

CAN A LIVESTREAMING GREEK TRADITIONAL DANCE GROUP PROGRAM HAVE FAVORABLE CHANGES ON MOOD STATES?

BY

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Abstract

The purpose of the present study was to examine the effectiveness of a live streaming Greek traditional dance group program on participants' mood states. In the research participated voluntarily 147 adult members of Cultural Clubs, who were randomly divided into intervention group (IG; n=75) and control group (CG; n=72). The IG participated in live streaming group lessons of Greek traditional dances, twice a week, for 45 minutes, for 12 weeks, while the CG continued its daily life, both during the quarantine imposed due to COVID-19. Before and after the 12-week period, the participants in both groups completed the 37-item Profile of Mood States, proposed by Shacham (1983), to measure tension, depression, anger, vigor, fatigue, confusion, exhilaration, and Total Mood Disturbance. The statistical package SPSS/PC version 29.0 for windows was used for statistical analysis. The data analysis showed that participation in the livestreaming Greek traditional dance group program implemented during the quarantine affected very positively IG's mood states, as it caused very significant decreases ($p < 0.001$) concerning the negative dimensions of mood states -tension, depression, anger, confusion, fatigue, Total Mood Disturbance-, and very significant increases ($p < 0.001$) regarding the positive dimensions of mood states -vigor, exhilaration. As for the CG, the 12-week daily life in quarantine affected very negatively their mood states, since the negative dimensions increased significantly ($p < 0.05$ to $p < 0.001$), and the positive dimensions decreased significantly ($p < 0.01$ to $p < 0.001$). Consequently, a livestreaming Greek traditional dance group program may, indeed, have favorable changes on mood states and also may be an alternative solution in cases where face-to-face participation in exercise and dance programs is not feasible, either due to problems concerning individual health or occupational problems, or problems concerning society, such as a pandemic.

Keywords: quarantine, Covid-19, dance, online program, adults, psychological state.

INTRODUCTION

Mood has been defined as "a disposition to respond emotionally in a particular way that may last for hours, days, or even weeks, perhaps at a low level and without the person knowing what prompted the state". Any short-lived emotional state, usually of low intensity, is mood (e.g. a cheerful mood, an irritable mood) (American Psychological Association, <https://dictionary.apa.org/mood>). Mood refers to a host of transient,

fluctuating affective states, reflecting how an individual feels at a particular moment (McNair et al., 1971).

Moods differ from emotions. Emotions tend to be intense, depending on the situation an individual finds themselves in and soon are replaced by the next feeling (Sukel, 2020). Additionally, moods differ from emotions because they lack an object. For

example, the emotion of anger can be arisen by an insult, but an angry mood may arise when one does not know what they are angry about or what elicited the anger (American Psychological Association, <https://dictionary.apa.org/mood>). While emotions tend to be linked to a particular person or event, moods may not be connected to any obvious cause. Moods tend to echo particular emotions, like happiness or sadness, but they are usually less intense. However, moods may not be as strong as some feelings, but they do have power and can influence perception, motivation, decision-making, social interactions, and even more basic cognitive processes like memory and attention (Sukel, 2020). Mood always governs human cognition (Thayer et al., 1994). Moreover, mood is related to psychological well-being as evidenced by an individual's general level of enjoyment, self-concept, and subjective well-being, can alter general behavior patterns, and influences physical health (Cohen & Rodriguez, 1995; Thayer et al., 1994). In addition, mood seems to affect an individual's general satisfaction with life (McInman, & Berger, 1993). Thus, it could be said that mood is an essential and integral component in a person's daily life.

Factors that can improve mood states and help lower stress, regulate hormone and neurotransmitter levels, are regular cardiovascular exercise, ample sleep (7-8 hours each night), nutritious foods (that include nutrients like Omega-3 fatty acids, selenium, and B vitamins), and even meditation (Sukel, 2020). Concerning exercise, studies have shown that physical exercise such as aerobic dance, Greek traditional dance, running, swimming, cycling, weight-lifting, and yoga are associated with short-term mood benefits (Argiriadou, 2003; Argiriadou et al., 2013; Berger & Owen, 1983; Berger & Owen, 1988; Dyer & Crouch, 1987; Gondola, 1987; McGowan, Pierce, & Jordan, 1991; McInman, & Berger, 1993; Papaioannou et al., 2009). In addition, spending some time outdoors, getting out in the sunshine, and spending time with others have also been shown to improve mood (Sukel, 2020).

However, the COVID-19 pandemic still remains as a cloud over our heads ready to manifest a storm. Additionally, Dr. Tedros, WHO chief, in 76th World Health Assembly (2023), warned that the world must prepare for the *next pandemic*, which could be "even deadlier" than the COVID-19 *pandemic*. He underlined that "the threat of another variant emerging that causes new surges of disease and death remains, and the threat of another pathogen emerging with even deadlier potential remains". So, a basal strategy to limit rapid spread of diseases is to follow social distancing, however people keep on maintaining social distancing due to fear (Kaur et al., 2020).

Thus, these situations that people experience in everyday life makes it difficult or/and even impossible for them to participate or/and adhere to exercise programs and get in touch and interact with each other. So, during a time that social distancing has entered our lives, that modern way of life does not provide an alternative way to participate in exercise but leads to a negative mood, and that the internet has entered the jobs and daily lives, the question that arises is whether participation in a livestreaming exercise program with an alternative form of exercise such as dance can

have favorable changes on mood states. Therefore, the aim of the present study is to examine the effect of a livestreaming group program with Greek traditional dances on the participants' mood states.

Materials and methods

Participants

A hundred and sixty members of Cultural Clubs from Thessaloniki and Giannitsa, cities in Greece, volunteered to participate in the study, after an online briefing about the research. Subsequently, a second online briefing was held concerning the online procedure of the dancing sessions and apparatus needed, the separation in IG and CG, the online participation in at least 80% of the total dancing sessions, as well as the inclusion criteria, that is no participation in any exercise, physical activity, or dancing programs. After that, five subjects withdrew their participation due to personal reasons. All the subjects underwent a medical checkup so that it was certified that they do not suffer from any cardiovascular or other diseases, and answered, online, a questionnaire about any health problems. In addition, an online consent for their participation in the research was obtained from each subject.

Then, the subjects were separated randomly to an IG (n=78) and a CG (n=77). The subjects who joined the IG participated in a 12-week livestreaming Greek traditional dance group program, twice a week, each for 45 min, and in no other exercise, physical activity, or dancing program for the duration of the intervention, and, also, continued the daily life they experienced under the COVID-19 conditions. The subjects who joined the CG didn't participate in any exercise, physical activity, or dancing programs for a 12-week period, but they continued the daily life they experienced under the COVID-19 conditions. However, during the research seven subjects lost to follow-up (3 subjects did not complete the required participation, 2 subjects had a musculoskeletal injury, and 3 subjects suffered from coronavirus). Finally, the participants in the research were a hundred and forty-seven healthy adult people, 43 men and 104 women, aged 49.73 ± 8.141 years old, 75 in the IG and 72 in the CG. Research conduction was approved by the committees of the Cultural Clubs. The study was conducted in accordance with the ethical standards of the Declaration of Helsinki.

Procedure

Firstly, all subjects answered questions online through Google Forms regarding anthropometric characteristics, and involvement in exercise, physical activity, or dance during quarantine. Then, the subjects of both groups, IG and CG, filled in the scale of measurement online through Google Forms, twice. More specifically, the participants in the IG filled in online the Profile of Mood States (POMS) just before the first session of the intervention. Concerning IG, immediately after the completion of the questionnaires, they began the first session of the livestreaming Greek traditional dance group program. The livestreaming Greek traditional dance group program was conducted through the online platform ZOOM, 2 times a week, each session lasting 45 minutes, for a period of 12 weeks.

At the beginning of each livestreaming Greek traditional dance session, new dances were taught or already taught dances were practiced at a slow-to-moderate pace for 5-7 minutes in order to warm up cardiorespiratory and musculoskeletal system. Then, until the end of each livestreaming session already taught dances were practiced. Continuous training method was used. Dance intensity ranged from 60% to 75% of the maximum HR, which corresponds to 40-60% of VO₂max (moderate intensity) (Swain et al., 1994; Tanaka et al., 2001; Uth et al., 2004). There were frequent rhythm alternations so that the subjects could keep dancing continuously throughout each dance session. The program contained a variety of dances, regarding rhythm, kinetic repertoire, and style. The performed Greek traditional dances were from Crete and Pontus. The dances included in the program were, from Crete, Sirtos Chaniotis, Pentozali, Anogianos, Siganos, Lasithi Pidichtos, Mikro-Mikraki, Glikomilitsa with their regional variations, and from Pontus, Omal, Tik, Kotsari, Sari Kouz with their regional variations. During dance execution, instructions were given regarding the correct execution of steps and whole-body movements. Immediately after the end of the last livestreaming session of the 12-week program, the participants in the IG filled in online the POMS for the second time.

Concerning the participants in the CG, they filled in online the POMS before the 12-week period and continued the daily life they experienced under the COVID-19 conditions, with no participation in exercise, physical activity, or dance. After the 12-week period, the participants in the CG, also, filled in online the POMS for the second time.

Measurements

The abbreviated version of the Profile of Mood States (POMS; McNair et al., 1971), proposed by Shacham (1983), was used as a measure of Tension/Anxiety, Depression/Dejection, Anger/Hostility, Vigor/Activity, Fatigue/Inertia, Confusion/Bewilderment, and Total Mood Disturbance. The rigorous psychometric properties of the 65-item original questionnaire seem to be well preserved in this 37-item easier-to-administer form (Grove, & Prapavessis, 1992). Moreover, five additional items were included, measuring Exhilaration, according to Zervas et al. (1993). Additionally, Total Mood Disturbance was calculated according to the next formula:

$$(Tension + Depression + Anger + Fatigue + Confusion) - Vigor + 100$$

The subjects responded to the question: “How have you been feeling during the past week including today”, using a 5-point scale (0=not at all, to 4=very much).

The abbreviated version of the POMS demonstrated high internal consistency (α=0.92 - 0.98) (Shacham (1983) and was translated in Greek following a standard procedure involving the discussion of multiple alternative wordings by a group of five bilingual experts (Zervas et al., 1993).

Statistical analysis

The statistical package SPSS/PC version 29.0 for windows was used for the statistical process of the data. Firstly, a descriptive analysis of the results was done. The t- test for independent samples was used to test the differences between the 2 (two) groups at baseline, concerning their anthropometric characteristics. In addition, difference tests (t-test for dependent samples) were carried out between the 2 (two) phases of the study regarding mood state dimensions. The level of significance was set at p<0.05.

Results

In Table 1 are presented the anthropometric characteristics of the IG that participated in the livestreaming Greek traditional dance group program, and the CG that didn’t participate in any exercise, physical activity, or dance, but continued the daily life they experienced under the COVID-19 conditions. Independent samples t-tests showed that, at baseline, there was no significant difference between the two groups, concerning age, height, weight, and Body Mass Index (BMI) (Table 1).

Table 1. Sample’s anthropometric characteristics

Characteristics	Intervention Group (Mean±SD)	Control Group (Mean±SD)	p
Age (years)	51.17±6.85	48.94±9.11	0.095
Height (m)	1.67±0.08	1.69±0.08	0.146
Weight (kg)	74.16±13.4	76.14±13.24	0.369
BMI (kg/m ²)	26.48±4.31	26.55±3.66	0.924

p - Statistical significance

The descriptive statistics concerning the POMS factors assessed prior to and following the 12-week live streaming Greek traditional dance group program for the IG and prior to and following the 12-week period of daily life under the COVID-19 conditions for the CG, as well as the significance of any demonstrated change are shown in Table 2.

Regarding the IG, there were significant, and, also, very big decreases in tension (54.14%), in depression (56.09%), in anger (53.09%), in confusion (56.35%), in fatigue (46.35%), and in Total Mood Disturbance (13.92%), but very significant, and, also, very big increases in vigor (17.64%), and in exhilaration (69.09%). On the contrary, regarding the CG there were very significant, and, also, very big increases in tension (25.90%), in depression (47.34%), in anger (45.56%), in confusion (14.49%), in fatigue (55.92%), and in Total Mood Disturbance (10.04%), but very significant, and, also, very big decreases in vigor (14.00%), and in exhilaration (19.08%) (Table 2).

Table 2. Descriptive data and differences of POMS factors of IG and CG

Group	POMS factors	Pre 12 weeks Mean±SD degrees	Post 12 weeks Mean±SD degrees	Change	Statistical significance
IG	Tension	5.81±5.2	2.67±4.06	↓	t=6.07 p<0.001
	Depression	5.04±5.37	2.21±3.84	↓	t=5.00 p<0.001
	Anger	3.04±3.68	1.43±2.50	↓	t=4.15 p<0.001
	Vigor	15.35±4.72	18.05±4.41	↑	t=-5.15 p<0.001
	Confusion	4.73±3.59	2.07±3.18	↓	t=6.40 p<0.001
	Fatigue	4.37±4.44	2.35±3.86	↓	t=3.74 p<0.001
	Exhilaration	8.67±5.37	14.65±5.56	↑	t=-9.21 p<0.001
	Total Mood Disturbance	107.65±22.08	92.67±18.77	↓	t=6.56 p<0.001
CG	Tension	6.11±5.39	7.69±6.30	↑	t=-2.75 p<0.01
	Depression	5.22±6.05	7.69±6.87	↑	t=-3.44 p<0.01
	Anger	3.44±3.93	5.01±5.41	↑	t=-3.93 p<0.001
	Vigour	14.58±5.34	12.54±5.81	↓	t=4.00 p<0.001
	Confusion	5.36±3.80	6.19±4.65	↑	t=-2.05 p<0.05
	Fatigue	4.69±4.40	7.32±5.60	↑	t=-4.52 p<0.001
	Exhilaration	8.80±5.17	7.12±5.23	↓	t=2.95 p<0.01
	Total Mood Disturbance	110.25±20.85	121.32±28.92	↑	t=-4.74 p<0.001

As it can be seen, the changes observed after the livestreaming Greek traditional dance group program generally reflect increases in positive mood state dimensions and decreases in negative mood state dimensions (Figure 1).

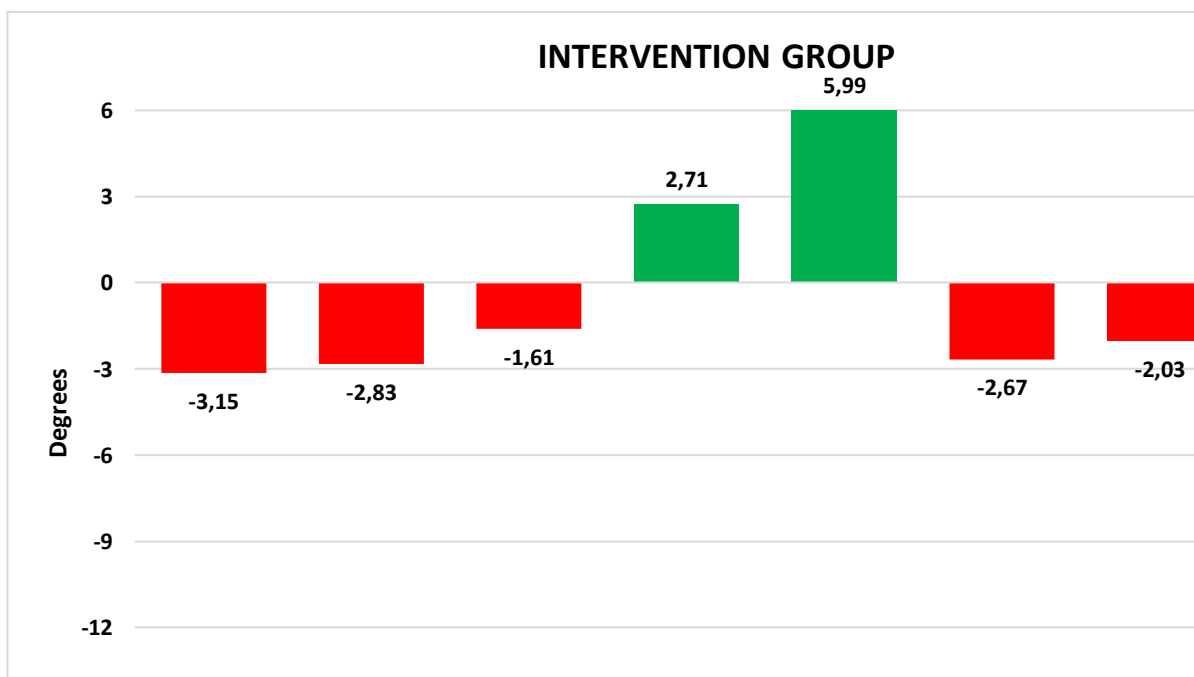


Figure 1. Alterations of POMS factors post 12-week program for IG

However, the changes observed in CG that didn't participate in any exercise, physical activity, or dance, but continued the daily life they experienced under the COVID-19 conditions, generally reflect decreases in positive mood state dimensions and increases in negative mood state dimensions (Figure 2).

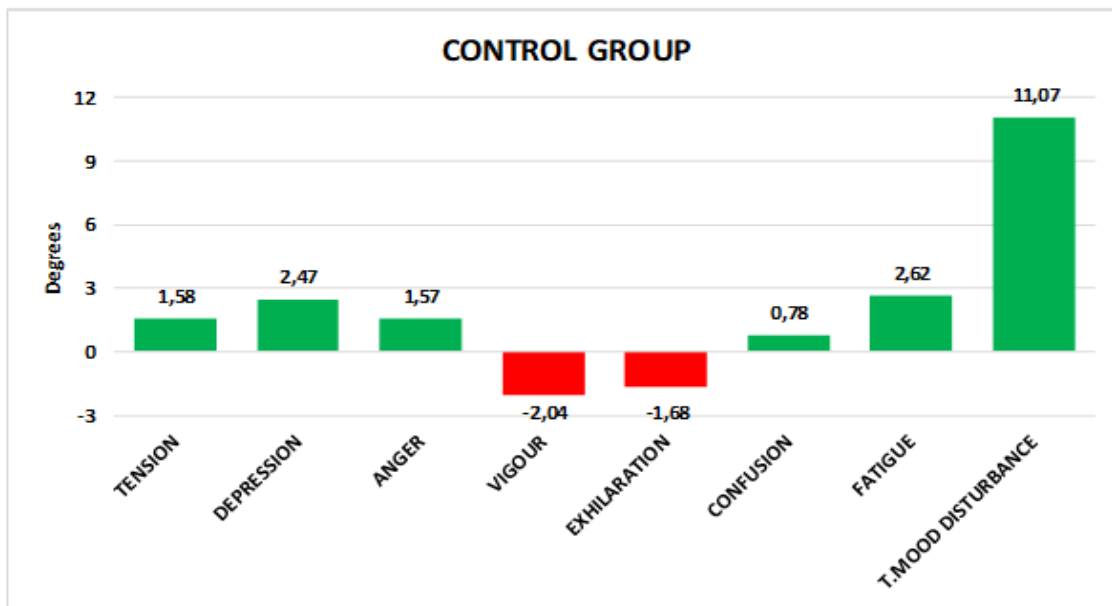


Figure 2. Alterations of POMS factors post 12-week period for CG

The results show that after the participation in the 12-week live-streaming Greek traditional dance group program, the measured mood state factors changed to the desirable direction, since the positive mood increased, and the negative mood decreased (Figure 1). However, as for the CG, the measured mood state factors changed to an undesirable direction, since the positive mood decreased, and the negative mood increased (Figure 2). From the results, it was shown that, indeed, a livestreaming Greek traditional dance group program can have favorable changes on mood states of the participants.

Discussion

The results of the present research showed that the participants in the IG improved their mood states after their participation in the live streaming Greek traditional dance group program, while mood states of the participants in the CG worsened. More specifically, the participants in the IG after their participation in the live-streaming Greek traditional dance group program significantly increased the positive aspects of mood states, and, also, significantly decreased the negative aspects of mood states. These correspond to increases from 17.64% to 69.09%, for the positive dimensions of POMS, and to decreases up to 56.35%, for the negative dimensions. On the contrary, the participants in the CG, who didn't participate in any exercise, physical activity, or dancing programs for a 12-week period but continued the daily life under the COVID-19 conditions, experienced decreases concerning the positive aspects of mood states, but increases regarding the negative aspects of mood states. These correspond to decreases from 14.00% to 19.08%, for the positive dimensions of POMS, and to increases up to 55.92%, for the negative dimensions. It can, therefore, be said that a livestreaming Greek traditional dance

group program may, indeed, have favorable changes on mood states.

These results confirm the findings of other researchers, who found an improvement in mood states after a 1-1½ hour Greek dance session in young people (Argiriadou, & Mavrovouniotis, 2001; 2002), in elderly people (Mavrovouniotis et al., 2010), in elderly women (Papaioannou et al., 2009), in middle-aged women with and without chronic diseases (Mavrovouniotis et al., 2006; Serbezis et al., 2007). Additionally, mood improvements were found by other researchers after a program of Greek traditional dances in middle-aged women (Genti, 2009) and in elderly women (Konstantinidou et al., 2000). From the aforementioned researches, as well as from the results of the present study, it can be said that Greek dances, in the form of a session or a program, can cause mood improvements.

Until before the COVID-19 pandemic, the most important reasons why people do not participate in exercise were lack of time, fatigue, risk of injury, high cost of participation, and the fact that they consider exercise boring (Dorfner, 2015). In these reasons, during and after COVID-19 pandemic, has been added the guidelines for the prevention of disease transmission and, also, fear, both leading in social distancing (Kaur et al., 2020).

As for the -before COVID-19 pandemic- reasons, they all may be overcome with a form of alternative exercise in which the risk of injury is low, the cost of participation is low, the participants do not perceive fatigue and find it enjoyable. Such an activity is Greek traditional dance (Anagnostopoulou et al., 2017; Argiriadou, 2018; Argiriadou et al., 2013; Malkogeorgos et al., 2010). Besides, it has been proven that Greek traditional dances with music accompaniment are an ideal and enjoyable alternative form of

exercise promising subjective health improvement (Argiriadou et al., 2013) and helping the participants to escape from their problems (Berger, 1994; Wankel, 1993). Moreover, Argiriadou et al. (2013) reported that the subjects who highly enjoyed their participation in Greek traditional dances had significantly higher positive well-being, and felt lower psychological distress, showing that the enjoyment, caused from a physical activity, constitutes a significant factor that could affect the subjective health of the participants in the activity, that is Greek traditional dances (Argiriadou et al., 2013). When a person is in a state of flow, concentrates on a limited field of stimuli, loses the sense of time, forgets personal problems, takes a “time out” from the daily routine, feels capable and in control, and has a wonderful sense of harmony with the environment (Csikszentmihalyi, 1991). Besides, the sense of pleasure/enjoyment not only promotes psychological benefits from physical activity but helps people to adhere to physical activity programs (Wankel, 1993).

As for the -after COVID-19 pandemic- reasons, they may be overcome with the form of a livestreaming program. Such a program is a livestreaming Greek traditional dance group program, which wonderfully and harmoniously combines both social distance and remote social contact of the participants. During the COVID-19 period, people used social media to connect to other people, as well as witness their regular activities, which they were missing otherwise (Kaur et al., 2020). However, this habit came to stay! So, a very large percentage of the population not only is keen to use modern computer technology but also is online daily (Irvine et al., 2013; Juznic et al., 2006). Thus, the increasing use and social integration of modern media may support the promotion of livestreaming physical activity interventions (Wagner et al., 2010). These non-face-to-face interventions present a novel way of physical activity promotion and come with considerable administrative as well as logistic benefits in terms of cost-effectiveness, ease of dissemination, and outreach (Müller, & Khoo, 2014).

Particularly, during the COVID-19 period, a significantly higher use of social media and apps for home-based fitness activities has been demonstrated (Ammar et al., 2020). It is well documented that social support boosts motivation for training and can increase up to 35% more adherence to a physical exercise program (Rhodes et al., 2001). However, technology-based interventions not only are effective in increasing and maintaining physical activity (Aalbers et al., 2011; Baez et al., 2016; Müller, & Khoo, 2014), but also have favorable effects on participants' psychological state as has been shown after the live streaming Greek traditional dance group program in the present study.

In agreement, Baez et al. (2016) who compared the effects of two exercise programs: a standard individual home-based training program and an online group exercise program of 8-weeks in older adults, proved that both programs caused a significant improvement in subjective well-being and in the enjoyment following physical activity, and both groups expressed a decrease in loneliness. Additionally, the researchers underlined that technology-supported online group exercising is effective in motivating and enabling individuals who are less fit to train as

much as fitter individuals. This not only indicates the feasibility of training together despite differences in physical skills but also suggests that online exercise might reduce the effect of skills on adherence in a social context and promote more physical activity participation (Baez et al., 2016). The present results confirm the results of Baez et al. (2016). It is worth mentioning that the effects of the livestreaming Greek traditional dance group program on the participants' mood states are comparable with those induced from face-to-face group Greek traditional dance programs (Argiriadou et al., 2017; Genti, 2009; Konstantinidou et al., 2000; Mavrovouniotis et al., 2007). Thus, livestreaming Greek traditional dance group program may be an alternative form of a physical activity program not only in habitual daily life but also in circumstances where face-to-face programs cannot be implemented.

The results of the present research are very significant, as the improvement of mood states through the live streaming Greek traditional dance group program occurred in a period when, due to the COVID-19 pandemic, there was a huge increase in emotional stress and uncertainty regarding many issues, including family, financial, and medical practices (Argiriadou et al., 2022). In addition, the psychological impact of quarantine included post-traumatic stress symptoms, confusion, anger, and stressors including longer quarantine duration, infection fears, frustration, boredom, inadequate supplies, inadequate information, financial loss, and stigma (Brooks et al., 2020; Jiménez-Pavón, 2020). Physical activity became especially essential during quarantine because maintaining physiological function and preserving most of the organ systems could contribute to the fight against mental and physical consequences and severity of Covid-19 (Jimenez et al., 2020).

Given the numerous physical and mental benefits of increased physical activity and reduced sedentary behavior, public health strategies should include the creation and implementation of interventions that promote safe physical activity and reduce sedentary behavior in the event of further lockdowns (Stockwell et al., 2021). Thus, the value and importance of the live-streaming Greek traditional dance group program is particularly great, because it provided the opportunity for participation in physical activity, but also led to a significant improvement in mood states of the participants in very difficult and particular circumstances.

Conclusions

Face-to-face dance brings about very important positive effects regarding mood states, but also a live-streaming Greek Traditional Dance group program, as it has been shown, may be equally effective. The implementation of the live-streaming Greek Traditional Dance group program during the quarantine offered participation in a safe and effective form of physical activity, social distancing, and, also, remote communication with many physical and psychological health benefits. Consequently, a livestreaming Greek Traditional Dance group program may, also, be an alternative solution not only in habitual daily life, but also in cases where face-to-face participation in exercise and dance programs are not possible, either due to problems concerning the participants

themselves (i.e., individual health or occupational problems) or society (i.e., pandemic).

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