The role of physical activity on the psychological health of alcohol addicts in post-cure

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ABSTRACT

The objective of this study is to show that the Adapted Physical Activity (APA) can contribute to the improvement of the well-being in alcohol dependence addiction. We have been working on two central notions of well-being: motivation and self-esteem. According to many studies, self-esteem is weak and it is a preferential treatment axis. It is often accompanied by stress and anxiety. Thirteen passions, aged 36 ± 6.24 year, body mass 70 kg (± 5.15), height 172 cm (± 4.5), participated in the experiment. We divided the group into an experimental group (EG) and a control group (CG) of 15 passions to the study by answering questionnaires based on self-esteem and motivation. It is difficult to demonstrate the part of the adapted physical activities on these two parameters. Psychologically, APA practice will positively impact, improving self-esteem and decreasing the negative effects of anxiety and depression. Indeed, group work can create a dynamic social framework that will promote communication. The practice of APA will serve as a meeting place, restructuring / reconstruction. This is for the purpose of progressive social reintegration. The APA allows playing an important role in these people’s improvement of physical and mental health.

Key words: APA, addiction, alcoholics, self-esteem, motivation.

INTRODUCTION

Psychological health is a set of procedures and methods for individuals to maintain their mental health, so that they can find appropriate solutions to the problems they face; it is also known as the ability of the individual to deal with the environment surrounding him and on the emotions that result from his being influenced by the factors that drive him to anger and anxiety, etc. Despite frequent reports of psychological benefits from regular exercisers and the intuitive holistic link between physical and mental well-being, researchers have only recently begun to systematically examine the impact of physical activity on mental health outcomes.

The result of this research is that we now have a convincing evidence base that supports the existence of a strong relationship between physical activity and psychological well-being (Biddle et al., 2000). There is a close relationship between physical and healthy physical exercise and mental health. This is a positive relationship. The greater the commitment to performing these exercises, the greater the psychological stability of the person becomes. These exercises reduce stress, anxiety and stress resulting from activities and stress daily life. This relationship may be critical. The literature indicates that mental health outcomes motivate people to persist in physical activity while also having the potentially positive impact on well-being (Biddle and Mutrie, 2001).

Without regular participation both mental and physical benefits will not accrue. The physiological and psychological benefits of physical activity have good evidence to support them. The term "addiction" can mean many things to many people. For our purposes we define addiction as follows: Addiction is the repeated involvement with a substance or activity, which is a pathological state where the organism is unable to function physiologically
outside the consumption of the responsible substance (Vanescon, 2005). The World Health Organization defines dependency as: "A psychic and sometimes physical state, resulting from the interaction between a living organism and a product, characterized by behavioral or other responses that always involve a compulsion to take the product regularly or periodically to feel its psychic effects and sometimes avoid the discomfort of its absence (weaning). The tolerance may be present or not. The World Health Organization, whose goals are present in all pathologies and diseases, always insist on well-being and health and often includes physical activity, but she is the only authority to take charge of health.

Indeed, there are other health organizations in the field of addictology that justify in their programs the benefits provided by the practice of regular physical activity, physical and mental health. An addiction heavily impacts the way a person thinks, feels and acts. Many individuals with addictive disorders are aware of their problem, but have difficulty stopping on their own. Alcohol is a legal, controlled substance that lowers anxiety and inhibitions. It also has a broad range of side effects, from loss of coordination to slurred speech. Not everyone who drinks is an alcoholic, but anyone whose life is negatively affected by alcohol on a consistent basis is considered to have an alcohol use disorder.

Alcohol is commonly consumed as a drink in various forms. The tolerance may be present or not. Alcohol causes the sensation of euphoria. This sensation is marked mainly by dehinition which facilitates social contacts and galvanizes interactions (André et al., 2004). Alcohol is toxic. Central nervous system (encephalopathies) or peripheral (polyneuritis, retrobulbar optic neuritis) disorders, loss of balance, arterial hypertension, stroke, and cardiac arrhythmias (Coulombier, 2001); all of these negative effects on the body and mind of a majority of substance-dependent subjects result in decreased self-esteem, motivation, value, physical and/or mental abilities.

Self-esteem is often regarded as the single most important indicator of psychological well-being. High self-esteem is associated with a number of important life adjustment qualities whereas low self-esteem is associated with poor health behaviour decisions and is characteristic of many mental disorders such as depression (Fox, 1997). The post-cure puts in place institutional care, which aims to move the patient towards autonomy. The alcoholic patient has no longer any desire, he is no longer aware of his body, he becomes an inactive person. According to Kukstas (1998), the patient's main motivation is to be healed, to get in shape and be listened to. It seems that the alcoholic patient is asomatognosic (loss of consciousness of a part or the whole body) (Clement, 2001). Among approaches to lifestyle modification, exercise holds particular promise for relapse prevention.

Exercise has been described as "a highly recommended lifestyle change activity" for relapse prevention (Marlatt and Gordon, 1985: 309), and the potential value of exercise and fitness in the prevention and treatment of addictive disorders has been widely noted (Agne and Paolucci, 1982; Taylor et al., 1985; Tkachuk and Martin, 1999). There is now considerable evidence that regular exercise is a viable, cost-effective, but underused treatment for mild to moderate depression that compares favorably to individual psychotherapy, group psychotherapy, and cognitive therapy, and a necessary ingredient in effective behavioral treatments that reduce self-reported pain in individuals with chronic pain. Preliminary evidence also suggests that regular exercise deserves further attention as a singular treatment for some anxiety disorders, for individuals suffering from body image disturbance, and for the reduction of problem behavior of developmentally disabled persons, and an adjunct in treatment programs for alcohol dependence (Tkachuk et al., 1999).

The detoxification procedure involves psychological and/or pharmacological support and an extensive follow-up period (De Sousa, 2004; Sinclair, 2001). Psychological management of alcoholism may include self-help groups, group therapy, psychotherapy and cognitive-behavioural therapy. These techniques deal with the underlying psychological issues that are associated with alcohol addiction, as well as, providing relapse prevention skills. Another therapeutic approach to alcoholism widely used in the last 10 years is motivational interviewing (Miller and Rollnick, 2002). It is an approach that helps to increase the intrinsic motivation and commitment to treatment of the patient, enhancing the will to change. This technique applies to patients with extremely serious problems and those with less severe alcohol problems. The decision to change is stemming from the person with the help of intrinsic motivation, which is emphasized in the theory of self-determination (Ryan and Deci, 2000).

APA brings essential benefits to this population, psychologically, socially, and physically. According to Lastra (1999), "the group constitutes a dynamic social framework, it is a communication engine". In seeking to better understand (and build an evidence base relating to) the value of exercise as adjunct therapy, testing the influence of exercise participation on recovery-specific and mental health outcomes – both in the short-term and in the longer-term – is crucial. Exercise has been suggested as an alternative approach in the prevention or treatment of alcoholics' (Donaghy and Mutrie, 1999; Read and Brown, 2003). Physical activity is unique in the sense that it is available to people who may not have access to other forms of treatment, such as psychological intervention or medication. It can also act as an alternative healthy activity versus addiction (Kosmidou, 2009) and enhance mood and psychological well-being (Craft and Perna, 2004).

A more recent study by Jamurtas et al. (22) used an exercise protocol of longer duration (30 min) and low intensity (~60% of the maximum heart rate). The results indicated an 18.6% decrease in alcohol urge in alcoholic
patients compared to the control group that underwent the same exercise protocol. Although this change was not statistically significant, it was close to the difference noticed in the aforementioned acute experiment (Ussher et al., 2004). With that in mind, researchers are encouraged to develop suitably powered cluster randomized trials that examine the effectiveness of treatment programs involving exercise participation relative to matched, no-exercise (for example, standard care) controls. This is in line with the goals of harm minimization and abstinence-based models of treatment (Marlatt and Witkiewitz, 2002; Marsh et al., 2013).

The objective of this study is to show the beneficial effects of APA on a physical and moral level and also to know if they have a sufficiently important place within the structure. From psychology questionnaires, we will try to determine the part of APA on improving self-esteem and motivation.

MATERIALS AND METHODS

Description of the study

This study is performed on 30 addicts aged 36 years (± 6.24), they weigh 70 kg (± 5.15) and their sizes and 172 cm (± 4.5), divided into two groups of (n = 15). One group was the Experimental Group (EG), while the other group of 15 players was the Control Group (CG). Both groups are with addiction (alcohol). All these patients were in post-cure. The patients presented were in day hospitalization (DH) for four weeks at the University Hospital Center for mentally ill Oran, Algeria. For Experimental Group (EG) patients, activities begin from the first day. Regarding physical activity, the (EG) have 5 times an APA time over four weeks. All patients in the study responded to psychology questionnaires at the beginning and end of the cycle. The questionnaires are based on different domains related to well-being:

1) Self-esteem scale in the body domain (Ninot et al., 2000).
3) Motivation scale in sport (Vallerand et al., 1995).

Regarding the questionnaire on personal perception, the meaning of each sentence leads to a weighting of 1 point (strongly disagree) to 4 points (totally in agreement) for positive items and vice versa for negative items. We obtain a maximum score of 40 and a minimum of 10 (10 questions), which gives an average of 20/40. For the questionnaire on self-esteem in the body domain, we have a weighting of 1 point (not at all) to 6 points (quite) for the positive items and vice versa for the negative items. For each parameter (overall self-esteem, perceived physical value and appearance) we have a maximum score of 30 points and a minimum of 5 points (5 questions in each sub items). This gives us an average of 17.5 / 30 for each parameter and 45/90 for the total. Finally, the questionnaire on the motivation leads to a weighting of 1 (does not correspond at all) to 7 (corresponds very strongly). This gives a maximum score of 28 and a minimum of 4 (4 questions for each sub-item) and therefore an average of 14/28. Nevertheless, on the criterion of amotivation, the lower the score (4), the better, because it means that the amotivation is weak. So for intrinsic motivation and extrinsic motivation, we have an average of 28/56.

Adapted physical activity program

The importance to be given to post-treatment APA rests on the reconstruction of a global being. The main motivation of the addicted is to heal, to get in shape and to be listened to. The goals in APA will therefore be based on fitness, by rediscovering the body and body diagram. These criteria are intended to increase self-esteem in these patients, most of whom have been inactive for several months. The post-cure program sets up institutional care that aims to change the patient towards a recovery of autonomy (Varrey et al., 2001). Sessions are made of lightweight muscle strengthening of the lower and upper limbs, pelvis (abdominal) using equipment such as weighted bracelets and dumbbells. Exercises based on endurance are also offered, through ball games (football and basketball) as well as, a bike practice and swimming. Some exercises are done alone, but "collective" or two exercises are included in each session whatever the proposed work.

Statistical analyses

The results for the anthropometric characteristics will be expressed as mean (± SD) (Table 1). After verifying the normality of the population, we choose a parametric test, a t-test for paired samples. This will be used to compare the results of the questionnaires between the beginning and the end of the cycle, for each theme (personal perception, self-esteem and motivation).

RESULTS

The results for the anthropometric characteristics will be expressed as mean (± SD) (Table 1). After checking the normality of the population, we choose a parametric test, a t-test for paired samples. This will be used to compare the results of the questionnaires between the beginning and the end of the cycle, for each theme (personal perception, self-esteem and motivation) (Tables 1 to 3).

The self-esteem results in the body domain show that the group (EG) progresses significantly and not significantly for the control group (CG). The baseline mean is negative for both groups with 42.2 / 90 (± 7.9), 43/90 (± 7.6) and improves...
Table 1: Presentation of significant body self-esteem scores at p <0.05 between the beginning and the end of the cycle.

<table>
<thead>
<tr>
<th>Items</th>
<th>Overall estimate</th>
<th>Perceived physical value</th>
<th>Appearance</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cycle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EG</td>
<td>CG</td>
<td>EG</td>
<td>CG</td>
</tr>
<tr>
<td>The beginning of the cycle</td>
<td>10.2±2.3</td>
<td>10.4±2.6</td>
<td>17.4±3.1</td>
<td>17.8±2.7</td>
</tr>
<tr>
<td>The end of the cycle</td>
<td>12.5±1.9</td>
<td>11.9±2.4</td>
<td>16.4±2.3</td>
<td>17.4±2.4</td>
</tr>
<tr>
<td>T student</td>
<td>3.2*</td>
<td>0.6</td>
<td>0.8</td>
<td>0.4</td>
</tr>
</tbody>
</table>

Table 2: Presentation of the results of the overall self-esteem significant perception at p <0.05 between the beginning and the end of the cycle.

<table>
<thead>
<tr>
<th>Item</th>
<th>Global self-esteem personal perception</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cycle</td>
</tr>
<tr>
<td></td>
<td>The beginning of the cycle</td>
</tr>
<tr>
<td></td>
<td>The end of the cycle</td>
</tr>
<tr>
<td>T student</td>
<td>6.12*</td>
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</tbody>
</table>

Table 3: Presentation of the results of the estimation of the significant motivation at p <0.05 between the beginning and the end of the cycle.

<table>
<thead>
<tr>
<th>Item</th>
<th>Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cycle</td>
</tr>
<tr>
<td></td>
<td>Intrinsic motivation</td>
</tr>
<tr>
<td></td>
<td>Extrinsic motivation</td>
</tr>
<tr>
<td></td>
<td>Amotivation</td>
</tr>
<tr>
<td></td>
<td>Total</td>
</tr>
</tbody>
</table>

at the end of the cycle with 46.1 / 90 (± 5.8) for the (EG) and 44.5 / 90 (± 6.8) for the (CG). Regarding the evolution of each criterion, there is a significant improvement for the group (EG) for the overall Estimate criterion but the means are negative (acceptable average of 15/30) and the standard deviation is not very important. For the group (CG), the mean is negative. For the Appearance criterion, the improvement is significant but slight for the group (EG); the patients in the group (CG) progress insignificantly also in the Appearance criterion. The criterion Physical perceived value which is not significant of an improvement for the two groups (EG) and (CG) nevertheless reveals more acceptable means than the two previous criteria at the beginning and end of the cycle.

Self-esteem

Personal perception shows the results are significant at 0.05, the averages are not negative if we base ourselves on an acceptable average of 20/40 and from an average of 25.3 ± 3.2 in beginning of the cycle at 30.2 / 40 (± 2.8) for the group (EG) (Tables 2). For the group (CG), an improvement between the beginning and the end of the cycle that does not present a significant difference in the criterion of self-esteem: personal perception at p <0.05 was observed.

With reference to the motivation questionnaire, some items were retained: intrinsic motivation to the achievement, extrinsic motivation identified and Amotivation. All results analyzed were significant at 0.05 for the (EG) group, and the group (CG) did not differ significantly at p <0.05. Regarding the evolution of each criterion there is a significant improvement for the group (EG) for the criterion intrinsic Motivation 15.2 / 28 (± 2.2) at the start and 18.1 / 28 (± 3.2) at the end, and that of Extrinsic Motivation goes from 14.8 / 28 (± 1.9) to 17.6 / 28 (± 2.3). For the group (CG), progress is insignificant with a small improvement of the averages for the two criteria (intrinsic Motivation goes from 14.7 ± 2.4 to 15.1 ± 2.6 and Extrinsic Motivation goes from 15.2 ± 2 to 15.8 ± 2.2 (Tables 3). The criterion of Amotivation was analyzed separately because there is a low average means better motivation. The results are significant at 0.05 for the group (EG) which goes from 10.3 ± 3.4 at the beginning to 8.6 ± 2.6 at the end of the cycle. The group (CG) show insignificant results also in the criterion Amotivation which
DISCUSSION

The purpose of this study was to show the beneficial effects of APA on a physical and moral level, with the assumption that its practice would lead to an improvement in self-esteem and motivation on alcohol-dependent people. Despite the fact that the part of physical activity can not be determined precisely in terms of improving these parameters, the initial hypothesis seems to be verified. In fact, the results are mostly statistically significant. A growing body of literature demonstrated that physical exercise is associated with favorable mental health outcomes. Exercise has the potential to be an accessible and affordable adjunct treatment option for persons with alcohol; however, exercise-based interventions have rarely been applied to this population. Several authors refer to the place of the body in therapy. It has a primordial role in the sense that one must relearn how to master it, how to deal with it (Adès and Lejoyeux, 1996; André et al., 2004; Aubry et al., 2004; Clément, 2001; Coulombier, 2001; Ninot, 2000; Reynaud, 2005; Vanderheyden, 2003; Varray, 1988).

The work of Marlatt et al. (2005) is among the most prominent and relapse prevention strategies based on this model and have shown promise in the treatment for alcohol use disorders (Carroll, 1996; Irvin et al., 1999; Witkiewitz and Marlatt, 2004). However, unequal attention has been paid to each component of this model. In particular, the lifestyle modification component, one of the primary domains of Marlatt’s model, received the least emphasis in relapse prevention programs for alcohol dependence (Marlatt and Witkiewitz, 2005; Witkiewitz and Marlatt, 2004), and as a result, rigorous empirical evaluation is lacking. The improvement is then subjective and the result based on the “word” of patients. More recently, consensus statements in the UK suggested a role for physical activity in alleviating depression and anxiety (Biddle et al., 2000).

Positive effects have been recorded for individuals with schizophrenia and those rehabilitating from drug and alcohol abuse but these areas need more research. Nevertheless, self-esteem is a preferred area of care in addictology centers, with the first intention being the emergence of a motivation for change and, secondly, the prevention of relapse. Belief in the necessity of “what I do for me” is the essential driving force. Here, the self-esteem improved but this questionnaire did not allude to the corporeal domain. This improvement can be the result of all the activities combined during the three weeks such as self-esteem, scenarios, individual psychological interviews and sport. We can not determine how much of the improvement is due to the ‘physical activity. These small improvements show that despite the beneficial effects of APA on the body, the body occupies too little space in the therapeutic program. The structure in which the study was conducted does not allow the development of activities, and it would be interesting to propose more varied sports activities for better results.

Indeed, according to the study of Ninot et al. (2003), physical activity brings benefits at the physical, mental or social level and can help bring the subject to better socialization, autonomy, responsibility, self-esteem. In fact, physical activity is considered a beneficial therapeutic method for people staying in post-cure. Several studies show this in particular a study of a center where physical activity has a primary role (Vanderheyden et al., 2003, Ninot et al., 2003). Physical exercise would improve behaviors, coping strategies and emotion management. Here again, we cannot identify what role physical activity played in increasing motivation. Certainly, during the physical activity sessions, some motivation techniques such as the goal setting theory were used where in the first sessions the objectives set are easy to reach and are complicated as the sessions progress (increase pedaling time on bike and increase in the number of series). Motivation and self-esteem are linked. By working on self-esteem, there is a motivational side “I am able to”, But AP sessions are few in number to accurately assess the degree of motivation. We do not have rational tools (apart from the questionnaire) and an intermediate evaluation is impossible over such a short period.

Goal setting theory cannot be applied correctly with little session. The assessment is based on the feelings of the patients during the sessions. Nevertheless, the improvement of this criterion can translate a better valuation as well as, a surpassing of oneself. Faced with a situation of success and not of failure or great difficulty, the patient had to analyze and treat various data in order to reach his goal. In the psychological domain, the theory of self-efficacy of Bandura (1977) refers to the socio-cognitive mechanisms through which the individuals can regulate their behavior. The theory argues that the inner belief of an individual that makes them successfully carry out a particular behavior is associated with the ability to exhibit this behavior. As such, when people engage in exercise programs they increase their self-confidence and this process is further reflected in their everyday lives by enhanced levels of self-esteem and self-efficacy (Landers and Arent, 2001: 36). By analogy, this process may be transferred to the implementation of coping strategies necessary to stay away from alcohol. This allowed him to regain some confidence and value his abilities that he thought was zero.

Sport is a therapeutic value, because it is realized in the progressivity and the continuity, taking into account the limits of each. He can then participate in the restoration of self-confidence and the restructuring of the personality. This is to the point that sport is far from being contraindicated and even desired as much as, possible (Vanderheyden et al., 2003). The usefulness of sports for
people with alcohol dependence is highlighted in the study of Vanderheyden et al. (2003). Addictions are numerous and diverse and can affect any individual or social context. Individuals who engage in regular activity will be less sensitive to the negative effects of stress and anxiety. Indeed, there is an important relationship between sport and well-being as sport contributes to individual health and social relationships, and has considerable potential (Ripoll et al., 1995). The study did, however, have two important limitations: minimal physical activity within the structure and a greater variety of physical activity that cannot be offered. According to our results, there is an improvement in self-esteem and motivation. Some important studies show the benefits of physical activity in reducing stress and anxiety (Carrière, 2003; Clément, 2001; Coulombier, 2001; Cox, 2005; Ninot, 2003; Vanderheyden, 2003; Vaneson, 2005; Varray, 1988). Be that as it may, physical activity shows its benefits and benefits on the physical and moral levels. It has its place in a post-cure center, because it helps the restructuring of the body diagram, that is to say, the individual in its own right, the rediscovery of his physical abilities, some forgotten sensations of pleasure and well-being that can help fight addictions.

Several limitations in this study warrant discussion. First, the small sample size demands caution when interpreting the results and “small” effects may not be detected due to limited power. Second, the lack of objective measure of exercise behavior between sessions is an important limitation. In addition, the reliability and validity of the TLFB for assessing levels of daily exercise over extended periods of time as utilized in this study has only recently been examined (Panza et al., 2012).

REFERENCES


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