RESEARCH ARTICLE

Effectiveness of auriculotherapy as a nursing intervention to improve wellness in alcohol-addicted young adults

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INTRODUCTION: In Mexico, addictions present major challenges for the new millennium, as the country faces one of endemic problems, more widespread and alarming in recent decades: the abuse of alcohol.
OBJECTIVE: Check the effectiveness of auriculotherapy as a nursing intervention to improve general wellness in alcohol-addicted young adults.
METHODOLOGY: Quantitative, correlational and applied study with pre-experimental, longitudinal; realized from January 2009 to August 2010 in a neighborhood of Tepic, Nayarit with n= 40. Research tools are the following:"Lecc.ves - A", "The Well -Being Picture Scale" (α=0.891), "Lesson-ves 1" (α=0.86) and "Lesson-ves 2" (α=0.80). A nursing care program based on auriculotherapy was designed and implemented, including group dynamics, educational and intervention sessions. The SPSS Statistics 17 was used, using relative and cumulative frequencies, mean and Standard Deviation (SD), and for hypothesis testing, the paired t-test (IC 95%; p<0.05).
RESULTS: Data reported an increase of 14.4 points in the personal well-being, 6.57 of family well-being and 6.35 in social well-being, after the intervention with p=0.01.
CONCLUSION: The nursing intervention using auriculotherapy was effective to stimulate the energy channels, allowing the flow and balance of energy, which influenced the increasing levels of general wellness.
Key Words: *Auriculotherapy; Nursing care program; Alcohol-addicted young adult*

INTRODUCTION

Social changes derived from variations in dynamics and composition of population, which doubled in 1981 and is expected to do the same again in 2020, the multiple economic crisis and an accelerated social and cultural opening, influenced by modernization and globalization processes, have affected people's life in individual, familiar and social spheres. In all of them alcohol abuse and its consequences are present. This allows us to identify alcoholism as a common phenomenon in modern society [1].

Alcohol consumption has been signaled as an acute epidemiological trouble worldwide, as it represents 4% of the total death risk in the world. Regarding morbidity, the main diseases associated to alcohol abuse are the following: psychiatric disorders in 100% of the cases, hepatic cirrhosis in 32% of them and troubles related to violence, homicide and accidents in 9% of the cases. In a lower percentage, we have neoplastic of the mouth and breast cancer. In virtue of these figures, we can conclude that alcoholism is the most important factor affecting the loss of years of healthy life worldwide [2].

In Mexico, addictions represent big challenges for the new millennium; particularly, alcohol abuse is an endemic and alarming problem and a largely spread social phenomenon. Mexico is placed 10th in an alcohol consumption ranking in Latin America with 71.3% of the total population (77,988,554 people) aged 12 to 65 years old. It is placed below other countries, such as Chili, Argentina, Venezuela or Brazil. Considering these figures, we can affirm that 63 in every 100 Mexican men aged 12 to 65 years old consume alcohol regularly. Regarding women, 41 in every 100 are regular alcohol consumers [3-6]. It is worthy to mention that the per capita consumption of ethanol was 7.2 L, consumers being aged 18 to 65 years old. The most consumed drinks among young people are the following: beer (41.1%), spirits (23.6%) and wine (6.6%) [4,7].

In the state of Nayarit, as well as in the rest of the country, alcohol is a risk factor associated to health damage, including accidents, violence and chronic liver disease. Adult population in the state of Nayarit represents 1.5% (1,108,799 people) of the total population of the country. A slight gender imbalance arises in the state population, as there are 49.9% of men and 50.1% of women. Alcohol consumption in the state is higher than the country average for both of them (44.0% of men and 22.4% of women); alcohol abusing or dependent men (17.2%) and women (3.0%) figures are also over the national average (23%). By the way, 15.4% of the total amount of adults in the state, 27.5% of men and 5.1% of women, declared having consumed an excessive quantity of alcohol within the last year. Last percentages place Nayarit at the top of the national alcohol consumption ranking, which reflects an intense habit among the population of the state [8,9].

Thus, people consuming alcohol experiment physical and psychological troubles, which have a negative effect on their wellness, owing to the fact that the disease is difficult to control. The brain cognitive structure, self-esteem and self-concept are affected, generating frustrations, depression, mood swings and aggressive behavior. Their attitudes reflect a low degree of satisfaction with life, with themselves and with their environment, derived from a lack of strength or capacity for facing up their problem and dealing with it [10].

Since alcoholism can take a serious toll on people's health, some research has been done to seek for therapeutic interventions, which would facilitate the overcoming treatment or could improve the patient's wellness. Up to our knowledge, none of this research is related to auriculotherapy. This study is based on Martha E. Rogers' Theory of Unitary Human Beings, in which the energy field is a fundamental unit and it provides a way to view people as irreducible wholes. A pattern is the distinguishing characteristic of an energy field and gives identity to it. The wellness experimented by the completely human being pattern is manifested when applying nonintrusive care techniques. Auriculotherapy is one of these techniques, using micro-stimulation of some specific points in the energy channels to increase the amplitude of high frequency resonant waves characterizing the whole human being pattern. This helps achieve the main nursing care goal, i. e., and the wellness for the individual, for families and for the community [11].

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MATERIALS AND METHODS

This quantitative, correlational and applied research, which includes a longitudinal and prospective pre-experimental design, was carried out between January 2009 and August 2010, in the '20 de November' neighborhood in the city of Tepic, state of Nayarit. The universe consisted of 63 alcohol-addicted young adults, of both genders, aged 20 to 30 years old. They were identified by virtue of the application of the AUDIT test, which determines alcohol consumption (frequency and amount), degree of dependence, and physical, individual or social disorders associated to alcohol abuse [12]. Sampling was carried out depending on subjects' availability among those who satisfied inclusion criteria, leaving 40 individuals for their participation in the study. The following tools were used to collect data:-

(a) A demographic profile was designed to compile information about some sociodemographic variables, such as age, gender, occupation, religion, age at first alcohol use, among others.

(b) In order to measure general well-being in young adults abusing alcohol, Sarah Gueldner's Well-Being Picture Scale was used. It "was designed for use with the broadest possible range of adult populations", including non-English speakers. Its "psychometric properties were established in a sample of more than 2,000 individuals from the United States, Taiwan, Japan, and Africa. The overall Cronbach's alpha is 0.8795"[13]. Scores were listed as follows: Optimum well-being (56-70 points), Appropriate well-being (41-55 points), Low well-being (26-40 points) and Poor well-being, from 10 to 25 points. A clinical trial was carried out in Tizimin, state of Yucatán, in order to test the reliability of this tool among Mexican population. A Cronbach's alpha of 0.891 was obtained, including socio-demographic variables.

(c) In order to measure family and social wellness, two tools were elaborated, 'Lecc-ves 1' and 'Lecc-vess 2'. Both surveys were composed by semantic differential scales having a random distribution of items. These are seven-point rated scales with end points associated to bipolar pictures that have semantic meaning. Respondents are requested to mark with an X one of the seven available spaces between poles, according to their personal and social well-being. Each scale includes 10 items. Individual items are scored on a 1 to 7 scale. Total scores were listed as follows: Poor well-being, from 10 to 25 points; Low well-being from 26 to 40 points; Appropriate well-being from 41 to 55 points and Optimum well-being from 56 to 70 points. Tools were applied on a 10% of alcohol-addicted young adults living in the '20 de November' neighborhood, in the city of Tepic, state of Nayarit, in order to test the reliability of this tool among Mexican population. A Cronbach's alpha of 0.86 and 0.80 was obtained, respectively.

A nursing care program based on auriculotherapy was designed and implemented after having applied the different evaluation tools. This includes group dynamics, educational intervention sessions, and one-hour individual sessions scheduled twice a week, in the morning and in the evening. Each session included an interview with the nurse, so as to create a sympathetic atmosphere and let reliability install between the young adult (and his or her family) and the nurse. This contributed to the follow-up of the changes operated in the patient after each intervention and to ensure adherence to the program and, therefore, its success. Mustard (*Brassica nigra*) seeds were applied on 10 auricular points, previously selected on account of the study goals and the evaluation of the general well-being of the participant. The right ear was chosen for starting the treatment in men and the left ear on women. In subsequent applications, ears were alternated, removing ear implants so as to not overstimulate the chosen points. Subjects were informed about care and self-stimulation, as pressure must be applied on each point 4 times a day. For control purposes, a form was elaborated, as well as a schedule and printed appointment reminders. Once the intervention program achieved, and a week after the last session, surveys about personal, familiar and social well-being were reapplied.

The SPSS Statistics 17 set of tools was used to analyze the collected data. Relative and cumulative frequencies were calculated for categorical variables, while the mean and standard deviation were calculated for numerical variables. For the study variables, some frequency tables were used in the descriptive previous and post-intervention analysis. Hypothesis testing was carried out using a t-test for comparing the average values among related groups, with a statistical reliability of 95% and a significance less than 0.05.

RESULTS

Table 1 shows, according to the alcohol-addicted young adult profile, that 65% of participants is 20 to 25 years old and 35% of them is 26 to 30 years old; 77.5% of participants are men and 80% of them has a regular income, as 52.5% of them registered 'Construction worker' or 'Employee' as their main occupation; 95% of participants are catholic, 22.5% of them has completed an Upper Secondary educational level and 30% of them declared a Tertiary level; 57.5% of subjects are single and 32.5% of them are married. The average age of first use of alcohol is 16.3 ± 1.66, giving an interval between 14 and 18; thus, patients started drinking alcohol as teenagers, where both healthy and unhealthy habits are caught from family or friends, as at these ages, individuals are not always able to make decisions, and somehow they lack of personal, family or social identity. Owing to the fact that alcohol consumption is a learned habit, usually acquired in the family, nursing intervention for early detection is extremely important for increasing the efficacy of the treatment.

TABLE 1
Alcohol-addicted young adult profile (settled-down in '20 de November' neighborhood, city of Tepic, state of Nayarit), (Source: Demographic Profile Survey Lecc-ves-A, 2010).

Variable	Dimensions	Frequency	Percentage
Age group	20-25	26	65
	26-30	14	35
	Male	31	77.5
Gender	Female	9	22.5
	Student	7	17.5
Occupation	Housekeeper	1	2.5
	Construction worker	6	15
	Merchant	5	12.5
	Employee	21	52.5
Religion	Catholic	38	95
	Protestant	2	5
	Completed Primary	4	10
Educational	Completed Lower Secondary	15	37.5
attainment level	Upper Secondary	9	22.5
	Tertiary Education	12	30
	Single	23	57.5
	Married	13	32.5
	Common-law marriage	3	7.5
	Divorced	1	2.5

The results of the surveys, previous to intervention, were as follows: 2.5% of participants had a Poor well-being, 27.5% of them reported a Low level, 55% of participants had an Appropriate well-being and 15%, an Optimum level. After the intervention using auriculotherapy, 95% of patients reported an Appropriate and Optimum well-being. Thus, according to the descriptive statistics in this study, auriculotherapy helped increase the personal wellness of participants. Focusing on family wellness, 35% of participants presented a Low or Appropriate level, and 65% of them, an Optimum level. After intervention, 100% of participants lied between Appropriate or Optimum well-being levels. Thus, descriptive statistics show

that auriculotherapy also helped increase the wellness of the participants' families. Concerning social wellness, 85% of participants declared an Appropriate or Optimum level previous to intervention, rising up to 97.5% after intervention; that means that auriculotherapy contributed to increase a 12.5% the social well-being of participants (Table 2).

TABLE 2
Young adult well-being (settled-down in '20 de November' neighborhood, city of Tepic, state of Nayarit, 2010), (Source: Gueldner Well-Being Picture Scale, 2010).

Level	Personal well-being				Family well-being				Social well-being			
	Previous to intervention		After intervention		Previous to intervention		After intervention		Previous to intervention		After intervention	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Poor well-being	1	2.5	0	0	0	0	0	0	1	2.5	0	0
Low well-being	11	27.5	2	5	2	5	0	0	5	12.5	1	2.5
Appropriate well-being	22	55	8	20	12	30	4	10	16	40	9	22.5
Optimum well-being	6	15	30	75	26	65	36	90	18	45	30	75

The global well-being of the alcohol-addicted young adult was evaluated before intervention and 12.5% of them presented a Low level, while 87.5% of them presented an Appropriate or Optimum level; 100% of participants reported an increased well-being level, between Appropriate and Optimum (Table 3), after intervention.

TABLE 3
Young adult global well-being level (settled-down in '20 de November' neighborhood, city of Tepic, state of Nayarit, 2010), (Source: Personal, family and social wellness survey, 2010).

Level	Personal well-being			
	Previous to intervention		After intervention	
	Frequency	Percentage	Frequency	Percentage
Poor well-being	0	0	0	0
Low well-being	5	12.5	0	0
Appropriate well-being	19	47.5	7	17.5
Optimum well-being	16	40	33	82.5

Hypothesis testing was carried out using a t-test for comparing the average values among related groups, and it was applied to each of the well-being levels with a significance less than 0.05. As shown in Table 4, data reveal an important increase of 14.4 points in personal well-being, 6.57 points in family wellness and 6.35 points in social well-being after auriculotherapy intervention with a significance of 0.01. The effectiveness of auriculotherapy is therefore verified statistically with the rise in general wellness of the alcohol-addicted young adult.

TABLE 4
Verification by t-test of the effectiveness of auriculotherapy in the general well-being of alcohol-addicted young adult (settled-down in '20 de November' neighborhood, city of Tepic, state of Nayarit, 2010), T-test with 39 Degrees of Freedom (DOF), (Source: Personal, family and social wellness survey, 2010).

Intervention	Personal well-being Mean ± SD			Family well-being Mean ± SD			Social well-being		
		t	p		t	p	Mean ± SD	t	p
Previous to intervention	46.00 ± 10.646	-		56.68 ± 9.305	-		50.93 ± 11.039	-	
After intervention	60.40 ± 8.482	8.16	<0.01	63.25 ± 8.776	4.83	<0.01	57.28 ± 8.265	4.57	<0.01

DISCUSSION

The results obtained in this research allow us to affirm that a relation exists between gender and alcohol consumption, as 77.5% of the young adults in the neighborhood are men and only 22.5% of them are women; among the later, 2.5% are housekeepers. Health personnel is concerned about this situation, as according to Mexican traditions, women are in charge of satisfying family's needs and encouraging the adoption of healthy habits

among its members. Our results are in accordance with those presented by Cortaza (2007) in the state of Veracruz, where it was also found that alcohol consumption was higher in men than in women [14]. However, this results reflect a gender culture which is still predominant in Mexico, where alcohol consumption is socially accepted for men, whereas it is not so for women.

The educational attainment of the young adults that participated on the survey was between upper secondary and tertiary; this would be associated to a middle to lower-middle socioeconomic status. Nevertheless, this is not in agreement with their occupation, as 30% of participants declared a tertiary educational level attained, but 25% of them work in hardware stores, 2.5% in footwear stores, 5% in childcare establishments and 2.5% of them in automobile repair shops.

Single is the most common marital status among the participants. Additionally, the average age between 20 and 28 years old, plus an average age of first use of alcohol between 14 and 18 years old, are situations which provoke alcohol consumption for leisure, due to the lack of family responsibilities. This agrees with the results presented by Jiménez in 2003, whose paper reported that the frequency of alcohol consumption for leisure is related to idleness [15].

It is worthy to mention the epidemiological relevance of the average age of first use of alcohol, as the risk exists for this to be a spark for other drugs consumption, as mentioned by Herrera (2004) and Hernández (2009). In these research works, a relation is established between an early age of first use of alcohol and prevalence, and the transition to the use of other (legal and illegal) drugs ($p<0.001$); probability is of 1% at 12 years old and of 15% at 20 years old [16,17].

The epidemiological profile described above reveals that 100% of the young adults who participated in the survey are situated in a productive life stage, looking for economic stability, as well as for the achievement of goals and personal aspirations. If these are fulfilled, there is a balance between the individual and the environment; however, when these are not fulfilled, they transform in stress factors that influence the alcohol consumption pattern, as the young adult becomes completely overwhelmed [17].

The correlations between the demographic variables and the status of personal, family and social wellness show that it does not exist a statistical significant difference to consider these variables as increasing the global well-being among young adults ($p>0.05$); worth mentioning, only occupation and education variables could be modified. Once the different well-being levels have been risen, owing to the nurse intervention described above, the alcohol-addicted young adults would try to search for better career opportunities according to their educational attainment.

An exhaustive revision of the literature was carried out to demonstrate the effectiveness of alternative therapies in improving patient's wellness. One of the first works that we remarked was the one by Ávila and colleagues in 2010, where the effectiveness of Reiki as a nurse intervention in adults with type 2 diabetes was studied; significant t-test values (2.24; 11 DOF; $p=0.047$) were obtained after the intervention, with respect to blood sugar levels [18]. Similarly, Juárez-Villegas studied the effectiveness of auriculotherapy in treating anxiety in alcohol-addicted adults and, according to Hamilton scale, they obtained a diminution of anxiety levels from 2.25 (previous to the intervention) to 1.25 (after the intervention) [19].

The results that we have obtained through the t-test for paired samples confirm the improvement of the global young adult wellness. It moved from 87.5% of participants in an Appropriate to Optimum level, previous to intervention, to 100% of them in an Appropriate to Optimum level, after the intervention. This agrees with the results obtained by Bullock in 1989 in studying techniques related to acupuncture for reducing alcohol consumption, and he verified the effectiveness of auriculotherapy as a treatment to reinforce alcohol detox [20].

These results are related with the Martha Rogers' Theory of Unitary Human Beings: the low wellness levels in alcohol-addicted young adults before the intervention with auriculotherapy might be caused by energy blocks in the energy channels motivated by an unbalanced integration with energy fields. This reveals a negative behavior pattern reflecting patients' frustration for receiving less than they think they deserve, and considering alcohol consumption as a weak and temporary solution for improving their wellness, thus creating a vicious circle, which becomes a lifestyle pattern [11].

CONCLUSION

The intervention with auriculotherapy was effective to stimulate the energy channels with specific auricular points, restoring the energy flow and allowing energy equilibrium. The improvement of the general wellness was expressed by the patients as a rising vitality, a general state of well-being with themselves and with the environment, a capacity to enjoy personal, family and social activities, and a positive emotional state. Rogers' theory mentions that the effectiveness of an intervention or reshuffle on an energy field can be measured by the wellness level attained by the patient, and she suggest that health personnel, particularly nurses, must use alternative therapies as part of a nursing care program, in the aim of better contributing to solve public health problems.

The present work presented some information to enhance future research on the effectiveness of non-intrusive alternative care techniques in the context of prevention and treatment of addictions and other pathologies. Genetic, emotional and motivational factors should probably be taken into account as part of the study variables, as well as the development of cognitive and praxeological skills in health personnel to carry out this kind of interventions.

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