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Patients' experience of auricular acupuncture during protracted withdrawal

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Accessible summary

- Interest has grown in complementary treatment methods such as acupuncture. In addiction treatment auricular acupuncture has been used to relieve difficult abstinence symptoms. The specific protocol used follows the definition used by the National Acupuncture Detoxification Association (NADA).
- The report describes 15 patients' experiences of receiving auricular acupuncture during the abstinence period after elimination of problematic alcohol and illicit drug use.
- The patients in the study mainly experienced positive effects of receiving NADA. The greatest gains were a reinforced sense of relaxation and well-being, peacefulness and harmony, and new behaviours. The treatment supported some of the respondents in staying away from alcohol and drugs and it ameliorated their abstinence symptoms. No one experienced any negative side-effects.

Abstract

Over the last decades interest in using auricular acupuncture for substance dependence care has increased. The specific auricular acupuncture protocol used follows the National Acupuncture Detoxification Association (NADA) definition. This paper describes patients' experiences of receiving auricular acupuncture during protracted withdrawal. Interviews were conducted with 15 patients treated at an outpatient clinic for substance dependence. Content analysis was used to analyse the interviews. The analysis resulted in seven categories of positive experiences and seven categories of negative experiences. The positive experiences were: Relaxation and well-being, Peacefulness and harmony, New behaviours, Positive physical impact, Importance of context, Anxiety reduction and Reduced drug and alcohol consumption. The negative experiences were: Nothing negative, Disturbing context, Short-term effect, Depending on someone else, Time-consuming, Physical distractions and Remaining cravings. The conclusion of this study is that all respondents appreciated NADA treatment. This study supports further research on using NADA in addiction treatment to reduce suffering during protracted withdrawal and in other contexts.

Introduction

Acupuncture is a complementary treatment method with roots in Traditional Chinese Medicine. The method is used as a stand alone treatment or as a complementary treatment for several types of health problems, for example to relieve pain (Green *et al*. 2008), as a support for assisted conception (Cheong *et al*. 2011), in chronic asthma treatment (McCarney *et al*. 2009) and in schizophrenia treatment (Rathbone & Xia 2012).

A later branch of traditional acupuncture is auricular acupuncture, developed by the French physician Paul

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Nogier (Gori & Firenzuoli 2007). The auricular method can be used to treat a wide variety of conditions, among others depression (Smith *et al.* 2010) and insomnia (Cheuk *et al.* 2009). Auricular acupuncture involves inserting thin solid needles at selected points of the outer ear. In the late 1970s a specific auricular acupuncture protocol was developed to alleviate acute and protracted withdrawal symptoms from opiate dependence and/or while adjusting methadone dose, now defined as the National Acupuncture Detoxification Association (NADA) protocol (Smith 1979, Smith & Khan 1988). In Sweden, the NADA protocol is used as a complement to ordinary treatment in psychiatric care (Lindell & Ek 2010) and in the context of protracted withdrawal symptoms from usage of alcohol and benzodiazepines. In a study at two prisons in Sweden NADA was used to treat inmates with prior identified drug use and inmates who received NADA treatment reported improved sleep quality compared with a non-standard protocol (Berman *et al.* 2004). Alleviation of physiological and psychological withdrawal symptoms occurred in both the NADA and the control group. NADA is used in many parts of the world within addiction treatment services. During acute and protracted withdrawal the brain is exposed to neurochemical stress. Protracted withdrawal can last for several months and the risk of relapse is high. Symptoms that occur are similar regardless of the substance used, including the inability to think clearly, memory disorders, irritability, anxiety, sleep disorders, physical co-ordination disorders and sensitivity to stress (Koob 2000, Weiss *et al.* 2001, Heilig *et al.* 2010, Zhao *et al.* 2011).

Auricular acupuncture has been posited to reduce cravings through blockage of drug receptors in the brain, according to a suggestion by Cowan (2011). Acupuncture leads to the release of endorphins and encephalins, which may affect the dopamine system through the gamma-aminobutyric acid (GABA) system. Studies on rats reinforce this hypothesis (Zhao *et al.* 2011), suggesting acupuncture may lead to fewer symptoms of ethanol withdrawal (Lee *et al.* 2008). However, the methodological quality in studies regarding acupuncture and ethanol dependence is poor, precluding firm conclusions without further research (Cho & Whang 2009). Acupuncture has also been found to decrease the morphine withdrawal symptoms in rats through activation of the GABA receptors (Lee *et al.* 2011), and clinical applications of these findings suggest that acupuncture and relaxation techniques should be implemented in relapse prevention care (Chang *et al.* 2010). Although quite extensive research regarding acupuncture treatment for cocaine dependence has been conducted, clear evidence for the method is limited (Margolin *et al.* 2002b, D'Alberto 2004, Mills *et al.* 2005, Gates *et al.* 2006).

While animal-based research indicates that acupuncture might be helpful to humans experiencing withdrawal from problematic substance use, scientific research with human participants has shown equivocal results at best. The scientific lack of conclusive evidence contrasts with patients' subjective anecdotal experiences in receiving acupuncture treatments for addiction recovery (Berman 2006). Previous qualitative research has shown that patients' treated with acupuncture reported increased physical and/or mental energy, calmness, relaxation and feelings of greater personal control (Rugg *et al.* 2011), increased hope and feelings of responsibility as well as initial scepticism to the method and surprise that it worked (Billhult & Stener-Victorin 2012). Patients have also reported improvement in sleep, and motivation as well as fewer side-effects of medication (Ronan *et al.* 2011), in addition to changes in self concept (Paterson 2006). However none of these qualitative studies involved patients with substance dependence.

Persons who receive auricular acupuncture in clinical settings often give subjective evidence of the positive effects. This study is an attempt to elucidate this topic, with the hope of generating hypotheses for further research.

Method

Design

Descriptive design is often used to reveal patterns and connections. A qualitative approach with a descriptive design (Patton 2002) was used to describe experiences of receiving NADA.

Sample and setting

Participants were recruited among patients at an addiction outpatient clinic associated with a university hospital. General treatment at the clinic consisted of psychosocial treatment individually and/or in groups, pharmacological treatment and auricular acupuncture, the latter as a complementary treatment. Aside from auricular acupuncture, which was provided by nurses, all treatments were provided by physicians, nurses, social workers and psychologists.

Patients offered participation in the study were those who had ended their problematic alcohol and/or drug use and were still in a protracted withdrawal phase. In order to obtain a purposeful sample, almost all patients at the outpatient clinic who had quit their substance abuse or drug dependence were eligible for the study. Patients who were excluded included pregnant women, patients with psychosis and patients whose responsible physician, the chief of medicine or other delegated physician, had assessed as

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inappropriate to participate in the study. The latter group included patients who, for example, were not considered able to gainfully participate in group treatment. The final sample thus consisted of patients who had psychiatric health problems such as anxiety and mood disorders, aside from their problematic substance use.

The patients had access to treatment as usual during the study. Twenty-one consent forms were handed out, 18 were signed and returned and one person dropped out before the study started. The study group consisted of four men and 13 women, 28–63 years old. This group was deemed a purposeful sample, representative for the patients at the clinic during the time the study was conducted. Four participants were treated for the first time; the rest had been treated previously at the clinic. Fifteen participants had been diagnosed with alcohol dependence in remission and one of these was also medicated with methadone. Three respondents had a prior addiction to benzodiazepines and three respondents had had both alcohol and benzodiazepine dependence. Fifteen participants completed the study; three dropped out because of unknown reasons.

Treatment

The intervention was auricular acupuncture treatment in the context of protracted withdrawal. The participants were offered NADA twice a week for 5 weeks in a group setting. At every treatment, five acupuncture needles were inserted bilaterally in each patient's outer ears for about 40 min. Before the needles were inserted the acupuncturists' hands and the participants' outer ears were cleaned with disinfectant solution. Disposable stainless needles were used. The therapist (first author) was a registered nurse at a bachelor's degree level, with an additional 3-year diploma in Traditional Chinese Medicine.

During the acupuncture sessions, participants sat in chairs and were instructed by the acupuncturist to close their eyes and to focus on keeping their breathing calm and regular. After the final session they were interviewed about their experiences of the treatment.

Data collection

Potential participants were given oral and written information about the study by each patient's usual treatment provider at the clinic. Patients were informed that participation was voluntary with guaranteed confidentiality and informed that they could withdraw from the study at any time without any negative consequences and that non-participation would not affect their care. No economic compensation was paid to the participants in the study; however, they received auricular acupuncture treatment for free.

The interviews were conducted by the third author, a registered nurse and PhD with extensive experience in conducting research interviews. The interviews took place in privacy at the hospital or at the facilities of the Department of Neuroscience at Uppsala University. The interview questions were:

What is positive about receiving auricular acupuncture treatment?

What is negative about receiving auricular acupuncture treatment?

Has the treatment changed your life in any way?

The interviews were all ended by asking the participant whether he or she wished to add something more.

All interviews were audio-recorded with the patients' permission; the average duration of the interviews was 19 min, excluding demographic questions. Because of technical issues it was not possible to transcribe one of the interviews. Data were collected between January and October 2010. The first author was previously known to the patients while the second and third authors were not connected to the clinic. The third author had no prior knowledge about acupuncture.

Data analysis

The first and the third authors performed the analysis and discussed the results with the second author, a licensed clinical psychologist and senior researcher who is also qualified to provide auricular acupuncture treatment. Data were analysed using content analysis (Graneheim & Lundman 2004). The analysis procedure was implemented in following manner. The interviews were transcribed and numerically coded by the first author. The first step was to read and re-read the text, which was then sorted under headings in the form of sentences (units of meaning) containing information relevant to the interview questions. Second, the text was condensed into meaning units that summarized the core of the unit. Third, the condensed meaning units were classified into codes consisting of one or two words describing the core meaning unit. Fourth, categories were created where similar answers were placed.

Ethical consideration

Ethical approval was obtained from the Regional Ethical Review Board, Uppsala University, Sweden (reference number 2009/372).

Results

The presentation of the results is divided into 'positive experiences' and 'negative experiences', described in cat-

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egories and illustrated with quotations where interview numbers and gender (F for female, M for male) are indicated in brackets. The positive experiences dominated the interviews; however, seven respondents reported minor negative experiences.

Positive experiences

Peacefulness and harmony

Twelve respondents brought up peacefulness and harmony as one of the most valuable effects of the treatment: 'there are no tablets in the whole world that make you feel this peaceful and harmonious . . .' (7, F). For some respondents this felt odd, one respondent experienced the sensation as almost scary. To many respondents the difference before and after NADA was noticeable: '. . . the moment the needles come into my ears I experience a sense of peace that I never do otherwise . . .' (8, F), and the sensation tended to last between the treatment sessions. Some of the respondents even managed to learn how to induce the sensation by themselves, without acupuncture, simply by recalling the feeling they felt during acupuncture session.

Relaxation and well-being

Almost every respondent gained relaxation and an increased sense of well-being from treatment. Decreased stress led to less irritability, reduced control needs at work, improved sleep quality and increased the sense of joy: 'I slept for 12 hours straight' (11, M), '. . . one of the times, I felt so good that I sang when I left the place . . . in the car! . . .' (8, F). Among many respondents the treatment elicited a new sense of relaxation, which carried over outside the treatment setting. Some respondents who had previously had a hard time relaxing fell asleep during treatment; one had to take a nap in the car before driving back home after treatment.

For 12 respondents the treatment had in different ways enriched their lives. The respondents described how they felt more joy in their lives and some longed for the treatment on the days they did not receive it. Four respondents definitely wanted to continue after the study and three respondents said that during the treatment time they had started to pay attention to their health in a new way.

New behaviours

Nine respondents described how everyday situations became easier to handle because the ability to clear the mind became stronger. They experienced a new way of thinking and focusing and it became easier to process feelings as well as easier to ignore disturbing elements in the environment '. . . it has become easier to handle all my impressions and feelings . . .' (1, F). Because of the treatment one respondent noticed a big difference in how he managed to deal with problems and pressure during work: 'What's been positive . . . in my job, where I deal with customers in long lines . . . earlier I thought "oh my God!" . . . I was getting stressed out . . . but now, I've learned . . . *This* has taught me to take one thing at the time!' (2, M). According to this respondent the treatment had inspired him to think in new ways in the sense that he found it easier to prioritize, a development that also reduced his stress levels at work.

Reduced cravings for alcohol and drugs

Six respondents experienced reduced cravings for alcohol, nicotine and benzodiazepines. Four specifically expressed a connection between reduced cravings and the acupuncture: '. . . and you experience fewer cravings' (6, F). One respondent described how she felt less desire during the study to use benzodiazepines to relieve anxiety problems: 'I haven't felt the need to use them when I've received acupuncture . . . during that time I've experienced an inner peace in a different way than usual . . .' (10, F).

Anxiety reduction

Six respondents reported decreased anxiety levels. During the interview one respondent expressed she wished the psychiatric emergency clinic would offer NADA as anxiety reducing intervention: '. . . they only have tablets to offer at the psychiatric emergency clinic . . . but what if they would . . . while sitting down talking . . . they could use auricular acupuncture . . . That would be amazing . . . if they would have it there . . . Imagine, if they could offer something else . . . than just pills . . .' (13, F). Three respondents reported an improvement in feelings of depression and apathy. One respondent experienced that her suicidal thoughts occurred less frequently and she related this to the acupuncture treatments: '. . . all my life I have struggled with thoughts of committing suicide . . . but now I don't think in the same way . . . I believe it is because of this [the acupuncture] . . . earlier I was thinking a lot about it . . . but now I think in a different way . . . they are not that strong anymore . . .' (6, F). One respondent wanted to recommend the treatment to people suffering from Generalized Anxiety Disorder.

Positive physical impact

Eight respondents reported reduced nausea, increased appetite, heart rate reduction, fewer headaches, better balance, improved circulation and less muscular tension during the treatment period: '. . . my heart rate goes down . . .' (3, F). Half of the group reported an increased activity and energy level: '. . . and then it is easier to accomplish things when I have been to acupuncture . . .' (8, F).

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Importance of context
The group context brought a sense of coherence to several respondents. A warm and respectful attitude from the staff felt important and was very appreciated: 'It feels good to meet [the staff] . . . up there . . . and [the treatment provider] too . . . they keep an eye on you' (4, F). Eight respondents appreciated sharing experiences and meeting people in the same situation: '. . . it has been good to meet others with similar problems . . . we are all here for the same purpose . . . we all have problems . . . so, it's a quite nice feeling . . .' (1, F).

Negative experiences

Nothing negative
Twelve respondents expressed specifically that there was nothing negative about the treatment: 'I cannot see anything negative . . . actually' (5, F). 'Nothing! There are no side-effects . . . which there are when you are using medicines for example' (7, F).

Disturbing context
Five respondents described disturbances in the treatment context such as poor personal chemistry with specific people, hard chairs, ugly furnishing in the room, low room temperature and annoyance from hearing breathing sounds: 'I have not been able to relax . . . I'm sitting and listening, and become like this . . . pissed off.!' (1, F). One respondent reported a strong antipathy resulting from the building's history as the former clinic for women in an old mental hospital: 'I will put it this way . . . I was totally terrified the first time I was going to enter the building . . . it was the house in itself . . . yes, the former women's mental health care, . . . I knew that and . . . [thought] "ugh no, I don't want to come in here!" ' (14, F).

Time-consuming
Seven respondents indicated that the treatment could be time-consuming: '. . . the reason I quit was because I didn't have time to go . . .' (9, F). However, five of these respondents stated they could cope with this problem and that the treatment was worth the effort. One respondent expressed that it sometimes took a long time to receive the acupuncture needles when the group was large (six people): '. . . it takes so long to get started . . . it's a bit of a waste of time' (2, M).

Physical distractions
Seven respondents mentioned negative physical aspects of the treatment like slight pain at insertion, bleeding when removing the needles. However they did not regard these obstacles hindering treatment: '. . . It may sometimes hurt a little in the ear . . . but that's not something that I think is negative . . .' (4, F), '. . . and sometimes it may bleed a bit . . . but it's not dangerous . . . you just wipe it off' (10, F).

Short-term effect
One of the respondents stated: 'I can't say it lasts very long . . . I would need these needles to be inserted all the time' (8, F).

Depending on someone else
One respondent found it negative to depend on someone else to achieve relaxation: 'I couldn't see that I during these sessions could find a way to wind down by myself . . . and that is a negative factor, that one has to go someplace . . . to get help with it . . .' (9, F).

Remaining cravings
One respondent expressed disappointment regarding her cravings for alcohol: 'I was disappointed that the cravings remained . . .' (15, F).

Discussion

The aim of this qualitative study was to describe patients' experiences of receiving auricular acupuncture during post-acute withdrawal. The results complement quantitative research on auricular acupuncture for problematic substance use but do not explain inconclusive findings from randomized controlled trials (e.g. Margolin *et al*. 2002a, Gates *et al*. 2006). Indeed similar to results reported by Berman *et al*. (2004), our respondents experienced no major negative effects following treatment. Apart from the brief transitory sensation of pain from the needles, the treatment being time-consuming, as well as annoying details in the treatment environment, the benefits seem to have clearly exceeded the negative factors.

Participants experienced a reduction in protracted withdrawal symptoms and improved sleep quality. They also experienced a strong sensation of peacefulness, increased well-being, increased energy level, reduced physical discomfort, reduced irritability and fewer alcohol and drug cravings. These physiological and psychological responses could be explained by theories about the effects of acupuncture on the parasympathetic nervous system (Haker *et al*. 2000), the dopamine, GABA and opioid systems (Cowan 2011) and by experimental studies with rats (Lee *et al*. 2008, 2011, Zhao *et al*. 2011). Several respondents in our study experienced that their ability to focus was sharpened, as well as their ability to deal with everyday issues. Similar treatment responses are discussed in review by Han *et al*. (2011). In this study, however, it may be that the

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positive responses are due to the group context, camaraderie with other participants, detoxification from drugs or other unknown factors. One respondent in our study expressed a wish that the psychiatric emergency care would start using NADA because of its anxiety-reducing effect instead of only administering medicine. These findings raise the question if the need for prescriptions of anxiety reducing drugs within the psychiatric emergency care would decrease if NADA was continuously applied. Results from a controlled pilot study, where auricular acupuncture was given to inmates in prison psychiatric units, suggest that this might be possible after at least 25 auricular acupuncture sessions (Berman & Lundberg 2002); it should be noted that the number of sessions found effective exceeded by far the number of sessions offered in this study or in randomized controlled trials with inconclusive findings regarding effects on various aspects of problematic alcohol or drug use.

Methodological considerations

One limitation of the study was that the first author performed the acupuncture and the third author conducted the interviews. Both authors participated in the analysis process but have a bias; they have both been aware of this and have attempted to take their pre-understanding into account. In order to attempt to control for bias, the results of the analysis were discussed with the second author during the analysis process. Another limitation might be that the respondents appreciated the first author's presence, a factor that might have confounded their experience of treatment such that they confused treatment effects with the effects of meeting a liked and respected care provider. However, this is often the case when it comes to the complex area of nursing and treatment as it is delivered by human treatment providers acting from a caring sciences perspective. Another limitation was the interview guide. Some of the respondents repeated their answers from the first question when they responded to the third question. However, this generally reinforced their positive opinions of experiences from treatment. Further limitations could be the sample size; still, saturation of the interview material was reached after including 15 patients.

Our conclusion is that according to the participants in this study, the negative aspects of receiving NADA were few and almost insignificant. On the contrary, the treatment considerably helped the participants tolerate protracted withdrawal. In order to recover from addiction, patients might be likely to benefit from a combination of acupuncture, pharmacological (Karst *et al*. 2002) and behavioural treatments (Chang *et al*. 2010).

Transferability of the results from our study to other contexts or conditions might be possible given its consistency with previous qualitative research, suggesting auricular acupuncture could be used to relieve insomnia, anxiety and depression (Courbasson *et al*. 2007, Cao *et al*. 2009, Zhang *et al*. 2010). This was also suggested by our respondents. Given our positive findings, it remains perplexing that clinical trials do not show any clear evidence for the efficacy of auricular acupuncture in reducing withdrawal and other symptoms of addictions. Given that NADA is easy to administer for nurses and other professionals and is also cost-effective, it could be an ideal component of a variety of psychiatric treatments. Our study clearly indicates that more research will be needed to evaluate the clinical effectiveness of auricular acupuncture in addiction treatment, as well as to explore further explanations for its apparent adjunct effects in comorbid depressive disorders, insomnia and anxiety disorders.

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