

Original Article

The effect of a single bout of greek dances on subjective health of middle-aged people

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Abstract

The purpose of the present study was to examine the effect of a single bout of Greek dances on the subjective health of middle-aged people. Fifty one subjects (33 women and 18 men) 56.53±5.52 years old, participated in a bout of Greek dances for one hour. For subjective health evaluation the Subjective Exercise Experiences Scale (McAuley & Courneya, 1994) was completed 5 min before and after the Greek dances bout. In addition, the Physical Activity Enjoyment Scale (Kendzierski, & DeCarlo, 1991) was completed only after the dancing bout. For data analysis, *descriptive analysis*, the *non-parametric test Wilcoxon*, the *non-parametric test Mann-Whitney* and *correlation analysis* of the *SPSS ver. 18.0* for windows were used. After dancing, significant decreases in psychological distress ($z=3.758, p<0.001$), as well as significant increases in positive well-being ($z=-2.720, p<0.01$) were observed, while fatigue didn't present significant alterations. The extent to which the subjects enjoyed doing Greek dances ranged in a high rate (103±25.37 degrees). In addition, a very significant positive correlation was found between the enjoyment of the Greek dances and the positive well-being ($r=0.366, p<0.01$). From the *correlation analysis* and *Mann-Whitney test*, it was clear that the subjects who enjoyed highly their participation in Greek dances bout had significantly higher positive well-being ($z=-4.302, p<0.001$), and felt lower psychological distress- although not significant. Thus, it can be said that the enjoyment constitutes a significant factor that could affect the subjective health of the participants in the Greek dances. Consequently, Greek dances are an ideal and enjoyable alternative form of exercise promising subjective health improvement for middle-aged people.

Key words: traditional dance, alternative physical activity, well-being, enjoyment, quality of life

Introduction

Dance has been playing various roles that are functional in all the major manifestations of human endeavours. Dance has also helped in shaping the history of different cultures all over the world. In addition, dance is easily regarded as a universal phenomenon, just like spoken word, or language. As one of the potent instruments/tools for communication and nation building, dance has been used as a symbol of oneness which thereby culminates into aiding societal and behavioural changes (1).

It can also be said that dance constitutes the language of the body. Dance carries within it, the therapeutic potential of symbolism that leads to dance therapy. The body, through dancing, becomes the vehicle to move somebody from nature to culture. So dance attends in a multidimensional body where all the levels: biological, social, psychological, artistic and religious are present. It constitutes an activity physical and mental, individual and collective, representing sport and art, entertainment/enjoyment and mental exercise (43).

Greek traditional dance, in particular, is an integral part of Greek culture. Moreover, it is one of the most indicative characteristics of temperament, history and the cultural identity of Greek people, because it is connected with the same spontaneous, instinctive expression of human mind and body. Greek traditional dance, music and song are not just social life expressions and depictions, but also organic and integral elements of social life (22).

However, dancing also constitutes a form of exercise. Thus, it is a fact that dancing in the form of a physical activity of moderate intensity, of approximately 3-5 METs, contributes to the improvement of physical fitness (4, 31). Moreover, it could be said that dancing can lead to a calorie loss that amounts to 300-360 Kcal/h, when dancing in a low intensity pace. On the contrary, when dancing in a more intensive way we may burn from 420 up to 480 Kcal/h (13, 31, 40).

On the other side, attending dance sessions can bring about numerous benefits to the dancers on many different levels. They learn to become members of a group and to express their feelings and emotions physically in a non-aggressive manner. Familiarity with their bodies is increased and they learn to use them creatively. Physical flexibility, co-ordination and cardiovascular fitness improve. It is sometimes referred to dance as an art sport because it combines gymnastic and poetic qualities, or as a healing art because it promotes physical and mental

well-being (8). In addition, it appears that dancing is advisable as an appropriate form of moderate physical activity that could contribute positively to the maintenance not only of physical, but, also, of mental and psychological health of children and adults, as well as that of middle-aged and elderly people (6, 7, 20, 21, 37, 45, 51).

However, on reviewing the literature, it seems that there is a lack of research efforts noted regarding the effectiveness of traditional dances and especially Greek traditional dances on improving well-being and quality of life. Thus, the purpose of the present study was to examine the effect of a single bout of Greek traditional dances on the subjective health of middle-aged people.

Material & Methods

Subjects

Fifty one healthy subjects (33 women and 18 men), members of different dance clubs for learning and dancing Greek traditional dances, were selected randomly and participated in the study voluntarily. An announcement was set up in each dance club inviting only the members, who were fulfilled the inclusion criteria, that is healthy members, men and women, who were participated in a group dancing program for learning and performing Greek traditional dances to the club. A written informed consent for the participation in the research was obtained from each subject. All the subjects, before the beginning of the research, underwent medical control so that it could be certified that they do not suffer from any cardiovascular or other disease and, also, that they do not take any medication. Additionally, they answered a questionnaire about any health problem, while a research assistant was present in order to give any essential clarifications if he was asked to. Subjects' age ranged from 42 to 64 years ($M=56.53$, $SD=5.52$).

Procedures

All the subjects came to the dancing club where they were members, in scheduled afternoon hours. Before the beginning of the research, a description of general requirements was given and, still, the aim of the research was described to the participants without any briefing relative to previous research findings. The psychological instruments were also presented and the instructions were explained for each one of them. The need for absolute honesty and precision was particularly emphasized. In continuity, the subjects participated in a session of Greek traditional dances conducted by teachers of physical education with extensive practical experience. The performed Greek traditional dances were from different areas of Greece. In order to begin to dance the subjects were catching each other from the hands, creating a hemi-cycle. The performed dances included a variety of simple kinetic patterns with music accompaniment. The dances intensity ranged from low to high, with frequent rhythm alternations, so that the subjects could keep dancing continuously throughout the dance session. Essential breaks of approximately 10 sec in between dances in order to change dance were made. The duration of each dance was about 2.5 to 3 min. The session duration was 60 min in total. Procedures were in agreement with ethical standards of the Declaration of Helsinki of the World Medical Association (2000).

Scales of measurements

The Subjective Exercise Experiences Scale (SEES; 36), which constitutes a measurement of global psychological responses, to the stimulus properties of exercise, was used. The scale facility and brevity allows its fast and repeated use by the researchers even during exercise. The scale is composed of 12 items that represent three factors. Two of these factors, Positive Well-Being and Psychological Distress, correspond to the positive and negative poles associated with psychological health, whereas the third factor represents subjective indicants of Fatigue. The three-factor structure originally established by exploratory factor analysis using young adults was also supported in middle-aged exercising adults (36), in old people (34), as well as in the present sample. Additionally, SEES, in the present study, demonstrated acceptable internal consistency (a ranges from .73 to .90). SEES was completed about 5 min before and after the Greek traditional dances performance.

Moreover, Physical Activity Enjoyment Scale-PACES (27) was used, for the measurement of the enjoyment of the Greek traditional dances. All subjects completed the 18-item scale once, just about 5 min after the Greek traditional dances session, with score ranging from 18 to 126 degrees. SEES and PACES were administered in a counterbalanced order, which was reversed at the posttest and translated in Greek following a standard procedure involving the discussion of multiple alternative wordings by a group of five bilingual experts.

Statistical Analysis

For the statistical analysis the statistic packet SPSS/PC Version 15.0 for windows was used. Descriptive analysis and correlation were used. The non-parametric test Wilcoxon was used to evaluate significant differences between measurements (before and after the Greek traditional dances), while the non-parametric test Mann-Whitney was used to evaluate significant differences between the enjoyment categories. The level of significance was set to $p<0.05$.

Results

In Table 1 the anthropomorphological characteristics of the subjects are presented. In addition the score in the Physical Activity Enjoyment Scale is presented. As it can be seen, the enjoyment from the physical activity which in the present study is the Greek traditional dances is high.

Table 1. Sample's characteristics and Physical Activity Enjoyment

Parameters	Mean $\pm$ SD
Age (years)	56.53 $\pm$ 5.52
Height (cm)	167.35 $\pm$ 7.56
Weight (kg)	74.76 $\pm$ 7.29
Physical Activity Enjoyment (degrees)	103 $\pm$ 25.37

Descriptive statistics for each measure assessed prior to and following the dance bout are shown in Figure 1. According to data processing, it was obvious that there was an increase in the positive factor positive well-being, while there was a decrease in the negative factor psychological distress. Furthermore, the subjective indicators of fatigue showed a decrease after the Greek traditional dances performance.

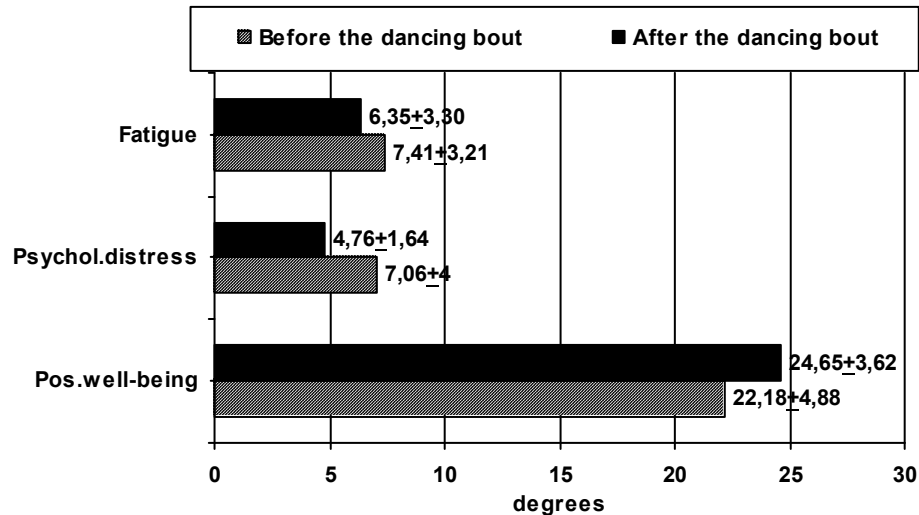


Figure 1. Alterations to SEES factors.

Moreover, from the non-parametric test Wilcoxon it was found out that all the factors of the SEES, except fatigue, were significantly influenced by the Greek traditional dances bout. As it can be seen, these changes that are observed after the performance of the Greek traditional dances generally reflect increases in positive responses and decreases in negative responses and fatigue. The greatest influence on psychological responses noted to be evidenced in the psychological distress dimension (32.44% decrease, $z=3.76$, $p<0.001$). The increase in positive well-being, although statistically significant ($z=-2.72$, $p<0.01$) was relatively modest (11.14%). However, the observed decrease in fatigue was not significant (14.30%) (Figure 2).

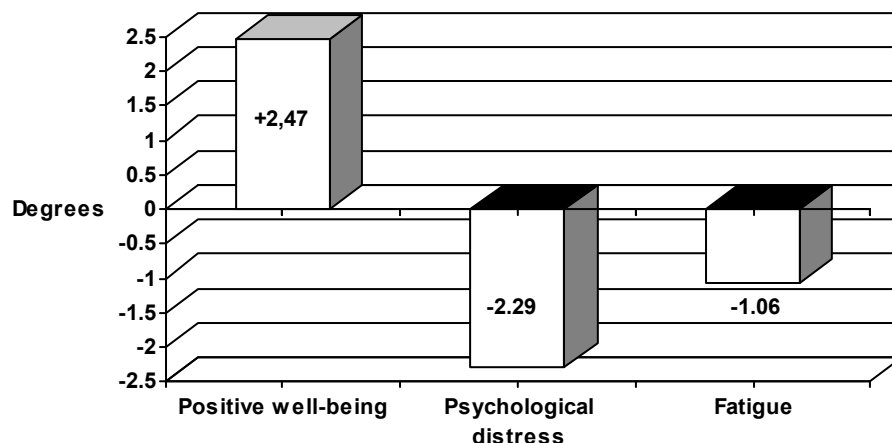


Figure 2. The degree of change for SEES factors after the Greek traditional dances bout.

Correlational analyses between the various measures taken postdance were then conducted to determine the degree to which such measures were or were not associated (Table 2).

Table 2. Correlations between SEES subscales and the PACES score after the Greek traditional dances bout

	Positive well-being	Psychological distress	Fatigue	Physical Activity Enjoyment
Positive well-being	1.00	-.60**	-.45**	.60**
Psychological distress	-.60**	1.00	.45**	-.20
Fatigue	-.45**	.45**	1.00	.15
Physical Activity Enjoyment	.60**	-.20	.15	1.00

** Correlation is significant at the 0.01 level

From the results in Table 2, it appears that positive well-being correlated negatively with the measures of negative affect, such as psychological distress, and fatigue, while the psychological distress factor correlated positively with indicators of negative states, such as fatigue. Moreover, high positive correlation was observed between physical activity enjoyment and positive well-being. However, the correlations between physical activity enjoyment and psychological distress (negative), as well as fatigue (positive) were not significant. In addition, from the non-parametric test Mann-Whitney, used to present differences between the physical activity enjoyment categories as for the SEES factors, it was found out that the subjects who enjoyed highly their participation in Greek traditional dances bout had significantly higher positive well-being. In addition, they felt lower psychological distress and higher fatigue, but these differences were not significant (Table 3).

Table 3. The SEES factors in regard to subjects' distribution as for Physical Activity Enjoyment

SEES factors	Physical Activity Enjoyment Categories		<i>p</i>
	Moderate Enjoyment	High Enjoyment	
Positive well-being	12.50	31.63	$z=-4.302$ $p<0.001$
Psychological distress	29.30	24.63	<i>NS</i>
Fatigue	21.50	27.88	<i>NS</i>

From the correlation analysis and Mann-Whitney test, it can be said that the Physical Activity Enjoyment constitutes a significant factor that could affect the subjective health of the participants in the activity, which in the present study is the Greek traditional dances.

Discussion

The objective of the present study was to examine whether a single bout of Greek traditional dances results in positive effects on middle-aged people's subjective health. The results overall indicate that Greek traditional dances could, indeed, improve middle-aged people's subjective health. More specifically, in the present study was found out the middle-aged people's well-being was increased, while the stress was decreased after the Greek traditional dances bout.

In similar results were led other authors after one bout exercising in Greek traditional dances for approximately 1½ h, in young adults (2, 3), in older people (34), in elderly women (39), as well as after a program of Greek traditional dances in old women (32). From the previously mentioned studies, as well as from the results of the present study, it can be said that Greek traditional dances, in a form of a single bout or a program, can induce state anxiety reductions, mood states improvement, satisfaction strengthening and significant improvement in all the parameters that delimit the quality of life generally.

In agreement with the present study, referring on traditional dance effects, Sibel et al. (44) found out that Turkish traditional dance decreased anxiety and improved mood and quality of life of elderly women. It has been, also, found out that a program with social/traditional dances helped the elderly women with senility who participated to reconstruct their remaining faculties and present with personal style their kinetic-dancing learning and experiences, communicate as a team and try positive sentiments (38).

Moreover, other forms of dance were, also, led in similar results. More specifically, a program of practice with movements of traditional Korean dances resulted in moral satisfaction, improvement of self-confidence and of psychological state (29). Furthermore, Berryman-Miller (10) found out that the 8-month application of a dancing program in individuals aged 55 to 85 years old, affected self-esteem and well-being positively and led to mood state improvement. Berrol, Wee and Katz (9) ascertained that the participation in dancing programs, of 45 min duration, once a week, for five months, improved the psychological state of old people who suffered from stroke, traumatic brain injury and cerebral vascular accidents. In addition, other authors suggest that dancing causes anxiety and neuromuscular tension reduction, and, also, causes psychological and physical calm (23, 28, 33, 41, 47, 48). Thus, it can be said that via dancing the dancer's psychological state is generally improved.

A possible explanation for the relation between the improved mood state and dancing, as a form of aerobic exercise, is that the improvement in mood state is related to the improvement in cardiovascular functioning and in physical fitness that occurs by exercising (17). So, while exercising many systems of the body as cognitive, skeletal-muscular or cardiovascular, interact in a somewhat general or holistic manner together with positive and negative moods (49). This sense of psychological well-being is connected with endorphins excretion that has a morphine-effect in the exercising individual. The general euphoria that endorphins produce reduces depression, anxiety, confusion and different negative mood states levels (17, 19).

Aside of the above, non-competitive exercises and dance activities provide a way out of physical tension and stress hormones that lead to a *fight or flight* response. Dancers can externalize some of their internal thoughts and feelings and then express them through movement. Moreover, movement experiences within dance, enabling participants to gain a sense of oneness with the inner self and to become better acquainted with their internal energy. They also add balance to the dancer's lives and bring a sense of completion and well-being (12).

Thus, dance, may be considered as the oldest of the arts, however its roots are lost in the animal body of man, while its biological basis is an integral part of its therapeutic efficacy. It is clear, that dance is a physical activity that causes physiological phenomena. If it was possible to distinguish the physical level of the other systems that make up the human being, it could be said that physical level is the first that benefits from the rejuvenating effects of dance (43). Therefore, through dancing middle-aged people can externalize large energy reserves that hiding inside them. So, when they begin to occupy with their body via dancing they feel revitalization, exhilaration and, also, younger. Thus, both dancing and physical fitness improvement become a lifestyle (50).

In addition, via dancing a safety and confidence climate created in which sentiments expression attained via movement. An environment, absolutely adapted to middle-aged people's faculties was offered and corresponded to their real needs (16). This happened because the Greek traditional dances bout included a variety of kinetic patterns, was of low to high intensity, depending on the participants' capacities, with appropriate intervals and frequent rhythm alternations. Moreover, dancing and movement with the help of music provide an improvement of psychological well-being and a clear reduction of anxiety symptoms (24, 42). Actually, music helps in the expression of movement (14, 46), reinforces mood state positively (25, 26), and moreover it can decrease anxiety (18).

Thus, dance is not a simple physical movement, but constitutes a conscious movement based on the emotion, enriched and imbued with the human element (30). It could be said that dancing is an effective factor of subjective health improvement of middle-aged people, as it contributes to the creation of a special stream state of consciousness which is related to various ecstasy levels, or, in other words, to a state of enthusiasm. Therefore, it appears that dancing is not simply and only the means of body-spirit reconnection. It is a kinetic activity that can, as the primitive, ritual dances, use brain properties in order to connect, via the conceiving rhythm, the internal and the external that is the individual and the world, a fundamental element in psychotherapy (43). Thus, the therapeutic function of dance is important as it can be used as an antidote to everyday stress and anxiety, restoring inner peace (35).

In doing so, is very important the contribution of the enjoyment felt by the people participating in dancing. From the results of the present study it was clear that the subjects who enjoyed highly their participation in Greek traditional dances bout had significantly higher positive well-being, and felt lower psychological distress. Thus, it can be said that the physical activity enjoyment constitutes a significant factor that could affect the subjective health of the participants in the activity, which in the present study are the Greek traditional dances.

Thereupon, the Greek traditional dances that the middle-aged people performed in the present study, as an aerobic exercise with music accompaniment, are considered a pleasant exercise type that helps the participants to escape from their problems. Besides, pleasure/enjoyment from physical activity appears to be a main factor in the improvement of psychological well-being and quality of life, which is closely related to the concept of flow (5, 52). When a person is in the condition of flow, concentrates on a limited field of stimuli, loses the sense of time, forgets personal problems, makes a "time out" from the daily routine, feels capable and in control, and has a wonderful sense of harmony with the environment (15, 18). These are, probably, some of the reasons explaining the observed in the present study beneficial effects of dances with music accompaniment on middle-aged people's subjective health. Therefore, as it has been shown in the present study, via dancing the individuals can express themselves, feel more relaxed and thus they can remove feelings of stress and anxiety.

Conclusions

From the present study it was revealed the significant contribution of Greek dances on subjective health of middle-aged people. At a time that about the 20% of the population will experience a serious emotional disorder or mood disorder some time in life (11), that over the 40% of the U.S. adult population suffers from an incident of psychiatric importance during life (19) and that the experience of excessive or prolonged stress results to the appearance of acute and chronic illness, Greek traditional dances contribution is very significant. More specifically, the feeling and expressed high enjoyment from the Greek dances participation may be a

crucial factor in the improvement of psychological well-being. Consequently, Greek dances are an ideal and enjoyable alternative form of exercise promising subjective health improvement for middle-aged people.

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