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Drugs and Body percussion: Rehabilitation therapy using the BAPNE method

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Abstract

Cognitive impairment amongst drug addicts is often seen during their rehabilitation process, leading to significant changes to aspects of their relational, personal, social and collective identity. In this study, we analyse the influence of the BAPNE method as a means to improve stress, identity, self-esteem and flow level during activities carried out with subjects with substance addiction going through the withdrawal process when confined for three months. The groups have been studied separately; during the confinement progress, patients are separated by gender. The programme was carried out with 28 males and 27 females aged between 16 and 20 years. Using an adapted version of the “Aspects of Identity Questionnaire (AIQ-IV)”, the four dimensions of identity were evaluated (personal, relational, social and collective). In order to evaluate self-esteem, the Rosenberg scale was used. To measure stress, three saliva samples were taken to measure cortisol. The results show an improvement in levels of identity after the workshop, both globally and in each one of the four dimensions. Levels of cortisol dropped substantially and increases in self-esteem were also notable, with a marked change from the start to the end of the programme. This aspect is linked to the level of flow during the activities due to the cognitive stimulation they underwent through the BAPNE method.

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1. Introduction

Body percussion as a useful means of therapy using the BAPNE method has been shown by numerous scientific studies which advocate its use with different types of patients (Romero-Naranjo, 2013). Its multidisciplinary approach has been shown to be justifiable with a range of different subjects, including those with cognitive deficit (Romero-Naranjo, 2014), Parkinson's (Romero-Naranjo, 2011), Attention deficit hyperactivity disorder (Romero-Naranjo, 2014), dyslexia (Crespo-Colmino, 2014), as well as being used didactically. Its validity as a means of therapy can thus be seen to be justified in numerous fields. The use of music as a means of therapy with patients with substance addictions experiencing withdrawal has been studied by various authors (Winkelman, 2003) (Doak, 2003). However, the use of body percussion with drug addicts has, until now, not been a topic of study. This is the first methodological approach to the subject, using the BAPNE method.

1.1. *The BAPNE method as a resource for rehabilitation therapy*

The BAPNE method stimulates the different areas of the brain, following Howard Gardner's theory of Multiple Intelligences, and has at its core movement and body percussion. BAPNE is an acronym formed from the words: Biomechanics, Anatomy, Psychology, Neuroscience and Ethnomusicology. All these disciplines are trained together in the exercises proposed in the technique. Body percussion is the art of hitting the body in order to produce various types of sounds for didactic, therapeutic, anthropological and social purposes. Both in the field of musical cultures and in the world of shows and performances, body percussion has had different roles, which can be classified into their different uses, meanings and purposes in each culture. The body is used for these different purposes as an acoustic, rhythmic, dynamic instrument with distinct timbre because it is linked to movement and dance. It is important to stress that in the present day, the media and social networking sites play an important role in their spread, due to their high level of visual and aesthetic content (Romero-Naranjo, 2013).

1.2. *Rehabilitation programmes by means of the BAPNE method*

Before starting this study, we carried out a range of different methodological tests to maximise the effectiveness of the proposed exercises with this particular type of subject. We included activities in these tests that are not used in strategies that involve the BAPNE method in order to see if these were equally valid. With subjects in rehabilitation for drug addiction, we used body percussion with background music, but quickly had to stop this approach due to the high levels of excitement provoked, the excessive force with which they hit their body, and the fights which, on occasion, broke out. We also used activities that were learnt in a more hierarchical fashion in the classroom (with the teacher standing in front of the class) and this led to violence between individuals and the person stood directly in front of them, and fights broke out amongst the subjects. In the same way, we used activities that lasted longer than four minutes, and activities that demanded learning a choreographed routine with body percussion (with and without background music). The attention span of subjects when asked to learn a series of steps was very low; remarks such as "how long left?" and "can we do something else?" were often heard. When the same test was carried out with patients with senile dementia, we observed the same, and saw that it was counterproductive for cognitive stimulation (Romero-Naranjo-2014). For this reason, in the current investigation, the model consists of activities carried out as follows: for a maximum of 3-4 minutes; with subjects always speaking, reciting or singing; without background music; always in circles or concentric circles in the classroom; and never as a choreographed routine, but only as a means of cognitive stimulation. We therefore used the BAPNE method strictly, making use of its four ways of learning: Imitation, Inverse Reaction, Variable Circular Coordination and Real-time Signalling. In parallel to this investigation, subjects underwent medical treatment as they went through the withdrawal process.

This treatment sought to control various aspects, including:

- Observing their level of awareness (excitement, psychomotor agitation, hallucinations)
- Monitoring vital signs to check for possible hypotension, bradycardia, fever
- Keeping airways open in case of needing to use oxygen or artificial respiration if necessary
- Cannulating a peripheral vein to administer liquid if necessary

- Maintaining subjects under strict direct observation in order to avoid suicide attempts
- Monitoring patients' hygiene when hygiene habits have been neglected

2. Method

The aim of this study was to analyze the influence of Body Percussion using the BAPNE method in a workshop aimed at reconstructing identity and building self-esteem amongst young offenders. The workshop was carried out with a group of a young men and women in a rehabilitation and reintegration centre which specialises in working with young substance addicts.

An adapted version of the "Aspects of Identity Questionnaire (AIQ-IV)" was used to evaluate identity, and the Rosenberg Scale was used to assess self-esteem.

We also carried out cortisol tests before and after the study in order to see if there was a link with improved identity (personal, relational, social and collective), as well as self-esteem of the group.

Each set of activities was carried out twice a week for a period of three months. A pre-test was carried out before starting the workshop, and a post-test at its end. It is important to stress that a pre-experimental design was used both at the pre- and post-test phrases, and that there was no control group. The activities were carried out with a large number of nurses who participated in them, often as the partners of subjects in the activities.

2.1. Context and participants

The subjects were studied in two separate groups, with males in one and females in another. The workshop was carried out with 28 young men and 28 young women, aged between 16 and 20, with varying degrees of withdrawal symptoms stemming from excessive consumption of cocaine, heroin, marihuana, hashish and hallucinogenic pills or liquids.

2.2. Instruments

An adapted version of the "Aspects of Identity Questionnaire (AIQ-IV)" was used to evaluate identity, and the Rosenberg Scale was used to assess self-esteem. In the final adapted version used in this study, the questionnaire was reduced to just 34 items. The four dimensions of identity were kept the same, but questions were distributed as follows: ten items on personal identity (1, 4, 7, 10, 13, 16, 18, 21, 23, 27), seven on social identity (2, 5, 8, 11, 14, 15, 17), seven on collective identity (3, 6, 9, 12, 20, 25, 33) and ten on relational identity (19, 22, 24, 26, 28, 29, 30, 31, 32, 34). This instrument used a Likert scale with response intervals from 1 ('Not important for me') to 5 ('Extremely important for me'). To make responding easier, a graded scale from 1 to 5 was used, and it was pointed out that 1 meant unimportant, and 5 very important. The scores of the AIQ-IV can be looked at in different ways depending on the interests of the researcher; they can be looked at to determine the global identity of participants, or each one of the four dimensions can be looked at independently. In this study, both approaches are used.

Secondly, the Rosenberg Scale (1973) was used to evaluate self-esteem as a variable indicator of emotional function, as it is a commonly used instrument in psychology. This scale has ten items, five of which are described positively and five of which are described negatively. The response interval ranges from 1 ('Strongly disagree') to 4 ('Strongly agree'). Responses of between 30-40 are considered as indicative of high self-esteem, those between 26-29 as of average self-esteem and responses of less than 25 as low self-esteem. The scale was translated into Spanish for the purpose of this study and shown as valid with an alpha Cronbach coefficient of 0.87.

3. Results

The following quantitative results were obtained after the pre- and post-test.

Table 1. Quantitative results

Global Identity (Males N=28)				
	Average	DT	t	p
Pre-test	2.52	.26		
Post-test	3.40	.32		
Pre-test - Post test			-13.98	.000

Table 2. Quantitative results

Global Identity (Females N=27)				
	Average	DT	t	p
Pre-test	2.63	.27		
Post-test	3.52	.36		
Pre-test - Post test			-14.02	.000

Table 3. Quantitative results

Identity Variable (Males N=28)							
	Pre-test			Post-test		Pre-test-Post-test	
	Average	DT		Average	DT	t	p
Personal	2.33	.44		2.97	.47	-8.48	.000
Relational	2.65	.38		3.35	.42	-7.83	.000
Social	2.83	.38		3.42	.48	-8.01	.000
Collective	2.35	.52		3.09	.57	-8.32	.000

Table 4. Quantitative results

Identity Variable (Females N=27)							
	Pre-test			Post-test		Pre-test-Post-test	
	Average	DT		Average	DT	t	p
Personal	2.38	.43		3.05	.49	-8.39	.000
Relational	2.69	.36		4.03	.44	-7.74	.000
Social	2.91	.37		3.72	.52	-7.95	.000
Collective	2.44	.51		4.01	.61	-7.93	.000

The cortisol tests showed evidence of a reduction in the secretion of the hormone cortisol after the 12 weeks of experimentation.

Table 5. Quantitative results

Cortisol (nmol/L) – Males (N=28)		
Shooting time	Pre	Post
8 - 10	22.3	18.1
14:30 – 15:30	13.4	11.4
23:00	4.8	3.1

Table 6. Quantitative results

Cortisol (nmol/L) – Females (N=27)		
Shooting time	Pre	Post
8 - 10	21.8	17.4
14:30 – 15:30	12.5	10.9
23:00	4.1	2.7

When the non-parametric Wilcoxon signed test was carried out on each of the dimensions of identity, a level of significance of 0.00 was obtained (<0.5) for each one. It can therefore be concluded that there are statistically significant differences in all dimensions.

The results of the level of flow and self-esteem are also positive. The level of flow during the activity was quite high, especially during the final month of the workshop. The same was found for levels of self-esteem, which started quite low, but increased as sessions continued, reaching almost 30% on the Rosenberg Scale by the end.

4. Conclusions

In light of the data obtained, the subjects can be seen to have shown significant improvement in tasks that increase their levels of stress, identity, flow and self-esteem. This was obtained despite the fact that it is difficult for

any teacher to work with this type of group due to the low levels of self-esteem, aggression, and sudden mood swings commonly found during withdrawal periods after high levels of drug abuse. The medium- and long-term results show a clear improvement in the subjects under study, suggesting that the BAPNE method is a valid tool to increase levels of identity and self-esteem due to the inclusion of group, inclusive and collaborative work. The BAPNE method does not allow individual and competitive work, but instead fosters the opposite type of skills, and thus works on emotions and values. It is important to stress that subjects carried out only this particular programme during the three months of the study in order to not interfere with the final results when seeking to evaluate the BAPNE method's effectiveness with this type of patient.

Due to the distribution of the group in the activities, and the active nature of the activities, improvements in mood were seen amongst those who participate in them. The gradual increase in the demand of activities was not found to be a cause of stress, but an incentive and source of motivation which led them to overcome new challenges. This feeling helps them to be more active and collaborate more. It is important to stress that this type of therapy was carried out using only the body as a sound instrument, with no percussion instruments at all.

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