

UNIVERSITY OF THESSALY School of Physical Education and Sports Laboratory of uport psychology and quality of life



# " New trends in exercise as medicine for dementia, drug addiction, and quit smoking "

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Sport and exercise as medicine to quit smoking

Smoking kills around 6 million people each year and around 8 million by the year 2025. More than 5 million of those deaths are the result of direct tobacco use while more than 600 000 are the result of non-smokers being exposed to second-hand smoke.

- It seems that sport and exercise programs is negatively related to the habit of smoking.
- Exercise has been considered as an effective tool for smoking prevention and smoking cessation.



#### The explanation and interpretation of the psychological and physiologic mechanisms through exercise

- <u>Sports and physical activity participation may increase individuals' confidence to quit</u> smoking
- might help people cope with abstinence, to cope with stress and depression feelings and to feel relaxed and calm.
- Increases caloric expenditure, and may increase the metabolic rate and reduce the weight gain associated with smoking cessation
   The activation of the meta-hainsm of self-esteem, body image, self-confidence, self control,
- The activation of the mechanisms of self-esteem, body image, self-confidence, self contro pleasure and satisfaction derived from the attendance of exercise programs etc.
- The activation of the mechanisms of endorphin secretion and body temperature fluctuation or via changing of neurotransmitters (Landers & Arent, 2007).



#### Experiment 1. Preference for other-selected and self-selected exercise intensity among smokers

Participants, adults, non-physically active, heavy smokers. TASK: 30 min exercise protocod on ergometric bicycle Results revealed that <u>the desire to somoke</u> was significantly lower immediately after exercise. Urge to smoke increased to baseline levels 30 minutes post-exercise periods and surpassed these levels 40 minutes after the completion of the physical task

mokers exhibited an enhanced preference for self-selected intensity of vercise an to other-selected forms of physical activity.



### Experiment 2.

a. Smoking delay: 16 minutes to first cigarette smoking after exercise

b. a preference for the moderate intensity exercise protocol.





#### Implementing an intervention program for exercise adherence and smoking cessation

#### (D. Tzatzaki thesis)

- · Personal goal setting for exercise
- · Personal goal setting for daily number of cigarettes
- Focus on breathing during exercise
- · Focus on positive self talk
- Focus on specific Coping strategies to quit smoking (drink water, focus on breathing, attentional focusing on something else),

### Procedure

#### FORM TO BE COMPLETED, First day every week

### 'goal setting for smoking reduction" This week the number of cigarettes that 1'll smoke will be less than....

How confident are you ? (not at all confident) 1 2 3 4 5 6 7 8 9 10 (totally co

### "goal setting for exercise" This week the total amount of time that 111 dedicate for exercise is....... minutes

How confident are you ? (not at all confident) 1 2 3 4 5 6 7 8 9 10 (total)

- Today I will try to walk with moderate intensity for......minutes
- 2. How confident are you? (not at all confident) 1 2 3 4 5 6 7 8 9 10 (totally confide

#### "Use of self-talk"

- While I'm walking I'm thinking: p.e. calmly, I feel good 2. I choose to repeat the word...... every .....steps



#### Counseling intervention for smoking cessation, combined with physical activity showed promising results

- Study 1.
- 53.3% of the participants quit smoking and maintained the abstention until the end of follow-up that lasted 12 months
- Study 2.
- Participants (n=50) 36% of them succeeded to quit for at least 1 year.
- Smoking cessation program based on counseling and supportive psychological interventions, combined with enhancement of physical activity in daily life, orientation to a healthier way of living, to manage their feelings of stress and tension, to increase self efficacy for quit smoking. Physical activity promotion in combination with counselling strategies and psychological support to a smoking cessation program can have positive results on the participants effort to quit.

### **Guidelines for exercise prescription**

- 1. Sports and exercise can be used both for smoking prevention and for smoking cessation.
- 2. Daily physical activities from 15 to 30 minutes of walking, increased gradually its duration to 60 min per day (or about 420 min per week).
- 1. Moderate intensity exercise protocols more than 20 min per session.

4. Personalized counseling strategies for smoking, combined with enhancement of physical activity in changing daily habits, to cope with stress and depression.

5. Self regulation strategies (goal setting, self talk) for increasing physical activities (jogging, swimming, bicycling, etc.)

### The importance of exercise on drug addiction

#### • Statistics:

- 246 million people, or 1 out of 20 individuals aged from 15 to 64 years old- used illicit drugs in 2013, whereas 10% of them have been addicted to one or more psychoactive substances.
- Drug addiction is defined as a cluster of cognitive, behavioral, and physiological symptoms that indicate a person has impaired control over substance use and continues to use such addictive substances despite the ensuing severe adverse consequences

## Why sports and exercise programs as therapeutic tool in drug addiction

- · reduces anxiety and depressive symptoms,
- · improves self-confidence, self-esteem and body image,
- · enhances mood states, general well-being and quality of life,
- offers participants the opportunity to attain a pleasant mental state without substance use
  adopt a positive lifestyle change
- reduced drug intake, increased abstinence rate, reduced craving, higher completion rate of the rehabilitation program, altered behavior and relapse prevention.
- Positive social outcomes, development of friendship networks





#### https://www.youtube.com/watch?v=c4cvevWE5Io&feature=share

### 2. the "Reintegration Through Sport" project

- The importance of Adventure therapy (AT)
- Outdoor adventure activities as a primary therapeutic tool, promoting real or perceived physical and psychological risk, as an important factor in achieving desired outcomes and can be applied either as an exclusive, complementary or parallel therapeutic tool to a wide range of mental disorders.
- The project focused on the benefits of outdoor sports activities in order to create a secure environment, giving ex-drug addicts equal opportunities, contributing to their treatment and social reintegration.

### Description of a 5-day adventure program in nature

- Outdoor adventure activities
- as camping, rafting, rappel, fire building, cooking, orienteering, MTB, archery, and River trekking/canyoning, as well as trust and cooperative activities.
- During the program, participants linked their experiences with the therapeutic process and goals through reflection and discussion with their facilitators and peers. Range of life skills including problem-solving approaches, positive reinforcement of self-esteem and self-efficacy.
- New experiences and developing new skills, focusing on positive changes in current and future behavior



Social inclusion through sports for addicted



The archery experience and the fear of failure









tes Adventure Therapy and RACE for life, Offer an alternative therapeutic approach to add ing by creating i

#### Guidelines for exercise description against drug addiction

- The place: Therapy Centers for Dependent Individuals 1.
- Participants: Not underling health conditions Duration: From 150 to 300 min per week. My suggestion 300 min 3.
- Types of sports:
- Team sports
- 2. Weight Lifting programs.
- Jogging or running
- Sports through adventure therapy programs
- 6. Important:
  - Relaxation techniques 2.
  - psychological skill strategies (e.g., goal setting, positive thinking and self efficacy), prepare strong arguments in order to persuade the clients/patients
    - VIDEOhttps://www.youtube.com/watch?v=c4cvevWE5lo&feature=share

### Exercise, dementia and Alzheimer

People suffering from dementia number 46.8 million worldwide, while 7.7 million new cases of dementia are recorded each year.

In Greece, patients have been calculated to be around 200,000 and that they will reach 500,000 by 2050.

#### **Guidelines for exercise prescription**

- 1. Exercise has been recognized as a mechanism for the improvement of their health and the prevention of dementia as well as for the improvement of their cognitive functioning and
- 2. Combined (strength, balance, aerobic, flexibility) or walking exercise with light to moderate intensity seems to improve walking performance and reduce the decline in activities of daily living, and cognitive functioning.
- 3. Exercise needs to be individualized and supervised.
- 3. Let close news to be intrividualized and supervised.
  4. Multicomponent combined cognitive- moderate physical training, targeting at improving upper and lower body strength, endurance, flexibility, balance, limb (upper and lower), cognitive function, such as visual perception, attention, memory, abstract thinking, and language, behavioral and psychological symptoms in major neurocognitive disorder and functional ability.
- 5. Exercise programs for three times/week for 45 minutes per session.

#### New trends, exercise in virtual reality environment NUMBER OF STREET, STREE

Driving Facely

A Virtual Reality App for Physical and Cagnitive Training of Cloter Pacple With Mild Cognitive Impairment: Mixed Methods Feasibility Study:

We developed a VR platform that allows older people with MCI symptoms to practice physical and cognitive skills on a dual task. This virtual reality application gives the participants the ability to self-regulate the intensity and duration of their exercise, monitor the distance covered, the speed, heart rate, the subjective feeling of fatigue as well as personal levels of satisfaction and enjoyment. Music preferences, and cognitive exercises for the improvement of memory also provided through the system. The findings suggest that VRADA is an acceptable, usable, and tolerable system for physical and cognitive training of older people with MCI.

http://psych.pe.uth.gr/index.php/el/projects/vrada

http://prick.ce.uth.c







A purposed protocol on Bicycle ergometer: 36 sessions 3 per week/ duration: start 20 min/ speed: 20 Km/h 22 km last month 30 min 25-30 km/h last month Heart rate =70-90 per min

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