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Relationship between Physical Fitness and the Self Efficacy and Social Support scales for Physical Activity for people with intellectual disabilities

Relación entre la condición física y la escala de Autoeficacia y Soporte social para la actividad física en personas con discapacidad intelectual

Pérez-Cruzado, David; Cuesta-Vargas, Antonio

Resumen

Introducción: La literatura muestra que varios factores influyen en los niveles de participación activa de las personas con discapacidad intelectual (DI) en el ejercicio regular. Previamente se sido desarrolladada escalas de autoeficacia y apoyo social para la actividad en adultos con DI. **Objetivo**: El objetivo de este estudio es analizar la relación entre la aptitud física y las escalas de Autoeficacia y Apoyo Social para la Actividad en adultos con discapacidad intelectual (SE / SS-AID). **Métodos**: Se realizó un estudio observacional transversal. Los datos de las pruebas SE / SS-AID y de aptitud física se midieron en 131 adultos con DI. Los datos se analizaron para descubrir la relación entre las pruebas de aptitud física y el SE / SS-AID, y la prueba de aptitud física se separó en cuatro categorías para brindar mayor especificidad. **Resultados y discusión:** Es necesario enfatizar que se encontraron correlaciones significativas entre las pruebas de aptitud física y el apoyo social (Flexibilidad muscular de la pantorrilla = 0.26 Flexibilidad anterior de la cadera = 0.23 Fuerza abdominal = 0.21). **Conclusiones:** Hay que destacar que en el presente estudio no se han encontrado relaciones entre la autoeficacia y las pruebas de aptitud física. En términos de apoyo social, se han encontrado correlaciones significativas con la flexibilidad y la fuerza.

Palabras clave: condición física; ejercicio; discapacidad intelectual

Abstract

Introduction: Literature shows that several factors influence the levels of active participation by individuals with intellectual disabilities (ID) in regular exercise. Self-efficacy and Social Support scales for activity in adults with ID have been developed previously. ***Aim:*** The aim of this study is to analyse the relationship between physical fitness ability and Self-efficacy and Social Support scales for Activity in adults with intellectual disabilities (SE/SS-AID). ***Methods:*** An observational cross-sectional study was conducted. Data from the SE/SS-AID and physical fitness tests were measured in 131 adults with ID. The data were analyzed to discover the relationship between the physical fitness tests and the SE/SS-AID, and the physical fitness test was separated into four categories to provide greater specificity**.** ***Results & discussion:*** It needs to be stressed that were found significant correlations between the physical fitness tests and social support (Calf Muscle Flexibility = 0.26 Anterior Hip Flexibility = 0.23 Abdominal Strength= 0, 21). ***Conclusions:*** We have to highlight that, in the present study, no relationships have been found between self-efficacy and the physical fitness tests. In terms of social support, significant correlations have been found with flexibility and strength.

Keywords: fitness condition; exercise; intellectual disability

Tipe: Original

Section: Physical activity and health

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Relação entre Aptidão Física e Escalas de Autoeficácia e Suporte Social para Atividade Física para pessoas com deficiência intelectual

Introdução: A literatura mostra que diversos fatores influenciam os níveis de participação ativa de indivíduos com deficiência intelectual (DI) na prática de exercícios regulares. Escalas de autoeficácia e suporte social para atividades em adultos com DI foram desenvolvidas anteriormente. Objetivo: O objetivo deste estudo é analisar a relação entre a aptidão física e as escalas de Autoeficácia e Suporte Social para Atividade em adultos com deficiência intelectual (SE / SS-AID). **Métodos**: Foi realizado um estudo transversal observacional. Os dados do SE / SS-AID e testes de aptidão física foram medidos em 131 adultos com DI. Os dados foram analisados para descobrir a relação entre os testes de aptidão física e o SE / SS-AID, e o teste de aptidão física foi separado em quatro categorias para fornecer maior especificidade. **Resultados e discussão**: Ressalta-se que foram encontradas correlações significativas entre os testes de aptidão física e suporte social (Flexibilidade Muscular da Panturrilha = 0,26 Flexibilidade Anterior do Quadril = 0,23 Força Abdominal = 0,21). **Conclusões**: Devemos destacar que, no presente estudo, não foram encontradas relações entre a autoeficácia e os testes de aptidão física. Em termos de suporte social, foram encontradas correlações significativas com flexibilidade e força.

Palavras-chave: condição de aptidão; exercício; deficiência intelectual

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I. Introduction / Introducción

The physical fitness profile of individuals with intellectual disabilities (ID) and hence, the physical activity behaviour in individuals with ID, has been of recent interest in research and public health initiatives (Frey et al., 2008). Physical activity provides people with intellectual disabilities many benefits, such as higher levels of fitness, balance and strength, due to people with intellectual disability who participate in sport have better levels of balance, strength, flexibility and aerobic condition compared with people who do not participate in sport (Hilgenkamp et al., 2014). Fitness condition has benefits regarding blood pressure and health self-perception (Carmeli et al., 2005), and has an influence on the performance of functional tasks of daily living, job opportunities and vocational performance (Salaun & Berthouze-Aranda, 2012).

The physical fitness profile measure requires the use of diverse fitness tests that have demonstrated feasibility for this particular population (Hilgenkamp et al., 2013). These tests provide relevant information regarding the fitness status of individuals with ID and have been classified in four categories in a well-supported structure (comparative fit index = 0.97, standardised root mean square error of approximation = 0.05) and they have shown excellent reliability and validity in people with ID, which may be used to justify the need for appropriate physical activity programmes addressed to this population. In addition to this, understanding the determinants of physical activity for individuals with ID is known to be critical both to develop effective exercise and educational programmes, and to facilitate active participation of people with ID in such activities (Howie et al., 2012).

Literature shows that several factors influence the levels of active participation of individuals with ID in regular exercise, including among others the individual's functional limitations, age, socioeconomic status, or the lack of nearby facilities for sports and recreational activities (King et al., 2003). Other psychological and social variables influence physical activity practice such as self-efficacy and social support, considered to be key factors for changing physical activity behaviour (Peterson et al., 2008)(8). Self-efficacy (SE) is considered to be the optimistic self-belief about being able to overcome real and perceived challenges for effective performance (Jamieson et al., 2014), and therefore has been correlated with people's intention to practice physical activity, strategies to overcome a sedentary lifestyle, and maintenance of regular physical activity practice (Trost et al., 2002). Social support (SS) is the set of human and material resources available to an individual or family to help overcome a particular situation (Langford et al., 1997) that could influence in the practice of physical activity in people with ID (Trost et al., 2002), including various types of support, for example, emotional support, financial support or informational support, and this can come from different groups, such as family, friends, and others. For individuals with ID, the literature describes SS received from three main supportive groups (family, professional caregivers and friends) as a factor

that may contribute to participation in physical activity (Peterson et al., 2008) due to social support is a facilitator to carry out physical activity in people with intellectual disabilities because they need the help of others to do physical activity (van Schijndel-Speet et al., 2014).

The Self-Efficacy and Social Support for Activity for persons with Intellectual Disability (SE/SS-AID) scales have been specifically developed to measure the effect of these correlates on physical activity participation for those with ID. The validity and reliability evidence of these scales were further confirmed by Rasch modelling, an advanced statistical approach (M. Lee et al., 2010), which shows that these scales are a valid and reliable instrument to measure how SE and SS coming from family, caregiving staff or roommates/friends influence participation in physical activities. The cross-cultural adaptation and validation of the SS/SE-AID scales into Spanish have also shown good psychometric properties in the Spanish context, with promising possibilities for the use of this instrument in further research in countries with substantial Spanish–speaking.

I.1.Aims / Objetivos:

With this research, we aimed to evaluate the relationship between of the SE/SS-AID scale regarding physical fitness tests to recognize if people with ID with better levels of self-efficacy and social support would improve their levels of fitness condition and consequently would improve their independency in activities of daily living and job opportunities.

II. Methods / Material y métodos

Participants

Participants in this study were 131 individuals (51 women and 80 men) between 26 and 64 years old with intellectual disability (ID). The sample was recruited from the III National Special Olympics Championships (Madrid, Spain), so this population includes athletic people; we expected high fitness condition results, similar to sportspeople in the study of Cuesta-Vargas et al. 2011. All participants had been medically diagnosed with mild ID (Intelligence quotient = 55-70). Before starting the investigation we have guaranteed participants the protection of confidential information obtained from them [Law

15/1999 Protection of Personal Data]. Informed consent was obtained from all subjects, and study procedures were consistent with the declaration of Helsinki.

Study design and instruments

This cross-sectional observational study employed a battery of 11 physical fitness tests evaluating the physical fitness profile of participants. All physical fitness test were grouped into 4 categories: balance (single-leg stance with eyes open and with eyes closed and functional reach test) flexibility (passive knee extension, calf muscle flexibility, anterior hip flexibility and functional shoulder rotation) strength (the timed-stands test, partial sit-up test, seated push-up and handgrip test) and aerobic condition (2 minute step test).

The Spanish version of the SE/SS-AID scales comprise 23 questions measuring the relationship between SE, SS and physical activity for those with ID. We use this scale since the participants of our study were Spanish people. The SE scale contained six items, with response options of "no, maybe, and yes". Together, the three SS scales included 17 items, composed of six questions in the family scale, six questions in the staff scale and five questions in the peer scale. The SS scales have response options of ''no, yes - sometimes, and yes - a lot". More information about the scales in the original English version can be obtained at (Peterson et al., 2008).

The examiners were ten qualified physiotherapists and five physiotherapy students from the residency programmes trained to perform the tests and administer the SE/SS-AID scales, the participants performed the SE/SS-AID scale, and the examiners explained that if participants did not understand any item, they would read the items for the participants for better understanding. Tests and scales were explained to the participants and repeated several times if necessary. Quite frequently examiners had to demonstrate how to perform the physical fitness tests to check that the participants indeed understood what was required from them. Tests were performed with at least two examiners to assure that the measure was done correctly but also to give support, to encourage and to ensure the safety of the participants during the test performance.

Passive knee extension (PKE): The participant was positioned supine on a treatment table with hip and knee flexed at 90º. The passive knee extension was measured using a goniometer, with the fulcrum placed

over the lateral femoral epicondyle and its arms in the direction of the greater trochanter and lateral malleolus respectively. Their ankle remained in a neutral position or in plantar flexion. The reliability of the PKE test in this population is excellent (0.95-0.98) (G. P. Lee & Ng, 2008).

Calf Muscle Flexibility (CMF). The participant was positioned supine on a table, with the hip and knee on the side to be measured in as much extension as possible. The fulcrum of the goniometer was placed over the lateral malleolus, with one of its arms in the direction of the fibular head and the other one in parallel to the lateral midline of the fifth metatarsal. Their ankle was passively dorsiflexed and its angle measured while their knee remained in extension. If the participant couldn't reach neutral position, the angle was recorded as negative (e.g., -10º). If the participant went beyond neutral, it was recorded as positive (e.g., +10º). If the participant only reached neutral, it was recorded as 0º. The reliability of this test in people with ID can be found in Waninge et al. (2011) (16).

Anterior Hip Flexibility (AHF): The participant was positioned supine on a table, both hips flexed to 90º. The hip to be measured was flexed up to 100º with a hand beneath the lower back to ensure that it remained flattened. Opposite hip was kept at 90º and not allowed to move into extension during the test. The fulcrum of the goniometer was placed over the greater trochanter, with its arms aligned with the lateral midline of the pelvis and with the lateral midline of the femur respectively. The degrees of extension between the pelvis and thigh were measured before the pelvis began to move forward. If the thigh lowered to the table surface, the result was recorded as 0º. If the thigh didn't reach the table, the angle was recorded as negative (e.g., -25º). Validity of this test in people with ID can be found in "Brockport Physical Fitness Test Manual: A Health-Related Assessment for Youths with Physical and Mental Disabilities" (Winnick & Short, 1998).

Functional Shoulder Rotation (FSR) (Apley's Scratch Test) . The participant stood or was seated facing the back of a chair. The participant was instructed to reach one arm behind the head and down the back, while the other arm reached behind the hip and up the back. The participant was instructed to "try to touch your index fingers together." A tape measure was used to measure the distance in cm between the index fingers in this position (one arm was in flexion/abduction/lateral rotation; the other was in extension/adduction/ medial rotation). The arm on top defined the recorded side (i.e., left arm on top = left; right arm on top = right). If the fingertips touched, the distance was recorded as 0. If the fingertips could not touch, the separation was recorded as negative (e.g., 15.2 cm). If the fingers overlap, the overlap was recorded as positive (e.g., +2.5 cm). The FSR is a reproducible measure of upper extremity function task that was validated in people with disabilities. The reliability of this test can be found in Edwards et al. (2002) (Edwards et al., 2002).

The Timed-Stands Test (TST). The timed-stands test was the method to quantify functional lower extremity muscle strength (hip and knee extension). The test requires the participant to complete 10 full stands from a seated position as quickly as possible without the use of their arms. The participant was seated in a firm straight-backed chair with the elbows flexed to 90º during the test. The participant had to stand 10 times as quickly as possible and the time to perform the task in minutes and seconds was recorded. If the participant could not perform 10 repetitions, the number of repetitions and the time taken was recorded. The TST is a reproducible measure of lower extremity function that was validated in people with disabilities. The reliability of this test can be found in Newcomer et al. (1993) (Newcomer et al., 1993).

Partial Sit-Up Test (PSUT). The partial sit-up test was the method to quantify abdominal muscle strength/endurance. The test requires the participant to complete as many sit-ups as possible from a supine position in one minute. The participant was positioned supine on a table or mat, with the legs placed on a chair or stool to keep their hips and knees bent at 90º. Their arms were placed straight out in front of the chest with the elbows extended during the entire test. Test-retest reliability and validity for people with ID was established in a previous study (Lahtinen et al., 2007).

Seated Push-Up (SPU). The seated push-up test is a method of assessing the strength of the triceps, shoulder and scapular muscles. The test involves pushing the body up out of a seated position, and slowly lowering it back into the seat. The participant was placed with the knees out straight and the heels resting on the floor or table. The participant had to push their body up from the table or floor until the elbows were straight, held for 20 seconds and then slowly lowered back into the seat. Reliability and validity of the test in people with ID are shown in the study of Graham & Reid (Graham & Reid, 2000).

HandGrip Test (HGT): The handgrip test is a standardized method for assessing strength of the hand and forearm muscles, as it has been correlated to upper extremity function. The test involved completing three grips on each side (preferred and non preferred hand) and recording the better of the three trials using an adjustable handgrip dynamometer. The participant had to keep the arm and hand at the side with the elbow bent at 90º while squeezing as forcefully as possible. The handgrip dynamometer have being found to be highly reliable (ICC = 0.98) and valid (ICC = 0.99) for measuring handgrip strength (22). Reliability and validity of the test in people with ID are shown in the study of Graham & Reid (Graham & Reid, 2000).

Single-Leg Stance With Eyes Open (SLSEO). The single-leg stance test with eyes open is designed to assess balance with the assistance of visual cues. The test required the participant to stand on one leg with the eyes open. Balance must be maintained as long as possible. The arms were placed at the sides with

elbows slightly flexed during the test. The test continued until participant lost balance, or put the other foot down (maximum time was 30 seconds).

Single-Leg Stance With Eyes Closed (SLSEC). The single-leg stance test with eyes closed is similar to the previous one but without the assistance of visual cues, so the participant's eyes are kept closed or covered with a blindfold. Validity and reliability of both test can be found in the study of Lahtinen et al. (Lahtinen et al., 2007).

Functional Reach Test (FRT). The test requires the participant to reach forward beyond the length of his/her arm without loss of balance. The participant was on two legs, positioned shoulder width apart (or seated if the participant could not stand). The participant was requested to lift one arm up to 90º with extend fingers and he had to flex forward. Test-retest reliability in people with ID was established in the study of Cuesta-Vargas & Gine-Garriga, 2014 (Cuesta-Vargas & Giné-Garriga, 2014).

The 2 minute step test (2MEST). Pre-exercise resting heart rate (RHR) was recorded with the participant seated before the test and again two-minute after the test is finished (2MAF). The participant was located next to a wall, and the minimum stepping height for the participant was marked. The test required a running tape measure from the iliac crest to the mid-patella, and to mark the midway point on the tape. This mark was transferred to the wall. The participant was requested to march for a maximum of two minutes, bringing each knee alternatively up to the tape mark in the wall. The number of times that the participant touched the tape with the right knee was recorded. This test have been validated in people with mentall illness (Perez-Cruzado et al., 2017).

Data analysis

A database was created containing the outcomes gathered from the participants, the tests and the scales. Descriptive statistics were performed, taking into consideration the measures of central tendency and dispersion of the variables studied. The analysis was performed to know the relationship between the SE/SS-AID scales with the physical activity and the physical fitness tests, observing correlations between the variables measured in the participants to find relationships among the variables, using Spearman's linear correlation with a CI of 95%. We defined a low correlation as $r \leq 0.3$, a medium correlation as $r > 0.3$ $r \leq 0.6$ and a high correlation as $r > 0.6$. Data was analyzed using the SPSS package (version 19.0).

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Ethical issues

The institutional review committee at the University of Malaga approved the procedures used in this study and ethical recommendations were taken into consideration at all stages during the research. The study complied with the principles laid out in the Declaration of Helsinki.

III. Results / Resultados

The current study included 131 adults with mild intellectual disability. The mean age of the forty participants was 39.27 (±9.93) years, their mean height was 162 (±12) centimetres and their mean weight was 76.12 (±15.52) kilogrames. Data about SE/SS scale, IPAQ and physical fitness test are shown in Table 1 with mean and standard deviation.

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Table 1. Characteristics of participants

	Mean (±Standard Deviation)
Height (m)	1.62 (±0.12)
Weight (kg)	76.12 (±15.52)
BMI	29.21 (±5.15)
SE (0-12)	6.49 (±3.92)
SS_Family (0-12)	5.44 (±4.00)
SS_Professionals (0-12)	9.52 (±3.28)
SS_Peers (0-10)	6.20 (±3.70)
METs_Vigorous	5937.89 (±8539.28)
METs_Moderate	653.51 (±1056.51)
METs_Light	856.46 (±1172.51)
Total_METs	7447.86 (±8569.21)
FRT(cm)	33.20 (±10.54)
TUG(s)	5.16 (±2.18)
SLSEO(s)	12.40 (±10.69)
SLSEC(s)	3.77 (±5.55)
PKE_R(º)	-21.44 (±14.41)
PKE_L(º)	-22.27 (±16.29)
CMF_R(º)	5.46 (±9.83)
CMF_L(º)	5.48 (±10.17)
AHF_R(º)	-5.53 (±5.49)
AHF_L(º)	-6.15 (±6.42)
FSR_R(cm)	-10.88 (±13.37)
FSR_L(cm)	-12.81 (±14.33)
TST(s)	23.28 (±16.01)
PSUT(repetition/1m)	28.18 (±11.73)

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SPU(s)	11.77 (±8.71)
HGT(kg)	24.62 (±11.30)
2MEST_BE(bpm)	83.55 (±13.53)
2MEST_AE(bpm)	119.17 (±21.82)
2MEST_2MA(bpm)	86.28 (±16.44)

SE: Self-efficacy; SS_Fam: Family social support ; SS_Prof: Professional social support; SS_Peers: Peers social support; METs: metabolic equivalent of tasks; FRT: Functional reach test ; TUG: Timed up and go; SLSEO: Single-leg stance with opened eyes; SLSEC: Single-leg stance with closed eyes; PKE_R: Right passive knee extension; PKE_L: Left passive knee extension; CMF_R: Right calf muscle flexibility; CMF_L: Left calf muscle flexibility; AHF_R: Right anterior hip flexibility; AHF_L: Left anterior hip flexibility; FSR_R: Right functional shoulder rotation; FSR_L: Left functional shoulder rotation; TST: Time-stands test; PSUT: Partial sit-up test; SPU: Seated push-up; HGT: Handgrip test; 2MEST_BE: Two-minute step test_before exercise; 2MEST_AE: Two-minute step test_before exercise;2MEST_2MA:Two-minute step test_2 minute after.

Table 2 shows the correlations of the physical activity and the physical fitness tests with the SE/SS-AID. Physical fitness tests were grouped into 4 categories to facilitate the visualization and analysis of results. It needs to be stressed that the correlations between the SE/SS-AID scale and calf muscle flexibility, anterior hip and abdominal strength are the highest; in contrast, we did not find a significant correlations between balance and aerobic condition and the SE/SS-AID scale. It is important to highlight that we did not find a significant correlation between self-efficacy and the physical fitness tests.

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Table 2. Correlations (Pearson r) between self-efficacy and social support (SE/SSAID) and physical fitness test.

		Self-efficacy	Family Support	Professional support	Peers Support
Balance	FRT	-0.09	-0.14	0.02	-0.05
	SLSEO	0.86	-0.14	-0.09	0.01
	SLSEC	0.04	-0.07	-0.01	-0.01
	TUG	-0.07	-0.18	0.26	0.24
Flexibility	PKE_R	-0.06	0.02	-0.07	-0.04
	PKE_L	-0.07	0.07	-0.08	-0.06
	CMF_R	0.16	**0.28***	0.01	**0.26****
	CMF_L	0.22	**0.32***	0.09	**0.21***
	AHF_R	0.11	0.17	**0.25***	**0.23***
	AHF_L	0.14	0.16	**0.28***	**0.20***
	FSR_R	-0.06	-0.11	-0.25	-0.23
	FSR_L	-0.09	-0.15	-0.17	-0.17
Strength	TST	-0.09	0.09	0.02	**0.06***
	PSUT	0.08	-0.06	**-0.11***	-0.04
	SPU	0.06	-0.12	-0.12	0.03
	HGT	0.20	-0.12	0.06	0.12
Aerobic Condition	2MEST_BE	-0.01	-0.05	-0.10	**0.21***
	2MEST_AE	-0.02	-0.01	-0.16	-0.11

2MEST_2MA	0.17	0.03	-0.04	-0.07

IV. Discussion / Discusión

This study was developed to establish the relationship between the SE/SS-AID scale and the physical fitness tests. We found low correlations between SE/SS-AID and physical fitness tests (<0.3) both positive and negative relationships. We highlight the correlation between social support and flexibility since these correlations are the highest.

In spite of the relationship between self-efficacy for activity and physical activity (Kono et al., 2004), we highlight that, in the present study, we did not find a significant relationship between self-efficacy for activity and fitness condition. Relationship between self-efficacy and fitness condition in people with intellectual disabilities have not been assessed in previous studies, so this is the first study that this relationship was analyzed but there were not found relationship between both variables. It is important to highlight that some study protocols have assessed the relationship between SE and physical activity (Donnelly et al., 2013; Mitchell et al., 2013) but in these study protocols they did not use physical fitness tests.

We know that social support from family, caregivers and peers is an important factor in the carrying out of physical activity (Peterson et al., 2008). In contrast, the present study provides information that enables us to understand that social support only shows a relationship with flexibility and strength in people with intellectual disabilities. On the other hand, social support did not show a significant correlation with balance and aerobic condition.

In our results, we only found significant correlations between family support and two physical fitness tests (calf muscle flexibility) ($r=0.322$; $p<0.05$).Family support for activity in people with ID have been measured in a few studies but in these studies, family support have not been associated with fitness condition. Something similar occurs with results between the physical fitness tests and professional support since there was not find important correlations in the present study between professional support and the

physical fitness tests, but we highlight results between professional support and abdominal muscles strength (SPU) (r=-0.112; p<0.05) and anterior hip flexibility (AHF) (r=0.280; p<0.05).On the contrary for family and professional support, we have found a study similar to the present study about peers support (Stanish & Temple, 2012). In this study we can know the effectiveness of peers support in physical fitness test, as people with ID with peers support have better results in the physical fitness tests. In the present study we found high correlation with strength and aerobic condition so that results are consistent with the study of Stanish & Temple 2012. Although these authors used similar physical fitness test to the present study, they did not find significant correlations with flexibility tests, in contrast, in the present study the highest correlations were with flexibility (calf muscle flexibility r=0.262 and anterior hip flexibility r=0.229).

Physical fitness tests that have been used in the present study have been used too to establish comparisons between adults with ID from various disabling conditions (Including people with mild ID as the present study) (Phillips & Holland, 2011). Physical fitness tests have also been used to identify score variations among individuals with ID (Skowronski et al., 2009), to relate the differences in scores to the levels of sport practice or to evaluate the effectiveness of physical fitness programmes (Golubović et al., 2012) ,so it is very important to know the relationship between these physical fitness tests with self-efficacy and social support for activity, being this the main strength of the present study due to there were not been studied these relations.

The weaknesses of the present study was that we did not examine these results in a sample of people moderate and severe levels of ID. This inhibits our ability to determine if the relationship between self-efficacy and social support with fitness condition and physical activity presented in the current study is the same for all people with ID.

V. Conclusions / Conclusiones

The main finding of this study is the knowledge of the relationship between physical fitness tests and SE/SS-AID scale. It is important to highlight that, in the present study, we did not find a relationship between self-efficacy and the physical fitness tests in people with ID. In social support, we have found that significant correlations did not exist between balance and aerobic condition. The highest correlations that we have found are between flexibility and social support.

The main implication of the present study is to understand that if we modified self-efficacy and social support in people with ID, we could show that the fitness condition variables would change.

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VII. Conflict of interests / Conflicto de intereses

The authors declare no conflict of interest.

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