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Adaption and validity of the “Physical Activity Class Satisfaction Questionnaire» (PACSQ) in Greek educational dancing context

Adaptación y validez del "Cuestionario de Satisfacción de La Clase de Actividad Física" (PACSQ) en el contexto de baile educativo griego

Adaptação e validade do "Questionário de Satisfação da Classe de Atividade Física" (PACSQ) no contexto de dança educacional grega

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ABSTRACT

Satisfaction is a contributing factor to increasing participation in sports activities, especially since it is linked to behavioural procedures responsible for causing positive feelings to people involved. The aim of this study was to confirm the “Physical Activity Class Satisfaction Questionnaire” in a Greek educational dancing context. The internal consistency of the questionnaire has also been examined. The sample of the study consisted of 482 participants, 184 male and 298 females. All participants have attended Greek traditional dance courses in dancing associations among Greece. The scale consists of 45 questions which constitute nine factors. The following statistical analyses were carried out: Questionnaire’s validity and reliability were examined via an exploratory factor analysis and a confirmatory factor analysis. Reliability analysis was conducted to examine the internal cohesion of the factors. Descriptive statistics have been calculated to broadly examine the degree of satisfaction. Results’ analysis arrived at the following conclusion: a. The Greek version of the questionnaire has shown stable stationary psychometric properties, which partially support its use in the Greek dancing context. b. Correlations among subscales indicated a related factor model supporting the construct validity of the scale.

Keywords: physical education, measurement, enjoying, teaching.

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ABSTRACTO

La satisfacción es un factor que contribuye a aumentar la participación en las actividades deportivas, principalmente porque está vinculada a procedimientos conductuales responsables de generar sentimientos positivos en las personas involucradas. El objetivo de este estudio fue confirmar el "Cuestionario de Satisfacción de La Clase de Educación Física" en un contexto educativo de danza griega. También se examinó la coherencia interna del cuestionario. La muestra del estudio consistió en 482 participantes, 184 de los cuales eran hombres y 298 eran mujeres. Todos los participantes asistieron a cursos de danza tradicional griega en diferentes asociaciones de danza en Grecia. La escala consta de 45 preguntas que constituyen nueve factores. Se realizaron los siguientes análisis estadísticos: La validez y fiabilidad del cuestionario se examinaron mediante un análisis de factores exploratorios y un análisis de factores confirmatorios. Se llevó a cabo un análisis de fiabilidad para examinar la cohesión interna de los factores. Se calcularon estadísticas descriptivas para examinar ampliamente el grado de satisfacción. El análisis de los resultados llegó a la siguiente conclusión: a) La versión griega del cuestionario mostró propiedades psicométricas estacionarias estables, que apoyan parcialmente su uso en el contexto de la danza griega. b) Las correlaciones entre las subescalas indicaban un modelo de factor relacionado que soporta la validez de la construcción de escalas.

Palabras clave: educación física, medición, disfrute, enseñanza.

RESUMO

A satisfação é um fator que contribui para aumentar a participação nas atividades desportivas, principalmente por estar ligada a procedimentos comportamentais responsáveis por gerarem sentimentos positivos nas pessoas envolvidas. O objetivo deste estudo foi confirmar o "Questionário de Satisfação da Aula de Educação Física" num contexto educacional grego de dança. A consistência interna do questionário também foi examinada. A amostra do estudo foi composta por 482 participantes, sendo que 184 eram homens e 298 eram mulheres. Todos os participantes frequentaram cursos de dança tradicional grega em diferentes associações de dança na Grécia. A escala é composta por 45 questões que constituem nove fatores. Foram realizadas as seguintes análises estatísticas: A validade e confiabilidade do questionário foram examinadas através de uma análise de fatores exploratória e uma análise de fatores confirmatória. A análise de confiabilidade foi conduzida para examinar a coesão interna dos fatores. Foram calculadas estatísticas descritivas para examinar amplamente o grau de satisfação. A análise dos resultados chegou à seguinte conclusão: a) A versão grega do questionário mostrou propriedades psicométricas estacionárias estáveis, que suportam parcialmente o seu uso no contexto da dança grega. b) As correlações entre as subescalas indicaram um modelo de fator relacionado que suporta a validade de construção da escala.

Palavras chave: educação física, medição, aproveitamento, ensino.

INTRODUCTION

According to Babiniotis (2012) "satisfaction" is the feeling awakened by the intense happiness that someone feels the moment that one need, desire or request is being fulfilled. Besides, this feeling seems to be the main reason for the utmost importance of satisfaction everywhere that human activity is involved. Satisfaction is a factor that can certainly contribute significantly to maximisation of participation in sports activities and that is due to the fact that satisfaction is connected with behavioural procedures responsible for people's positive feelings (Vallerand, & Rousseau, 2001). Everything in above, could be confirmed from surveys' findings, demonstrating that students who

receive profound satisfaction from physical education courses, seem to participate in more extracurricular activities (Sallis, Prochaska, Taylor, Hill, & Geraci, 1999). Moreover, according to Papaioannou, Bebetos, Theodorakis, Christodoulidis, and Kouli (2006), high levels of satisfaction issue from physical education lessons are the reason why several students are participating in extracurricular sports activities, while Gomez-Baya, Mendoza, and Tomico (2018) stated that although the male students are more involved than females in both school and out of school physical activities, this participation does not translate into higher rates of life satisfaction. According to Emmons and Diener (1986) such high levels of

satisfaction are closely related to the time that someone will spend in leisure activities. A similar view is expressed by Villena-Serrano, Castro-López, Zagalaz-Sánchez, and Cachón-Zagalaz (2020) according to whom the time of participation in physical activity is positively related to the subjective well-being of the individual and life satisfaction.

On the one hand, Greek traditional dance is an integral part of Physical Education lesson (Ministry of Education, Research, and religious Affairs, 2016), a leisure activity counting a great number of participants. Dance as a leisure activity could be found in dancing associations everywhere in Greece, whose normal and unhindered function is depending not only on new members' arrivals but also on the stay of the already existing participants. Such attendance is the result of participants' enjoyment and satisfaction from the lessons, organized by dancing associations. In consequence, based on the importance of satisfaction, people in the head of dancing associations are trying to find out whether the dancers are satisfied and if so to what extent.

Nowadays, not only in Greece but also in many other countries (Cunningham, 2007), satisfaction is treated only from a dimensional perspective. Satisfaction's unique point of view is the one that describes dance as a leisure activity (Duda, & Nicholls, 1992; Papaioannou, Milosis, Kosmidou, & Tsigilis, 2002). According to McAuley, Duncan, and Tammen, pleasure is measured as intrinsic motivation (1989). On the contrary, a growing number of researchers supported that satisfaction should not be considered as synonymous to internal motivation (Fairclough, 2003; Garn, & Cothran, 2006; Wiersma, 2001)- since such feelings minimize external factors that are equally important for being satisfied by a P.E. lesson- but as a broader and more inclusive structure. Treasure and Roberts (1998), even if they have treated satisfaction as a polysemic factor consisted of ideas like valuable experiences, social approval, and normative success; they failed to consider the leisure factor. However, various studies carried out that a person could be satisfied through his communication with others (Rossman, 1995), his overall health development (Stevens, Moget, De Greef, Lemmink, & Rispens, 2000), extensive experiences (Edginton, Hanson, Edginton, & Hudson, 1998), or relaxation (Rossman, 1995) while Scanlan, Carpenter, Lobel and Simons

(1993) perceive enjoyment as a concept consisting from six factors: the positive interaction among the members of a team, the positive interaction between parents and coaches and finally, the effort and mastery.

Despite the superiority of satisfaction in the frame of a dancing lesson, the instruments that measure it can be considered either as one-dimensional or as multi-dimensional, depending on the number of satisfaction dimensions they include. The Greek bibliography does not provide researchers with a credible measurement instrument which can estimate satisfaction as a multi-dimensional concept, in the frame of a dancing lesson. As a result, the aim of this study was to explore the validity and reliability of the "Physical Activity Class Satisfaction Questionnaire" (PACSQ) (Cunningham, 2007) in the Greek educational dancing context. The internal consistency has also been examined.

MATERIAL Y MÉTODOS

Participants

The sample of the study consisted of 482 participants, 184 male and 298 females of ages between 17 and 60 years old ($M=38.62$ & $SD=14.23$), who have been attending Greek traditional dance courses in dancing associations everywhere in Greece. The sample was selected randomly from dancing associations in Athens (80 or 16.6%) and Thessaloniki (60 or 12.4%), as well as in larger urban cities (161 or 33.4%) such as Veroia and Komotini or other rural areas (181 or 37.6%) like Alexandria and Servia. The 38.4% of the sample has participated in dancing activities from 6 to 10 years, the 34.4% from 11 to 15 years, while 13.3% participates for more than 16 years. Only the 13.9% of the participants participates in dancing activities for less than 5 years.

Instruments

The Greek version of "Physical Activity Class Satisfaction Questionnaire" (PACSQ) (Cunningham, 2007) was used. Questionnaire's translation and adjustment to Greek reality was made by a committee consisting of three professional translators, who have followed the methodology proposed by Banville, Desroriers, and Genet-Volet (2000) (back-to-back translation) about questionnaires' translation and adjustment to a different social environment from the one used in the beginning.

PACSQ in Greek educational dancing context

The questionnaire is composed of 45 questions and examines the nine factors of satisfaction. These factors are a. "Mastery Experiences" (ME), which examines satisfaction's degree resulted from the opportunities offered for a broaden development of their dancing abilities and it was calculated by the average answers in five different questions (e.g., the opportunity to learn new skills). b. "Cognitive Development" (CD), which analyses satisfactions' degree from the new knowledge acquired and related to dance and is also calculated by the average answers in five different questions (e.g., what I learned concerning the technical aspects of the activity). c. "Teaching" (TCH), studying satisfaction's degree from teaching procedure, teaching methodology and the growing relationship between instructors and dancers. This factor was calculated by the average answers in five different questions (e.g., the instructor's enthusiasm during the class). d. "Normative Success" (NS). This factor examines satisfaction's degree derived from the personal progress, in relation with others' progress, while it was calculated by the average answers in five different questions (e.g., how I am able to perform better than other students in the class). e. "Interaction with Others" (IWO), which explores satisfaction's degree resulted from the opportunities offered for dancers' social relationships improvement. This was calculated by the average answers in six different questions (e.g. the opportunity to make new acquaintances in the class). f. "Fun and Enjoyment" (FE). This factor analyses satisfaction's degree, while questions whether dancing associations consist places full of happiness and fun or if there is a pleasant and enjoyable climate during courses, are coming to the surface. This factor was calculated by the average answers in four different questions (e.g., how much fun I had in the class). g. "Improvement of Health & Fitness" (IHF), which examines whether satisfaction's degree from dancing lessons has contributed to the improvement of participants' health and fitness. It was calculated by the average answers in five different questions (e.g., the class's contribution to my overall health). h. "Diversiory Experiences" (DE), which analyses to what extent dancing lessons, helped to boost the energy thus enhancing participants' emotional state. This was calculated by the average answers in six different questions (e.g., how I feel exhilarated during the class). j. "Relaxation" (REL), which examines relaxation and tranquillity levels in the class. This was calculated by the average answers

in four different questions (e.g., the way I am able to relax during the activity).

The questionnaire indicated particularly good internal consistency during its construction since Cronbach's α was found to be: "Mastery Experiences" .91, "Cognitive Development" .93, "Teaching" .90, "Normative Success" .93, "Interaction with Others" .94, "Fun and Enjoyment" .92, "Improvement of Health & Fitness" .95, "Diversiory Experiences" .93, "Relaxation" .85 (Cunningham, 2007). However, in the surveys of Alvaro, Ferriz, Trigueros, and Gonzalez-Cutre (2014) as well as Trigueros, Mínguez, González-Bernal, Jahouh, Soto-Camara and Aguilar Parra (2019) were $\geq .73$ and .85, respectively.

In Greek educational context the questionnaire was used by Masadis et al. (2019), Masadis et al. (2020) and Karakouta et al (2020) in studies with sample of primary and secondary school students, respectively. The questionnaire showed particularly good behavior since Cronbach's α consistency ranged from .89 to .92 in all three surveys. The answers were given an 8-point scale from 1 (no satisfaction) to 8 (very satisfying).

Measurement process

The questionnaires were completed in dancing associations' places and the time to answer was approximately 10 minutes. The questionnaires' anonymity as well as their use only for scientific reasons has been promised to participants.

Statistical analysis

The following statistical analyses were carried out: Questionnaire's validity and reliability were examined by using an exploratory factor analysis (EFA) and a confirmatory factor analysis (CFA). Reliability analysis was conducted to examine the reliability of the factors (Cronbach's alpha and composite reliability). A Pearson product-moment correlation coefficient was computed to assess the relationship between the factors of scale. Descriptive statistics were calculated to broadly examine the degree of satisfaction.

Exploratory factor analysis: Researchers proposed that in case that some of the factors turn out inappropriate, control of data and variables' suitability could be seen as the first stage of factorial analysis. In order to secure

such control, specific statistical criteria, such as the partial correlation coefficient, which is controlled with the value of KMO (Kaiser- Myer – Olkin) and Bartlett's test of Sphericity (Hair, Black, Babin, Anderson, & Tatham, 2009; Teixeira, Rosado, & Nunes, 2020), and Measure of Sampling Adequacy (MSA) were used.

The KMO index takes values from 0 to 1. When KMO's value is between 0.8 and 1 indicate the sampling is adequate. When KMO's value is less than 0.6, indicate the sampling is not adequate and that remedial action should be taken. Some authors put this value at 0.5 (Glen, 2016). Regarding MSA values, according to Hair, Anderson, and Tatham (1998), the values .9 and .8 are the appropriate ones, while values from .6 to .7 are acceptable but not so reliable, and finally those who are close to $\leq .5$ have to be deleted and to not be taken into consideration at the analysis to come.

Confirmatory factor analysis: The estimator method used was the Maximum Likelihood (ML). The adjustment (fit) indices that have been taken into account and their acceptable values are the following: namely minimum discrepancy (CMIN or χ^2), degrees of freedom (d. f.), minimum discrepancy divided by the degrees of freedom ($\chi^2/d. f.$) <5 , Root Mean Square Error of Approximation (RMSEA) $<.08$, Standardized Root Mean Square Residual (SRMR) $<.05$, and incremental indices Comparative Fit Index (CFI) $>.90$, Normed Fit Index (NFI) (Bentler, 1990; McDonald, Marsh, 1990; McDonald, & Marsh, 1989) and Parsimony Normed Fit Index (PNFI) values equal to or greater than .60. The control of the internal consistency of the factors was performed using the index composite reliability (Aguirre-Urreta, Marakas, & Ellis, 2013; Hair, Black, Babin, & Anderson, 2019). The reliability of factor is acceptable when the index takes values $\geq .70$. To assess the discriminant and convergent validity the Average Variance Extracted (AVE) index was considered. Values of $\geq .50$ are acceptable.

RESULTS

Suitability of Data and Variables

The results reflected that the statistical criterion of Kaiser – Meyer – Olkin is remarkably high, (.919). Furthermore, the Bartlett's Test of Sphericity rejects the zero hypothesis that correlation's table is the unitary one (the value of control function 20055.520, degrees of freedom 990 and $p = .000$). Data analysis indicated that the survey's data are suitable for a factorial analysis.

In order to check out if all indicators are appropriate for this model, the value of "Measure of Sampling Adequacy" (MSA) has been considered. According to the results, all the indicators are within the limits of the criteria in above, the index ranges between .806, and .966 the highest (Hair, Anderson, & Tatham, 1998). Variables 31, 32, 33, 34 and 35 whose MSA index is .701, .700, .744, .699 and .695, consist of an exception. However, they have been kept into the survey, because it's the first time that such a questionnaire is applied in Greek reality and it is thought that it would be better to test their suitability in future studies.

Exploratory Factor Analysis

Forty-five questions (45) on the concept of satisfaction were included in the exploratory factorial analysis, SPSS 26, which was carried out with the method of main component and axes' direct oblimin rotation assuming that the resulting factors are related to each other. Nine (9) factors resulted from this analysis, which explains the 76.80% of the total variance. The results of exploratory factorial analysis are presented on Table 1.

Reliability analysis

Except for "Improvement of Health & Fitness" factor, all dimensions of the PACSQ demonstrated acceptable reliability coefficients (all's $\geq .77$) (table 1). The reduced reliability coefficient of the factor in above was something really expected, due to the low value of "Measure of Sampling Adequacy" factor.

Table 1. Questionnaire Items and Factor Loadings (see in Anexo)

<i>I am satisfied from...</i>	Factors								
	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th
The opportunity to learn new skills					.78				
The degree to which I improved on particular skills					.77				
How much I learned about how to perform better in this activity					.79				
My improvement in performance					.79				
My opportunity to practice new skills					.80				
What I learned concerning the technical aspects of the activity			.82						
How much I learned about the various strategies used in performing the activity			.81						
What I learned about the basic content of the activity			.77						
The knowledge about the fundamentals of the activity I have gained			.80						
The extent to which I learned the essential concepts of the activity			.83						
The quality of the overall instruction				.76					
The clarity of the instructor's lessons				.82					
The instructor's enthusiasm during the class				.81					
The empathy the instructor showed for the students in the class				.74					
The instructor's ability to effectively communicate content matter				.85					
My performance compared to others in the class						.83			
The superiority of my skills in comparison to others in the class						.82			
How I am able to perform better than other students in the class						.79			
My skills compared to others in the class						.77			
My ability to outperform others in the class						.85			
The chance I had to meet people with similar interests	.83								
The interaction I had with others in the class	.83								
The opportunity to make new acquaintances in the class	.82								
My communication with others in the class	.84								
The chance I had to socialize with others	.84								
The overall social atmosphere of the class	.83								
My overall enjoyment in the class							.79		
How much fun I had in the class							.81		
The pleasant experiences I had in the class							.79		
The extent to which I had a good time in class							.82		
The improvement of my health due to this class									.78
The physical workout I receive in the class									.74
The development of greater fitness as a result of this class									.66
The class's contribution to my overall health									.66
The progress I have made toward a healthier body during the class									.75
The stimulating nature of the class		.82							
How I feel rejuvenated as a result of the class		.81							
How I feel exhilarated during the class		.76							

The way the class makes me feel re-energized	.78									
The physical exertion during the class	.82									
The manner in which the activity contributed to my emotional well-being	.82									
The way I am able to relax during the activity									.72	
The way my mind was put at ease									.75	
The way the activity helped me to relieve stress									.77	
The way that the class helped me									.74	
Total variance	76.80%									
Factor's variance %		11.3	10	9.4	9	8.9	8.7	7.1	6.4	6
Initial Eigenvalues		5.2	4.6	4.1	4	4.0	3.9	3.2	2.9	2.6
Cronbach's α		.96	.92	.93	.93	.94	.90	.95	.90	.77

Confirmatory Factor Analysis

A CFA using LISREL 9.30 for students was conducted to further examine the structure of the 9-factor PACSQ. All of them are presented in table 2.

Table 2. Model Fit Indices

x	χ^2/df	RMSEA	SRMR	CFI	NFI	PNF
1.967.75	2.16	.069	.030	.98	.96	.89

(df 909, n 482)

Composite Reliability & Average Variance Extracted

All factors showed particularly good reliability since the CR index takes values from .831 (REL) to .919 (IWO). In terms of discriminant and convergent validity, the AVE index showed satisfactory values for the seven factors, from .609 (TCH) to .653 (IWO). In contrast, the two factors, REL, and IHF, showed marginally acceptable values, .552 and .513 respectively (Table 3).

Bivariate Correlations analysis

A Pearson product-moment correlation coefficient was computed to assess the relationship between the factors scale. The results showed that there was a positive correlation between: a. Cognitive development and: teaching ($r=.470$), mastery experience ($r=.563$) b. Teaching and: Mastery experience ($r=.515$), Normative success ($r=.439$) c. Diversionary experiences and mastery experience ($r=.422$) d. Interaction with others and: Fun and enjoyment ($r=.491$), Relaxation ($r=.550$) e. Fun and enjoyment and Relaxation ($r=.517$). Overall, there was a negative correlation between: a. Interaction with

others and: Diversionary experiences ($r=-.418$), Cognitive development ($r=-.476$), Teaching ($r=-.515$), Mastery experience ($r=-.479$) b. Diversionary experiences and Fun and enjoyment ($r=-.450$). c. Cognitive development and: Fun and enjoyment ($r=-.523$), Relaxation ($r=-.489$). d. Teaching and: Fun and enjoyment ($r=-.510$), Relaxation ($r=-.516$). e. Mastery experience and: Fun and enjoyment ($r=-.550$), Relaxation ($r=-.576$). f. Normative success and: Fun and enjoyment ($r=-.402$), Relaxation ($r=-.421$) (Table 4).

As far as dancers' satisfaction is concerned, "teaching" factor gathers the highest value of all the others and is followed by factors of "mastery experiences" and "cognitive development". All these three factors are closely related with teaching and learning procedure. Nevertheless, the lowest values are those of factors related with "relaxation", "interaction with others" or "health and fitness improvement". This survey's results are totally in agreement with Cunningham's (2007) research, according to which "teaching" (6.97), "fun and enjoyment" (6.96), "mastery experiences" (6.61), and "cognitive development" (6.58) factors gather the highest values. The survey's results are seemingly only in contrast with others, according to which the "boredom rejection" (Filippou, Goulmaris, Baxevanos, & Genti, 2010) "enjoyment" (Filippou, Rokka, & Mavridis, 2016) have the most preferences. At this point, it has to be underlined that in all the research in above, factors such as "teaching" and "cognitive development" seem to not be included, although these researches were taking place in learning environments.

PACSQ in Greek educational dancing context

Table 3. CR & AVE

Construct	Item	CR	AVE
IWO	.81	.919	.653
	.80		
	.81		
	.80		
	.81		
DE	.82	.913	.635
	.81		
	.80		
	.76		
	.78		
CD	.81	.896	.634
	.80		
	.77		
	.79		
	.81		
TCH	.75	.886	.609
	.80		
	.80		
	.74		
	.83		
ME	.76	.890	.619
	.76		
	.80		
	.78		
	.80		
NS	.80	.891	.621
	.79		
	.78		
	.77		
	.83		
FE	.79	.873	.632
	.80		
	.78		
	.81		
	.72		
REL	.76	.831	.552
	.76		
	.76		
	.73		
	.78		
IHF	.73	.839	.513
	.66		
	.65		
	.75		
	.75		

Table 4. Means, SD, and Bivariate Correlations

	1	2	3	4	5	6	7	8	9
IWO	1								
DE	-.418**	1							
CD	-.476**	.357**	1						
TCH	-.515**	.343**	.470**	1					
ME	-.479**	.422**	.563**	.515**	1				
NS	.338**	.260**	.302**	.439**	.361**	1			
FE	.491**	-.45**	-.52**	-.51**	-.55**	-.020	1		
REL	.550**	-.43**	-.49**	-.52**	-.58**	.421**	.52	1	
IHF	.055	.077	.007	.038	-.082	-.063	.04	.03	1
Mean	4.52	5.14	5.57	5.88	5.61	4.66	5.30	4.5	4.82

As far as correlations between satisfaction dimensions are concerned, it is observed that: In first place, a strong positive correlation between “mastery experiences”, “cognitive development”, “teaching”, “normative success”, and “diversionary experiences” is developed. Likewise, the same applies between “interactions with others”, “fun and enjoyment”, “improvement of health/ fitness” and “relaxation”. However, these correlations are not strong enough to let us talk about a possible overlap or that the participants were not able to make the distinction between satisfaction’s different aspects, as happened in Cunningham’s survey (2007).

A strong negative correlation is developed between aspects such as “mastery experiences”, “cognitive development”, “teaching”, “normative success”, “diversionary experiences” and “interaction with others”, “fun and enjoyment”, “improvement of health/fitness”, “relaxation”. This correlation demonstrates that there are two different subscales in the main scale, which are strongly opposed. That means that all the participants who choose these dimensions, related with learning procedure are negative to those of leisure, and vice versa.

From results analysis and the discussion that followed the following conclusions are reached: a. the Greek version of Physical Activity Class Satisfaction Questionnaire has shown stable psychometric properties, which partially support its use in the Greek educational context. b. Correlations among the subscales indicated a related factor model supporting the construct validity of the scale.

PRACTICAL APPLICATIONS

The dancing instructor as well as the Physical Education's teachers can use the PACSQ to evaluate the satisfactions, as polysemic notion, of their dancers and students.

LIMITATIONS

The sample of this research consisted of dancers and in fact dancers from traditional dance, so it concerns a specific population for safer conclusions, it is advisable to conduct research on sample of dancers from other types of dance such as classical, modern, and Latin dance or athletes of various sports.

Conflicts of interests: There are no conflicts of interests

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