

Awareness programs towards people with disabilities in the school context, physical education and health. A systematic review of the last 10 years

Programas de sensibilización hacia las personas con discapacidad en el contexto escolar, educación física y salud. Una revisión sistemática de los últimos 10 años

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Abstract. The objective was to analyze research from the last 10 years on disability awareness and inclusion programs in physical education classes. The electronic bibliographic databases Web of Science, Pubmed, EBSCO, Dialnet and Scielo were used following the PRISMA method for the search between the years 2011 and 2022. The search strategy yielded a total of 48 results, of which seven met the inclusion criteria. The selected articles are recent and the sample of participants is significant and of mixed gender. On the other hand, the intervention strategies described in these articles are of an experimental nature with more than seven days of intervention. The overall results obtained indicate a positive attitude change influenced by the type of technique used. The analysis of the selected studies shows that school awareness programs help improve the attitude of the school community towards people with disabilities, with greater effectiveness in the direct contact technique.

Key words: School awareness programs, disability, adapted sport, inclusion, Physical education.

Resumen. El objetivo fue analizar las investigaciones de los últimos 10 años sobre los programas de sensibilización a la discapacidad y la inclusión en las clases de educación física. Se utilizaron las bases de datos bibliográficas electrónicas Web of Science, Pubmed, EBSCO, Dialnet y Scielo siguiendo el método PRISMA para la búsqueda entre los años 2011 y 2022. La estrategia de búsqueda arrojó un total de 48 resultados, de los cuales siete cumplieron los criterios de inclusión. Los artículos seleccionados son recientes y la muestra de participantes es significativa y de género mixto. Por otro lado, las estrategias de intervención descritas en estos artículos son de carácter experimental con más de siete días de intervención. Los resultados globales obtenidos indican un cambio de actitud positivo influenciado por el tipo de técnica utilizada. El análisis de los estudios seleccionados muestra que los programas de sensibilización escolar ayudan a mejorar la actitud de la comunidad escolar hacia las personas con discapacidad, con mayor eficacia en la técnica de contacto directo.

Palabras clave: Programas de sensibilización escolar, discapacidad, deporte adaptado, inclusión, Educación física.

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Introduction

The concept of inclusion is widely discussed in today's society, but there is often confusion in defining its meaning and distinguishing it from integration. When analyzing the field of physical education (PE), significant differences have been identified between the two terms. While integration refers to sharing space between people with and without disabilities, inclusion goes beyond sharing the same space, it also involves a feeling of belonging, valuing, acceptance of being part of the society or group in which one finds oneself (Haegele, 2019; Lavay & DaPaepe, 1987). In some cases, integrated physical education has been referred to as a dumping ground where people with disabilities are simply enrolled in classes with their peers, and lesson content and instruction remain unchanged with little or no accommodations or support (Lavay & DaPaepe, 1987).

The performance of physical activity, physical exercise and/or regular sports has been a recurring theme at a social level, focusing on the benefits it brings and the importance of incorporating physical activity as a habit from an early age. Being the schooling period one of the most transcendental stages of life, to promote a healthy lifestyle becomes a necessity (Kolanowski, Ługowska & Trafialek, 2022; Berrigan, Beaudoin, Dubuc, Bernier & Turcotte, 2021). This perspective poses new challenges, especially in increasingly diverse school settings as, people with disabilities are often

subject to derogatory terms from some members of the community, which negatively impacts their experiences sharing integrated PE spaces (Barton, 1998; Barton, 2008; Haegele & Kirk, 2018). These feelings are inconsistent with the principles of belonging, acceptance, and valuing that characterize education based on inclusive approaches (Haegele, 2019).

This phenomenon is related to what was stated by the World Health Organization (WHO) in 2001. This is, according to the International Classification of Functioning, Disability and Health (ICF), the definition of disability must be complemented with limitations to undergo some activities and some restrictions in participation, reasons for which there is a negative aspect in the interaction between the individual and the contextual factors that surround them, being social barriers the main one (Yupanqui, 2016). Thus, adapted sport might be the starting point for an inclusive sport practice, from the context of PE classes, which is a space where negative attitudes and discrimination are generally observed, limiting their participation.

According to the WHO (2011) more than one billion people live worldwide with some condition of disability, that is, approximately 15% of the global population. Almost 200 million people experience considerable difficulties in their functioning worldwide. In this regard, in Chile, the results of the second national disability study conducted in 2015 show that there are 16.7% of Chilean people living

with some form of disability from the age of 2 years and older (SENADIS, 2015). Undoubtedly, there have been advances in the conformation of public policies that promote educational-inclusive development, such as the ratification of the United Nations Convention in 2008 that seeks a student-centered model of education, promotes respect for their rights, autonomy and independence, or the enactment of a Chilean law (LEY N°20.422) that establishes equal opportunities and social inclusion for people with disabilities, as well as the enactment of a law on school inclusion that regulates the admission and enrollment of students (LEY N°20.845). Nevertheless, school diversity has not been considered in school subjects that include physical exercise and sports. Therefore, it is necessary to develop and include awareness programs in the school system, where the entire community might be included.

Awareness programs are understood as activities based on social interaction, aiming to promote knowledge, acceptance of people with disabilities and decrease negative attitudes towards people with disabilities (Choe, Park, & Shin, 2018). Studies have determined that there are various strategies to develop awareness programs, such as information, direct contact, indirect contact, simulation and reflection (Ison et al., 2010; Lindsay & Edwards, 2013; Felipe-Rello, Garoz & Tejero, 2020). For example, Abellán et al. (2022) presented the benefits and achievements of a didactic proposal that aims to raise awareness through the simulation of physical disability using an adapted sport (sitting volleyball) in students of Primary and Secondary Education.

Park et al. (2015) noted that one of the benefits of inclusive education is to provide opportunities to foster students' awareness of disability through contact-based experiences and hence the importance of developing it in the school setting. What is more, Flower, Burns & Bottsford-Miller (2007) indicate that students who attend inclusive classrooms show greater social acceptance of their peers with disabilities. Therefore, it is necessary to include these programs in the educational system where the entire school community is integrated, in order to promote acceptance of people with disabilities, allowing a positive discourse to emerge. This might also lead to an improved peer attitude towards people with disabilities.

In this sense, physical and sport activities have been emerging as an advantageous tool for the transmission of positive values and attitudes, normalization, equality, and social inclusion. For this reason, it is considered important for the current study to provide relevant information that allows complementing and adapting study plans and programs provided by the Chilean Ministry of Education (MINEDUC) in the near future.

It is advised then to include new proposals for teachers and to take diverse learner characteristics into consideration. The lack of preparation in the training of undergraduate teachers of PE is also worth mentioning. PE teachers-to-be generally having a wide gap when it comes to diversity

and inclusion, so it is a training aspect that must be addressed (Azzarito, 2009; Bredahl, 2013).

The general objective of this research is to analyze the studies in the last ten years regarding disability and inclusion in the form of awareness programs in PE classes. The specific objectives involve (i) to identify studies that have been carried out on school disability awareness programs in PE classes in the last 10 years and (ii) recognize and analyze the attitudinal components along with the multicomponent strategies present in the collected studies.

Methodology

Type of study

The study corresponds to a systematic typology literature review which consists of a type of research that aims to select and synthesize relevant previous research articles on a given topic, using a systematic procedure in order to reduce the risk of bias (Guirao, 2015). The methodology proposed by PRISMA (Liberati et al., 2009; Page et al., 2021) was adopted.

Data sources and search

The bibliographic databases Web of Science, PubMed, EBSCO, Scielo and Dialnet were used to search for articles, considering the ones published in the last ten years. The search for articles was performed until June 30 of 2021 and it considered articles published from June 2011 to June 2021, with open access and peer-reviewed. In the case of the search in English, the key words introduced included school awareness programs, inclusion, disability, PE, adapted sports. The search operation was as follows: [(Awareness programs OR Intervention programs) AND (Disability OR Adapted sport OR Inclusion OR Physical education)]. Regarding the search in Spanish, the same terminology was used which resulted in the number of hits described above.

Eligibility criteria

The articles were selected when: (i) the study was experimental in nature; (ii) they were conducted in any type of school and at any level of education, in the subject of PE; (iii) they complied with a minimum of seven sessions in the intervention due to the direct relationship between the duration of interventions with positive student outcomes (Chae, Park & Shin, 2018; Reina et al., 2011); (iv) they were published in the last ten years (from 2011 to 2021); (v) they were academic, scientific articles; (vi) the articles were written in English or Spanish.

Selection of studies

The selection of studies was performed using the reference management software Mendeley Desktop® (version 1803 for Windows), exporting all the documents returned in the selected databases according to the search strategy used.

The PRISMA flowchart methodology is considered, selecting the studies according to the title and abstract, eliminating duplicates and their relevance, according to the purpose of the research, considering the key terminology mentioned in the previous section. Once the search in all the databases was completed, we began to exclude those that did not meet the eligibility criteria, either by year, type of text, number of sessions and/or type of intervention, thus obtaining the total number of articles for complete reading. Two reviewers carried out this process independently, and in case of discrepancies, a third reviewer was consulted to reduce the risk of bias.

Results

Selection of studies

Initial search in the bibliographic databases resulted in the collection of 48 studies. Subsequently, 13 duplicates were eliminated, leaving a total of 35. After scanning titles and abstracts, 17 more articles were discarded, leaving a total of 18 selected items. Then, eligibility criteria were carried out, in form of inclusion/exclusion criteria after reading through the whole article, Thus, 11 more articles were discarded according to the number of sessions for intervention, which was agreed upon in a minimum of seven sessions. Finally, seven documents were included in the current research for systematic review (figure 1).

Table 1 presents selected studies. These studies meet current characteristics considering that their years of publication are recent, on the other hand, each one presents an approach on the effects of awareness programs within a school context in PE classes, with various sports alternatives, targeting students of different ages and gender, with and without disabilities, participating in a practical experience with a minimum of seven sessions. It is important to mention that each research used various types of techniques and/or teaching strategies in the interventions on attitudes towards inclusion, highlighting as a frequent and significant variable the direct contact, helping to improve the attitudes of the population towards people with disabilities.

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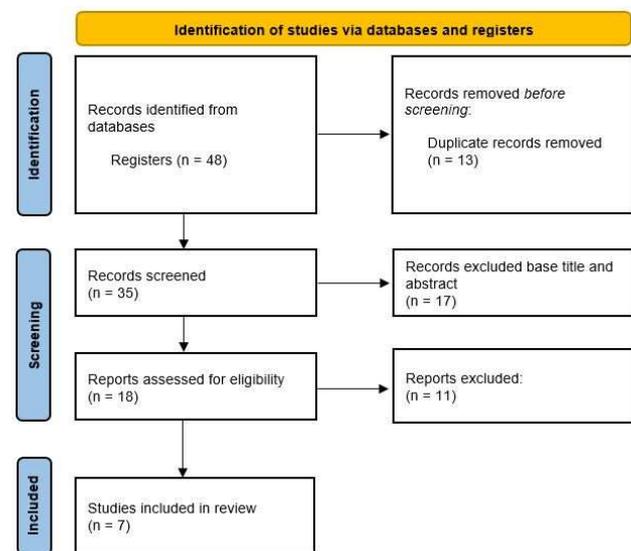


Figure 1. Flow of information through the different phases of a systematic review

Source: Page et al. (2021)

Table 1. Identification of selected articles

Year	Title	Authors
2020	La inclusión de personas con discapacidad en una escuela multideportiva: Efecto de las actitudes hacia la discapacidad en niños, jóvenes, padres, madres y personal de la instrucción.	Visquez, F; Quirós, S; Rodríguez-Méndez, D & Solano, L.
2020	The effects of modifying contact, duration, and teaching strategies in awareness interventions on attitudes towards inclusion in physical education.	Reina, R; Íñiguez-Santiago, M; Ferriz-Morell, R; Martínez-Galindo, C; Cebrián-Sánchez, M & Roldan, A.
2020	How do competitiveness and previous contact with people with disabilities impact on attitudes after an awareness intervention in physical	Ocete, C; Pérez-Tejero, J; Coteron, J &

Year	Author(s)	Title	Journal
2018	Pérez-Torralba, A.; Reina, R.; Pastor-Vicedo, J & Gonzalez-Villora, S.	Education intervention using para-sports for athletes with high support needs to improve attitudes towards students with disabilities in Physical Education.	Reina, R.
2018	Abellán, J; Sáez-Gallego, N & Reina, R.	Explorando el efecto del contacto y el deporte inclusivo en educación física, en las actitudes hacia la discapacidad intelectual en estudiantes de secundaria.	Abellán, J; Sáez-Gallego, N & Reina, R.
2018	Abellán, J; Sáez-Gallego, N & Carrión, S.	La boccia como deporte adaptado y sensibilizador en Educación Física en Educación Secundaria.	Abellán, J; Sáez-Gallego, N & Carrión, S.
2018	Rello, C; Garoz, I & Tejero, C.	Análisis comparativo del efecto de tres programas de sensibilización hacia la discapacidad en Educación Física.	Rello, C; Garoz, I & Tejero, C.

Table 2.

Summary of selected articles

Author (year)	Sample	Objective	Methodology	Results
Viquez et al. (2020)	Thirty-three people participated: 11 parents (X = 41.5 ± 10.5 years), 4 instructors (X = 21 ± 3.4 years) and 18 non-disabled users (X = 10.3 ± 2.5 years).	To observe the effect of an inclusive multisport program on the attitudes of children, youth, parents and instructional staff towards people with disabilities.	Pre and post intervention design was used. The intervention was developed through sports sessions (collective and individual) and group recreational sessions; a talk on disability for parents. The intervention consisted of 6 weeks, at least 2 hours per week in 3 sports disciplines that varied from week to week. They were evaluated with the questionnaire "Attitudes towards people with disabilities".	A significant interaction was found in the dimension "valuation of capabilities and limitations" (VCL), F (2, 30) = 10.28, p < 0.001 and significant differences in the pathway measurements in the dimension of "generic rating" (GC), F (1, 30) = 4.884, p = 0.035, while in the dimensions of "recognition or denial of rights" (RND) and "personal involvement" (PI) no significant differences were found (p > 0.05).
Reina et al. (2020)	A total of 603 students (14 to 19 years old) from 5 public schools in southern Spain, without disabilities, participated.	To analyze the effects of an intervention program with five different strands designed to improve physical education (PE) students' attitudes toward inclusion of peers with disabilities.	A pre- and post-intervention design was used. Students received between 2 to 7 lessons of 55 min per session in their physical education classes. The awareness program consisted of 3 factors: contact with para-athletes; duration of the awareness program; and teaching strategies such as videos and infographics. Three Paralympic sports were used; boccia, indoor soccer for the visually impaired and sitting volleyball. Attitudes were assessed with the questionnaire Children's Attitude Towards Integrated Physical Education and the Attitudes Towards Students with Disabilities in Physical Education Scale.	All three groups having contact with para-athletes during the interventions improved their attitudes according to the scores of the three attitude variables (p < 0.05; -0.20 < d < -0.24). Pairwise comparisons of improvement rates also revealed several positive effects of intervention duration and provision of teaching strategies (p < 0.05; -0.07 < d < 0.18).
Ocete et al. (2020)	A total of 1068 non-disabled patients (13.9 ± 1.76 years) participated.	To analyze the effects of an educational program "inclusive sport at school" on the attitudes of non-disabled students towards the inclusion of disabled peers.	Pre and post intervention design was used, carrying out the ISS educational program, developed in Physical Education classes, which consisted of 8 sessions of approximately 50 minutes each that included 3 didactic units based on Paralympic and adapted sports. Running for blind people, wheelchair basketball, soccer 7-a-side for people with cerebral palsy, rhythmic gymnastics, sitting volleyball, goalball, wheelchair rugby, indoor soccer for people with visual impairment, sports for deaf people and petanque were performed. The CAIPE-R questionnaire was used.	The results showed a significant impact on the general attitude subscale after the intervention. Interaction effects between between-group and within-group factors were not significant. However, the related measures t-test showed significant differences in the general attitude subscale for students in the inclusive centers where there were [t(351) = -6.11; p < 0.01] or no [t(199) = -2.43; p = 0.016] students with disabilities in the EF class, showing more positive attitude values after the intervention.
Pérez-Torralba et al. (2018)	Eighty-eight students participated; the GC group (15 males and 30 females) and the IG group (20 males and 30 females), with and without disabilities.	To know in the short and long term, the effects of a sports awareness program on attitudes towards disability and their contact with people with disabilities.	Pre and post intervention design was used, using a sports awareness program (PSAP), for the IG group, while the GC group continued with their regular physical education classes, the intervention lasted 7 sessions, using multimedia material, simulations of physical and visual impairments. The physical education questionnaire was used, based on the theory of planned behavior and the CAIPE-SP.	After the PSAP, the intervention group showed better attitudes in all variables, with some statistically significant differences, such as in the acceptance of adaptations in sports practice (p < .01; d = .58).
Abellán, Sáez & Reina (2018)	Eighty-three students participated; 40 males and 43 females. The groups were; the control group (N=33) and two experimental groups, the activity group (N=25) and the visit plus activity group (N=25).	To analyze the effect of a program that uses inclusive sport and contact with people with intellectual disabilities on their attitudes towards disability in physical education classes.	A pre- and post-intervention design was used. The Attitudes Towards inclusion of Student with disabilities in Physical education (AISDPE) questionnaire and the "Attitude scale towards students with disabilities in physical education (EAADEF) were used. The activity consisted of dividing 3 groups, 1) the control group, 2) group V-A visiting the facilities of the employment center for people with I.D. and 3) group A, inclusive sports day plus visit. The sports practice consisted of meetings where the 2 experimental groups shared practice with a group of athletes with ID.	The results show that the group that performed inclusive sport and a visit to the work facilities of people with intellectual disabilities improved in the cognitive dimension (Pre-test 2.84 ± 0.64; Post-test: 2.67 ± 0.81) of one of the two questionnaires of attitudes towards disability in Physical Education used.
Abellán, Sáez & Carrión. (2018)	Twenty-eight students (12 females and 16 males) in the 2nd and 3rd years of Compulsory Secondary Education (ESO) participated.	To examine the effect of a program to change attitudes towards disability in high school students through the implementation of a boccia didactic unit.	Pre and post intervention design was used. Three questionnaires were used; AISDPE - cognitive and behavioral, EAADEF - behavioral and a questionnaire to know the opinion about the use of adapted sports in Physical Education classes. At the end of the initial data collection, the group developed a boccia Didactic Unit of 7 sessions, adapting the work contents to the secondary school curriculum, in a total intervention time of 2 months.	The results indicate that the group experiences a significant improvement in attitudes towards disability in the cognitive AISDPE dimension, in addition to a slight increase in the score of the behavioral dimension of the same, although without significant differences; while the EAADEF scale worsens its values subtly, also without significant differences. The participants indicated that boccia contributes to education in values and equal opportunities, but not to the development of basic skills and abilities.
Rello et al. (2018)	A total of 374 students between the ages of 12 and 17 participated.	To analyze the effect of three educational programs designed to sensitize or positively modify attitudes towards people with disabilities.	Pre- and post-intervention design was used. The CATCH Chedoke-McMaster Attitudes Toward Children with Handicaps questionnaire was used. The intervention lasted 8 sessions (4 months) and was divided into 4 subgroups: The first received contact technique, the second intervention with simulation technique, other contact and simulation and control group.	The results indicate that the program that combines more techniques in this case contact and simulation is more effective in improving their attitudes towards disability in the affective (p 0.004), cognitive (p 0.007) and total appraisal (p 0.001) dimensions compared to the other groups.

Source: Own elaboration

Discussion

The objective of this systematic review was to analyze the studies in the last ten years, focusing on sensitization programs that sought to explore inclusion and disability in

PE classes, with the intention of analyzing inclusion strategies and recognizing attitudinal components present in the selected articles. Results show that awareness programs based on contact-sports activities promote a positive attitude towards people with disabilities, being those strategies

the main factor for that positive change, which tends to endure over time.

Lindsay & Edwards (2013, quoted by Reina, 2020) point out that an optimal combination of several factors is key when seeking the success of awareness-raising interventions. What they mean is that there is no single model or only solution for inclusion in PE classes, but rather a combination of actions that support this process.

One of the most widely used strategies to achieve attitudinal change and inclusion is based on the contact theory, proposed by Allport, Clark & Pettigrew (1954, quoted by Viquez et al., 2020), which states that contact provides an increase in communication and a decrease in prejudice towards people with disabilities. It manages to re-categorize the groups involved. Contact situations foster team identity of diverse people participating in the interaction, reorienting the cognitive and motivational processes that are usually activated in social encounters. The contact theory is present in all the reviews of this research, and it is consistently considered as a trigger for positive attitude, as long as it is planned and frequent (García & Hernández, 2013; García, Díaz, & Rodríguez, 2009; Novo-Corti, Muñoz-Cantero, & Calvo-Porrall, 2011; Sánchez, 2017, quoted by Viquez et al., 2020).

Another important point, according to McManus, Feyes and Saucier (2010), is given with the association of the development of positive attitudes related to the quality of contact and not only with the quantity of this, which is reaffirmed in the research of Rello, Garoz & Tejero (2018). In the development of this line, contact is also visualized from another perspective, that of contact prior to an intervention with a person with a disability, regarding this variable, in its generality it can be said that the studies analyzed tend to an increase in positive attitudes towards this, as it is in the case of the study of Pérez-Torralba et al. (2018), where previous contact will always be associated with better results, however, in this study only gave this type of results in subjective aspects of the research, there being differences towards the other more objective variables, which did not demonstrate an increase in positive attitudes, giving an answer to this controversy, through the research of Block (1995) and those of Van Biesen, Busciglio & Vanlandewick (2006), who do not find significant results between previous contact and positive attitudes, in addition Nikolarazi et al. (2005) affirms that the mere fact of maintaining contact with a person with a disability does not generate a change in attitude, this must be associated with greater knowledge about disability (Ison et al. 2010), according to this, other authors agree that this variable requires more research, more exposure time, knowing the type of activity, the quality of contact and the relationship with the person with a disability (Ocete, Pérez-Tejero, Coterón & Reina, 2020).

The duration of the interventions is a variable that was considered in the selection of the studies, and it had an effect on the attitude change. Reina (2011) showed that a seven-day program was more effective than a one-day program. However, authors point out that if their research had

been extended over longer intervention periods, even more positive results would have been obtained. Meanwhile, other authors counter the above by mentioning that three-day and even one-day programs can improve attitudes toward inclusion (Liu et al., 2010; Tavares, 2011; McKay et al., 2015, cited by Rello et al., 2018). However, authors such as Chae et al. (2018) point out that the longer the awareness-raising interventions last, the better results they obtain in attitudinal change.

Another 2018 study in Rello, Garoz & Tejero, points out that groups confronted with different variables and evaluated after a 4-month follow-up after the last evaluation, show that attitudes of affectivity and cognition present an improvement. It can be said then that based on the results obtained, an improvement in attitudes towards people with disabilities is not the product of a short-term effort or circumstantial interventions, and a follow-up test should also be considered in future studies to verify whether the changes are maintained over time, however, in relation to the latter, it is considered that follow-ups after the last evaluation may lead to a predisposed social behavior, as mentioned in the study, because there is already a knowledge of what is expected as a response to the program experienced, so that a reevaluation over time is not a reliable variable to determine whether or not there is a real change in attitudes towards people with disabilities.

The variable of gender and age were also present in previous research. In this sense, authors such as Abellán et al. (2018) refer to the fact that the females tend to have a greater acceptance towards people with disabilities, which was reinforced by García-Fernández et al. (2013). Similarly, Miller (2010) contributes to the idea, pointing out that this difference is due to a greater development of empathy in the female gender, as they tend to put themselves in the position of people with disabilities more easily than members of the opposite sex. In this sense, Viquez et al. (2020) recommend that this type of initiative be promoted from an early age, in any type of school to prevent discrimination. The number of strategies or techniques used during intervention programs had more impact when a greater number of these were combined (Rello et al., 2018). Thus, there is a concordance in several studies which makes it clear that the combined effect of several techniques seems to be more effective than isolated efforts when it comes to foster a change in attitude in favor of people with disabilities (Aguado, et al., 2003, 2004; Ison, et al., 2010; Krahé & Altwasser, 2006; Reina, 2011; Santana & Garoz, 2013; Xafopoulos et al., 2009, quoted by Rello, 2018).

According to the study by Rello et al. (2018), the delivery of information was considered a necessary but little dynamic tool within the didactic proposals. However, its importance is recognized as a starting point to define and understand basic concepts about disability and inclusion. The need for the information to be novel to help understand the educational content and the needs of people with disabilities is highlighted, strengthening the relationship between

knowledge and attitudes (Lindsay & Edwards, 2013). Lindsay & McPherson (2012) emphasize that both teachers and students should consider information as a tool to foster positive attitudes toward their peers with disabilities.

According to Abellán et al. (2018), para-sports and/or adapted sports have been used as a positive intervention resource in PE classes, contributing to education in values and equal opportunities, and sensitively improving attitudes towards disability. The use of adapted sports in PE classes also promotes respect, personal development, interpersonal relationships, and inclusion (Robles-Rodríguez et al., 2017).

When it comes to competition as an intervention strategy, diverse opinions were found. For example, Bebetos et al. (2017) do not favor competition in this type of interventions. They encourage collaborative work instead. On the other hand, Axmann-Leibetseder (2010, cited by Ocete et al., 2020) support competition, but with adaptations. They note that through these opportunities, negative beliefs towards disability will be eliminated; to cancel competition would be connoted as an image of inferiority. Competition is not only part of sport, but also of society.

In addition to scarce literature on the topic, among the limitations of the present study there is a lack of standardization regarding the evaluation of attitudes in the long term, which restricted the number of articles found on awareness programs for people with disabilities in the school context.

Future lines of research are suggested in this area involving various multicomponent strategies as well as adapted or disability-specific sports at different ages in order to be able to determine the existence of awareness program designs that may be more efficient. Likewise, it is suggested, at all times, to have a record of the degree of knowledge or contact of the participants with the disability, since these may be factors that alter the analysis and interpretation of the results.

Conclusion

According to the results of this research, it is concluded that awareness programs in the school stage related to disability and inclusion in physical education help to improve the attitudes of the population towards people with disabilities.

It is highlighted that the contact theory is fundamental in the design of these programs, since sharing experiences with people with disabilities, meeting athletes and participating in adapted sports activities generates a positive experience that achieves significant changes in attitudes. Simulation and experiential techniques also show positive results.

It is emphasized that sport activity contributes to the formation of values, encourages participation and promotes awareness and inclusion, requires a different perspective on disability. However, it is pointed out the need to use consistent evaluation instruments in future research and to promote education and training in educational establishments for students, teachers and parents.

Finally, the importance of starting these programs from

early childhood is emphasized, since this is a period when attitudes are less ingrained.

Conflicts of interest

The authors declare that they have no conflicts of interest.

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References

- Abellán, J; Sáez- Gallego, N & Carrión, S. (2018). La boca como deporte adaptado y sensibilizador en educación física en educación secundaria. *Revista euroamericana de ciencias del deporte*, 7(2), 109-114.
- 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. *Revista internacional de ciencias del deporte*, 53(14), 233-242.
- Abellán, J., Segovia, Y., Gutiérrez, D. & García López, L. M. (2022). Sensibilización hacia la discapacidad a través de un programa integrado de Educación Deportiva y Aprendizaje-Servicio (Disability awareness through an integrated program of sport education and service-learning). *Retos*, 43, 477-487. <https://doi.org/10.47197/retos.v43i0.86625>
- Azzarito L (2009) The panopticon of physical education: Pretty, active and ideally white. *Physical Education and Sport Pedagogy* 14(1), 19-39. <https://doi.org/10.1080/17408980701712106>
- Barton, L. (1998). *Discapacidad y sociedad*. Ediciones Morata
- Barton, L. (2008). *Superar las barreras de la discapacidad*. Ediciones Morata
- Bebetos, 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>.
- Berrigan, F., Beaudoin, S., Dubuc, M., Bernier, P. & Turcotte, S. (2021). Benefits of a daily physical activity program supervised by a physical and health education teacher: utility of a mixed methods study using an ecological approach. *Physical Education and Sport Pedagogy*, 27(2), 200-2013. <https://doi.org/10.1080/17408989.2021.1999915>
- Bredahl, A. M. (2013). Sitting and watching the others being active: The experienced difficulties in physical education when having a disability. *Adapted Physical Activity Quarterly*, 30(1), 40-58. <https://doi.org/10.1123/apaq.30.1.40>
- Block, M. (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>
- Chae, S; Park, E & Shin, M. (2018). School-based interventions for improving disability awareness and attitudes towards disability of students without disabilities: A meta-Analysis. *International journal of disability, development and education*, 343-361. <https://doi.org/10.1080/1034912X.2018.1439572>
- Felipe-Rello, C., Garoz, I. & Tejero, C. (2020). Cambiando las actitudes hacia la discapacidad: diseño de un programa de sensibilización en Educación Física. *RETOS*, 37, 713-721. <https://doi.org/10.47197/retos.v37i37.69909>
- Flowers, A; Burns, M & Bottsford- Miller, N. (2007). Meta-analysis of disability simulation research. *Remedial special education*, 28(2), 72-79. <https://doi.org/10.1177/07419325070280020601>
- García-Fernández, J. M., Inglés, C. J., Juan, M. V., Macià, C. G., & Viejo, C. M. (2013). Actitudes hacia la Discapacidad en el Ámbito Educativo a través del SSCI (2000-2011). Análisis Temático y Bibliométrico. *Electronic Journal of Research in Educational Psychology*, 11(1), 139-165.
- García-García, F; López- Torrijo, M & Santana- Hernández, R. (2020). Educación inclusiva en la formación del profesorado de educación secundaria: Los programas españoles. *Profesorado, revista de currículum y formación del profesorado*, 24(2), 271-293.
- Haegele, J. A., & Kirk, T. N. (2018). Experiences in physical education: Exploring the intersection of visual impairment and maleness. *Adapted Physical Activity Quarterly*, 35(2), 196–213. <https://doi.org/10.1123/apaq.2017-0132>
- Haegele, J. (2019). Inclusion Illusion: Questioning the Inclusiveness of Integrated Physical Education. *Quest*, 71(4), 387-397. <https://doi.org/10.1080/00336297.2019.1602547>
- Ison, N; McIntyre, S; Rothery, S; Smithers-Sheedy, G; Goldsmith, S; Parsonage, S. & Foy, L. (2010). 'Just like you': a disability awareness programme for children that enhanced knowledge, attitudes and acceptance: pilot study findings. *Dev Neurorehabil*, 13(5), 360-8. <https://doi.org/10.3109/17518423.2010.496764>
- Kolanowski, W., Ługowska, K. & Trafialek, J. (2022). Increased Physical Activity at School Benefits Arterial Blood Pressure in Children—A Prospective Follow-Up Cohort Study. *International Journal of Environmental Research and Public Health*, 19(8), 4662. <https://doi.org/10.3390/ijerph19084662>
- Lavay, B., & DaPaeppe, J. (1987). The harbinger helper: Why mainstreaming in physical education doesn't always work. *Journal of Physical Education, Recreation, & Dance*, 58(7), 98–103. <https://doi.org/10.1080/07303084.1987.10609614>
- Ley N° 20.422. Establece la Ley de Normas sobre Igualdad de Oportunidades e Inclusión Social de Personas con Discapacidad (10 de febrero de 2010). En Biblioteca del Congreso Nacional de Chile. <https://www.bcn.cl/ley-chile/navegar?idLey=20422>
- Ley N° 20.845. Regula la admisión de los y las estudiantes, elimina el financiamiento compartido y prohíbe el lucro en establecimientos educacionales que reciben aportes del estado (29 de mayo de 2015), En Biblioteca del Congreso Nacional de Chile. <https://www.bcn.cl/ley-chile/navegar?idNorma=1078172>
- Lindsay, S. & McPherson, A. (2012). Strategies for improving disability awareness and social inclusion of children and young people with cerebral palsy. *Child Care Health Dev*, 38(6), 809-16. <https://doi.org/10.1111/j.1365-2214.2011.01308.x>
- Lindsay, S. & Edwards, A. (2013). A systematic review of disability awareness interventions for children and youth. *Disability and Rehabilitation*, 35, 623-646. <https://doi.org/10.3109/09638288.2012.702850>
- Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., Ioannidis, J. P., Clarke, M., Devereaux, P. J., Kleijnen, J. & Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate healthcare interventions: explanation and elaboration. *PLoS Medicine*, 6(7). <https://doi.org/10.1136/bmj.b2700>
- Miller, S. R. (2010). Attitudes toward individuals with disabilities: does empathy explain the difference in scores between men and women? *Annals of Behavioral Science and Medical Education*, 16(1), 3-6.
- Ministerio de desarrollo social. (2015). *Resultados generales II estudio nacional de la discapacidad niños, niñas y adolescentes población 2 a 17 años*. Consultado el 21 de abril del 2022 en https://www.sena-dis.gob.cl/pag/355/1197/ii_estudio_nacional_de_discapacidad
- Nikolaraizi, M., Kumar, P., Favazza, P., Sideridis, G., Koulousiou, D. & Riall, A. (2005) A cross-cultural examination of typically developing children's attitudes toward individuals with special needs. *International Journal of Disability, Development and Education*, 52(2), 101-119. <https://doi.org/10.1080/10349120500086348>
- Ocete, C; Pérez-Tejero, J; Coterón, J & Reina, R. (2020). How do competitiveness and previous contact with people with disabilities impact on attitudes after an awareness intervention in physical education. *Pedagogía de la educación física y el deporte*, 27(1), 19-31.
- ONU (2006). *Convención internacional sobre los derechos de las personas con discapacidad*. Consultado el 26 de julio del 2022 en https://www.ohchr.org/sites/default/files/Documents/Publications/AdvocacyTool_sp.pdf
- Organización mundial de la salud (2001). Clasificación internacional del funcionamiento, de la discapacidad y de la salud (CIF). Consultado el 26 de julio del 2022 en https://apps.who.int/iris/bitstream/handle/10665/43360/9241545445_spa.pdf.
- Organización mundial de la salud. (2011). *Resumen informe mundial de la discapacidad*. Consultado el 27 de julio del

- 2022 en https://www.who.int/disabilities/world_report/2011/summary_es.pdf?ua=1
- Page, M., McKenzie, J., Bossuyt, P., Boutron, I., Hoffmann, T., Mulrow, C., Shamseer, L., Tetzlaff, J., Akl, E., Brennan, S., Chou, R., Glanville, J., Grimshaw, J., Hróbjartsson, A., Lalu, M., Li, T., Loder, E., Mayo-Wilson, E., McDonald, S., ... Moher, D. (2021). Declaración PRISMA 2020: una guía actualizada para la publicación de revisiones sistemáticas. *Revista Española de Cardiología*, 74(9), 790–799. <https://doi.org/10.1016/j.recesp.2021.06.016>
- Park, E; Lee, D; Lee, S; Lee, Y & Kang, J. (2015). Study on the effect of inclusive education policy and development plans. *Sejong: Ministry of education*.
- Pérez - Torralba, A; Reina, R; Pastor- Vicedo, J & González- Villora, S. (2018). Education intervention using para-sports for athletes with high support needs to improve attitudes towards students with disabilities in physical education. (2018). *Revista europea de educación para necesidades especiales*, 34(4), 455-468.
- Reina, R. (2011). *La actividad física y deporte adaptado ante el espacio europeo de enseñanza superior*. Wanceulen.
- Reina, R., López, V., Jiménez, M., García-Calvo, T. & Hutzler, Y. (2011). Effects of awareness interventions on children's attitudes toward peers with a visual impairment. *International Journal of Rehabilitation Research*, 34(3), 243-248. <https://doi.org/10.1097/MRR.0b013e3283487f49>
- Reina, R; Iñiguez- Santiago, M; Ferriz- Morell, R; Martínez-Galindo, C; Cebrion-Sanchez, M & Roldan, A. (2020). The effects modifying contact, duration, and teaching strategies in awareness interventions on attitudes towards inclusion in Physical education. *Revista europea de educación para necesidades especiales*, 37(1), 57-73.
- Felipe-Rello, C., Garoz Puerta, I., & Tejero-González, C. M. (2020). Cambiando las actitudes hacia la discapacidad: diseño de un programa de sensibilización en Educación Física (Changing attitudes towards disability: design of an awareness program in Physical Education). *Retos*, 37, 713–721. <https://doi.org/10.47197/retos.v37i37.69909>
- Rello, F; Garoz, I. & Tejero, C. (2018). Análisis comparativo del efecto de tres programas de sensibilización hacia la discapacidad en educación física. *Retos*, 34, 258-262. <https://doi.org/10.47197/retos.v0i34.59889>
- Robles-Rodríguez, J., Abad-Robles, MT, Giménez, J. & Benito-Peinado, P. (2017). Los deportes adaptados como contribución a la educación en valores ya la mejora de las habilidades motrices: la opinión de los alumnos de Bachillerato. *Retos*, 31, 140-144. <https://doi.org/10.47197/retos.v0i31.49418>
- SENADIS. (2015). II Encuesta Nacional de la Discapacidad. Consultado el 26 de julio del 2022 en <http://endisc.senadis.cl/resultados.html>
- Van Biesen, D., Busciglio, A. & Vanlandewijck, Y. (2006). Attitudes towards inclusion of children with disabilities: the effect of the implementation of "A Paralympic School Day" on Flemish elementary children. 8th European Conference of Adapted Physical Activity Acceso el 17 octubre de 2022, recuperado de <http://www.eufapa.upol.cz/index.php/eucapa/proceedings/eucapa-2006.html>
- Viquez, F; Quiroz, S; Rodríguez- Méndez, D & Solano, L. (2020). La inclusión de personas con discapacidad en una escuela multideportiva: Efecto de las actitudes hacia la discapacidad en niños jóvenes, padres, madres y personal de instrucción. *Revista MH salud*, 17(2), 1-13.
- Yupanqui, A; Gonzalez, B; LLancalahuen, V; Quilodran, W & Toledo, C. (2016). Lenguaje, discriminacion y discapacidad en el contexto educativo de Magallanes. Un enfoque de derechos humanos desde la terapia ocupacional. *Magallania*, 44(1), 149-166