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Emotional Intelligence Levels of Adult Hellenic Traditional Dancers and Group Exercisers

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Abstract

The purpose of the present study was to examine the Emotional Intelligence (EI) differences among people who participate in different forms of Physical Activity (PA). Strict selection criteria were applied to maximize the effort of avoiding other effects than the type of (PA). The participants (n=299) were divided in two groups a) 25-34 years old (young adults, n=150) and b) >60 years old (older adults, n=149) and in three subgroups: a) Hellenic Traditional Dancers (HTDs), b) Pilates/Yoga/whole body exercisers and c) sedentary lifestyle. The Greek EI scale was used to assess self-report EI and the Leisure Time Physical Activity scale to assess participants' PA. We found that younger participants displayed higher scores in "express and recognition of emotions" than older participants ($p<.001$), while HTDs scored higher in EI than the other two groups. This evidence designates that HTD is a form of PA that is positively connected with adults' empathy and mental health.

Keywords: *group exercise, recreational activity, empathy*

Ερευνητική

Επίπεδα Συναισθηματικής Νοημοσύνης σε Ενήλικες Χορευτές Ελληνικού Παραδοσιακού Χορού και Ομαδικά Ασκούμενους

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Περίληψη

Σκοπός της παρούσας εργασίας ήταν να εξετάσει τις διαφορές στη Συναισθηματική Νοημοσύνη (ΣΝ) μεταξύ συμμετεχόντων σε διαφορετικές μορφές φυσικής δραστηριότητας. Για να αποφευχθούν επιδράσεις από άλλους παράγοντες, εκτός από το είδος της φυσικής δραστηριότητας, εφαρμόστηκαν αυστηρά κριτήρια επιλογής. Οι συμμετέχοντες (n=299) επιλέχθηκαν ώστε να αντιστοιχούν σε δύο ηλικιακές ομάδες: α) 25-34 ετών (νέοι ενήλικες, n=150) και β) > 60 ετών (ηλικιωμένοι ενήλικες, n=149) και σε κάθε ηλικιακή ομάδα σε τρεις υποομάδες: α) χορευτές ελληνικού παραδοσιακού χορού, β) συμμετέχοντες σε ομαδικά μη χορευτικά προγράμματα άσκησης όπως Pilates/Yoga και γ) καθιστικός τρόπος ζωής. Η ΣΝ αξιολογήθηκε με την Ελληνική κλίμακα ΣΝ και η φυσική δραστηριότητα αξιολογήθηκε με την κλίμακα Leisure Time of Physical Activity. Από τα αποτελέσματα βρέθηκε ότι οι νεότεροι παρουσίασαν υψηλότερα σκορ στην έκφραση και αναγνώριση συναισθημάτων από ότι οι μεγαλύτερης ηλικίας συμμετέχοντες, ενώ οι χορευτές ελληνικού παραδοσιακού χορού παρουσίασαν υψηλότερα επίπεδα ΣΝ από τις άλλες δύο ομάδες. Από τα στοιχεία της παρούσας εργασίας φαίνεται πως ο ελληνικός παραδοσιακός χορός συνδέεται θετικά με την ενσυναίσθηση και τη ψυχική υγεία των ενηλίκων.

Λέξεις κλειδιά: *ομαδικά προγράμματα άσκησης, δραστηριότητες αναψυχής, ενσυναίσθηση*

Introduction

The Ancient Greek philosopher Aristotle declared in *Nicomachean Ethics* that ‘it’s easy for somebody to be angry, but it’s difficult to be angry at the proper time, with the proper person, for the proper reason, in the proper place’. This statement reflects the definition of Emotional Intelligence (EI), which is the capacity to recognize and manage own emotions and emotions of others in an effective way (Mayer, Caruso, & Salovey, 1999). EI is involved in perceiving emotions, incorporates emotion-related feelings, recognizes the information of those emotions, and manages them (Mayer et al., 1999). It is also related to cognitive and emotional way of thinking that is based on recognition, evaluation and expression of emotions (Salovey & Mayer, 1990). EI is also described as a set of interpersonal and emotional abilities, which are responsible for understanding and expressing ourselves, emotions of other people and relationships with other people (Bar-On, 1997).

People with high level of EI have more possibilities to accomplish their goals than those with low level of EI (Goleman, 1998). The development of EI can be achieved through several socially dynamic interactions, while the EI is developed until the age of 15 years (Bar-On, 2000). EI is positively influenced by life experiences and education (Goleman, 1998). Individuals with high level of EI usually display psychological well-being (Martinez-Pons, 1997; Palmer, Donaldson, & Stough, 2002), increased life success scores (Bar-On, 2001; Goleman, 1995), increased life satisfaction scores, high quality of social interactions (Austin, Saklofske, & Mastoras, 2010), increased interpersonal relationships (Flury & Ickes, 2001), academic success (Parker, Summerfeldt, Hogan, & Majeski, 2004), good management of life situations and efficient control of their emotions (Taylor, 2001).

EI is also negatively associated with stress (Bar-On, Brown, Kirkcaldy, & Thomé, 2000), depression and isolation (Austin, Saklofske, & Egan, 2005; Dawda & Hart, 2000; Tsaousis & Nikolaou, 2005). Interestingly, hypertensive individuals display lower levels of EI than healthy individuals (Patel & Jain, 2017). Indeed, high levels of EI are positively associated with healthy behaviors (Trinidad & Johnson, 2002), such as healthy diet and exercise (Johnson, Batey, & Holdsworth, 2009; Saklofske, Austin, Rohr, & Andrews, 2007) as well as happiness and longevity (Zeidner, Matthews, & Roberts, 2012). Evidence also shows that EI is positively associated with participation in PA (Zysberg & Hemmel, 2018), while athletes express higher levels of EI than non-athletes (Costarelli & Stamou, 2009; Szabo & Urbán, 2014). Furthermore, EI is positively associated with exercise frequency (Gáspár, Soós, & Szabo, 2017; Magnini, Lee, & Kim, 2011), while regular PA may lead to changes in EI (Laborde, Dosseville, & Allen, 2016).

Regarding the exercise type, Yoga participants (Rathore & Choudhary, 2013) and chronic aerobic exercisers may display higher levels of EI than sedentary individuals (Sevimli, 2010), while chronic involvement in dance, swimming and walking may improve health indices in both adults and elderly (Krawczynski & Olszewski, 2000). In this light, dance was suggested to be more attractive than usual exercise activities (Judge, 2003). Dance and music activities may also motivate individuals to maintain exercise participation (Andrijasevic, 2010; Kodama et al., 2013), while dance enhance EI improvements (Vancea, 2013). Furthermore, dance may enhance empathy, a component of EI (McGarry & Russo, 2011), while empathy may promote cooperation and social behavior (Behrends, Müller, & Dziobek, 2012). Dance is presented as an element with a meaningful role in EI’s development (San-Juan-Ferrer & Hípola, 2020) and more specific Hellenic Traditional Dance (HTD) as a recreational activity enhances EI’s management (Goulmaris & Rokka, 2019).

Evidence of the link between EI and exercise in adults is rather limited, while the research related to EI and dance – especially HTD – is much more limited. The aim of the current study was to investigate the levels of EI between Hellenic Traditional Dancers (HTDs) and group exercisers for both young and older adults using an observational cross-sectional study design.

Methods

The study was approved by the Ethics Review Board of the University of Thessaly, Department of Physical Education and Sport Sciences (Protocol number 2-4/10-10-2012).

Participants and procedure

The dance clubs that participants were involved were from Athens and major urban Hellenic regions: Easter Attica, Chalcis and Trikala of Thessaly. To achieve a holistic approach in our methodology, the dance clubs had to correspond the following inclusion criterion: a) participants in dance clubs should have been taught various

HTDs from all geographical areas of Greece, and not focusing on dances only from one or two geographical areas, b) dance instructors should be physical educators specialized in HTD.

Volunteers were eligible to participate if they: a) participated only in one organized form of exercise and not in two or more. Participants in dance classes should not have been participated in other organized form of exercise other than HTD. Similarly, exercisers should not have been participated in dance or other organized form of exercise; b) participated in a specific form of exercise the last 15 months.

We recruited 299 adults (222 females, 77 males) divided in two age groups (Spirduso, 1997), a) 25-34 years old (young adults, n=150) and b) >60 years old (older adults, n=149). The range of ages 20-44 and 45-64 years were previously investigated (Bougiesi & Zisi, 2014). Both young and older adult groups were assigned in three subgroups: a) HTDs, b) Pilates/Yoga/whole body exercisers and c) sedentary lifestyle group. The exercisers and sedentary participants were selected from the same regional areas with the dancers. PA adherence (dance or exercise) of the participants was recorded as their experience years. Before filling the questionnaires, participants were given verbal instructions about it. The range of dance participation in young adults was 2-20 years and in older adults 2-30 years. Participants' characteristics can be found in Table 1 and in Table 2.

Table 1. Participants' characteristics. SD: standard deviation; MET: Metabolic Equivalent/week; HTDs: Hellenic traditional dancers.

	Participation group	Age		Experience Years		Physical Activity (MET)		Total n=249
		Mean	SD	Mean	SD	Mean	SD	
25-34 Years old n=150	Sedentary participants	29.5	4.2	-	-	18.7	13.1	n=50
	Group Exercisers	30.1	4.5	3.1	3.3	29.7	15.6	n=50
	HTDs	30	3.5	8.9	7.2	30.3	17.9	n=50
>60 Years old n=149	Sedentary participants	67.6	10.5	-	-	15.6	11.9	n=50
	Group Exercisers	61.2	4.7	6.8	6.8	27.1	13.6	n=50
	HTDs	62.2	6.7	8.4	10.2	27.6	17.3	n=49

Table 2. Metabolic Equivalent (MET)/week in Hellenic traditional dancers (HTD) and group exercisers.

Age group	MET range	HTDs	Group exercisers
25-35 Years old	minimum	5	6
	maximum	60	57
>60 Years old	minimum	5	9
	maximum	56	59

Measurements

The Greek EI Scale (GEIS) (Tsaousis, 2008) was used to assess self-report EI, which displayed a validity of .85 and reliability of .89 (Tsaousis, 2008). GEIS was designed to measure EI in Greek population, while we followed standard approach methodology (Mayer, Caruso, & Salovey, 1999). GEIS consists of 52 questions of four variables as following: a) "expression and recognition of emotions", b) "control of emotions", c) "use of emotions" and d) "care and empathy". In Greek GEIS scale, the higher the score the better the EI parameters. Table 3 shows Cronbach α index for EI parameters in the present study. GEIS questionnaires were filled in the dance and exercise clubs where the participants used to attend, while the sedentary participants filled the GEIS question-

naires in public areas. Detailed explanations and guidelines were provided to the participants to ensure the clarity of the questionnaire during the data collection process.

Table 3. Cronbach α for emotional intelligence parameters.

Variable	Cronbach α
Express and Recognition of Emotions	.87
Use of Emotions	.75
Care and Empathy	.74
Control of Emotions	.81

The Leisure Time Physical Activity (PA) (Godin & Shephard, 1985) questionnaire was used to assess participants' PA. It includes three questions and assesses the frequency and intensity of participants' spare time. More specifically, the questionnaire determines the frequency of participation in high, medium and/or low intensity exercise for >15 minutes the last week. The score is calculated as following: weekly leisure-time activity score = (9*frequency of strenuous PA) + (5* frequency of moderate PA) + (3* frequency of mild PA) in units. The questionnaire has been previously used in the Greek population with good credibility and validity (Psaltopoulou et al., 2004). The participants' characteristics are presented in Table 1 and in Table 2.

Statistical Analysis

We tested normal distribution via Skewness (<2.00) and Kurtosis (<2.00), as well as homogeneity via Levene's test (>.05). An independent sample t-test was used to assess the sex differences in EI parameters. A two-way multivariate analysis of variance (MANOVA) was used to assess the differences in EI parameters as far as the age and participation group is concerned. The dependent variables were: a) "expression and recognition of emotions", b) "control of emotions", c) "use of emotions" and d) "care and empathy". The independent variables were: a) age group (i) 25-34 years, (ii) >60 years and b) participation group: (i) HTDs, (ii) Group exercise programs: Pilates, Yoga, total body and (iii) sedentary life style group. Sidak post hoc tests were used to test group differences.

A two-way analysis of variance (ANOVA) was used to assess the differences in PA as far as the age and participation group is concerned. The dependent variable was the total exercise index. The independent variables were: a) age group (i) 25-34 years, (ii) >60 years and b) participation group: (i) HTDs, (ii) Group exercise programs: Pilates, Yoga, total body and (iii) sedentary life style group. Sidak post hoc tests were used to test group differences. All analyses were conducted using SPSS version 18.

Results

We found significant sex differences in EI only in the parameter of care and empathy ($t_{284} = 5.328, p < .01$). Women ($M = 4.30, SD = .44$) had higher score of care and empathy than men ($M = 3.99, SD = .42$). We also found a main effect of age (Wilk's $\lambda = .81, F_{4,278} = 16.25, p < .001, \eta^2 = .19$) and participation group (Wilk's $\lambda = .83, F_{8,556} = 6.65, p < .001, \eta^2 = .08$) on EI and a significant interaction between age and participation group (Wilk's $\lambda = .938, F_{8,556} = 2.25, p < .05, \eta^2 = .03$). Post hoc tests showed that younger participants (25-34 years old) displayed higher scores in "express and recognition of emotions" than older participants (>60 years old; $p < .001$). Additionally, we found a main effect of participation group in all EI parameters as following: "expression and recognition of emotions" ($F_{2,281} = 14.98, p < .001, \eta^2 = .09$), "use of emotions" ($F_{2,281} = 3.43, p < .05, \eta^2 = .02$), "control of emotions" ($F_{2,281} = 9.01, p < .001, \eta^2 = .06$) and "care and empathy" ($F_{2,281} = 5.98, p < .01, \eta^2 = .04$). Post hoc tests also revealed that HTDs showed higher scores in "expression and recognition of emotions" than the exercisers [Mean difference (MD) = .29, $p < .05$] and sedentary participants (MD = .66, $p < .001$), while exercisers showed higher scores than sedentary participants (MD = .36, $p < .05$). In "use of emotions" HTDs displayed higher scores than sedentary participants (MD = .23, $p < .05$), while in "control of emotions" HTDs showed higher scores than exercisers (MD = .37, $p < .01$) and sedentary participants (MD = .42, $p < .001$). Finally, in "care and empathy" HTDs displayed higher scores than exercisers (MD = .19, $p < .01$) and sedentary participants (MD = .19, $p < .05$). Table 4 displays the descriptive statistics of EI parameters.

Table 4. Descriptive statistics of emotional intelligence parameters in young and older adult groups. HTDs: Hellenic traditional dancers; SD: standard deviation.

		HTDs		Group Exercisers		Sedentary participants		Total	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD
25-34 years old	Express & Recognition of Emotions	3.51	.73	3.39	.79	3.23	.86	3.38 [@]	.80
	Use of Emotions	3.67	.47	3.61	.91	3.58	.61	3.62	.67
	Control of Emotions	3.33	.73	2.93	.71	2.99	.69	3.08	.72
	Care and Empathy	4.33	.35	4.29	.46	4.17	.48	4.26	.44
>60 years old	Express & Recognition of Emotions	3.14	.89	2.66	.92	2.09	.79	2.64 [@]	.97
	Use of Emotions	3.93	.66	3.62	.58	3.57	.46	3.71	.59
	Control of Emotions	3.21	.78	2.88	.83	2.72	.73	2.94	.80
	Care & Empathy	4.37	.43	4.03	.54	4.16	.39	4.19	.49
Total	Express & Recognition of Emotions	3.32 ^{*#}	.84	3.03 ^{*#}	.93	2.69 [*]	1.00	3.01	.96
	Use of Emotions	3.80 [£]	.59	3.62	.76	3.57 [£]	.54	3.66	.64
	Control of Emotions	3.27 ^{*\$}	.75	2.91 ^{\$}	.77	2.86 [*]	.72	3.01	.77
	Care & Empathy	4.35 ^{£\$}	.39	4.16 ^{\$}	.51	4.16 [£]	.44	4.22	.46

[@] Significant differences between >60 years and 25-34 years old $p < .001$

^{*} Significant differences between sedentary and HTDs, $p < .001$

[#] Significant differences between group exercisers and HTDs, $p < .05$

[£] Significant differences between sedentary and HTDs, $p < .05$

^{\$} Significant differences between group exercisers and HTDs, $p < .01$

We found an interaction effect between age and participation group in “express and recognition of emotions” ($F_{2,281} = 4.93$, $p < .01$, $\eta^2 = .03$, Figure 1) and in “care and empathy” ($F_{2,281} = 3.09$, $p < .05$, $\eta^2 = .02$, Figure 2). One-way ANOVA showed an effect of group participation on “express and recognition of emotions” ($F_{2,139} = 16.78$, $p < .001$) and in “care and empathy” ($F_{2,139} = 6.99$, $p < .05$) in old adults. Post hoc tests showed that HTDs displayed higher scores in “express and recognition of emotions” than group exercisers ($MD = .48$, $p < .05$) and sedentary participants ($MD = 1.04$, $p < .001$). Also, group exercisers had higher scores than sedentary participants in “express and recognition of emotions” ($MD = .56$, $p < .01$). Similarly, HTDs displayed higher scores in “care and empathy” than exercisers ($MD = .35$, $p < .01$).

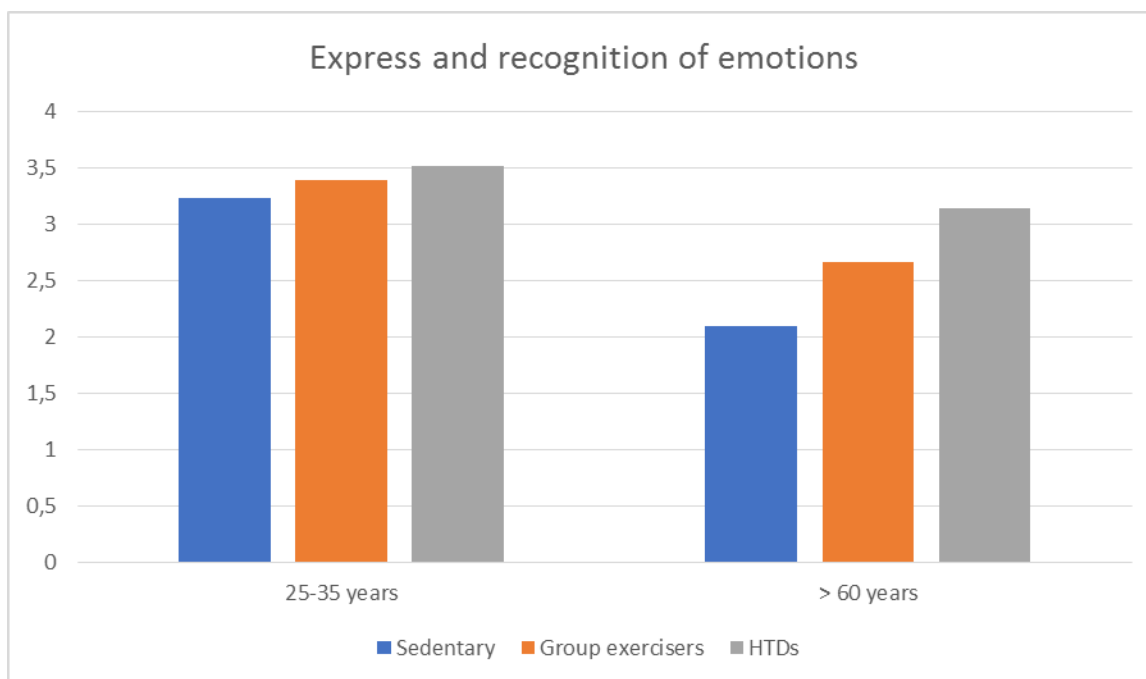


Figure 1. Interaction between participation group and age in “express and recognition of emotions”. HTDs: Hellenic traditional dancers.

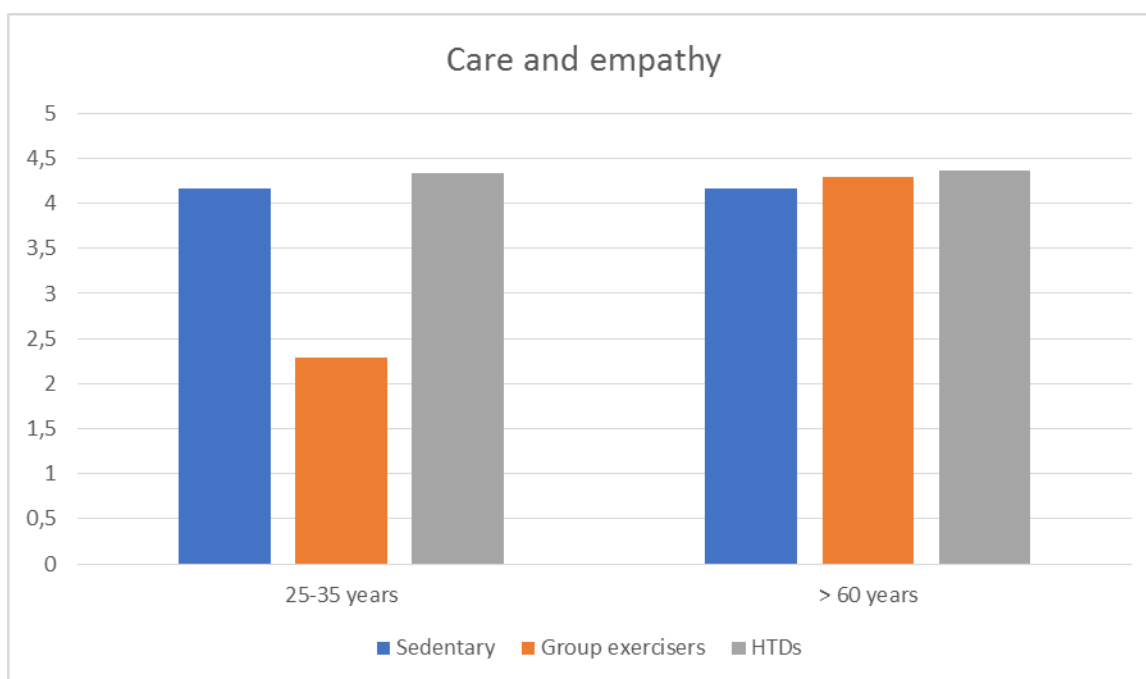


Figure 2. Interaction between participation group and age in “care and empathy”. HTDs: Hellenic traditional dancers

We detected a significant main effect of the group ($F_{2,283} = 19.61, p < .001, \eta^2 = .12$) in the amount of PA, while there was no main effect neither of age ($F_{1,283} = 2.53, p > .05$) nor the interaction effect between age and participation group ($F_{2,283} = 3.31, p > .05$). Post hoc tests showed that HTDs had no significant differences from exercisers in the amount of PA ($MD = .58, p > .05$), while sedentary had lower PA than dancers ($MD = 11.85, p < .001$), and exercisers ($MD = 11.27, p < .001$). Table 1 displays the descriptive statistics of PA.

Discussion

The aim of the current study was to investigate the EI differences among HTD participants, group exercisers and sedentary for both young and older adults. We found that women showed higher levels of care and empathy than men, a finding similar with previous evidence (Broidy, Cauffman, Espelage, Mazerolle, & Piquero, 2003; Wilson, Prescott, & Becket, 2012). This outcome also reinforces the consideration that women present higher empathy than men inherently (Wilson, et al., 2012). We also found that young adults had higher scores in “express and recognition of emotions” than older adults. This can be explained by the reduction of general cognitive performance as we age (Phillips, MacLean, & Allen, 2002). Loneliness in adults could also be a factor of reducing emotional management (Leehu, 2012).

We also found that HTDs displayed higher scores for both “control of emotions” and “care and empathy” than exercisers and sedentary participants. This is in line with a cross sectional study that reports higher “care and empathy” of HTDs than exercisers and sedentary participants at the age of 45-64 years (Bougiesi & Zisi, 2012). Similarly, HTDs aged over 60 years displayed higher scores in EI parameters than exercisers and sedentary participants (Zisi, Bougiesi, Gianni, & Michalopoulou, 2015). These findings are in line with previous evidence showing that dance and music may play an important role in improving empathic ability (Gujing et al., 2019).

We also detected that in “express and recognition of emotions” HTDs displayed higher scores than exercisers and sedentary participants, while exercisers showed higher scores than sedentary participants. Previous evidence showed that a sedentary way of life is connected with low levels of emotional management comparing with aerobic exercise participation (Sevimli, 2010). Also, participation in exercise programs is connected with higher “express and recognition of emotions” levels than a sedentary way of life, given that exercise is positively connected with extraversion (Saklofske et al., 2007).

The current study also found that HTDs displayed higher levels of “use of emotions” than sedentary participants. This may be explained by the fact that team contact sports teach athletes how to recognize and manage their emotions (Campo, Mellalieu, Ferrand, Martinet, & Rosnet, 2012). It also found that HTDs showed higher scores in “use of emotions” than exercisers. This may have occurred due to music that is included in the HTD, which may influence participants’ emotions (Palazzi, Fritzen, & Gauer, 2018). In older HTDs, it was found higher scores in “care and empathy” than exercisers. Similarly, the older HTDs showed higher scores in “express and recognition of emotions” than exercisers and sedentary participants, while exercisers showed higher scores than the sedentary participants. Dance programs seem to be more effective in increasing recognition of emotions than exercise in older adults (Fong Yan et al., 2018).

Furthermore, there were no PA differences between HTDs and exercisers ($p > .05$). This indicates that the differences in EI parameters were not affected by differences in PA levels of the participants. High levels of EI are connected with high levels of quality of life, psychological well-being (Salovey & Mayer, 1990) and increased social interaction (Bar-On R., 2000). Dance participation increases social engagement (Brustio, Liubicich, Chia-brero, & Rabaglietti, 2018) during which older people have the opportunity to gain a sense of self-worth, foster friendships and create the sense of belonging (Joseph & Southcott, 2019). Cooperation and music are some of dance participation characteristics. In HTD participants handholding and synchronized with the other dancers under the music. Touch is unavoidable and consists a mean of interaction between individuals (Afifi & Johnson, 1999). In contrast, most group exercise programs do not require any touchable activities, while music creates emotions in dance participants.

EI developed as a person get older and influenced positively from experience and exercise (Mayer et al., 1999, 2000). Consequently, we would expect that participants with 15 months of experience would present different levels of EI than those with 18 years of experience. However, an independent sample t-test did not show significant mean differences in EI between those who participated in <2 years and those who participated in >2 years in dance classes. We set “2 years” as a limit for this analysis, given that the participants with <2 years of experience displayed at least two years of participation in dance classes, even though the inclusion criterion was set at 15 months. The aforementioned non-significant difference in EI between participants with <2 years and those with >2 years of experience in dance classes, should be acknowledged as a limitation.

Care and Empathy is considered one of the most interesting characteristics of EI. HTDs in our study showed higher scores of “care and empathy” than exercisers and sedentary participants. HTD is a social activity and its combinations with music plays an important role in emotions (Krumhansl, 2000), which may lead to empathy

development. The present study increases the awareness related to the connection of EI and HTD, in which research is limited. In conclusion, HTD is positively associated with EI parameters. This designates that HTD is an effective type of PA for both young and older adults, favoring emotional management and mental health.

Significance for Exercise and Quality of Life

Emotional Intelligence (EI) is a vital parameter in our life. People with higher levels of EI seems that have a more successful life personally, socially and related their job and manage every situation efficiently. Exercise and physical activity are positively connected with EI and are ways of emotional management. It is useful to know ways so as to manage our emotions and Greek traditional dance, as a form of physical activity seems that is one of them. EI is important in mental health which is a part of quality of life. Greek traditional dance could be used for enhancing emotional management and as a result for a better quality of life.

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