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SPORTS AGAINST SMOKING AND SUBSTANCE USE DISORDER

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Topics

- **Addiction definition**
- **Smoking addiction and exercise**
- **Exercise and alcohol**
- **Exercise addiction**
- **Drug addiction and exercise**
- **How to organize effective intervention programs**

What is addiction

- Addiction is a **complex condition, a brain disease that is manifested by compulsive substance use despite harmful consequence**. People with addiction, have an intense focus on using a certain substance(s), such as alcohol or drugs.
- They keep using alcohol or a drug even when they know it will cause problems (American Psychiatric Association)
- Addiction **is a global problem** that costs many millions of lives each year and causes untold suffering.
- It can involve ingesting licit and illicit psychoactive drugs (e.g. **alcohol, nicotine, opioids, stimulants, steroids, or cannabis**) or other kinds of activity (e.g. **gambling, computer gaming**).

The effects of exercise on smoking:



Facts about smoking and diseases

- **There is strong medical evidence that smoking is related to more than two dozen diseases and conditions. It has negative effects on nearly every organ of the body and reduces overall health.**
- **Smoking remains the leading cause of preventable death and has negative health impacts on people of all ages: unborn babies, infants, children, adults etc.**
- **Smokers not only increase their risk of lung disease, including lung cancer, but they also increase their risk of other illnesses, including heart disease, emphysema, stroke, and oral cancer, type 2 diabetes etc.**

WHO smoking statistics

Tobacco 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.

U.S. National Cancer Institute and World Health Organization (2016). *The Economics of Tobacco and Tobacco Control. National Cancer Institute Tobacco Control Monograph 21*. World Health Organization; 2016

Smoking and diseases

Research has shown that Smoking creates a **various functional problems and leads to serious diseases.**

It is responsible for the increased mortality rate in smokers.

The percentage of Greek smokers are among the highest in Europe.

Greece has the highest proportion of smokers among Western European countries

Differences between Exercisers and Non-Exercisers

- the more people exercise the less they smoke
- older individuals exercise less and smoke more than younger individuals,
- non-athletes smoke more than athletes
- former athletes smoke less than people who had never exercised.
- **It seems that exercise is negatively related to the habit of smoking.**
- (Hassandra &Theodorakis, 2005)

Sports, Exercise and smoking

- **Sports and Exercise has been considered as an effective tool for smoking prevention and importantly for smoking cessation.**
- **Reviews on the relevant research have identified limitations focusing on the lack of theoretically driven interventions, but also methodological shortcomings.**

More focused analyses

Exercise & smoking

- *Smoking is related with stress, depression and bad mood*
- *Many forms of exercise and physical activity are associated with increased psychological well-being, strength and vitality, and a sense of 'feeling better'.*
- *an increased capacity to manage stress, depression, anger and fatigue, as well as increased vigor*
- This feeling is attested to be strong after an exercise program, where people **feel pleasant mood changes**.

Exercise & smoking.

- Physical activity participation **may increase individuals' confidence** to quit smoking
- might lead to **reductions in withdrawal symptoms** (e.g., stress, depression, irritability, restlessness, poor concentration), nicotine craving
- might help people cope with **abstinence** (εγκράτεια).
- Regular physical activity increases caloric expenditure, and may **increase the metabolic rate and reduce the weight gain associated** with smoking cessation
- (Marcus, et al., 2003; Taylor & Katomeri, 2007; Taylor & Ussher, 2005)

Interventions

Psychological theories and hypotheses

- Exercise helps deal with stress and can thus satisfy the motives of those who declare that they smoke **to feel relaxed and calm.**
- People who exercise report fewer symptoms of depression, so exercise can act as a substitute for smokers who use tobacco **in order to cope with depression feelings.**
- **Exercise improves the sense of control,** the sense of self-efficacy, self-image and self-esteem and promotes more positive social relationships.

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

- contributing in this positive outcome **is not yet clarified.**
- The **reduction of depression and stress**
- The activation of the mechanisms of self-esteem, body image, self-confidence, self control, **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).
- **Since beta endorphin is released during exercise and it appears to be the factor that results in a euphoric feeling after smoking**

Interventions

Psychological theories

- The most popular psychological theories examining the relationship between psychological variables and smoking behavior include:
- Social Cognitive Theory (Bandura, 1986; Butler, 2002)
- Theory of Planned Behavior (Ajzen, 1988),
- Goal-setting Theory (Locke & Latham, 1990),
- Health Belief Model (Rosenstock, 1974)
- Transtheoretical model (Pechaska & DiClemente, 1983) ,
- Self determination Theory (Deci & Ryan, 1985; 2000) .

Ten steps to quit smoking

The effects of exercise and psychological counseling in smoking cessation

The intervention program was entitled «No more smoking! It's time for exercise».

Patients participated in a 10 week cognitive-behavioral smoking cessation treatment. The treatment is divided in 10 steps, one step per week, and lasting one hour each.

The focus of the program was

- 1. on psychological intervention strategies,**
- 2. on motivating physical activity participation.**

The psychological intervention part

was based on relevant quitting smoking programs, and guidelines from the American Cancer Society.

knowledge and information about smoking and health,
analyzing reasons and ways to quit,
changing smoking and unhealthy beliefs,
changing attitudes and unhealthy habits,
analyzing physical and affective symptoms,
coping with craving,
stress management,
managing mood and affect,
relaxation techniques, and self-monitoring.

Physical activity promotion and involvement

During the intervention meetings participants were given written instructions for exercise.

They were working by setting personal goals, and completed goal setting forms and log books,

to monitor their physical activity participation,
by assessing the duration in minutes of physical activity, the intensity and the type of physical activity.

Participants instructed to **increase**

- their daily physical activity from 15 to 30 minutes of walking and to increase gradually its duration and intensity about 20 minutes of jogging day to day. The second week participants prompted to increase gradually their physical activity to 40 minutes, by switching jogging and walking.
- The next week participants were taught how to set realistic short-term goals for their daily physical activity intensity and duration.
- Participants also were instructed to use pedometers and encouraged to choose from a broader variety of physical activities (bicycle, sports, e.t.c.).

The fourth and fifth week participants

- **were also taught how to set long-term goals for their physical activities and how to increase commitment to achieve their goals. The next 5 weeks counsellors monitored the participants' physical activity.**
- During this period also, participants were encouraged to find the better way to incorporate a suitable physical activity when quit-smoking symptoms aroused in their every day schedule. Additionally, they had the opportunity to join a group that every evening was walking and jogging at local recreational parks

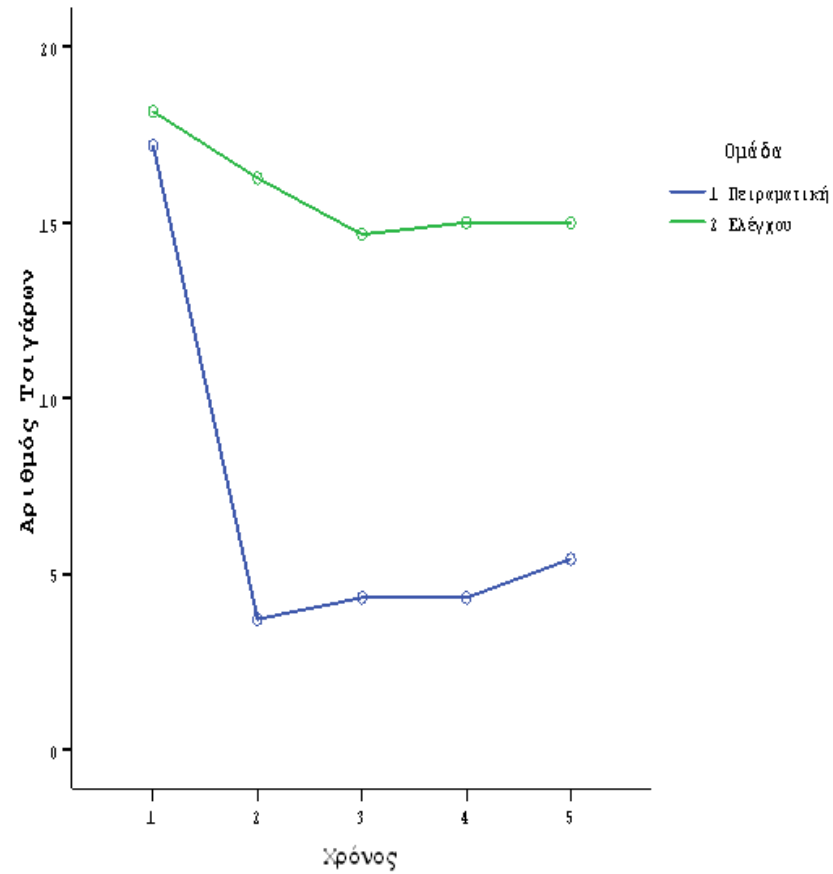
Goal setting form for exercise

Type of activity	Your long term goal	Goal for the next month	Goal for the next week	Goal for today
walking				
jogging				
Aerobic class				
Other (specify)				

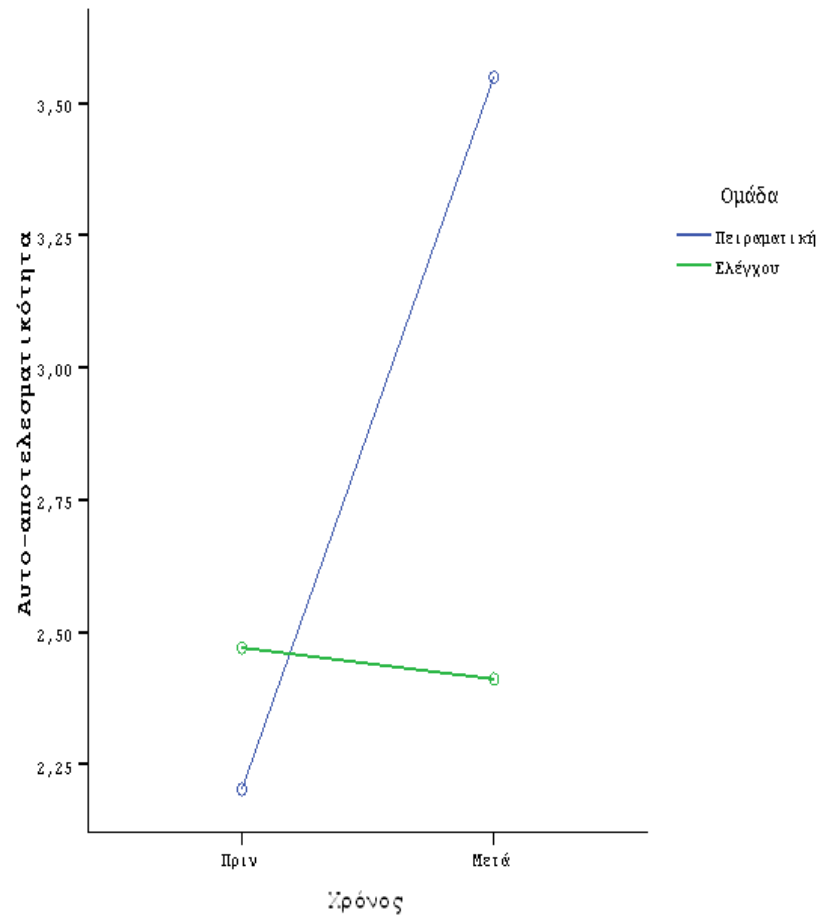
Exercise and smoking

- **Intervention study**
- **Participants (n=50)**
- **36% of them succeeded to quit for **at least 1 year**.**
- they perceived exercise:
 - as a means that helped them manage their feelings of stress and tension during their effort to quit smoking, and as a way to improve their life by adopting a healthier lifestyle.
 - They reported walking and running as their most favorite physical activities whereas several of them found pedometers to act as motivating tools increasing their attachment to exercise. Overall, it could be suggested that people who try to quit smoking should be encouraged to be more physically active.
- (Hassandra et al., EHP, 2012, JSHS 2013)

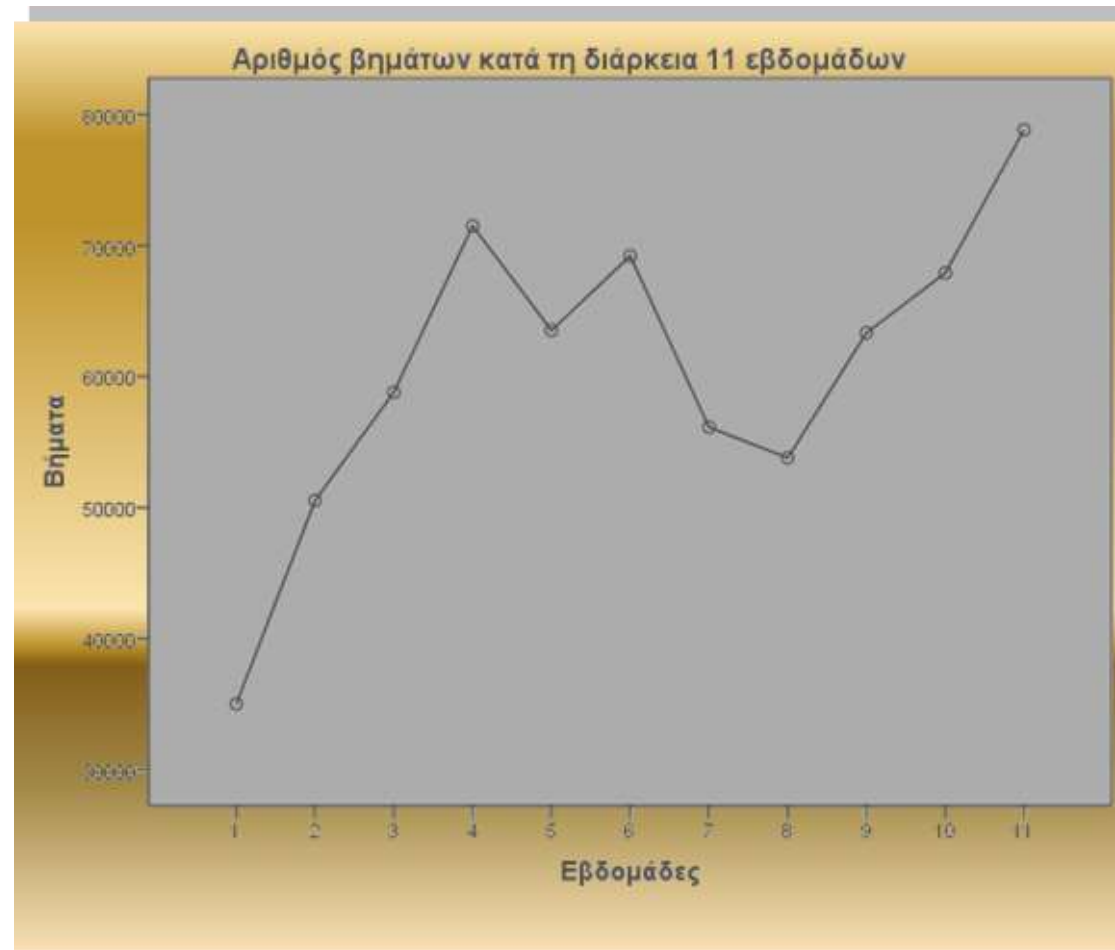
Number of cigarettes



Self efficacy to quit smoking



Walking: Number of steps per week



Results:

- At the end of the program, **the self efficacy for quit smoking** was increased.
- **Participants increased their physical activity** levels from pre-to post-intervention and 5 of them found pedometers as motivating tools to increase their attachment to exercise.
- People who try to quit smoking should be encouraged to be more physically active.
- **Physical activity promotion in combination with psychological support to a smoking cessation program can have positive results on the participants effort to quit.**

Some more experimental evidence

The Thalís project

1. Experiment comparing the effects of moderate and high aerobic exercise intensity on smoking delay.
2. Experiment comparing the effects of assigned moderate and self-selected aerobic exercise intensity on smoking urge.
3. An exercise intervention, based on the self-determination theory and self-regulation strategies.
4. A qualitative approach to the topic through the exploration of experiences from smokers participating in relevant exercise sessions.

- The Thalís project:
- This research has been co-financed by the European Union (European Social Fund – ESF) and Greek national funds through the Operational Program "Education and Lifelong Learning" of the National Strategic Reference Framework (NSRF) - Research Funding Program: THALES. Investing in knowledge society through the European Social Fund.



Thalis project

Preference for other-selected and self-selected exercise intensity among smokers

- Participants, 10 adults, non-physically active, heavy smokers.
- TASK: 30 min exercise protocol on ergometric bicycle
- Results revealed that smoking urge/ desire to smoke was significantly lower immediately after exercise.
- **Urge to smoke reverted back (increased) to baseline levels 30 minutes** post-exercise periods and surpassed these levels 40 minutes after the completion of the physical task.
- Smokers exhibited an enhanced preference for self-selected forms of physical activity as opposed to other-selected forms of physical activity.
- **Implication:** smoking cessation and motivation for physical activity participation can be increased by allowing smokers select intensity of physical activity programs.

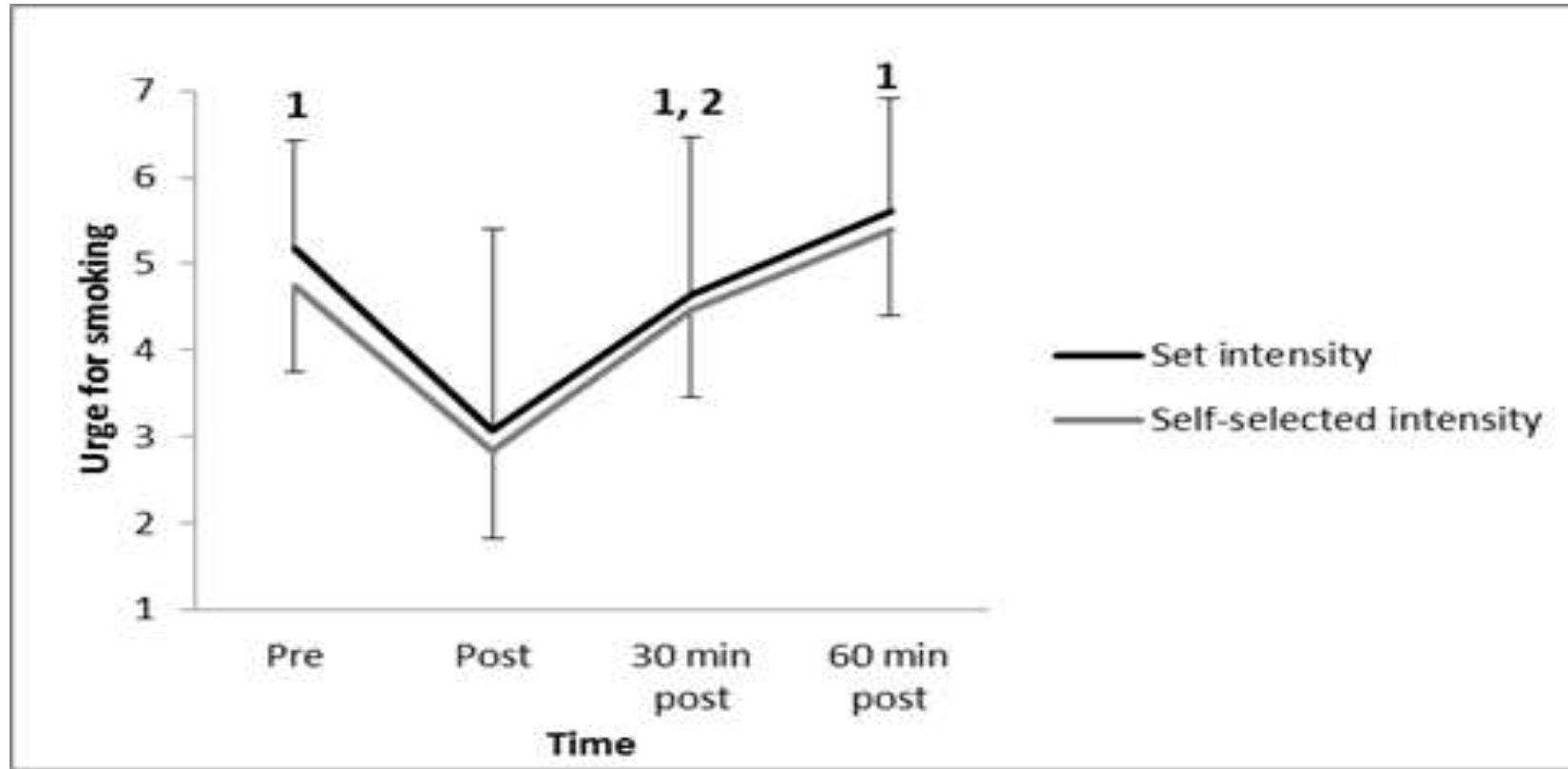
results

Means and standard deviations for all the examined variables (n = 10)

	Physiological measures (averaged)					
	HR*		RPE**		WL***	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Set intensity	136.38	4.98	12.25	2.30	55.36	14.86
Self-selected intensity	126.18	15.59	11.68	1.30	48.68	11.54

Note: *Heart Rate in beats per minute, **Rate of Perceived Exertion. ***Work Load in watts

Smoking urges/desire following set intensity and self-selected intensity exercise



Significantly different compared to Post, 2: Significantly different compared to 60 min post

Effects of different types of exercise

Participants

Smokers (mean: 26.2 cig/day)

Non exercisers

Mean age 32.70

12 males 12 females

Protocol

Within subjects design

Three 30' conditions (counterbalanced)

control

moderate intensity PA (50-55%)

high intensity PA (65-70%)

Exercise protocol

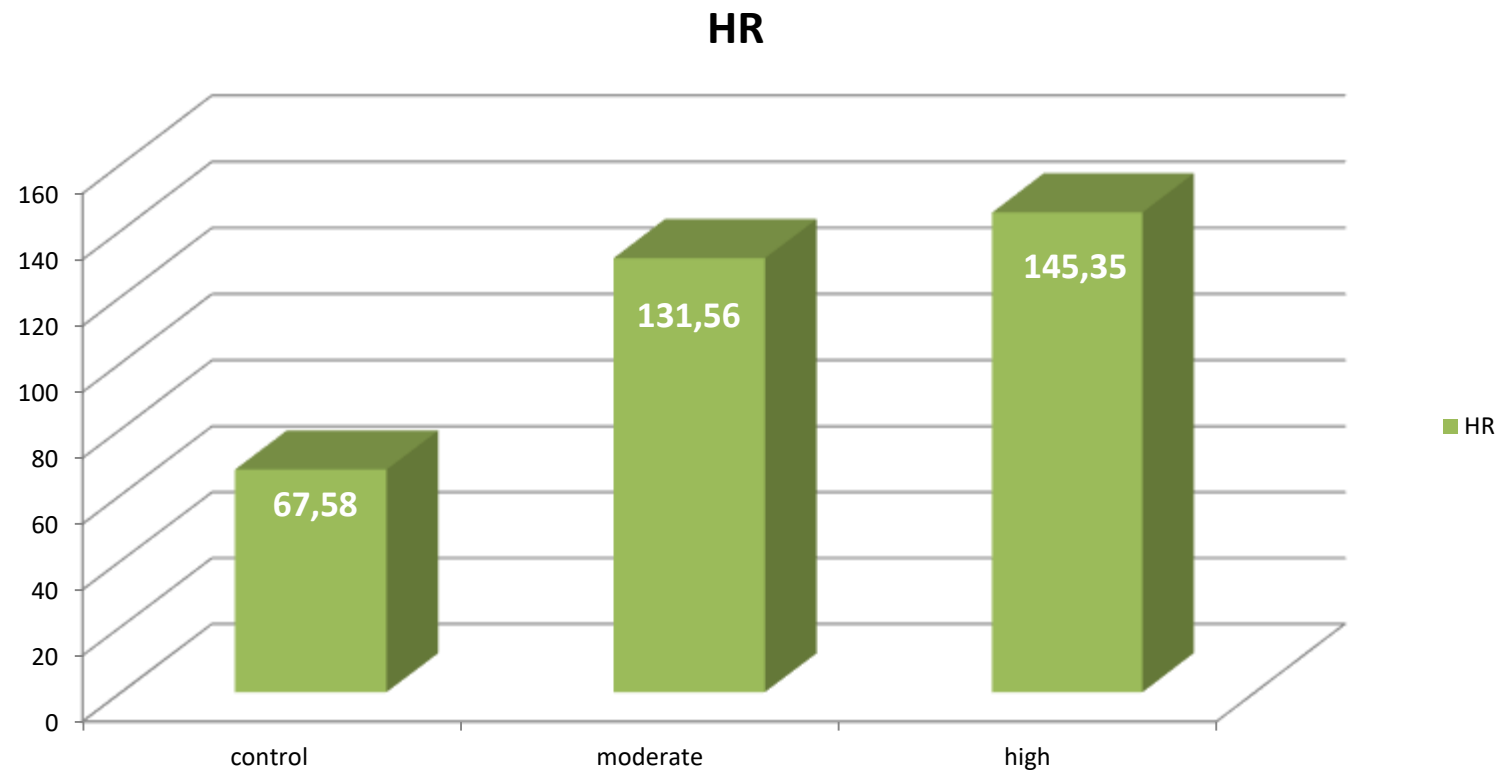


Πειράματα

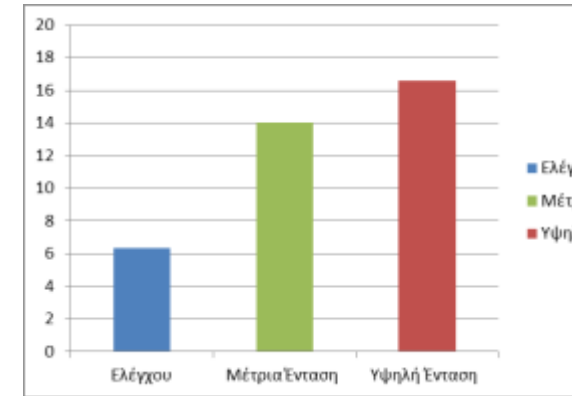
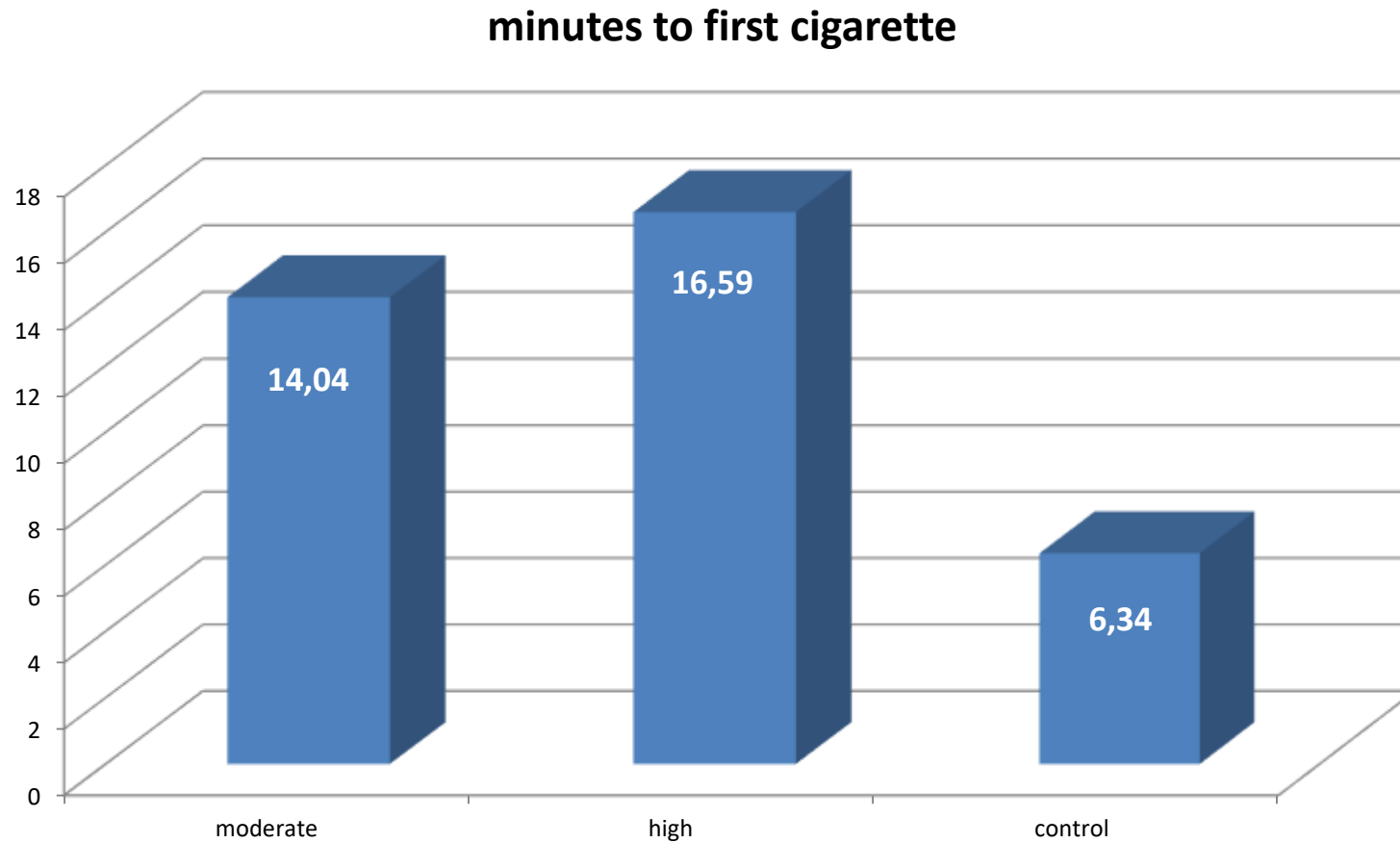


HR man. check

Average Heart Rate for the three conditions



smoking delay: minutes to first cigarette smoking after exercise



Results

- Smoke delay
- Results showed significant differences between the control and the moderate intensity condition ($p < .05$), and between the control and the high intensity condition ($p < .01$), but not between the moderate and high intensity conditions ($p = .28$).
- In the control condition participants smoke their first cigarette faster than in the two exercise conditions.
- Analysis, showed a preference for the moderate intensity exercise protocol.
- 11 participants reported smoking less on the day of the moderate exercise protocol
- 13 reported smoking less cigarettes on the day of the high intensity exercise protocol
- 8 participants reported initiating moderate exercise/ walking after participating in the experiment
- Participants initiating exercise reported smoking on average 3.75 (± 3.65) fewer cigarettes during the day they exercise.

Implementing an intervention program for exercise adherence and smoking cessation

SELF REGULATION STRATEGIES FOR 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),

The intervention

duration 8 weeks


▶ Exercise

- Aerobic program
 - In the first 2 weeks, participants were advised to attend 2-3 sessions per week with final goal 5 sessions by week 8.
 - Exercise sessions began at 20-30 minutes per session and gradually progressed to 60-70 minutes.
 - Moderate intensity (55%-60% VO₂max)
 - The program took place in a recreation park or in the gym (when the weather was not helpful / when participants chose to)
- 


The intervention

Self regulation strategies

Training

- ▶ **to breath properly**
 - ▶ **to set personal goals for exercise and smoking**
 - ▶ **and the use of self-talk**
- 

Procedure

- ▶ **At baseline,**
 - ❖ **all participants completed questionnaires assessing demographic information, medical history, smoking history, and intention to quit smoking**
 - ❖ **measure of past physical activity behaviour**
 - ❖ **questionnaire packet accessing psychological variables**
 - ❖ **Test of physical condition**
- 


Procedure

FORMS TO BE COMPLETED AT THE BEGINNING OF EVERY EXERCISE SESSION

“Set a goal”

1. 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 confident)

“Use of self-talk”

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

Procedure

FORM TO BE COMPLETED, First day every week

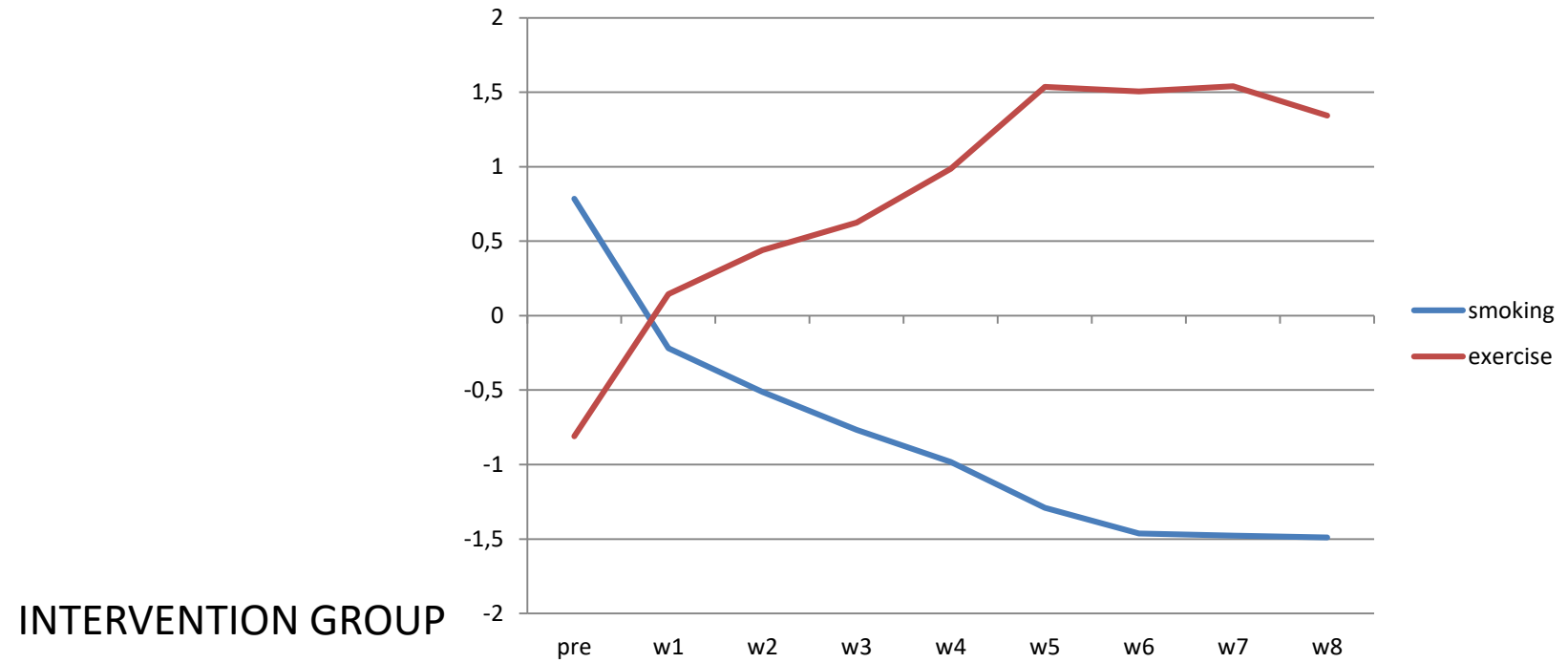
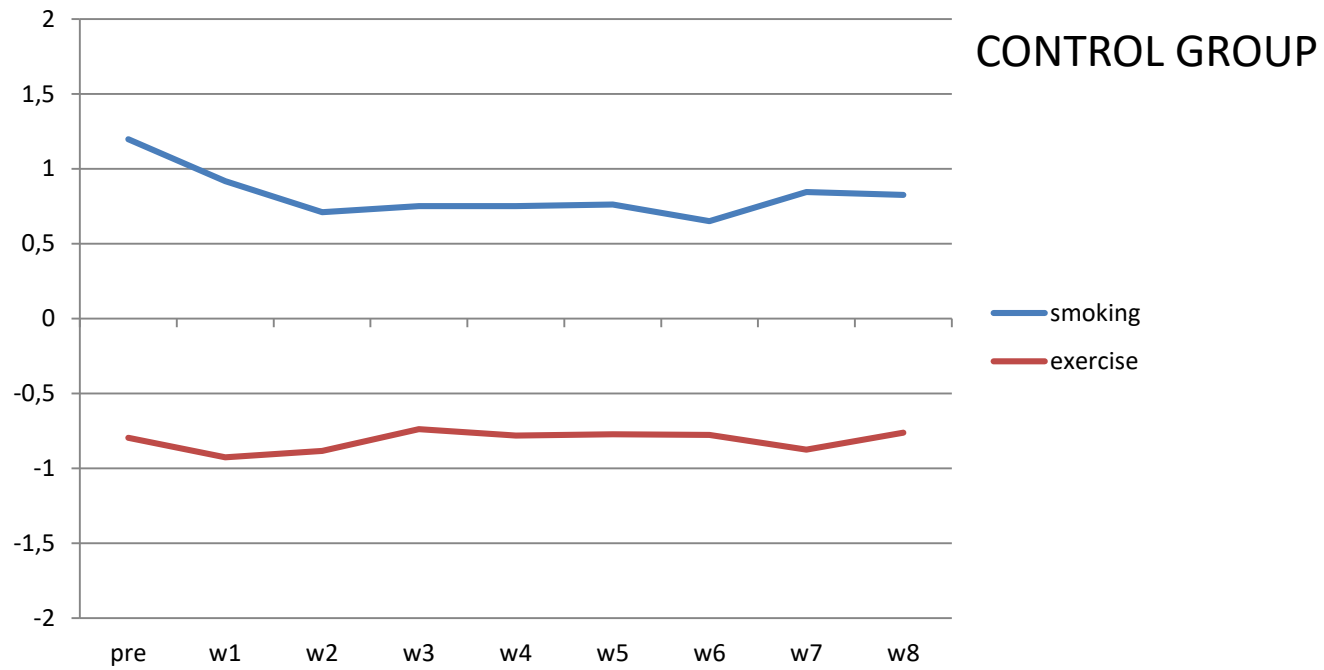
"goal setting for smoking reduction"

1. This week the number of cigarettes that I'll smoke will be less than.....
2. How confident are you ?
(not at all confident) 1 2 3 4 5 6 7 8 9 10 (totally confident)

"goal setting for exercise"

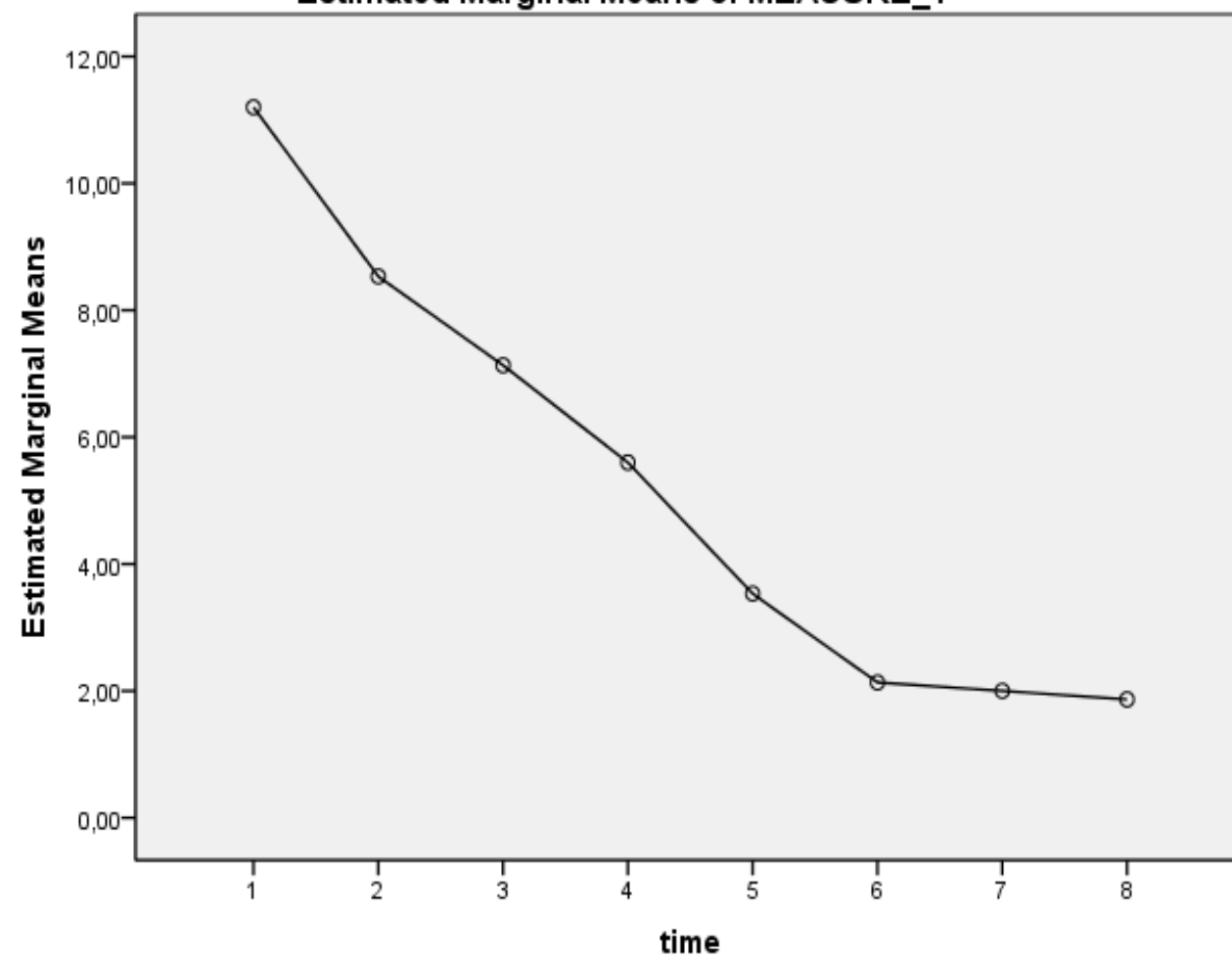
1. This week the total amount of time that I'll dedicate for exercise is..... minutes
2. How confident are you ?
(not at all confident) 1 2 3 4 5 6 7 8 9 10 (totally confident)

- Participants: 16
- Men: 7, Women: 9, Mean age: 39years
- Number of cigarettes smoked: 18,8
- 10 persons quit smoking. Eight of them cut smoking between week 5 and week 6. One person in week 1 and one person in week 8.
- 6 persons reduced smoking. Mean: 4,6 cigarettes
- 3 out of 10 persons that had quit smoking relapsed. 1 of them relapsed in 2 weeks and the other 2 persons relapsed in one month and a half.
- Goals setting was the most helpful technique.
- The most useful distraction strategy were “water” and “delay”



Number of cigarettes smoked

Estimated Marginal Means of MEASURE_1

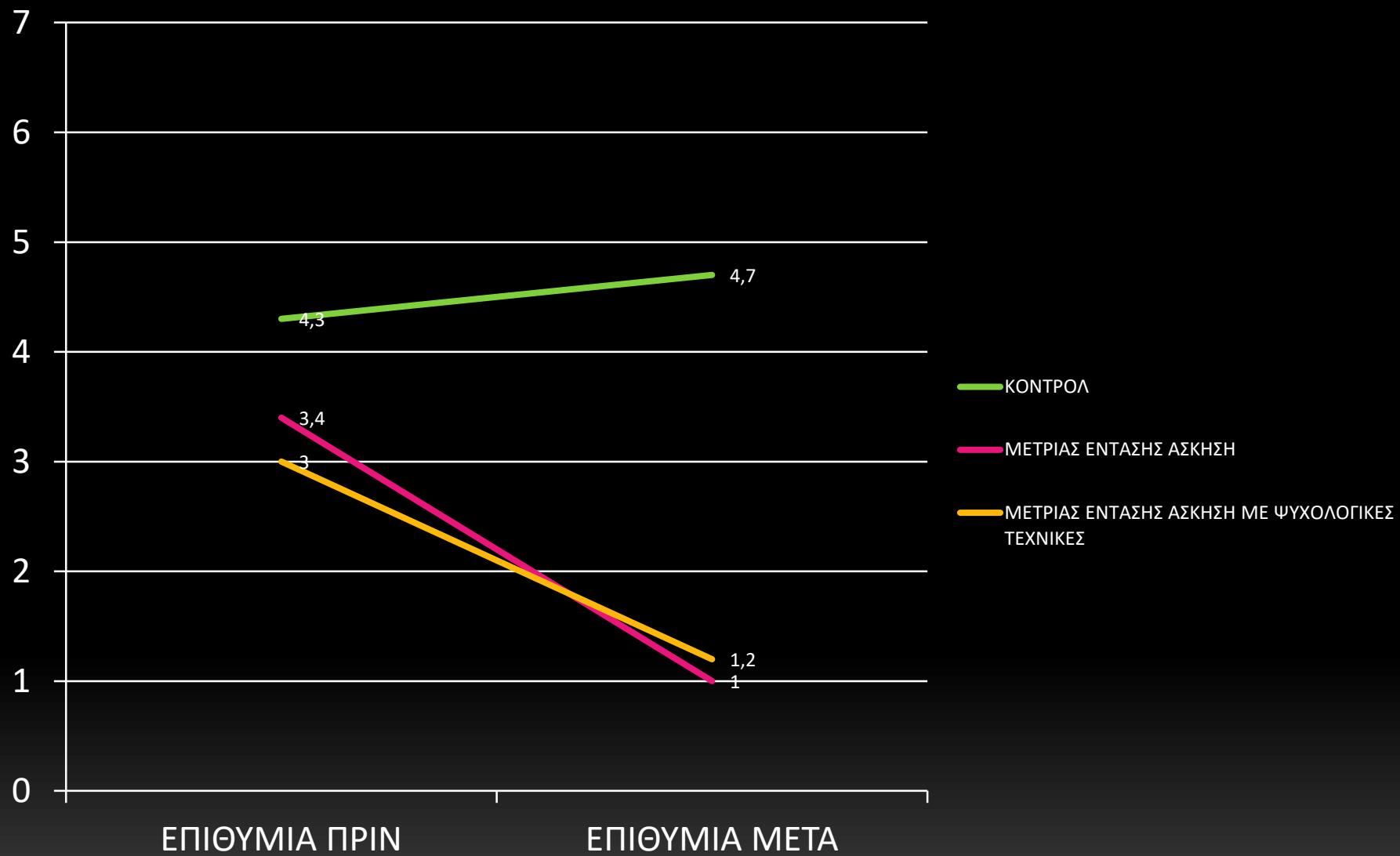


The acute effect of an exercise program combined with psychological self-regulation strategies on smoking delay

The effects of an acute bout of moderate aerobic exercise on smoking urge and smoking delay. Participants were 11 adults, non physically active, smokers. They all participated in two moderate intensity exercise conditions; one of them included self-regulatory strategies, and a control condition. Results indicated that 30 minutes of moderate intensity exercise combined with self-regulatory strategies (goal setting, breathing and self-talk) reduce smoking desire and delay smoking for 32 minutes.

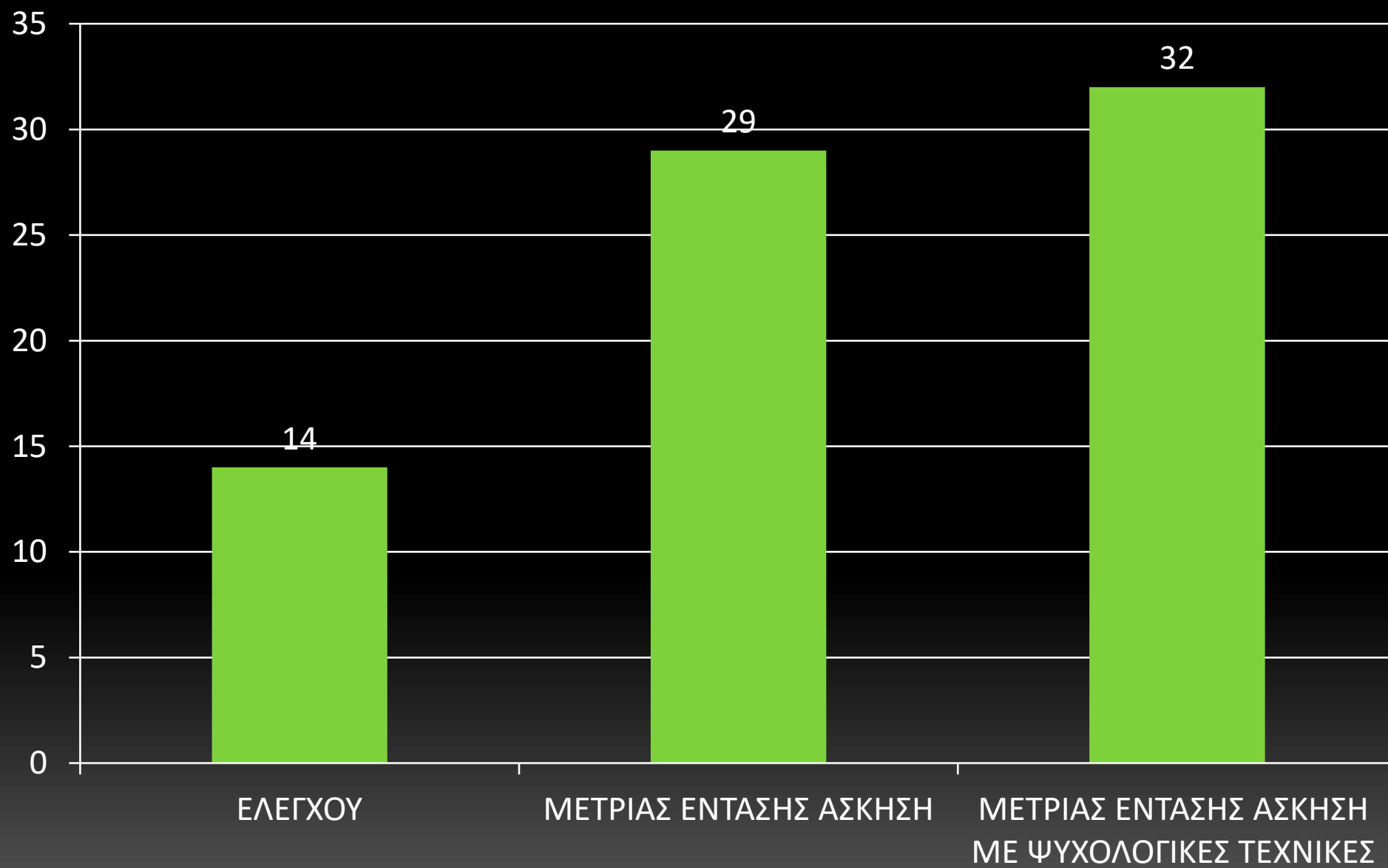
Additionally 30 minutes of moderate intensity exercise delay smoking for 29 minutes. The role of psychological self-regulation strategies is proved to be crucial according to the results.

Desire for smoking pre post



$F(2,9) = 3.2, p < .05$

Smoking delay in min



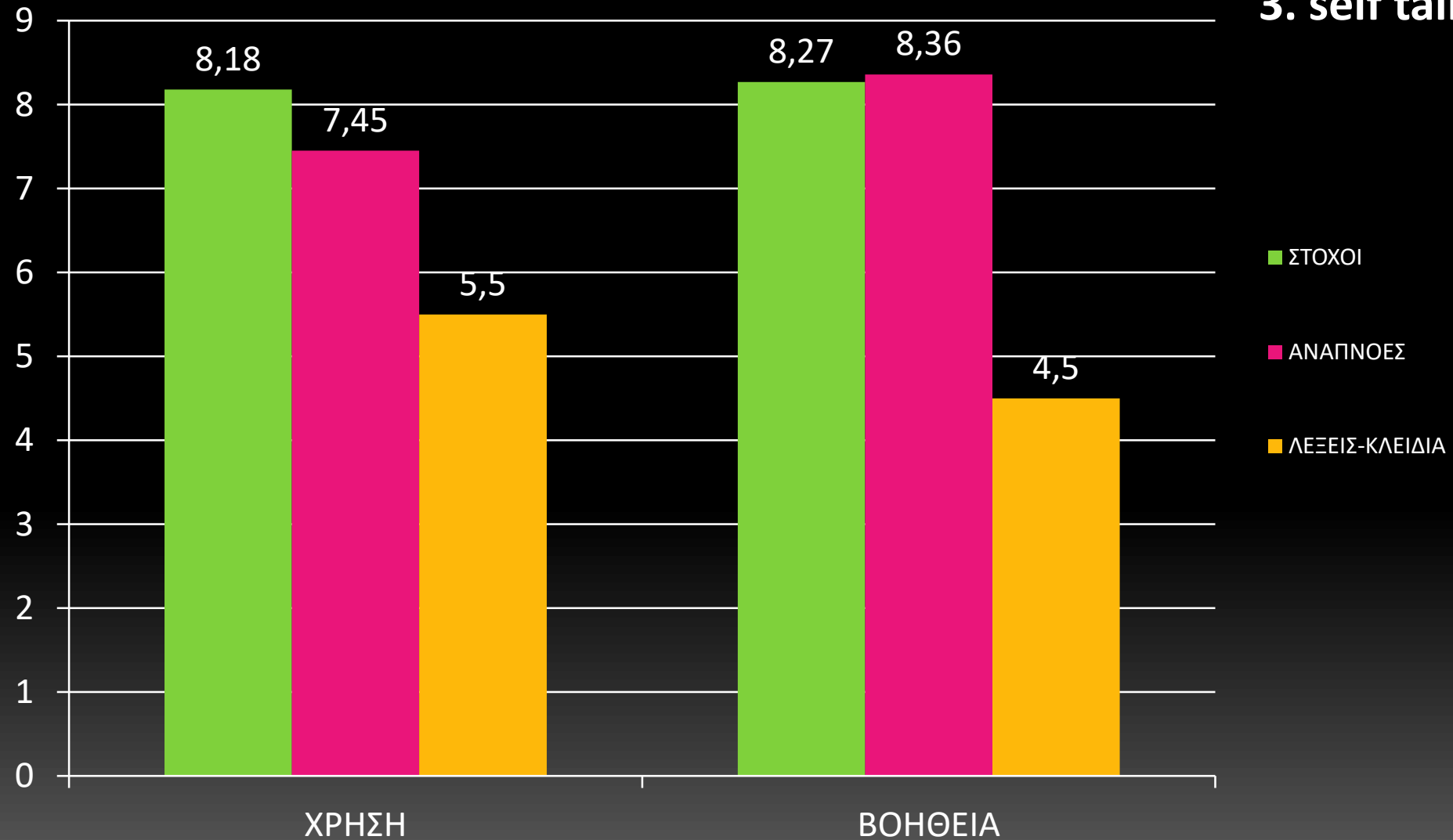
$F(2, 9) = 5.03, p < .05$

Self regulatory strategies

1.goal setting,

2. breathing.

3. self talk

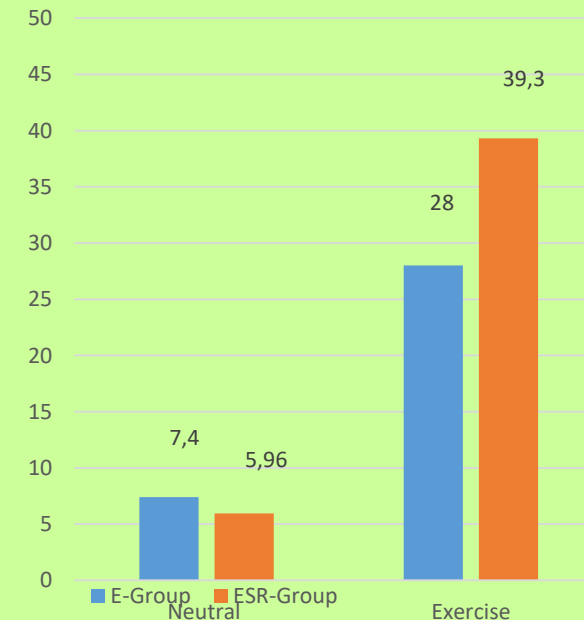


The effects of self-regulation smoking-delay strategies following moderate intensity exercise

Maria Angeli, Antonis Hatzigeorgiadis, Yannis Theodorakis, Nikos Comoutos

The effect of moderate intensity exercise on smoking delay. Participants were 40 adult smokers who were randomly assigned into two groups: plain exercise (E-group, control) and exercise and self-regulation (ESR-group, experimental).

The results showed that smoking delay increased significantly for both groups; however, the increase for the ESR-group was significantly larger than that of the control group. The results supported the anti-smoking effects of acute exercise; furthermore, they highlight the usefulness of self-regulation strategies, and in particular goal setting, in extending smoking delay.



Counseling intervention for smoking cessation in adults

Stamatia Gratsani:

- An implementation and evaluation of a smoking cessation program based on counseling and supportive psychological interventions, combined with enhancement of physical activity in daily life, and orientation to a healthier way of living. Based on the Transtheoretical Model.
- RESULTS a) the satisfaction and the utility of the supportive counseling and the psychological interventions were high, b) physical activity was increased during the intervention and maintained until the end, **c) 53.3% of the participants quit smoking and maintained the abstinence until the end of follow-up that lasted 12 months**

Counseling intervention for smoking cessation in adults

Stamatia Gratsani:

Why people smoke

- pleasure alleging cigarette, relaxation that smoking offers, stress management, companionship, habit and help offered by the cigarette in concentration,
- **the biggest challenges faced by people in smoking cessation** is the difficult and stressful situations they have to face, the stress they experience, the pleasure derived from smoking which they do not want to lose, the lack of decision and will to stop smoking, the environment and the lack of support from significant others and family, the addiction, the loneliness and the lack of support, the lack of interesting hobbies, all the habits connected with smoking, the evening hours where the craving increases, the lack of encouragement and support, the belief that a few cigarettes do not harm, the workplace,

The main strategies that have helped people to stop smoking

- the communication, connection, cooperation and constant discussions with the consultant, the personal will, the integration of exercise and movement in everyday life, the setting of goals on a weekly basis and the commitment to them, the desire resistance and management techniques for cigarette, the information and knowledge, the relaxation techniques, the activities, exercises, questionnaires and tools used during the program, the program's adaptation to the needs of each individual, the duration, consistency and stability of the program, the gradual change of daily habits, the support from the environment, the health issues that played a motivational role,

The strengths of the program

- the organized psychological support based on a personalized counseling tailored to the needs of each person, the incorporation of exercise in daily life, the consistency and stability of the program and the consultant, the personal development processes and the training for skills towards the change of habits and the establishment of healthy behaviors, as well as the organization of an enhanced quality of life, the development of stress management skills, the increase of self-efficacy and self-confidence.
- The program was effective in smoking cessation and maintaining abstinence from it throughout the follow up period, as well as in the integration of physical activity in the daily life of individuals and the adoption of a healthy and qualitative lifestyle.

Smoking and depression

- People suffering from depression are more prone to smoking and to nicotine dependence which leads to worse their health.
- Two people with depression symptoms were tested at two conditions on 30 minutes exercise on cycle-ergometer . After completion of the experimental process people with symptoms of depression were interviewed. Both participants acknowledged the experimental procedure as an interesting experience which made them feel more powerful and active.
- They argued that the exercise reduces the desire to smoke, and that exercising at a high intensity for both is more interesting, but for the future they would prefer to participate in an exercise in moderate intensity.

Participants have linked depression symptoms with smoking, observing increased consumption of nicotine over the symptoms and reported on the benefits of exercise on mood, since the participation in the exercise leads to increased self confidence and self-esteem.

- Tsiami, A., Kolovelonis, A., Goudas, M., & Theodorakis, Y. (2016). Exercise, Smoking and Depression Symptoms. A Qualitative Study. *Inquiries in Sport & Physical Education*, 14, 14 – 26.

Conclusion

- Exercise is now recognized as a low cost factor of prevention or treatment of many illnesses, and smoking cessation. also
- It seems plausible to state that exercise can be used both for smoking prevention and for smoking cessation.
- However, preventive programs should focus on an overall healthy lifestyle including exercise, rather than on smoking solely. Moreover, long-term interventions employing exercise to stop smoking should be coupled with respective counselling strategies.
- Hassandra, M., Goudas, M. and Theodorakis, Y. (2015) Exercise and Smoking: A Literature Overview. *Health*, 7, 1477-1491. <http://dx.doi.org/10.4236/health.2015.711162>

The effects of physical exercise on the treatment of alcohol abuse

- Excessive alcohol consumption has harmful effects on the human organism, which are associated with serious health problems.
- **Alcohol abuse**, is associated with specific personality traits such as neuroticism. Many people drink because they cannot handle the stress of everyday life. Alcohol consumption helps them feel relaxed and forget stress and further problems.
- Alcohol consumption contributes toward improved mood and act as a means of relaxation during social interactions of individuals.

The effects of physical exercise on the treatment of alcohol abuse

- Beneficial effects of exercise include the release of endorphins, which can generate feelings of pleasure, improve mood, and reduce depression, control stress, increase self-efficacy and social support.
- Exercise will result in elevated levels of beta endorphin which in turn will cause a euphoric feeling avoiding the intake of alcohol
- Physical exercise seems to help in alcohol abstinence, as an adjunctive strategy, during and after alcohol abuse treatment.

Zourbanos

What is exercise addiction

- Stereotyped pattern of exercise, of once or more a day
- performing excessive amounts of exercise, against of physical health,
- spending too much time exercising, against of personal and professional life,
- exercising regardless of physical injury.
- It may also involve a state of dependence upon regular exercise which involves the occurrence of severe withdrawal symptoms when the individual is unable to exercise.

Strategies to avoid exercise addiction

- Keep exercise plan 3-5 times per week.
- Train with hard and easy days. Alternate low and high intensity workouts.
- Try to find a partner to work with.
- Schedule a rest days as part of exercise plan
- Make sure full recovery after an injury.
- Set realistic short and long term goals.
- Use relaxation techniques



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.

What is drug addiction

- 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
- Addiction is caused when the excessive use of a drug affects the reward system of the brain.
- Almost 50% of the drug depended clinical population, is suffering from at least one personality disorder while emotional, anxiety and psychotic disorders are also very commonplace.

Exercise and drug addiction

- **Small literature on the field**
- **Sports and Physical activity:**
- 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
- These psychological changes, linked to positive substance-related outcomes:
- 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**

• Διαμαντής, Π. (2017). Ο ρόλος της σωματικής άσκησης στη θεραπεία απεξάρτησης από ψυχοτρόπες ουσίες. Μεταπτυχιακή Διατριβή. Πανεπιστήμιο Θεσσαλίας.

Finding of a qualitative study

- 12 adult male participants.
- The rehabilitation program lasts six months. Exercise sessions are implemented five days per week for at least one hour.
- *Findings:*
- Participants reported improved self-esteem, confidence and mood, increased self-awareness, communication and various changes on behavior.
- These outcomes contributed to retention to treatment and prevention of premature dropout, reduced the resistance to therapy and influenced positively the entire treatment process.
- **The social interaction, enjoyment and changes in body sensation and body image were key in bringing out these results.**
- Exercise should be included in the philosophy of any rehabilitation program for drug addiction (Diamantis et al., 2018)

Findings

- Participants stressed that exercise helped improve their mood.
- Tension release, both physical and mental. anger management.
- Self-esteem enhancement.
- Higher energy levels,
- Improved body image and body sensation, healthier eating habits were adopted.
- participants reported, that they reduced smoking or had even been thinking about giving it up.
- **Exercise seemed to have a positive effect on various behavioral changes, depending on the personality of each participant.**
- (Diamantis et al., 2018)

Topic for discussion 1.

Sports against addiction

- <https://www.youtube.com/watch?v=tqmjhfxOIGo>
- Nick Galis delivers his speech upon being enshrined to the Naismith Memorial Basketball Hall of Fame as part of the class of 2017
- The most important part of his career,

for more information see:
<http://www.rtsport.eu/>



the “Reintegration Through Sport” project

- 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. Adventure therapy (AT) is an experiential and interactive intervention, which lies upon psychosocial and educational theories.
- AT utilizes the outdoor adventure activities as a primary therapeutic tool, promoting real or perceived physical and psychological risk, as a clinically 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.

- **AT utilizes outdoor adventure activities as well as a range of activities including goal setting, confidence and problem-solving approaches, that are physically and/or psychologically demanding, to promote personal change such as positive reinforcement of the self-esteem and self-efficacy of the individual.**
- **Successful completion of these activities could enhance self-efficacy especially when performance is the result of individual competence rather than incidental or external events.**

Psychological effects of an adventure therapy program in the treatment of substance use disorders.

- The aim of this study was to examine the effects of a short term adventure therapy program on the self-concept of individuals in treatment programs of substance use disorders.
- In this light, this study investigated the effects of a 5-day adventure therapy program on two psychological constructs related to participant's self-concept: self-esteem and self-efficacy.
- Pre and post data were collected from 14 drug addicts utilizing two self-report instruments: General Self-Efficacy Scale and the Self-Esteem Scale.
- [Panagiotounis](#), F., Theodorakis, Y., [Hassandra, M.](#) & [Morres, I. \(2020\)](#). Psychological effects of an adventure therapy program in the treatment of substance use disorders. A Greek pilot study. *Journal of Substance Use*, doi.org/10.1080/14659891.2020.1807630.

***Addiction is a complicated phenomenon

- Addiction is a complicated phenomenon resulting from interactions between individual, family and social factors and represents a means of alleviating the difficulties of the everyday life.
- Addiction is associated with many causes as risk factors for substance use involve an individual's genetic and personal characteristics as well as environmental and social impacts.
- Antisocial behavior, mental and emotional disorders such as depression and post-traumatic high risk-seeking and reward-seeking, impulsivity, and recklessness, represent some of the most important factors predicting the involvement with substance use from childhood.

Adventure therapy

- AT deals with the reveal of the positive effect of nature, active and direct involvement and responsibility of clients in their treatment, and with the focus on positive change, and positive use of stress.
- AT supports the active involvement via personal motivation in the form of energy, involvement and responsibility.
- This active and direct involvement of the individual contributes
- **to enhancing self-esteem and self-efficacy,**
- An essential ingredient of AT is the use of unknown adventure activities, which aim at enhancing one's sense of meaning, by recognizing new experiences and developing new skills, focusing on positive changes in current and future behavior.

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 activities, cooperative activities, and initiative activities.
- The selection, the planning and the sequence of the activities were directly linked to the desired outcomes and they were geared towards the therapeutic goal of preventing relapse by enhancing self-esteem and self-efficacy, as well as developing coping and problem-solving skills.
- During the program, participants linked their experiences with the therapeutic process and goals through reflection and discussion with their facilitators and peers

Data Analysis

Table 1. Mean SD, Intercorrelation and Cronbach's α

	Variable	Mean	SD	1	2	3	Cronbach's α
1	SE 1	3.15	.287				.756
2	SE 2	3.36	.287	.536*			.700
3	GSE 1	2.73	.291	.465	.157		.632
4	GSE 2	3.00	.369	.635*	.583*	.326	.746

Repeated measures analysis of variance indicated that there is a statistically significant increment in the self-esteem and self-efficacy of the participants, supporting, that adventure therapy interventions can work as parallel or as a complementary therapeutic tool into traditional addiction recovery counseling.



activities

Activities

Activities	Potential goals
Guided meditations	Promote introspection and self-awareness
Journaling	Promote introspection and self-awareness Find internal motivation for change
Psychoeducational groups	Promote introspection and self-awareness Learn accurate and helpful goal setting Enhance feeling of group belonging
Cooking	Develop social skills Enhance feeling of group belonging
Hiking	Develop social skills Learn accurate and helpful goal setting Enhance feeling of group belonging
MTB	Develop social skills Find internal motivation for change Enhance feeling of group belonging
Caving	Learn to deal with stress and anxiety Learn to cope with uncertainty
Orienteering	Learn to deal with stress and anxiety Learn accurate and helpful goal setting Find internal motivation for change
Rappel	Learn to deal with stress and anxiety Learn to cope with uncertainty
Climbing	Learn to deal with stress and anxiety Learn accurate and helpful goal setting Find internal motivation for change
Canyoning	Learn to deal with stress and anxiety Learn to cope with uncertainty
Archery	Learn to deal with stress and anxiety Learn to cope with uncertainty Learn accurate and helpful goal setting
Rafting	Develop social skills Learn to deal with stress and anxiety Learn accurate and helpful goal setting Enhance feeling of group belonging
Kayak	Learn to deal with stress and anxiety Learn to cope with uncertainty

Conclusion

Adventure Therapy offer an alternative therapeutic approach to addiction counseling by creating positive changes.

- **The study provides supportive evidence that participation in an adventure-based therapy program had a significant impact on the addicted person's self-concept by enhancing the psychological factors of self-efficacy and self-esteem (Panagiotounis et al. 2020).**

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Sports Against Addiction

- 1. **Sports reduces the level of stress and** psychological tension.
- 2. **Peaceful sleep.** Regular workout improves sleep both in its amount and quality.
- Playing sports or doing yoga can significantly change sleep patterns in a positive way and enhance general well-being.
- 3. **Energy boost.** Active exercises push blood through the heart which increases oxygen levels in the body. It makes the cardiovascular system stronger which allows to perform daily activities much easier
- 4. **Better mood.** Most addicts are willing to take drugs to experience positive and relaxed states of mind. Luckily, substance intake is not the only way to pleasure.
- 5. **Healing the brain.** Long-term substance abuse makes significant harm to the brain, especially its white matter which consists of connections linking brain cells.
- Modern experiments show that endurance workout helps in the secretion of neurotransmitters which are linked to neuroprotection and plasticity which are essential for successful addiction recovery.
- Aerobic exercises enhance the brain's recovery after substance addiction.
- 6. **social support.** Sports games provide addicts with social support which is essential for drug seekers.
- 7. Depression is one of the most common disorders in substance abuse.

Social inclusion through sports for addicted



Social inclusion











WORK IN GROUPS

After a 10 days in the exercise program, I started to feel my body. So, this was the time, I believed I can overcome the problem.

Σε δυσκόλεψε κάτι πριν, κατά την διάρκεια αλλά και μετά τη δραστηριότητα;

Πριν με δυσκόλεψε το να είναι ανρκώς και ομιληκός
μαζί με δραστηριότητα σε δυσκολευτηκε κίαν

ΗΤΑΝ ΟΡΑΙΑ ΕΡΟΤΙΣΙΑ ΚΑΙΡΟΝΡΙΟΙΣ ΑΥΘΟΡΠΟΥΣ ΚΑΙ
ΑΝΤΑΝΝΑΖΑ ΕΜΠΕΡΙΕ ΚΑΙ ΕΜΑΘΑ ΚΑΙ ΚΑΙΡΟΝΡΙΑ
ΠΡΑΓΜΑΤΑ

Πως ένιωσες κατά τη διάρκεια αλλά και μετά την ολοκλήρωση της δραστηριότητας;

ΕΡΙΟΤΙΑ ΑΜΗΧΑΡΙΑ ΚΑΠΟΙΕΣ ΦΟΡΕΣ ΑΛΛΑ ΜΕΤΑ ΗΜΟΝ
ΧΑΠΑΡΟΣ ΚΟΙΤΑΖΑ ΝΑ ΤΟ ΕΥΧΑΡΙΣΤΙΩ ΚΑΙ ΝΑ ΠΑΡΟ
ΠΡΑΓΜΑΤΑ ΑΤΩ ΟΠΗ ΤΗ ΔΡΑΣΗ ΙΚΑΝΟΠΟΙΗΜΕΡΟΣ ΕΙΜΑΙ

Through sports we can change the world

Πως ένιωσες κατά τη διάρκεια αλλά και μετά την ολοκλήρωση της δραστηριότητας;

Ένιωσα πολύ καλά πρώτα κοντά με τα παιδιά από το ΤΕΦΑ, και μετά με όλους που περπατάμε όλοι καλά και κρέναν τα παιδιά και είδαμε και το σπίτι μας!

Πως ένιωσες σε σχέση με τη διάρκεια και την ένταση της δραστηριότητας;

Με κούρα να ήταν ποιο ήγυατο διαδρομή και σε ποιο έντονο ρυθμό.

Ποιοι ήταν οι στόχοι που είχες βάλει πριν την δραστηριότητα; Επιτευχθήκαν; Αν ναι Πως;

Να είναι κοινωνικό) και το ΑΓΓΕΛΟ και το ΠΕΤΕΛΟ ανοίγοντα) συζητήσιν)

Πως ένιωσες κατά τη διάρκεια αλλά και μετά την ολοκλήρωση της δραστηριότητας;

Ένιωθα πολύ σκωρρα και πηρα ΙΚΗΡΟΠΟΙΗΣΗ και μου αρέσει η συζητήσιν που κάναμε

The archery experience and the fear of failure



How to run 10 Km race by using Goal setting strategies

- **Methodology**

- The present study concerns the implementation of a sport training program for the preparation of people with substance use problems (under therapy) in a 10 km run race. This intervention was designed to reinforcing their motivation to continue drug therapy by empowering them to transfer their experiences and the benefits from the activity with their treatment process.
- In this context, this intervention had five components: (1) autonomy in the choice of distance and intensity; (2) the setting of weekly distance goal and their attainment; (3) weekly treatment goals (4) team support; (5) supervision by a trainer.
- The intervention was the implementation of a 5-week sport training program to prepare participants for a 10km race. Throughout the program, the participants continued the substance abuse treatment.

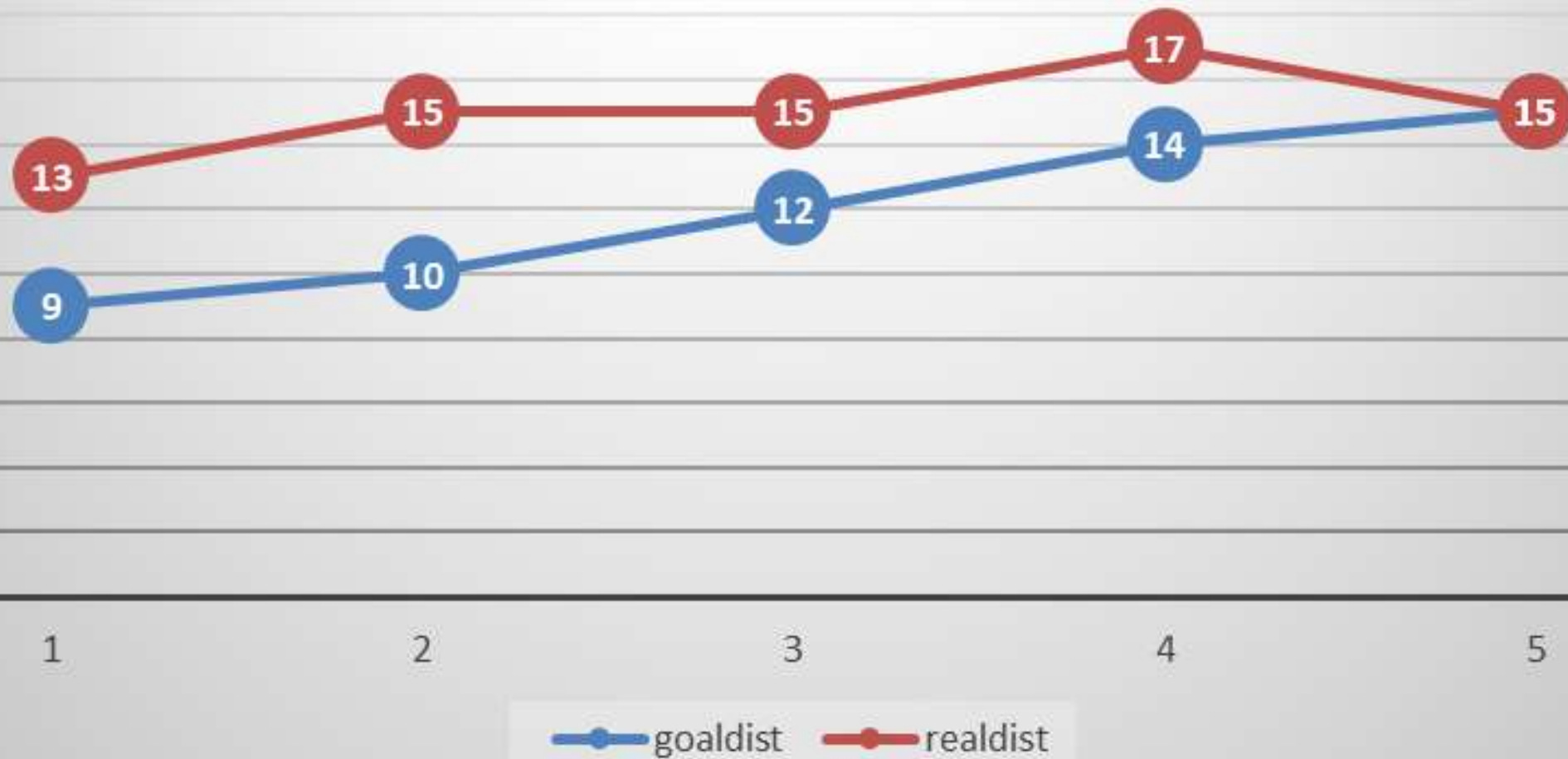
- **Participants**

- Participants were 14 ex - former users of psychotropic substances involved in drug treatment in a KETHEA Therapeutic Community in Greece, 12 men, and 2 women, with an average stay in the main treatment phase, 75 days (min 7 - max 165). The age average was 33 years.

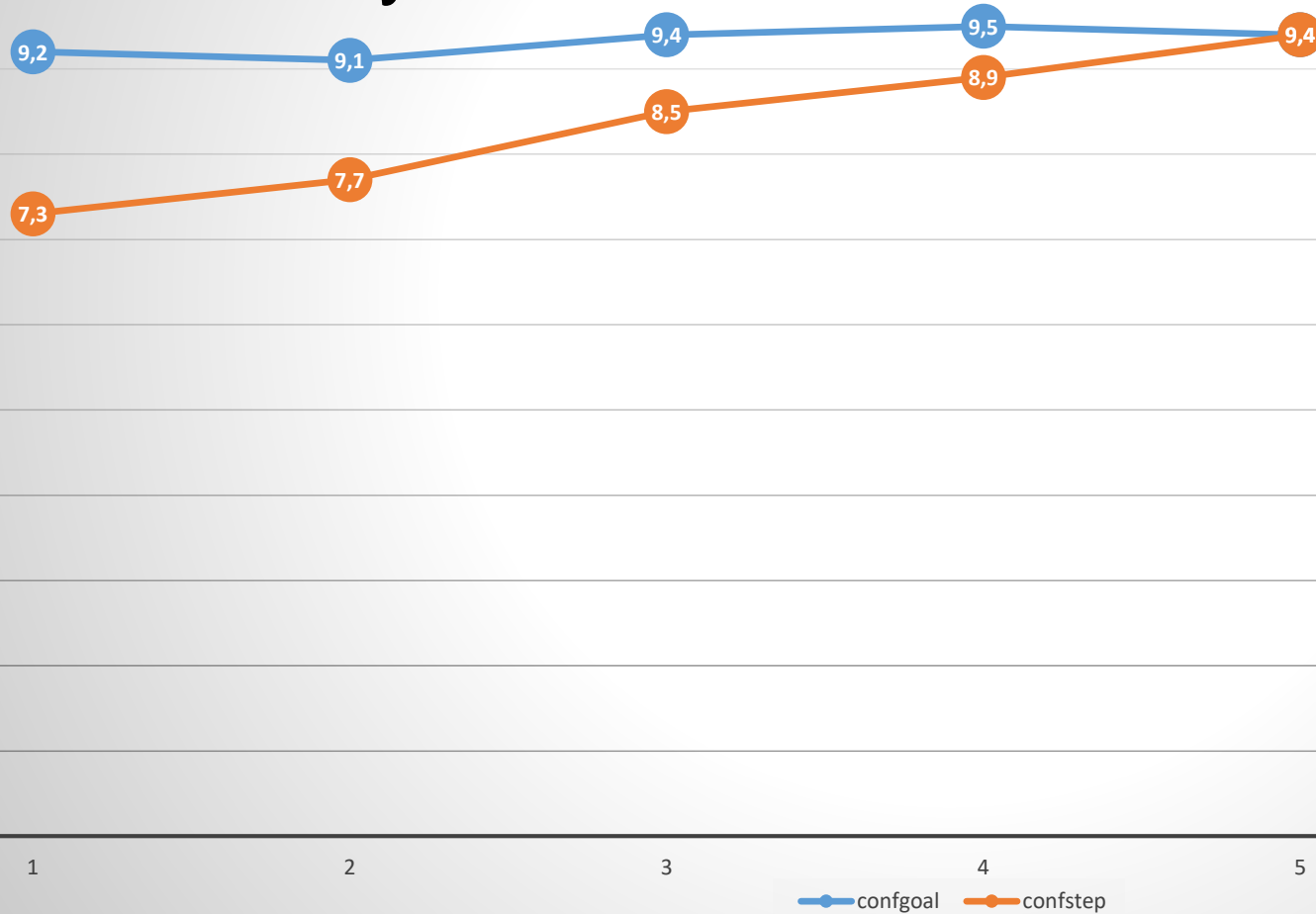
- **Data collection tools**

- Participants completed an improvised self-report questionnaire at the beginning of each week and prior to the training sessions. They recorded the distance goals they wanted to achieve at the end of each week and whether they were sure they would achieve it (rating of 1 not at all sure to 10 absolutely sure). They also recorded the steps they will follow to achieve the distance goals and whether they were sure they would achieve it (rating of 1 not at all sure to 10 absolutely sure). Then, they recorded their weekly therapeutic goals and how their participation in the sport program would help them to succeed in these goals.
- At the beginning and during each session, the participants were encouraged to utilize Positive Thinking Strategies.

total distance/week



- Self efficacy



the steps they said they would do to achieve the weekly distance goal were

- Dedicated to training
- Concentration
- Looking at my feet and observing my steps
- I follow my team
- Cigarette reduction
- Positive thinking
- Be disciplined
- Keep pace, run - breath
- To concentrate on my breath
- Empty any thoughts that disorganize
- Prepare psychologically before training
- Stay focused on my goal, Don't lose training, I cut out the evening meal, Be committed to my goal
- Losing weight, Be consistent, Be confident

Their experience of participating in the sports program had a significant impact on the treatment process as it helped them achieve the therapeutic goals they had set for each week.

- "... these two goals are perfectly connected ... To run the 10km and my treatment effort..."
- "...gives me strength ..." "... I want to complete both ..."
- "... My attempt to achieve one goal, strengthens the other one..."
- "... I feel good when I run ... I do something for myself ..."
- "...it's one of the things that has kept me in the therapeutic community ..."
- "... I feel more confident and concentrated ..." "... I feel better about myself ..." "... I feel healthy ..."
- "...if I manage to run the 10km I will get great strength and confidence ..."
- "... helps me think ... helps me think about my goal ..." "...gives me faith in being able to live a clean life ..."
- "...is a continuation of the new identity I am creating ..." "...makes me even more convinced that I will succeed ..." "...step by step fulfill my 10km goal ..."
- "...preparing for the race will keep my body and mind clean so I can stay sober ..." "...keeps me motivated ..."

Panagiotounis, F., Hassandra, M., Goudas, M., & Theodorakis, Y. (2021). Application of a theory-based exercise promotion program (RACE) for adults in therapy substance use disorders: a longitudinal intervention study. Exartisis,

One of the main goals of substance use disorders (SUDs) treatment is the attainment and maintenance of abstinence, by promoting the adoption of new healthy behaviors, utilizing a wide variety of interventions and strategies. sport is an example of a health-related behavior that is applied in suds treatment, with varied effects. the present study describes the implementation and influence of a 5-week endurance training program (RACE), and prepare participants to take part in a non-professional 10K race, based on self-determination and goal-setting theories. the objectives of the intervention were:

(a) to train individuals in treatment for suds, to set goals and work to attain such goals within a sport context (b) to enhance the participants to transfer such skills into suds treatment, using the same techniques and processes and (c) boost participants' self-confidence so that they may indeed attain their goals. the participant of the RACE program was 14, with average previous substance use of 15 years, following 3.5 months of treatment of suds. the results revealed a significant positive relationship between goal achievement and self-confidence improvement ($d=3.33$) and treatment attendance. the follow-up assessment also revealed that the RACE program worked positively not only to strengthen the participants to develop goal-setting skills ($M=8.55$, $SD=.69$) *but also to transfer the goal-setting strategies in their therapeutic process* ($M=8.69$, $SD=.85$). *results further supported the idea that sport can be a safe environment* for the training of behavioral-change and motivational strategies in the treatment of SUDs.

Workshop

<https://www.youtube.com/watch?v=c4cvevWE5lo&feature=share>
video

- **Work in groups:**
- **“how to help drug addicted in their reintegration process”**
- **According to the information of the lecture and the information given bellow, try to organize an intervention exercise program, in order to help:**
- **drug addicted in their reintegration process.**
- **Please try to use as many:**
- **psychological skill strategies,**
- **behavioral modification strategies,**
- **variety of sports and physical activities**
- **analyze the benefits and**
- **prepare strong arguments in order to persuade the clients/patients**

[illegible]

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