

icSEP 2017
International Conference on Sport, Education & Psychology

**EFFECT OF FITNESS SPORT ACTIVITIES ON SUBJECTIVE
EXPERIENCING AND PSYCHOLOGICAL STATES**

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Abstract

Psychological state is a dynamic feature, which can be characterised by a variability of psychological activation and emotional frame of mind (experiencing). The research study works on an assumption that leisure time fitness sport activities can influence subjective experiencing and psychological states. Fitness sport activities integrate both physical and psychological factors. Purpose of the study was to determine the effect of fitness activities on subjective psychological experiences and states. The selected fitness activities include aerobic group exercise, body and mind group exercise, and individual gym training. 101 university students (age 19-23) participated in the research. The method for evaluation of structure and dynamics of subjective experiences and psychological states was a standardized questionnaire (SUPSO). The change was indicated by proportional representation of positive and negative components. Statistical significance of difference between pretest and posttest was evaluated by Wilcoxon pair test ($p < 0.05$). Structure and dynamics of subjective experiences and psychological states was changed significantly ($p < 0.05$) between pretest and posttest, in the evaluated fitness activities (aerobic group exercise, body and mind group exercise, individual gym training). The change was represented by proportional representation of positive and negative components (psychological wellbeing, activeness, impulsiveness, discomfort and restlessness, anxious expectations, and sadness). Effect of fitness sport activities can merge into a positive well-being, due to a full concentration on the activity itself, and harmony of body and mind. Fitness activities significantly influenced subjective psychological experiences and states, in terms of increasing positive and decreasing negative components. It is recommended to verify the effect in a wider variety of fitness sport activities.

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Keywords: "Well-being", "Physical Activity", "Experiencing", "Exercise"



1. Introduction

Optimal physical activity may enhance health and quality of life. Health is comprehended in a wide sense, as a state of complete physical, mental, and social well-being. Health is a dynamic condition resulting from continuous adjustment and adaptation in response to factors of stress, and variability of external factors of the environment. Regular leisure time physical activity is recommended to be a part of a healthy lifestyle and develop health-oriented physical fitness, focused on harmonious motor development and positive motion experiencing. The research study focuses on a relation of physical activity and mental well-being, as mentioned above. Changes in mental well-being and psychological experiencing have been investigated in recent research. Positive changes in relation to physical activity have been investigated e. g. in running (Sato, Jordan & Funk, 2014), high-intensity interval training (Costigan et. al, 2016), yoga (Park, Riley & Braun, 2016), and dance (Goulimaris et al., 2014; and Campion & Levita, 2014).

1.1. Fitness sport activities

Fitness sport activities can be subsumed under all-round and fitness exercises in the system of gymnastics, as illustrated in figure 01. In a wide sense it is an open system of physical exercises, which are characterized by deliberate coordinated movements of all the body and its segments, flowing in a harmonious composition. Novotná (2005) analyzed and evaluated definitions and knowledge in the field of gymnastics published in the Czech Republic, where the systematization of gymnastics has great tradition. She describes gymnastics as a system of consciously performed physical activities that aim to affect the state of motor system, the level of physical fitness, and motion expression.

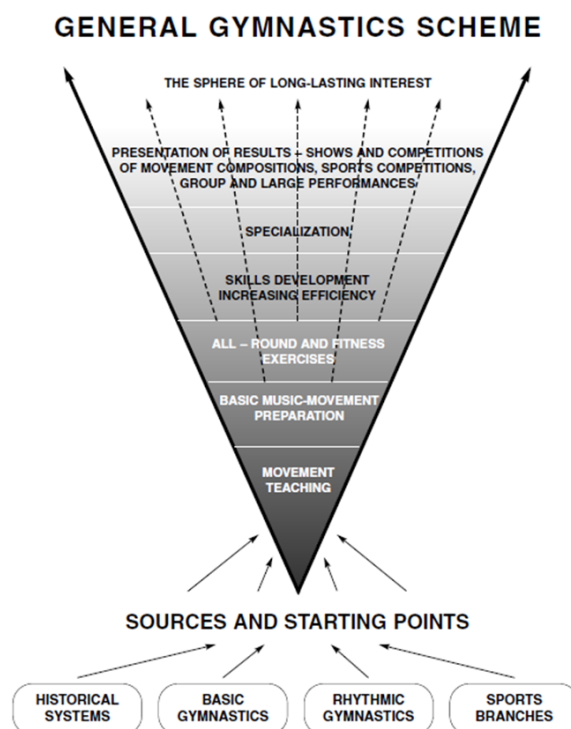


Fig. 01. General gymnastics scheme (Novotná, 2005)]

Fitness sport activities are divided in group and individual exercise. Individual exercise is an individualized exercise usually performed in the gym on one's own, using both exercising machines and function training with a body weight and various aids (balance balls, kettlebells, bosu, TRX etc.). Group exercise (classes with an instructor) can be further divided according to the main aim and the content into aerobic (or cardio) exercise, resistance exercise and body and mind.

The main sense of leisure physical activities lays in physical and mental relaxation, maintaining and improving health, fitness and performance, physical development and self-confidence.

The importance and benefits can be described in the levels of effect on man:

- physical aspect (motor abilities and skills, posture, muscle strengthening and stabilization - physical fitness and health),
- psychological aspect (control and management of emotions - confidence, self-esteem, experiencing - psychological health, emotions as self-feelings, embodied feelings, mental states),
- and social aspect (social psyching-up – interpersonal experience).

Velínská (2004) described the fields of benefits to physical function in: fitness (aerobic and muscular fitness), compensation (muscle imbalances compensation, posture improvement) and coordination (development of space-time orientation, assembling simple movements into complex units, ability to achieve a target through one's own body).

As mentioned above, fitness activities can affect not only physical development, but also psychological and social development of a man. This study concerns particularly with the changes in subjective psychological experiencing.

1.2. Experiencing and psychological aspects of physical activity

Gymnastic movement is generally characterized by features that play an important role in sustaining the effects of exercise - movement, course, position, execution, expression, plan and experience (Novotná, 2005). Experiences are an important part of physical exercises, as a result of both physical and psychological load and tension. In body and mind exercises one can fully perceive motion flow and the motion takes the attention, so that we forget what is going on around us. Thus a full concentration can generate a very intensive experience. Neumann et al. (1999) described experiences as subjective, individual, instant, expressive, emotional and unforgettable.

A positive influence of physical activity on health in general is generally being recognized, however, this recognition is based on activity that is regular, targeted, adequate and optimized to individual needs. If the strenuousness of the activity exceeds the musculoskeletal system preparedness, pain can be induced in response. Relation of pain and psychological factors have been investigated in non-specific low back pain, which is a frequent health problem (Hides, Jull & Richardson, 2001). Psychological factors in chronic low back pain can also influence the therapy outcome; a fear of pain can lead to changes in movement patters (fear avoidance model).

2. Problem Statement

Půža and Komešík (2012) emphasized the current trend in the field of physical activity, focused on such sport activities, which are based on positive and meaningful experiences. Experiencing is connected to physical load, satisfaction of performance and proving one's own physical and mental strength. Experiencing and responsive behaviour can be determined by its speed, intensity and coordination (Mikšík, 2004).

A general key feature of every situational change is a dynamic change of psychological state. A psychological state was characterized by Mikšík (2004) as a state of coping with individual differences, expressed by proportional representation of the given components. Both positive and negative components normally exist in typical mutual relations, through which individual differences can be characterized, in their psychological activations and their prevailing psychological states.

3. Research Questions

The research study deals with fitness sport activities and possible psychological effects in experiencing common feelings of individuals. It was assumed that the fitness activities would change subjective psychological experiences and states in terms of a positive change (increase in positive components and decrease in negative components.)

4. Purpose of the Study

Fitness sport activities integrate both physical and psychological factors. The research study was carried out to evaluate experiencing and current feelings of individuals, and their possible changes in terms of effect of the selected fitness activities on subjective psychological experiences and states. The selected fitness activities included aerobic group exercise (represented by jumping and interval core training), body and mind group exercise (represented by pilates and health exercise), and individual gym training.

5. Research Methods

The research was carried out as a quasi-experiment with an empirical, causal design. The data were processed by quantitative analysis.

5.1. Participants

The research sample comprised 101 participants. The key criterion for inclusion was their regular leisure fitness physical activity for at least 2 months preceding data collection. The participants were university students (age 19 - 23, 31 men and 70 women) who studied Economics and Management programmes, all of them attending voluntary classes of physical activities. The classes are a part of a complex system of voluntary physical activities attended by students of University of Hradec Kralove. Minimal volume and frequency of the physical activity is 1,5 hour once a week and the aim is to

compensate for sedentary study demands, to prevent from muscle imbalances, and to motivate students to regular and targeted physical activity.

5.2. Measures

The assumed effect is investigated by the selected indicators of qualitative changes. Data were collected by means of SUPSO questionnaire (Mikšik, 2004). SUPSO is a standardized tool to evaluate structure and dynamics of subjective experiences and individual states. The indicators of psychological state of participants comprised 2 positive components (P - psychological well-being, and A – Activeness) and 5 negative components (I -impulsiveness, Di - discomfort and restlessness, De – depression and exhaustion, F - fears and anxious expectations, and S – sadness). The scales contain adjectives (n = 24). The aim is to evaluate nature, level and quality of experiencing and activation. Qualitative changes in the structure are assumed to be influenced by a specific complex of situational variables and internal changes. In its integrity, the components can be expressed in gross score, or in their proportional representation.

5.3. Analysis

Data were analysed by quantitative analysis. Statistical significance of the difference between pre-test and post-test was evaluated by nonparametric Wilcoxon pair test ($p < 0.05$). In analysis the results were evaluated in terms of increasing positive and decreasing negative components. The positive components (experiencing and activation associated with feelings of comfort) integrated in evaluation were: psychological wellbeing and activeness. The negative components (associated with feelings of discomfort) integrated in the questionnaire were: impulsiveness, discomfort and restlessness, depression and exhaustion, fears and anxious expectations, and sadness. A set condition for verification was a significant change in majority of indicators.

6. Findings

The significance of the difference was tested in statistical analysis (Wilcoxon pair test, $p < 0.05$), regarding 2 positive components and 5 negative components of psychological state. Increase of positive components was verified by means of the 2 indicators (P - psychological well-being, and A – Activeness). In the component of Activeness, there was a significant difference between pre-test and post-test in all three selected fitness activities. In the component of Psychological well-being, the difference was significant for body and mind and for individual gym exercise. The overall results support the influence of fitness sport activities on increase of positive components of psychological state.

Decrease of negative components was verified by means of the 5 indicators (I -impulsiveness, Di - discomfort and restlessness, De – depression and exhaustion, F - fears and anxious expectations, and S – sadness). In all three selected fitness activities a significant difference was shown in the components of Impulsiveness, Discomfort and restlessness, Fears and anxious expectations, and Sadness. However, the component of Depression and exhaustion showed a significant difference only for body and mind exercise. The overall results support the influence of fitness sport activities on decrease of negative components of psychological state.

6.1. Discussion

The research findings evaluated positive psychological effects of fitness sport activities in experiencing common feelings of the research participants. The selected fitness sport activities included aerobic group exercise, body and mind exercise, and individual gym exercise. In body and mind fitness activities there was pilates and health exercise. Pilates is closely related to contemporary dance as many dancers use pilates as a basis for dancing technique, in terms of postural stabilization during motion. Among applied key pilates principles there is breathing, posture, flow, precision, coordination, core, and concentration. In agreement with the suggested effects of pilates and health exercise on experiencing and mental well-being, some authors investigated dancing in relation to positive psychological effects. Hrusova (2015) focused on changes in subjective psychological experiencing in contemporary and street dance. Goulimaris et al. (2014) and Campion & Levita (2014) carried out surveys concerning changes in well-being and reduction of stress and fatigue. Pilates, yoga, contemporary dance and other body and mind exercises are considered to be effective techniques, which can be recommended as movement therapy, both in terms of psychological and physical terms. The findings of this study, aimed at experiencing and psychological changes, can be supported by other recent research studies in dancing, e. g. Jorba-Galdos (2014), Martin (2014), Murrock & Graor (2014), Slavin-Mulford (2013), and Pinniger et al. (2013). With regard to body and mind exercise, Park, Riley & Braun (2016) also reported yoga's positive effects on general health, fitness and relaxation. Concerning negative effects, only few negative changes were reported in yoga (e. g. injuries, soreness or emotional irritability).

In the introduction, fitness sport activities were subsumed under all-round and fitness exercises in the system of gymnastics. Apart from effects of gymnastic exercises on psychological state, Erlandson, Kontulainen & Baxter-Jones (2011) suggested effects in physical terms, in greater bone strength in gymnasts.

Not only body and mind exercise, but also aerobic or cardio exercises influence mental subjective experiencing and mental well-being. Costigan et al. (2016) suggest high-interval intensity training (HIIT) as an activity to improve mental and cognitive health in adolescents. Similarly, running is recommended as a leisure time physical activity to enhance quality of life through positive experience (Sato, Jordan & Funk, 2014), in agreement with the findings of this research study.

7. Conclusion

The purpose of the study was to evaluate possible effects of fitness sport activities on subjective experiences and psychological state. The selected fitness activities included aerobic group exercise, body and mind and individual gym exercise. All the evaluated fitness activities showed a significant difference in positive (comfort) components and negative (discomfort) components. The findings suggest that convenient fitness sport activities can have a positive influence on subjective experiencing and psychological states and thus enhance participants' quality of life. However, further research is recommended in terms of engaging a control group and in wider variety of fitness sport activities.

References

- Campion, M. & Levita, L. (2014). Enhancing positive affect and divergent thinking abilities: Play some music and dance. *Journal of Positive Psychology*. 9(2), pp.137-145.
- Costigan, S. A. et al. (2016). High-Intensity Interval Training for Cognitive and Mental Health in Adolescents. *Medicine and Science in Sports and Exercise*. 48(10), pp.1985-1993.
- Erlanson, M. C., Kontulainen, S. A., and Baxter-Jones, A. D. G. (2011). Precompetitive and Recreational Gymnasts Have Greater Bone Density, Mass, and Estimated Strength at the Distal Radius in Young Childhood. *Osteoporosis International*. 22(1), pp.75–84.
- Goulmaris, D. et al. (2014). Relationships between basic psychological needs and psychological well-being in recreational dance activities. *Journal of Physical Education and Sport*. 14(2), pp.277-284.
- Hides, J. A., Jull, G. A., Richardson, C. A. (2001). Long-term effects of specific stabilizing exercises for first-episode low back pain. *Spine*. 26(11), pp.243-248.
- Hrusova, D. (2015). Effect of dancing on subjective experiences and psychological state of dancers. In: *Journal of human sport and exercise*. Alicante: Universidad de Alicante, pp. 198-204.
- Jorba-Galdos, L. (2014). Creativity and dissociation. Dance/movement therapy interventions for the treatment of compartmentalized dissociation. *Arts in Psychotherapy*. 41(5), pp.467-477.
- Martin, M. (2014). Moving on the spectrum: Dance/movement therapy as a potential early intervention tool for children with Autism Spectrum Disorders. *Arts in Psychotherapy*. 41(5), pp.545-553.
- Mikšík, O. (2004). Dotazník SUPSO: Příručka. Brno: Psychodiagnostika, s.r.o., pp.5-39.
- Murrock, C. J., Graor, C. H. (2014). Effects of dance on depression, physical function, and disability in underserved adults. 22(3), pp.380-385.
- Neumann, J. et al. (1999). *Překážkové dráhy, lezecké stěny a výchova prožitkem*. Praha: Portál, pp.34-38. ISBN 80-7178-292-0.
- Novotná, V. (2005). System of General Gymnastics in the Czech Association Sport for All. *Kinesiology*. 37(1), pp.106-111.
- Park, L., Riley, K. E., Tosca, D. B. (2016). Practitioners' Perceptions of Yoga's positive and negative effects> Results of a National United States Survey. *Journal of Bodywork & Movement Therapies*. 20(2), pp.270-279.
- Půža, B., Komeščík, B. (2012) Sportovně rekreační activity v cestovním ruchu. Hradec Králové: Gaudeamus. pp.16-18. ISBN 978-80-7435-186-0.
- Sato, M., Jordan, J. S., Funk, D. C. (2014). The Role of Physically Active Leisure for Enhancing Quality of Life. *Leisure Sciences*. 36(3), pp.293-313.
- Slavin-Mulford, J. (2013). The dance of psychotherapy. *Psychotherapy*. 50(3), pp.419-423.
- Velínská, L. (2004). *Aerobik: speciální učební text*. Praha: Česká asociace Sport pro všechny, pp.22-25. ISBN 80-86586-13-8.