2024, Retos, 56, 1056-1065

Effects of an inclusive running event on children's attitudes toward disability students in physical education

Efectos de una carrera inclusiva sobre las actitudes de los niños hacia estudiantes con discapacidad en educación física

Juan Ramón Martínez-Morales, Rafael Martínez-Gallego, Jesús Ramón-Llin
Universidad de Valencia (España)

Abstract. Physical education is now seen as an integral subject that aims not only to improve motor skills, but also to create healthy lifestyle habits and promote inclusive values. This study analysed the effects of a running event on students' attitudes towards inclusion and the adaptation of sports rules, taking into account gender, school year, disability, level of competitiveness and the type of extra-curricular sport practised at school. The San Silvestre 2022 running event in Valencia (Spain) involved more than 600 people – including students, teachers and volunteers – 170 of whom were students from 16 schools who responded to a questionnaire. The results showed that the event did not have a significant effect on improving attitudes towards inclusion and sports rules adaptation, although both the pre-test and post-test scores were very positive (higher than 3.5 out of 4); however, the responses showed that most participants had very positive attitudes and a high level of satisfaction and interest in participating in future running events (more than 90%). We found that attitudes towards inclusion were lower among men who did not have a disability, who were highly competitive and who were involved in individual sports. In conclusion, we recommend organising this type of event to motivate students and maintain good attitudes towards integration in physical education.
Key words: Inclusion, sport, disability, educational needs, academic.

Resumen. En la actualidad, la educación física se considera una asignatura integral que pretende no sólo mejorar las habilidades motrices, sino también crear hábitos de vida saludables y promover valores que faciliten la inclusión. Este estudio analizó los efectos de una carrera en las actitudes del alumnado hacia la inclusión y la adaptación de las normas deportivas, teniendo en cuenta el género, el curso escolar, la discapacidad, el nivel de competitividad y el tipo de deporte extraescolar practicado en la escuela. En la San Silvestre 2022 de Valencia (España) participaron más de 600 personas -entre alumnado, profesorado y voluntarios-, 170 de las cuales eran estudiantes de 16 colegios que respondieron a un cuestionario. Los resultados mostraron que el evento no tuvo un efecto significativo en la mejora de las actitudes hacia la inclusión y la adaptación de las normas deportivas, aunque tanto las puntuaciones del pre-test como del post-test fueron muy positivas (superiores a 3,5 sobre 4); sin embargo, las respuestas mostraron que la mayoría de los participantes tenían actitudes muy positivas y un alto nivel de satisfacción e interés en participar en futuros eventos de running (más del 90%). Encontramos que las actitudes hacia la inclusión eran más bajas entre los chicos que no tenían una discapacidad, que eran altamente competitivos y que participaban en deportes individuales. En conclusión, recomendamos organizar este tipo de eventos para motivar al alumnado y mantener buenas actitudes hacia la integración en la educación física.
Palabras clave: Inclusión, deporte, discapacidad, necesidades educativas, académico.

Fecha recepción: 28-10-23. Fecha de aceptación: 30-04-24
Juan Ramón Martínez-Morales
Juan.r.martinez@uv.es

Introduction

In the late 20th and early 21st centuries, society has been confronted with serious problems such as climate change, high levels of inequality between countries, significant changes in education patterns, high levels of resource consumption and diseases that have led to high mortality rates among the world's population (Jickling, 1994), such as malaria (Goklany, 2004) in less developed countries and cardiovascular diseases and diseases related to obesity and sedentary lifestyles in more developed countries (Rössner, 2002). These challenges have prompted governments to reach a collective response. Thus, in 2015, UNESCO, UNICEF, the World Bank, UNFPA, UNDP, UN Women and UNHCR met in Incheon (Korea) to establish the Sustainable Development Goals (SDGs) of the 2030 Agenda (United Nations, 2015). These consist of a total of 17 goals that these countries must pursue by planning and implementing the necessary political, social, economic and educational strategies. Examining some of the goals, goal number 3 aims to "ensure healthy lives and promote well-being for all" (UNICEF, 2015). This goal sets out a number of specific targets focusing on reducing maternal, neonatal and child mortality, and epidemics, and ensuring universal access to health services, etc.

From a health perspective, Physical Education (PE) is generally considered a key subject (Gallotta et al., 2016; Whitehead, 2013; Haerens et al., 2011) for the development of healthy habits. Thus, PE and its pedagogical models, such as motor literacy (Whitehead, 2013) or health-based physical education (Haerens et al., 2011), aim to create physical activity and sports habits in students, as well as promoting other healthy lifestyle habits, such as adequate rest and sleep, a healthier diet and proper hygiene habits. Within the scope of SDG 3, a global health crisis began in 2019 with the COVID-19 virus, which caused a large number of deaths worldwide, forcing many people to remain isolated at home and many children to take online classes, limiting physical education teachers to seeking strategies to minimise sedentary lifestyles and prevent obesity during the lockdown period (López-Valenciano et al., 2021).

Another issue facing our diverse society is inclusion. According to Ainscow (2009), inclusion can be defined as "the best way to respond to functional diversity" (p. 1). Inclusion

is also a major focus of the SDGs. In fact, there are three SDGs directly related to it. SDG 10 aims to reduce inequalities between countries, targeting income, employment, gender, and health care for vulnerable populations (United Nations, 2015). SDG 5 aims to "achieve gender equality and empower all women and girls", although the pandemic has accentuated these inequalities, particularly in terms of gender-based violence (United Nations, 2015). Finally, for the study we are about to present, we will focus on in SDG 4, which aims to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" (United Nations, 2015).

Sharma et al. (2019) reported on a classification of barriers to inclusive education towards disabled students based on three levels; the micro level referred to barriers in the classroom and school, the meso level to village and community barriers, and the macro level to regional and state systems. The main barriers identified at the micro level were the lack of inclusive school policies and adequate facilities, the lack of teacher training in understanding inclusive education, as well as the negative attitudes of peers and parents. In addition, the lack of inclusion awareness has been reported by students with disabilities (Mampaso et al., 2020). In order to achieve social and educational inclusion, one of the first aspects to be addressed is to improve the attitudes of students (Almeida et al., 2023; Keegan & Hurley, 2009) and teachers (Block & Obrusnikova, 2015; Nieva & Lleixà, 2018; Solís & Borja, 2021).

According to the Theory of Planned Behavior (Azjen, 1991) these attitudes, reflected by thoughts, feelings or behaviours towards disabled students, are conditioned by previous experiences, knowledge and beliefs that we acquire (Mckay et al., 2015). In the field of PE, has also been identified as one of the main barriers to the inclusion of students with disabilities, the attitudes of their non-disabled peers (Ocete et al., 2017; Xafopoulus et al., 2009). For this reason, questionnaire-based studies have been conducted to assess teachers' and students' attitudes towards disabled students inclusion in PE (Block, 1995; Ocete et al., 2017). Further, several interventions and studies have been carried out in the field of PE and sport to improve both teachers' (Hernández et al., 2011; Marques et al., 2013; Nieva & Lleixà, 2018) and students' (Bebetsos et al., 2017; McKay et al., 2015; Reina et al., 2019) attitudes towards inclusion of disabled students.

One of the theories on which many interventions for improving attitudes towards inclusion of disabled students are based is the contact theory (Allport, 1954) in which direct contact can reduce discrimination and prejudice towards a group, if aspects such as equality of status, working towards common goals, cooperation between individuals and institutional support are controlled. Ríos (2004) pointed out that inclusive strategies should focus on values education, cooperative learning, multi-level teaching, adaptation of tasks, compensation of limitations in competitive situations, sharing of sports adapted to people with and without disabilities, counselling and support for teachers and schools. In this sense, Physical Education is identified as an ideal area for inclusive education (Ocete et al., 2015), since is the locus of many social interactions, especially among secondary school students, who undergo physical and emotional changes during adolescence that can, in some cases, lead to disruptive behaviour (Hortigüela et al., 2019). Thus, Hortigüela et al. (2019) pointed out that a cooperative learning model can help students to develop skills such as empathy and respect for their peers, as well as attitudes that encourage and support learning. Furthermore, this learning model has been shown to be effective in both primary and secondary school students (Hortigüela et al., 2019).

To improve attitudes towards inclusion, interventions should facilitate opportunities for non-disabled learners to become aware of the benefits of social inclusion and for learners with disabilities to enjoy the learning process in a cooperative environment (Ocete et al., 2015, Tavares, 2011). Several studies have shown that specific interventions can be effective in improving attitudes towards inclusion (Bebetsos, et al., 2017; McKay et al., 2015). For example, Bebetsos et al. (2017) conducted an intervention based on play and low-difficulty recreational sports for 3 sessions of 45 minutes each. Despite the short nature of the intervention, the results indicated that the non-disabled students developed positive attitudes towards inclusion. Mckay et al. (2015) conducted another intervention based on the Paralympic School Day, which had a significant effect on improving attitudes towards inclusion.

On the other hand, in order to improve inclusion in the field of physical activity, nowadays various inclusive physical activities are organised, such as inclusive popular running events, since all kinds of people can participate in them regardless of their physical condition or disability (Ocete-Calvo et al., 2016). Thus, the Comprehensive Plan for the Promotion of Sport and Physical Activity for People with Disabilities (2009) in Spain states that in order for all people with disabilities to be able to participate on equal terms, it is necessary to promote their participation, provide training and adequate resources and ensure their access to facilities and services.

Finally, in the case of attitudes towards students with disabilities, one might expect girls to show better attitudes than boys (Campos et al., 2014; Reina et al., 2019), teenager students may show worse attitudes than in primary school (Campos et al., 2014; Lindsay & Edwards, 2013), more competitive students may reject the inclusion of students with disabilities in order not to worsen their results (Campos et al., 2014) and participants in team sports may be more tolerant than those in individual sports (Moradi et al., 2020). However, the review conducted for our study (ie: Luarte-Rocha et al., 2023; Valderrama-Padilla et al., 2023) did not find any previous interventions based on running events to improve students' attitudes towards inclusion. Therefore, the aim of the study was to analyse the effects on attitudes towards general inclusion and adaptation of sports rules during an inclusive running event.. The

attitudes of PE students with and without disabilities were analysed, taking into account gender, year group, level of competitiveness and extracurricular sporting activities. We hypothesised that girls, students with disabilities, students who are less competitive (those who prioritise winning less), and those who participate in team sports would exhibit better attitudes.

Materials and methods

Sample

This quasi-experimental study used non-probabilistic convenience sampling to reach as many participants as possible (Casal & Mateu, 2003). More than 600 people participated in the San Silvestre 2022 running event, including students, teachers and volunteers. The sample consisted of 170 students from 16 different schools in the Valencia province. As can be seen in Table 1, the sample included a higher percentage of female students, belonging to 5 different year categories, spread over 3 levels of competitiveness and 3 types of extracurricular sports practise. Of the total 170 participants, 9 children had been diagnosed with autism and we considered them to be in the special education group (Table 1).

Table 1.
Characteristics of participants.

Variables	Categories	N	Percentage
Gender	Boys	72	42.40%
	Girls	98	57.60%
Grade	Year 5 primary school (10 y/o)	30	17.60%
	Year 6 primary school (11 y/o)	97	57.10%
	Year 3 secondary school (14 y/o)	5	2.90%
	Year 4 secondary school (15 y/o)	29	17.10%
	Special education (12-18 y/o)	9	5.30%
Competitive-ness_level	Not competitive	40	23.50%
	Somewhat competitive	86	50.60%
	Very competitive	44	25.90%
Type_of_out-of-school_sport	Team	93	54.70%
	Individual	31	18.20%
	None	46	27.10%

Instruments

A modified version of the Children's Attitudes Toward Integrated Physical Education – Revised Inventory (CAIPE-R) (Ocete et al., 2017) with 10 items was used to measure 2 dimensions, attitudes towards general inclusion (the first 6 items) and attitudes towards rule adaptation. This has been the most widely used questionnaire to assess attitudes towards inclusion (Valderrama-Padilla et al., 2015). The original questionnaire uses the situation of a person playing softball and then was modified to basketball by (Campos et al., 2014) because was more popular. We adapted it to running instead. CAIPE-R describes the situation of a hypothetical student (Maria or Carlos) in a wheelchair. To provide an example for each dimension, an item for the attitudes towards inclusion dimension reads: "Would you like to have Maria or Carlos in your PE class?" Some items related to attitudes towards adapting rules were "Should Carlos have someone to help him participate in the running event?" or " Could someone help Maria and Carlos when they do the team race?" The scale is a Likert-type scale with 4 levels being 1=NO, 2=Probably NO, 3=Probably YES and 4 =YES.

We measured the reliability of the scale using Cronbach's alpha for each dimension, with alpha values between 0.7 and 0.9 being considered reliable (Cohen et al., 2017). The "attitudes towards inclusion" dimension showed initial reliability values of 0.5 (pre-test) and 0.61 (post-test), with item 8 reversed. When item 8 was removed, the values were 0.69 (pre-test) and 0.74 (post-test). In the "attitudes towards rule adaptation" dimension, the initial reliability values were 0.51 (pre-test) and 0.61 (post-test). By eliminating items 12 and 14, both scores were 0.65. Subjects who showed an absolute difference of 2 or more in items 11 and 13 were excluded (n=7), resulting in alpha values of 0.67 (pre-test) and 0.74 (post-test).

As mentioned above, in addition to recording the dimensions of inclusion and rule adaptation, the questionnaire also recorded gender (boys or girls), school year (categories:10, 11, 12, 13, 14, and 15 years old, and a special education group), level of competitiveness (the importance they attach to winning and the effort they make to achieve a good result; we distinguished among not competitive, somewhat and very competitive groups) and type of extracurricular sports practise (team sports such as football, basketball, volleyball, padel, etc.; individual sports such as tennis, judo, swimming, etc.; and those who do not practise extracurricular sports). We used a coding system to identify each subject anonymously (Table 1).

Table 2
Data recording and running event stages.

12–15 December 2022	22 December 2022	22–23 December 2022
Pre-test	Running event 9:00. Arrival of the organising team 10:00. Arrival of students 10:00–11:00. Organised games: Hide and seek game Tag game Music and dancing 11:00. Start of the 1st group of the race One additional group every 5 minutes 12:30. Arrival of the last group of participants 12:35. Forming the word "INCLUSION" 12:40. General applause and closure	Post-test

Procedure

All school centres were informed of the aims of the study in advance by email, with a written certificate signed by the research team stating that the data would be treated anonymously. All participating centres emailed a signed informed consent form to the research team, agreeing to take part in the study. The centres requested a signed permission to participate in the activity from the parents/guardians and informed them of their voluntary participation in the research, while maintaining data protection. An ethics committee approved this project, GV/2021/158.

At the first meeting, the research team agreed on a common objective to measure the change in attitudes of those involved in the running event towards sport, as a factor to

improve competences in the inclusion of pupils with Specific Educational Needs (SEN) and Specific Educational Needs and Dissabilities (SEND). At this first meeting, the team also set up a schedule for future meetings with the 16 participating schools to determine the process by which participants would complete the pre- and post-event questionnaires. The team also agreed on the method of collecting the questionnaires, which would be either paper questionnaires or online questionnaires in Google Forms, depending on the resources available to each participating school.

The pre-test was carried out during the week before the event in the different school centres (Table 2). The event took place on a pre-arranged 1,200-metre course, which was closed to traffic by the police, and in which students with special needs and students with disabilities participated together with students without special needs. The running event took place on 20 December 2022. The start was sequential and divided into groups. The first group started at 11:00 and the following groups started every 5 minutes. The solidary event was a fun and festive activity, so a batucada, made up of percussionists from some of the schools, spectators and volunteers, cheered each group on with samba and Brazilian and African rhythms, while the waiting participants also cheered and applauded (Table 2).

The aim of the event was for all participants in each group to "cross the finish line together". To achieve this, each group was accompanied by teachers from the schools and volunteers assigned to each group to ensure that no one was left behind or accelerated at a pace that would break up the group. The teachers were also responsible for encouraging all participating students before the start, during the running event and at the finish. During the running event, the time spent by each participant was logged and the information needed for subsequent data analysis was recorded. The last groups of participants arrived at the finish line around 12.30 and the organisers began to divide them into zones, with the word "INCLUSION" painted all over the area. This was the message around which the whole event revolved and the main objective of the event. After several aerial photographs of the word "inclusion" were taken by a drone, the solidary running event was over and, after a long round of applause to recognise the work of the organisation responsible for organising the event, the activity was closed and each group returned to their schools. The award ceremony took place at the end of the event. The post-test questionnaire was distributed in the 3 days following the event (Table 2).

We understand that the running event can be an intervention that fits the model of interventions based on the Direct Contact Theory (Allport, 1954), in which all participants had an equal status, had a common goal of reaching the goal together and there were interactions in dances and collaborations for a task such as forming the word "inclusion" in the space. These interactions were carried out in the presence of physical education teachers and special education or therapeutic pedagogy professionals. The running event also corresponds to the model of "inclusive popular races" to promote inclusive activities (Ocete-Calvo et al., 2016).

Data analysis

Data analysis was performed using SPSS 28.0 (IBM, Chicago, USA). We chose the mean and standard deviation or the median and interquartile range as descriptive statistics. The distributions did not meet assumptions of normality, so non-parametric tests were also performed. In order to compare the effect of the intervention for each category of each independent variable (gender, school year, level of competitiveness and extracurricular sport), we performed Wilcoxon tests comparing the pre-test and post-test data for each dimension (attitudes towards inclusion and attitudes towards rule adaptation). Kruskall-Wallis tests followed by Mann-Whitney U-tests for pairwise comparisons with Bonferroni's correction for significance were used to compare whether there were differences in pre-test and post-test attitudes towards inclusion and integration between the different school years, levels of competitiveness and types of extracurricular sports played. To compare the interest in future participation and the level of enjoyment of the activity for each independent variable, we used chi-squared tests, followed by Z-tests for comparing column proportions, adjusted for significance according to Bonferroni. Crammer's V or Phi value was used as the statistic to measure effect size, with 0.1 representing a small effect, 0.3 representing a medium effect, and 0.5 representing a large effect (Cohen et al., 2017) Significance values were adjusted for $p < .05$. Pairwise comparisons of school year categories were adjusted for significance for values of $p<.01$, and for competitiveness and extracurricular sport, they were adjusted for $p<.017$.

Results

Gender

According to gender (Figure 1), the results showed very high scores equal to or above 3.5 on both the mean and the median for attitudes towards inclusion and rule adaptation at both the pre- and post-test stages. Thus, the intervention did not have a significant effect on girls' attitudes towards inclusion or rule adaptations. For boys, the intervention also had no significant effect on attitudes towards inclusion, but showed a tendency ($p < 0.1$) to worsen attitudes towards rule adaptation ($Z= -1.76$; $p = .078$), with the median decreasing from 4 to 3.5.

When comparing both genders, we observed that females had better attitudes towards inclusion before ($U=2630$; $Z= -3.66$; $p<.001$) and after ($U=2461$; $Z= -4.18$; $p<.001$) the event. However, no significant differences were observed in attitudes towards rule adaptation – however, boys had higher scores than females before and lower scores after the running event.

In terms of participation, 90 % or more of the participants (depending on gender) indicated that they would

participate again, with a greater tendency for girls than boys (X^2 =1.98; p=.159; V=.106). Thus, in the enjoyment of the running event there was a more significant percentage of girls who liked it much more than men and a higher percentage of men who liked it less than girls ($X^{2,3}$ =12.18; p=.007; Ø=.262).

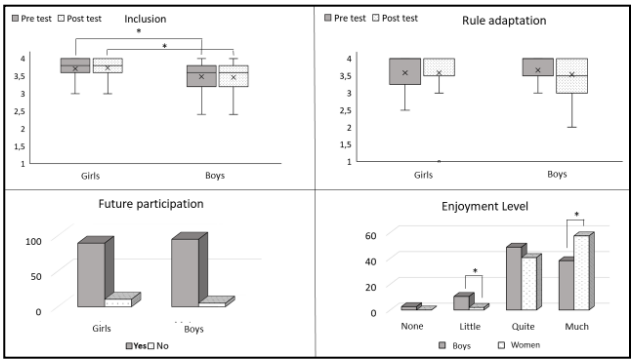

Figure 1. Effect of the intervention on attitudes towards inclusion (top left) and rule adaptation (top right) by gender, and analysis of future participation (bottom left) and level of enjoyment (bottom right) by gender. *= p <.05

School year

The results of the analysis by school year (Figure 2) showed very high values equal to or higher than 3.5 in the mean and median for both attitudes towards inclusion and rules, both in the pre-test and in the post-test; thus, the intervention did not have a significant effect, except in the 5th year of primary school. In the 3rd year of secondary school, there was a greater tendency for attitudes towards inclusion to get worse (Z= - 1.6; p=.109), but for attitudes towards special education to get better (Z= -1.47; p=.141). Finally, attitudes towards rule adaptation declined in the 4th year of secondary school (Z= -1.52; p=.129) and in the 5th year of primary school (Z= -2.08; p=.037).

When comparing the different school years, we found that special education students had better attitudes towards inclusion than 6th year primary students in the pre-test (U=261; Z=-2.15; p=.031) and in the post-test (U=163; Z=-3.25; p=.001). In the post-test, they also had better attitudes towards inclusion than 3rd year (U=7.5; Z= -2.5; p=.018) and 4th year secondary students (U=48; Z=-3; p=.003). We also observed that 5th year primary school students had better attitudes towards inclusion in the post-test than 6th year primary school students (U=1125; Z=-2.42; p=.015) and 4th year secondary school students (U=307; Z= -2.35; p=.019).

In terms of participation, between 80% and 100% of participants (depending on school year) indicated that they would participate again, and we observed that there was a higher will to participate among 5th year primary school students than in special education (X^2 = 6.2; p=.183; Ø=.187). Regarding the level of enjoyment, a significantly higher percentage of respondents indicated that they had enjoyed the experience a lot in the 3rd year of secondary school than in the 5th and 6th years of primary school and in special education ($X^{2,12}$ =25.72; p=.012; Ø=.381).

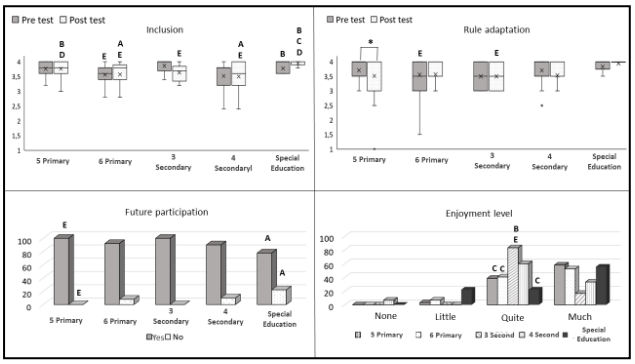

Figure 2. Effect of the intervention on attitudes towards inclusion (top left) and rule adaptation (top right) by school year, and analysis of future participation (bottom left) and enjoyment (bottom right) by school year.
Second= Secondary; *= p<.05; A = significant differences with 5th year of primary school; B = significant differences with 6th year of primary school; C = significant differences with 3rd year of secondary school; D= significant differences with 4th year of secondary school; E = significant differences with the special education group.

Level of competitiveness

The results for the level of competitiveness (Figure 3) showed very high scores equal to or above 3.5 at the mean and median for attitudes towards inclusion and towards rule adaptation, both at the pre- and post-test. Thus, the intervention had no effect on attitudes towards inclusion at any level of competitiveness; however, the intervention showed a tendency to worsen attitudes towards rule adaptation in the highly competitive group (Z= -1.38; p=.069). On the other hand, when comparing the different levels of competitiveness, no significant differences were observed in either attitudes towards inclusion or attitudes towards rule adaptation.

In terms of participation, all levels showed values close to or above 90% for interest in future participation, with no significant differences observed when comparing between levels. As far as enjoyment is concerned, however, there was a higher percentage of those who had enjoyed it very much in the least competitive group than in the highly competitive group ($X^{2,12}$ =11.8; p=.006; Ø=.259).

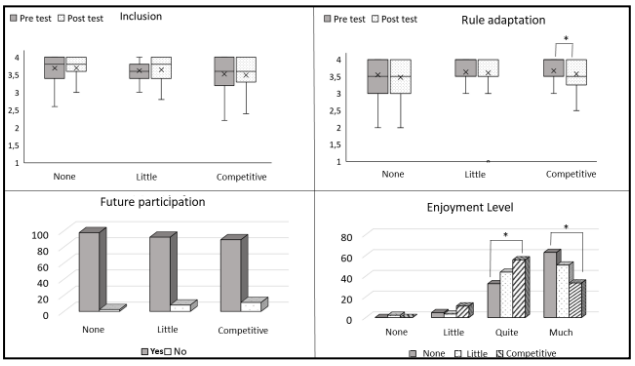

Figure 3. Effect of the intervention on attitudes towards inclusion (top left) and rule adaptation (top right) by level of competitiveness and analysis of future participation (bottom left) and enjoyment (bottom right) by level of competitiveness. *= p <.05, None= Not competitive at all; Little= Somewhat competitive; Competitive= Very competitive.

Extracurricular sport

The results for the type of extracurricular sports practised (Figure 4) showed very high scores equal to or above

3.5 on the mean and median for attitudes towards both inclusion and rule adaptation, both at pre-test and post-test. Thus, the intervention did not affect attitudes towards inclusion in any group or type of extracurricular sports. However, the intervention did have an effect on improving attitudes towards rule adaptation among participants in extracurricular team sports (Z= -2.13; p=.033). On the other hand, there were no significant differences in attitudes towards inclusion and rule adaptation when comparing extracurricular sports groups, either at pre-test or post-test.

In terms of participation, all extracurricular sports practise groups showed levels of interest in future participation above 90%, with no significant differences in interest in future participation or level of enjoyment between the groups.

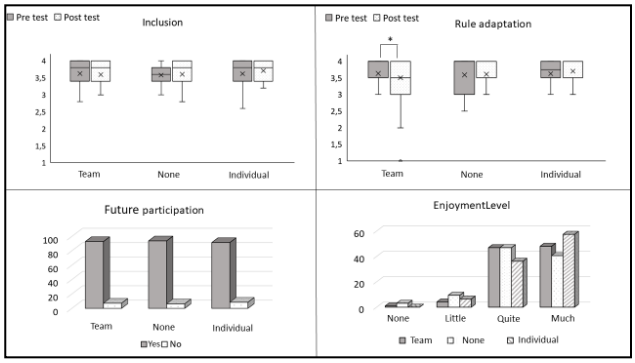

Figure 4. Effect of the intervention on attitudes towards inclusion (top left) and rule adaptation (top right) according to the type of extracurricular sports practised and analysis of future participation (bottom left) and level of enjoyment (bottom right) according to the type of extracurricular sport practised. *= p <.05

Discussion

This study proposed an intervention based on an inclusive running event to improve students' attitudes towards disabled students. The intervention did not have a significant effect, and our results differ from other interventions that did show an improvement in attitudes towards inclusion of disabled students. In the field of physical education, several studies have reported negative attitudes towards inclusion of disabled students among students who had had previous contact (Hutzler & Levi, 2008) or non-significant improvement in non-structured contact group (Slininger et al., 2000). Hutzler & Levi (2008) justified the poorer attitudes of the high school groups that had had previous contact as possibly being due to the fact that the students felt that their chances of success in a particular activity were diminished. We believe that the lack of effectiveness of the intervention is possibly due to the fact that the pre-test scores were already maxed out. Another possibility is that the students already recognised the barriers and difficulties associated with inclusion, as was the case in the study by Schulenkorf et al. (2016).

In the gender comparison, girls showed higher attitudes towards inclusion of disabled students than boys, both before and after the intervention. In addition, boys's attitudes towards rule adaptation worsened because, although they recorded mean scores above 3.5 out of 4 in the post-test, their pre-test scores were almost maximal, with scores close to 4. Our results were similar to those reported by previous studies (Campos et al., 2014; Reina et al., 2019, Tripp et al., 1995). Reina et al. (2019), reported that girls aged 11-16 had better attitudes towards inclusion than boys of the same age, similarly, Tripp et al. (1995) reported better attitudes of girls than boys in both the integrated and segregated physical education groups. Campos et al (2014) also found better attitudes of girls than boys in Portuguese students between 11 and 14 years old. These results may be due to the fact that boys are more outcome-oriented than task-oriented in their motivation. In this regard, Campos et al. (2014) suggested that gender differences in attitudes were due to the level of competitiveness. For example, several studies have shown that boys are more motivated by competition and winning, while girls are more motivated by social relationships and enjoyment of physical activity (Adie et al., 2008). This would explain why, in our results, although the majority of people of both genders enjoyed the inclusive running event, there was a higher percentage of men than girls who reported not enjoying the run.

Regarding the students' year, although all year groups showed mean scores equal to or higher than 3.5 for attitudes towards inclusion in the pre-test and post-test, and also showed a marked interest in participating in similar running events in the future and a high or quite high level of enjoyment of the event, a worse attitude towards adapting the rules was observed in the 5th year primary school students after the running event. This could be due to the fact that the 5th year students were very competitive and not as task oriented as other year groups. However, the attitudes towards inclusion tended to improve even more for the special education students; for example, they showed the greatest disparity in enjoyment during the activity. Although most of them reported high levels of enjoyment, they were also the group with the highest percentage of students who reported low levels of enjoyment. A likely explanation for this is that because there were many students with Autism Spectrum Disorder (ASD) in the special education group, they may have experienced some stress in a crowded running event with lots of people and noise. In addition, some of the students with ASD may have found it frustrating to have to modulate their running pace.

Lindsay & Edwards (2013) conducted a review study indicating that age was a factor that had been reported in some studies to have a significant impact on attitudes towards inclusion. Most previous studies have shown that the most competitive grades are found in secondary school (Campos et al., 2014; Piéron & Ruiz-Juan, 2010; Ruiz-Juan et al., 2011). In fact, Campos et al. (2014) using the same questionnaire as us reported worse attitudes of the older than the younger on both scales. As in previous studies, there were no differences between the disabled and non-disabled groups when there were no differences in the level of competitiveness between these groups (Kentiba, 2013).

However, the trend towards greater improvement in attitudes towards inclusion among special education students may be due to a matter of empathy among students with disabilities (García-López & Gutiérrez, 2015; Arufe-Giráldez et al., 2019). On the other hand, awareness programs have been designed (Felipe-Rello et al., 2020) that have been shown to be effective in improving attitudes towards inclusion disability in Physical Education (Abellán et al., 2018; Rello et al., 2018). Thus, Abellán et al. (2018) reported improvements in the cognitive and behavioral dimensions of attitudes towards inclusion in 3rd and 4th year high school students who received an intervention, and similarly, Rello et al. (2018) reported improvements after the intervention in the affective and cognitive dimensions of adolescents' attitudes towards inclusion in Physical Education (Abellán et al., 2018).

With regard to the level of competitiveness, a recent study by Ocete et al. (2022) analyzed the effects of an Inclusive Sport program at school with adolescents, indicating that students with a moderate and high level of competitiveness are those who improved their general attitudes, while the less competitive group worsened their attitudes towards changes in the rules of the game. In our study, all groups showed very positive attitudes (scores of 3.5 or higher), as well as interest in participating in future running events and a good level of enjoyment. However, the highly competitive group showed a tendency to worsen their attitudes towards adapting the rules after the running event, and also had less enjoyment than participants in the least competitive group. As mentioned above, highly competitive individuals may have a greater focus on winning -- and thus outcome -- than on completing a task. Our results would be in line with the study by Kentiba (2013), which indicated that more competition-oriented participants had less positive attitudes towards inclusion. Some studies have indicated that boys are more motivated to participate in PE and sports, this greater motivation was observed in interventions where the PE content was related to competitive tasks in the "games and sports" content block (McKay et al., 2015), whereas girls were more motivated to participate in "body expression" content (Balaguer et al., 2010).

Regarding the type of extracurricular sports practised, all groups also showed mean scores of 3.5 or higher on attitudes towards inclusion on both the pre- and post-test questionnaires, as well as high interest in participating in similar events again and high or quite high enjoyment of the running event. However, the intervention did improve attitudes towards rule adaptation in the team sports group. A possible explanation for this is that these students are probably more accustomed to teamwork and therefore more tolerant of their peers' mistakes. Our results are in line with those of Moradi et al., (2020), who found that participants in team sports had more positive attitudes towards inclusion than participants in individual sports.

However, the results of the present study have certain limitations. Firstly, there were two items in the questionnaire that had to be excluded because they affected statistical reliability. In addition, the CAIPE-R questionnaire used was not validated for students with disabilities (Ocete et al., 2017) and the results for this population group should be taken with caution. Futher, the questionnaire is designed for regular physical education and does not propose a running event. On the other hand, the participation of students from some year groups was low and it would be interesting for future studies to consider an analysis according to different types of disability. We did not control whether students had had direct contact with students with disabilities as previous studies have done (Ocete et al., 2022). Furthermore, the independent variables were analysed separately and therefore, we suggest that future research should increase the sample size in order to analyse any interaction between the variables of gender, year, disability and extracurricular sports, and consider making certain modifications to the questionnaire. In addition, future research should consider validating an instrument for assessing attitudes towards inclusion in Physical Education, which is oriented to be carried out by students with disabilities.

Conclusions

This study may be the first to implement an inclusive running event and to take into account the gender, school year, level of competitiveness and extra-curricular sports of students. The running event did not have a significant impact on improving attitudes towards inclusion, as both pre- and post-test scores were very positive. Nevertheless, the event proved to be an effective activity in maintaining positive attitudes towards inclusion, as most participants enjoyed it very much and expressed an interest in participating in similar events in the future, regardless of gender, school year, disability, level of competition and type of sport practised. Despite the very positive attitudes of the majority, it was noted that the lowest attitudes towards inclusion were among boys without a disability, with a high level of competitiveness and involved in individual sports.

Throughout this study, the organisers of the running event, the participating schools and students, the teachers, the volunteers and the research team have been guided by the motto "we want to make the impossible possible and make the everyday visible". It has accompanied us all throughout the running event and the arrival at the finish line had a common goal shared by all of us: to raise awareness of diversity; to get closer to its universe, needs and reality; to create new opportunities for students with special educational needs; to bring us closer to a truly inclusive future where we can stop talking about inclusion because we can no longer identify it in our society.

References

Abellán, J., Sáez-Gallego, N., & Reina, R. (2018). Explorando el efecto del contacto y el deporte inclusivo en Educación Física en las actitudes hacia la discapacidad

intelectual en estudiantes de secundaria.[Exploring the effect of contact and inclusive sport on Physical Education in the attitudes toward intellectual disability of high school students]. *RICYDE. Revista Internacional de Ciencias del Deporte. doi: 10.5232/ricyde, 14*(53), 233-242. https://doi.org/10.5232/ricyde

Adie, J. W., Duda, J. L., & Ntoumanis, N. (2008). Achievement goals, competition appraisals, and the psychological and emotional welfare of sport participants. *Journal of Sport & Exercise Psychology, 30*(3), 302-322. https://doi.org/10.1123/jsep.30.3.302

Ainscow, M. (2009). Developing inclusive education system: What are the levers for change? In P. Hicky & G. Thomas (Eds.), *Inclusion and diversity in education* (Vol. 2, pp. 1-13). Sage Publishing.

Allport, G. (1954). *The nature of prejudice*. New York: Doubleday Books

Almeida, A., de Sousa, T., & Jales, E. (2023). Determinants for an inclusive physical education: perception of a group of specialist teachers in inclusion. *Retos, 47*, 282-291. https://doi.org/10.47197/retos.v47.94755

Arufe-Giráldez, V., Zurita-Ortega, F., Padial-Ruz, R., & Castro-Sánchez, M. (2019). Association between level of empathy, attitude towards physical education and victimization in adolescents: A multi-group structural equation analysis. *International Journal of Environmental Research and Public Health, 16*(13), 2360. https://doi.org/10.3390/ijerph16132360

Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes, 50*(2), 179-211. https://doi.org/10.1016/0749-5978(91)90020-T

Balaguer, I., Castillo, I., & Duda, J. L. (2010). Apoyo a la autonomía, satisfacción de las necesidades psicológicas y motivación en educación física: Comparación entre chicas y chicos. *Revista de Psicología del Deporte, 19*(1), 157-176.

Bebetsos, E., Derri, V., & Vezos, N. (2017). Can an intervention program affect students' attitudes toward inclusive physical education? An application of the "theory of planned behavior". *Journal of Psychiatry, 20*(6), 429. https://doi.org/10.4172/2378-5756.1000429

Block, M. E. (1995). Development and validation of the Children's Attitudes Toward Integrated Physical Education- Revised (CAIPE-R) Inventory. *Adapted Physical Activity Quarterly, 12*(1), 60-77. https://doi.org/10.1123/apaq.12.1.60

Block, M. E., & Obrusnikova, I. (2015). Inclusion in physical education: A review of the literature from 1995-2013. *Adapted Physical Activity Quarterly, 32*(3), 250-269. https://doi.org/10.1123/apaq.2013-0109

Campos, M. J., Ferreira, J. P., & Block, M. E. (2014). Influence of an awareness program on Portuguese middle and high school students' perceptions of peers with disabilities. *Psychological Reports, 115*(3), 897-912. https://doi.org/10.2466/11.15.PR0.115c26z7

Casal, J., & Mateu, E. (2003). Tipos de muestreo. *Rev. Epidem. Med. Prev, 1*(1), 3-7.

Cohen, L., Manion, L., & Morrison, K. (2017). *Research methods in education*. Routledge.

Comprehensive Plan for the Promotion of Sport and Physical Activity for People with Disabilities (2009). Retrieved from Consejo Superior de Deportes. https://www.csd.gob.es/sites/default/files/media/files/2018-09/Actividad%20F%C3%ADsica%20y%20Deporte%20Edad%20Escolar%20v.1.pdf

Felipe-Rello, C., Puerta, I. G., & Tejero-González, C. M. (2020). Cambiando las actitudes hacia la discapacidad: diseño de un programa de sensibilización en Educación Física. *Retos: nuevas tendencias en educación física, deporte y recreación, (37)*, 713-721. https://doi.org/10.47197/retos.v37i37.69909

Gallotta, M. C., Iazzoni, S., Emerenziani, G. P., Meucci, M., Migliaccio, S., Guidetti, L., & Baldari, C. (2016). Effects of combined physical education and nutritional programs on schoolchildren's healthy habits. *PeerJ,* 4, e1880. https://doi.org/10.7717/peerj.1880

García-López, L. M., & Gutiérrez, D. (2015). The effects of a sport education season on empathy and assertiveness. *Physical Education and Sport Pedagogy, 20*(1), 1-16. https://doi.org/10.1080/17408989.2013.780592

Goklany, I. M. (2004). Climate change and malaria. *Science, 306*(5699), 55-57. https://doi.org/10.1126/science.306.5699.55

Haerens, L., Kirk, D., Cardon, G., & de Bourdeaudhuij, I. (2011). Toward the development of a pedagogical model for health-based physical education. Quest, 63(3), 321-338. https://doi.org/10.1080/00336297.2011.10483684

Hortigüela, D., Hernando, A., Pérez-Pueyo, Á., & Fernández-Río, J. (2019). Cooperative learning and students' motivation, social interactions and attitudes: Perspectives from two different educational stages. *Sustainability, 11*(24), 7005. https://doi.org/10.3390/su11247005

Hutzler , Y., & Levi, I. (2008) Including children with disability in physical education: general and specifi c attitudes of high-school students . *European Journal of Adapted Physical Activity , 1* (2), 21 - 30. https://doi.org/10.5507/euj.2008.006

Jickling, B. (1994). Studying sustainable development: Problems and possibilities. Canadian Journal of Education/Revue canadienne de l'éducation, 19(3), 231-240. https://www.jstor.org/stable/1495389

Kentiba, E. (2013). *Challenges and problems affecting the participation of disabled children in physical education and extracurricular activities* (Master's thesis). Addis Ababa University.

Keegan, R. J., & Hurley, D. A. (2009). Attitudes of typically developing children towards their peers with physical disabilities: A review of literature. *European Physical Education Review*, 15(2), 131-150. https://doi.org/10.1177/1356336X09345231

López-Valenciano, A., Suárez-Iglesias, D., Sanchez-Lastra, M. A., & Ayán, C. (2021). Impact of COVID-19 pandemic on university students' physical activity levels: An early systematic review. *Frontiers in Psychology*, 12, 3787. https://doi.org/10.3389/fpsyg.2021.637984

Lindsay, S., & Edwards, A. (2013). A systematic review of disability awareness interventions for children and youth. *Disability and Rehabilitation, 35*(8), 623-646. https://doi.org/10.3109/09638288.2012.702850

Luarte-Rocha, C., López-Casanova, L., Navarro-Gajardo, V., Pleticosic, Y., Sagredo-Aravena, R., de Castelli de Campos., & Campos, K. (2023). Awareness programs towards people with disabilities in the school context, physical education and health: A systematic review of the last 10 years. *Retos: nuevas tendencias en educación física, deporte y recreación, (50)*, 1281-1288. https://doi.org/10.47197/retos.v50.99529

Marqués, M., Sousa, C., & Cruz, J. (2013). Strategies for teaching life skills through sport in young people at risk of social exclusion. *Apunts Educación Física y Deportes, 112*(2), 63-71. https://doi.org/10.5672/apunts.2014-0983.es.(2013/2).112.06

McKay, C., Block, M., & Park, J. Y. (2015). The impact of Paralympic School Day on student attitudes toward inclusion in physical education. Adapted Physical Activity Quarterly, 32(4), 331-348. https://doi.org/10.1123/APAQ.2015-0045

Mampaso,J., Alonso, M., & Hernández, A. (2020). Autopercepción de la experiencia de aprendizaje en el entorno virtual en jóvenes universitarios con discapacidad intelectual. *Revista de estilos de Aprendizaje (Journal of Learning Styles) (13)*, 140-154

Moradi, J., Bahrami, A., & Dana, A. (2020). Motivation for participation in sports based on athletes in team and individual sports. *Physical Culture and Sport Studies and Research, 85*(1), 14-21. https://doi.org/10.2478/pcssr-2020-0002

Nieva, C., & Lleixà, T. (2018). Inclusion of immigrant girls and beliefs of physical education teachers. *Apunts Educación Física y Deportes, 134*, in press. https://doi.org/10.5672/apunts.2014-0983.es.(2018/4).134.07

Ocete, C., Pérez-Tejero, J., & Coterón, J. (2015). Propuesta de un programa de intervención educativa para facilitar la inclusión de alumnos con discapacidad en educación física (Propose of an educative intervention program for inclusion of children with disability in general physical education). *Retos (27)*, 140-145 https://doi.org/10.47197/retos.v0i27.34366

Ocete, C., Pérez-Tejero, J., Coterón, J., & Reina, R. (2022). How do competitiveness and previous contact with people with disabilities impact on attitudes after an awareness intervention in physical education?. Physical Education and Sport Pedagogy, 27(1), 19-31. https://doi.org/10.1080/17408989.2020.1834527

Ocete, C., Pérez-Tejero, J., Pinilla, J., & Polo, I. (2016). *Guía de carreras populares inclsuivas. Una herramienta para el fomento de todos*. (Ed) Perez-Tejero, J. Universidad Politécnica de Madrid, Fundación Sanitas, Psysport.

Ocete, C., Pérez-Tejero, J., Franco, E., & Coterón, J. (2017). Validation of the Spanish version of the questionnaire "Attitudes of students towards integration in physical education (CAIPE-R)". Psychologica, Sociedad y Educacion, 9(3), 447-458. https://doi.org/10.25115/psye.v%vi%i.1114

Piéron, M., & Ruiz-Juan, F. (2010). *Actividad físico-deportiva y salud. Análisis de los determinantes de la práctica en el alumnado de enseñanza secundaria*. Consejo Superior de Deportes.

Reina, R., Hutzler, Y., Iniguez-Santiago, M. C., & Moreno-Murcia, J. A. (2019). Student attitudes toward inclusion in physical education: The impact of ability beliefs, gender, and previous experiences. *Adapted Physical Activity Quarterly, 36*(2), 132-149. https://doi.org/10.1123/apaq.2018-0147

Rello, C. F., Puerta, I. G., & Tejero-González, C. M. (2018). Análisis comparativo del efecto de tres programas de sensibilización hacia la discapacidad en Educación Física. *Retos: nuevas tendencias en educación física, deporte y recreación, (34)*, 258-262. https://doi.org/10.47197/retos.v0i34.59889

Ríos, M. (2004). Physical education and the inclusion of students with disabilities. In *Didáctica de la educación física: Una perspectiva crítica y transversal* (pp. 147-169). Biblioteca Nueva.

Rössner, S. (2002). Obesity: The disease of the twenty-first century. International *Journal of Obesity, 26*(S2), S2-S4. https://doi.org/10.1038/sj.ijo.0802209

Ruiz-Juan, F., Piéron, M., & Zamarripa, J. (2011). Spanish version of the Task and Ego Orientation in Sport Questionnaire (TEOSQ) adapted to physical education. *Estudios de Psicología, 32*(2), 179-193. https://doi.org/10.1174/021093911795978287

Schulenkorf, N., Sugden, J., & Burdsey, D. (Eds.). (2016). *Sport for development and peace as contested terrain: Place, community, ownership*. Routledge. https://doi.org/10.4324/9781315765769

Sharma, U., Armstrong, A. C., Merumeru, L., Simi, J., & Yared, H. (2019). Addressing barriers to implementing inclusive education in the Pacific. *International Journal of Inclusive Education, 23*(1), 65-78. https://doi.org/10.1080/13603116.2018.1514751

Slininger, D., Sherrill, C., & Jankowski, C. M. (2000). Children's attitudes toward peers with severe disabilities: Revisiting contact theory. *Adapted Physical Activity Quarterly, 17*, 176–196. https://doi.org/10.1123/apaq.17.2.176

Solís, P.; & Borja, V. (2021). Actitudes del profesorado de Educación Física hacia la inclusión de alumnos con discapacidad. *Retos: nuevas tendencias en educación física, deporte y recreación, (39)*, 7-12. https://doi.org/10.47197/retos.v0i39.77841

Tavares, W. (2011). An Evaluation of the Kids Are Kids

Disability Awareness Program: Increasing Social Inclusion Among Children With Physical Disabilities. *Journal of Social Work in Disability and Rehabilitation, 10*(1), 25-35. https://doi.org/10.1080/1536710X.2011.546296

United Nations. (2015). Transforming our world: The 2030 agenda for sustainable development. https://sdgs.un.org/2030agenda

United Nations. (n.d.-a). Goal 10: Reduce inequality within and among countries. Retrieved August 5, 2023, from https://www.un.org/sustainabledevelopment/inequality/

United Nations. (n.d.-b). Goal 5: Achieve gender equality and empower all women and girls. Retrieved August 5, 2023, from https://www.un.org/sustainabledevelopment/gender-equality/

UNICEF. (2015). SDG3: Good health and well-being. Retrieved August 5, 2023, from https://data.unicef.org/sdgs/goal-3-good-health-wellbeing/#:~:text=SDG%203%20aims%20to%20prevent,and%20regions%20are%20priority%20are%20areas

Valderrama-Padilla, S., de Campos, L. F. C. C., Fernandez-Muñoz, M., Gamonales, J. M., Van Munster, M. D. A., Norambuena, J. S. P., ... & Dos Santo, L. G. T. F. (2023). Efectividad de los programas de sensibilización hacia las personas con discapacidad, implementados en las clases de educación física: Revisión Sistemática. *Revista Peruana de ciencia de la actividad física y del deporte*, *10*(3):1695 - 1715

Whitehead, M. (2013). Definition of physical literacy and clarification of related issues. *ICSSPE Bulletin*, 65, 29-34.

Xafopoulos, G., Kudlacek, M., & Evaggelinou, C. (2009). Effect of the intervention program «Paralympic school day» on attitudes of children attending international school towards inclusion of students with disabilities. Paper presented at the Acta *Universitatis Palackianae Olomucensis*. Gymnica

Datos de los/as autores/as y traductor/a:

Juan Ramón Martínez-Morales	Juan.r.martinez@uv.es	Autor/a
Rafael Martínez-Gallego	Rafael.martinez-gallego@uv.es	Autor/a
Jesús Ramón-Llin	jesus.ramon@uv.es	Autor/a
Manuel Gil Fernández	manu.gil.fernandez@gmail.com	Traductor/a