or contribute to generalizable knowledge. Therefore, it does not meet the federal definition of research and IRB oversight is not needed.

This determination letter is limited to IRB review. It is your responsibility to ensure all necessary institutional permissions are obtained prior to beginning this project. This includes, but is not limited to, ensuring all contracts have been executed, any necessary Data Sharing Agreements and Material Transfer Agreements have been signed, and any other outstanding items are completed.

An archived record of this determination form can be found in IRBManager from the Dashboard by clicking the “_xForms” link under the “My Documents & Forms” menu.

If you have any questions, please contact the Office of Research Compliance and Integrity at (616) 3313197 or rci@gvsu.edu. Please include your study title and study number in all correspondence with our office.*Research is a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge (45 CFR 46.102 (d)).
Appendix G

Evaluation of Presentation

Evaluation of the Presentation of Auricular Acupuncture

1. The most interesting information I learned from this presentation was.

2. The least interesting information from this presentation was?

3. What other information would you add to the presentation in the future?

4. Did you find this presentation helpful?
Appendix H
Recruitment Poster

LEARN MORE ABOUT

AURICULAR ACUPUNCTURE

DATES AND TIME TBA

MONICA LYONS RN, MS, FNP, DNP student

If you have any questions, please contact: Monica Lyons lyonsmon@mail.gvsu.edu or Andrea Bostrom PhD 616 331-3558