

Systematic Review

The Impact of Programs Aimed at Raising Awareness About Children with Intellectual and Developmental Disabilities in Schools: A Systematic Review

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Abstract: The awareness and inclusion of school children with intellectual and developmental disabilities are garnering growing attention in educational research. Schools are increasingly focused on creating inclusive environments, and programs aimed at improving students' attitudes toward peers with disabilities are key to this effort. This article reviews studies on the impact of these programs on primary and secondary education. A systematic search of the WOS, Scopus, PubMed, and ERIC databases was conducted using the PRISMA statement. This yielded nine relevant articles published either in Spanish or English. This review found that awareness programs had a generally positive effect on students' perceptions of their peers with disabilities. However, the awareness of intellectual and developmental disabilities remained lower than that of physical, visual, or hearing disabilities. The most effective strategies involved direct interaction and information sharing, with simulation techniques also having positive outcomes. Despite some successful results, challenges remain, particularly involving the need to engage educational staff and ensure the long-term sustainability of these programs within the curriculum. Future research should investigate the long-term impact of these interventions and their effectiveness across different educational settings.



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1. Introduction

Education for people with disabilities has undergone a profound transformation over time. People with disabilities were initially marginalized and excluded from mainstream education systems. However, the 19th century saw a significant change, with the emergence of special schools and the adoption of innovative methods such as sign language and the Braille system (J. Jiménez et al., 2009), demonstrating that people with disabilities were capable of learning just like their non-disabled peers (Dussan, 2010). In 1917, special education was formally established in Europe, though its segregated approach faced criticism for perpetuating intolerance toward differences (Dussan, 2010).

By the mid-20th century, concepts such as normalization and the 1978 Warnock Report promoted social and educational integration, which enhanced the self-esteem and autonomy of individuals with Special Educational Needs (SENs) (Dussan, 2010; Martín, 2010; Rubio, 2009).

In recent decades, the term “inclusion” has replaced the term “integration”, reflecting a shift toward actively valuing diversity (Guajardo-Ramos, 2018). The aim of inclusive education is to remove barriers and discrimination and ensure that all students, regardless of their conditions and circumstances, learn together in a shared environment (Jumbo-Jumbo, 2024; Llabrés et al., 2019; Vásquez-Orjuela, 2015). This approach became established in 2006 with the adoption of the UN Convention on the Rights of Persons with Disabilities, which explicitly recognized the right to inclusive education (BOE, 2008). The convention aimed to eliminate discrimination and foster educational settings that accommodate the diverse needs of all learners. The convention was intended to ensure an inclusive education system at all levels and promote lifelong learning, with the aim of eliminating all forms of discrimination and creating innovative spaces that contribute to the organization of a favorable learning environment (Aguinaga-Doig et al., 2018).

The concept of inclusion seeks to improve education and society and ensure that all students develop and learn in quality educational environments, regardless of their differences (Castillo-Briceño, 2015). Achieving this goal requires significant changes to be made in schools and teaching ideas and practices to support and adapt to the diversity and uniqueness of each individual (Sebastián-Heredero & de Mattos, 2020). It recognizes the importance of understanding the context before implementing changes in educational policies, something that is often neglected (Ainscow, 2003). Promoting inclusion in education is a shared responsibility that involves several actors: teachers, families, researchers, students, managers, and politicians, as well as support and maintenance staff (Fielding, 2011; Molina, 2015). They all must work together to foster a positive attitude toward changes in the educational system (A. J. Robles, 2020; Simón, 2016).

Educating for diversity entails creating an adaptable educational program designed to meet the varying needs of students in diverse school contexts (Navarro-Aburto et al., 2016). This flexibility involves tailoring curriculum content, teaching methods, and assessment practices to accommodate individual differences and promote inclusion (Sisto et al., 2021). This presents educators and educational institutions with the need to consider different organizational and didactic strategies to address a variety of situations (Quintero, 2020). The idea of providing personalized teaching has been, and continues to be, a challenge for pedagogical practices (Mesías et al., 2022), since institutional approaches still tend to be rather uniform and establish average levels of performance and work rhythms that hinder the inclusion of all students. Promoting inclusive educational practices means that all children have the right to learn in normalized educational environments and without restrictions (Molina, 2015); that the resources and services offered by schools are more inclusive than specialized and differentiated organizations; and that educational content needs to be more accessible and contextualized (P. Jiménez & Navarro-Montaña, 2022). The curriculum must also be flexible and adaptable to different situations and promote maximum participation and involvement in how the school operates. Diversity awareness and an understanding of individual differences are needed to drive the values of diversity (Clavijo & Bautista-Cerro, 2020). In an inclusive classroom, flexibility must be promoted, as there are no simple and universal answers to all educational needs (Verdugo & Rodríguez, 2012).

Inclusion in the school environment brings with it several tangible benefits in various areas (Huete, 2017). These include improvements in affectivity and acceptance among students, as well as increased academic achievement, especially for those with SENs (Ainscow, 2003). While the social impact may vary, inclusion promotes diversity awareness. In general, inclusion not only benefits students with SENs but also enhances the performance and educational experience of the entire school community (Cortés, 2010).

The implementation of inclusive education should be a shared principle, centered on respect and a holistic appreciation of each individual. This suggests that teachers, through

a comprehensive and systematic approach such as UDL (Universal Design for Learning), can improve their pedagogical methods to adapt to student diversity, thus ensuring the presence, participation, and achievement of all students (Covarrubias & Garibay, 2021; Delgado, 2021). The concept of Universal Design was created by architect Ron Mace in the 1970s, who proposed that the design of products and the environment should be usable by everyone, without the need for adaptations. This means that any approach or design considers the diversity of the users from the very beginning (Chang et al., 1996). Universal Design can be applied to education by the use of Universal Design for Learning (UDL), where it can play a decisive role in responding to the existing diversity in schools, where students with high abilities, specific learning difficulties, cognitive disabilities, a lack of interest and motivation, an unknown language background, and different socioeconomic levels, among other characteristics, can all coexist. Teachers must recognize and consider this diversity when supporting their students, since plans designed for the majority of the group may be effective for some but may exclude those who are not part of that majority from the learning process (Alba, 2019).

Despite legislative and social advances in the area of inclusion, many challenges remain, especially at the school level (Sandoval et al., 2019). People with disabilities continue to face barriers that limit their access to quality education and their full participation in school life. It is the schools that must adapt to the characteristics of the students, not the students who must meet certain criteria to be considered educable (Cobeñas, 2020). This participation is further reduced as age increases, resulting in higher segregation rates (Huete, 2017). It should be noted that people with intellectual and developmental disabilities are furthest from achieving true inclusive education (De Boer et al., 2013; Firat, 2020; Padilla, 2011). In contrast, people with visual, hearing, and motor disabilities have inclusion rates more similar to those of the general population (Huete, 2017).

Barriers can take the form of discriminatory attitudes, a lack of suitable resources, or a lack of awareness and training programs for the educational community (Covarrubias, 2019). Attitudes (which are defined as an emotionally charged idea that predisposes people to act in a certain way in specific social situations) are influenced by beliefs, experiences, and newly acquired information. They are not static or immovable but can change over time, which means that they can be influenced by new information and experiences (Abellán et al., 2022). In this context, disability awareness programs (DAPs) are a response to the need to implement strategies that promote understanding, empathy, and the acceptance of diversity (Castelli et al., 2023). These actions seek to foster empathy and a genuine commitment to others, contributing to the feeling of acceptance of both people with and without disabilities (Lindsay & Edwards, 2013). However, the effectiveness and scope of these programs vary considerably depending on several factors, such as the pedagogical approach, previous experience with people with disabilities, the training of the teaching staff, and the participation of the educational community as a whole (Castelli et al., 2023; Kelly & Castillo, 2024). The facilitators of inclusion include suitable teacher training, strong collaboration within the educational community, and access to sufficient resources to support diverse learners, which together can help create an environment conducive to inclusion (Espinosa, 2024; Sisto et al., 2021). There are several papers in the scientific literature that have addressed DAPs and have been evaluated in terms of their efficacy and effectiveness in raising awareness, as well as their impact on the beliefs of non-disabled students (M. Campos & Entresede, 2024; M. J. Campos et al., 2014; Felipe et al., 2018).

Starting awareness sessions in the primary education stage is essential, as this gives children the opportunity to cultivate these values from an early age, preparing them to integrate positively and respectfully into the society of the future (Pan et al., 2023). Different DAP proposals have been made in order to generate different strategies to change attitudes

towards people with disabilities, including (1) facilitating direct or indirect contact with people with disabilities; (2) providing information on disabilities; (3) using persuasive messages; (4) engaging in disability simulation exercises; and (5) participating in discussion groups (Felipe et al., 2018). These techniques, whether applied individually or in combination, have been incorporated into various educational programs designed to raise awareness about disabilities. These initiatives aim to increase understanding, promote the acceptance of individuals with disabilities, and ultimately reduce negative attitudes toward them (Ocete Calvo et al., 2015). The present study therefore provides a systematic review to identify and analyze different awareness programs, as well as their results and impact.

2. Materials and Methods

This research aims to examine the impact of awareness programs on individuals with intellectual and developmental disabilities within the school setting, focusing on the role they play in promoting inclusion and respect for diversity. Three authors conducted this review, which employed a rigorous process to search, select, and analyze the evidence available in the scientific literature on this specific topic.

2.1. Type of Study

This is a systematic review seeking to objectively identify the awareness programs that have been implemented for people with intellectual and developmental disabilities in elementary school. This research was conducted according to the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Page et al., 2021).

2.2. Data Sources and Search

The following databases were used for a structured search: Scopus, Web of Science (WOS), ERIC, and PUBMED. These databases were searched until 22 March 2024. The documents were obtained from electronic databases following the search strategy described below: awareness OR consciousness (title, abstract or keywords) AND “intellectual disability” OR “developmental disability” (title, abstract or keywords) AND education OR school (title, abstract or keywords) AND program OR intervention OR “best practice” (title, abstract or keywords).

2.3. Inclusion and Exclusion Criteria

The process for determining eligibility was based on a set of clearly defined inclusion and exclusion criteria. Articles were selected if they met the following inclusion criteria: (i) the study was conducted in an educational setting; (ii) the study was conducted in elementary through to high school; (iii) the objective of the program was to raise awareness; (iv) they were academic, scientific articles; and (v) articles were written in either English or Spanish.

Articles were excluded if they (i) did not focus on elementary through to high school; (ii) had objectives other than awareness raising; (iii) did not include a defined intervention; or (iv) described an intervention that was not carried out in a school setting. These criteria ensured that only those studies and programs focused on the levels of education mentioned above, seeking to raise awareness, implementing structured actions, and carried out within formal educational institutions were considered.

2.4. Selection of Studies

The studies were selected using the Mendeley Desktop (version 1.19.8) reference management software. All documents were exported from the selected databases according to the search strategy employed. Once the search that yielded all the articles was performed, the PRISMA flowchart methodology was used, and duplicates were eliminated. The studies

were selected on the basis of the title and abstract and the purpose of the research. The key terminology mentioned in the previous section was taken into account in this process. After completing the search of all the databases, those studies that did not meet the eligibility criteria based on the inclusion and exclusion criteria mentioned above were excluded. Consistency and accuracy throughout this review was ensured by all three authors verifying each other's work at every stage of the selection and assessment process. When disagreement or discrepancies arose, the authors engaged in discussions to resolve the differences. If consensus could not be reached, a final decision was made through mutual agreement, with careful consideration of the inclusion and exclusion criteria, ensuring that the integrity and objectivity of the review process were maintained.

3. Results

3.1. Search Process

The initial search in the bibliographic databases resulted in the collection of five hundred and ten studies, of which nine articles that met all the inclusion criteria for the purposes of this systematic review were finally analyzed, as shown in the flow chart (Figure 1). Of the 510 initial articles, 175 were eliminated because they were duplicates. Of the remaining 335 articles, 291 were discarded after examining the titles and abstracts, as they were not related to the objective of this systematic review. This reduced the total number to 44 articles. After reading all the articles, 36 others were eliminated because they failed to meet the specific criteria, namely their objective was not to raise awareness ($n = 11$), they were not concerned with an intervention ($n = 13$), if they dealt with an intervention, it was not carried out in a school setting ($n = 5$), or the intervention was not aimed at elementary through to high school levels of education ($n = 7$). An additional article was found after the citation search, resulting in nine studies included in this systematic review.

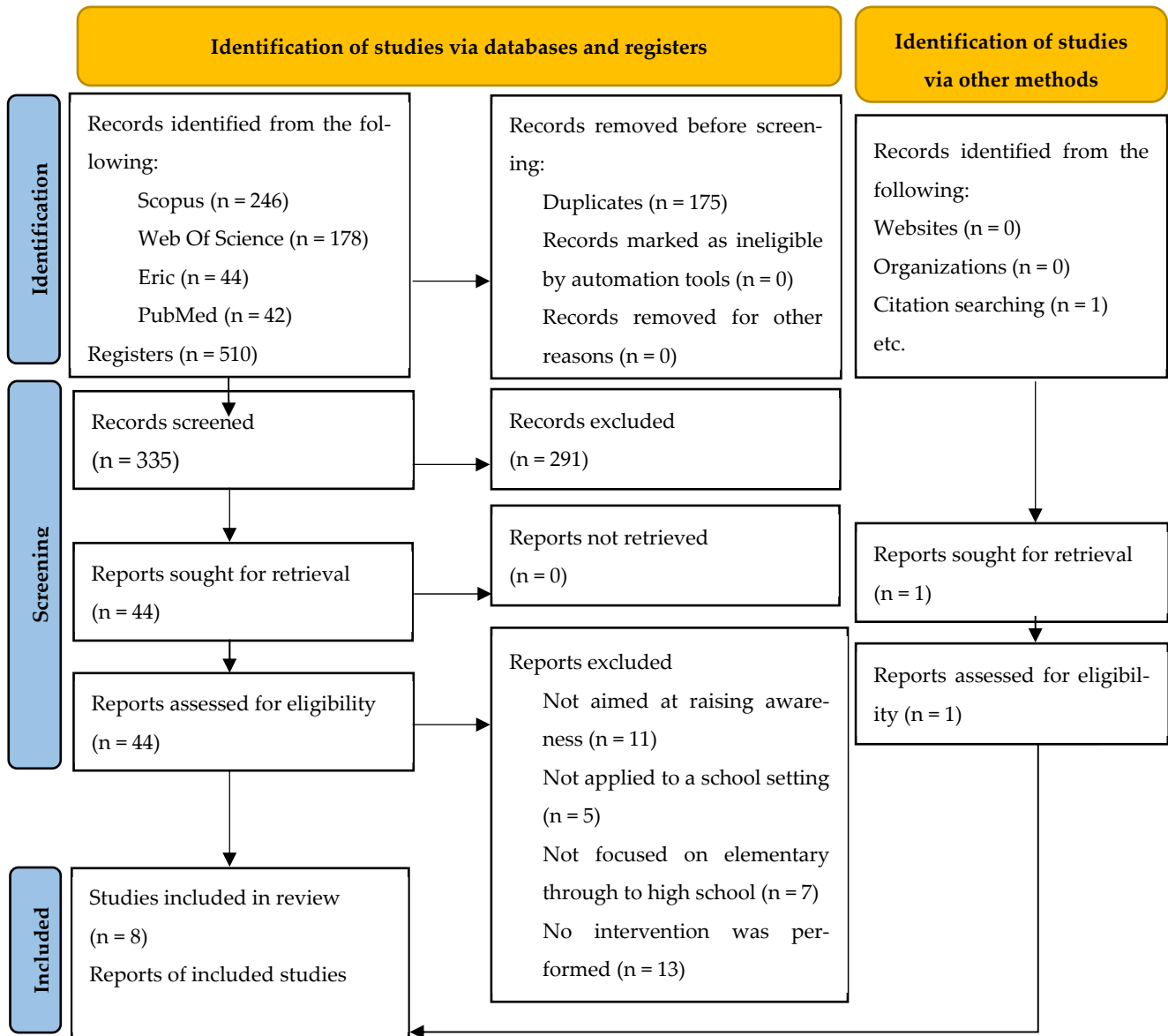


Figure 1. PRISMA flow diagram for study selection.

3.2. Identification of the Techniques Used and the Impact Generated

Tables 1–3 show the results of the nine articles analyzed, highlighting the sensitization techniques used in the interventions and the results obtained in each study.

Table 1. Description of selected manuscripts.

Article	Sensitization Technique	Intervention	Tool	Sample	Stage	Country	Type of Disability
Abellán et al. (2018b)	<ul style="list-style-type: none"> • Direct contact • Simulation 	Number of sessions: 7 Duration: 2 months Didactic Unit Boccia	The Attitudes towards Inclusion of Students with Disabilities in Physical Education (AISDPE) (Reina et al., 2016b); Attitude Scale for Students with Disabilities in Physical Education (ASSDPE) (Iñiguez-Santiago et al., 2017); Questionnaire to measure opinion (J. Robles et al., 2017)	n = 28 Average age: 14.86	High school	Spain	Intellectual disability
(Pan et al., 2023)		Duration: 8 Weeks	The Inventory of School Climate—Student Scale [ISC-S] (Acun-Kapikıran & Kapikıran, 2011); Attitudes toward Persons with an Intellectual Disability Questionnaire [APIDQ] (Boo & Nie, 2018); Adjective Checklist [ACL] (Behling & Law, 2000); 2 open-ended questions	n = 164 Average age: 14.9	High school	East Asia (Taiwan)	Intellectual disability
(Rillotta & Nettelbeck, 2007)	<ul style="list-style-type: none"> • Direct contact • Indirect contact • Information 	Intervention A. Number of sessions: 3 (45 min each) Intervention B. Number of sessions: 8 (45 min each) Duration: 4–6 weeks	Attitudes Toward Persons with an Intellectual Disability Questionnaire	n = 259 Group A average age: 11.7 Group B average age: 13.12	High school		Intellectual disability
(De Boer et al., 2013)	<ul style="list-style-type: none"> • Indirect contact • Simulation • Information 	Number of sessions: 6 (45 min each) Duration: 3 weeks Program “Special Friends”	Acceptance Scale for Kindergarten—revised (ASK-R) (Favazza & Odom, 1996); Attitude Survey Towards Inclusive Education (ASIE) (De Boer et al., 2012)	n = 271 Group A (aged 5–6): Control group (n = 31) Experimental Group (n = 22) Group B (aged 7–11): Control group (n = 127) Experimental group (n = 91)	Elementary education	The Netherlands	Intellectual disability + physical disability

Table 1. Cont.

Article	Sensitization Technique	Intervention	Tool	Sample	Stage	Country	Type of Disability
(Lindsay & Edwards, 2013)	<ul style="list-style-type: none"> Information 	Intervention A. Number of sessions: 1 (60 min) Intervention B. Number of sessions: 1 (45 min) Duration: 1 month	Questions created by them	n = 165 Average age: 9.3	Elementary education		Physical disability
Abellán et al. (2018a)	<ul style="list-style-type: none"> Direct contact Information 	Intervention A Number of sessions: 1 (2 h) Intervention B Sessions: 2 (2 h each) Duration: 1 month	The Attitudes towards Inclusion of Students with Disabilities in Physical Education (AISDPE) (Reina et al., 2016b); Attitude Scale for Students with Disabilities in Physical Education (ASSDPE)	n = 83 Average age: 15.18 Control group (n = 33) Experimental group A (n = 25) Experimental group B (n = 25)	High school	Spain (Castilla- La Mancha)	Intellectual disability
(Nowakowska & Pisula, 2021)	<ul style="list-style-type: none"> Direct contact 	Number of sessions: 2 (90 min each)	Seven-point semantic differential with 30 adjective pairs (Janusz Kirenko, 2007; Osgood & Suci, 1955; Otrebski et al., 2012)	n = 93 Control group (n = 43) Average age: 16.31 Experimental group: 50 Average age: 16.15	High school	Poland	Intellectual disability
(Firat, 2020)	<ul style="list-style-type: none"> Direct contact Information 	Number of sessions: 7 (40 min each) Duration: 7 weeks	Guttman-type scale (Versluijs et al., 2020)	n = 100 Control group: 50 Experimental group: 50 Average age: 13.3	High school	Turkey	All types of disabilities
(Trufero Miguel, 2021)	<ul style="list-style-type: none"> Simulation 	Number of sessions: 4 (55 min each)	Students' attitudes toward integration in physical education (CAIPE-R) (Ocete et al., 2017)	n = 43 Age: 10–11 age	Elementary school	Spain (Canary Islands)	Intellectual disability, visual, motor, and auditory

Table 2. Technique of sensitization of each intervention and result.

Article	Technique of Sensitization	Intervention	Results
Abellán et al. (2018b)	<ul style="list-style-type: none"> • Direct contact • Simulation 	Boccia Didactic Unit.	Attitudes improved after implementing the didactic unit. They considered adaptive sports to be suitable for awareness but not for working on motor skills.
(Pan et al., 2023)		One teacher, one student with intellectual disabilities, and one student without disabilities participated from each school.	Girls had greater school awareness than boys (regardless of whether they viewed school positively or negatively). Boys had higher scores in cognitive values. The importance of including these programs at earlier ages was noted. Participation by family and community members was highly valued. The implementation of these programs was highly valued both by people with and without disabilities, since their learning process was more meaningful.
(Rillotta & Nettelbeck, 2007)	<ul style="list-style-type: none"> • Direct contact • Indirect contact • Information 	<p>Group A → 3 sessions:</p> <ul style="list-style-type: none"> • 2 sessions of direct contact with people with intellectual disabilities; • 1 reflection session. <p>Group B → 8 sessions:</p> <ul style="list-style-type: none"> • Interview with teachers; • Searching for information on disability and preparing presentations; • Creating a video of a person with autism; • School adaptations or adaptations made to the life of a family with disabilities by a professional; • Sharing the experiences of people with disabilities (direct contact); • Sharing activities with people with disabilities: craft, art, or sports (direct contact); • Sharing activities with people with disabilities: games or cooking (direct contact); • Reflection. 	The attitude of the students participating in the awareness programs improved. The results of the participants in group B (who took part in 8 sessions) were better than those of the participants in group A (who took part in 3 sessions). Students who spent more time with people with intellectual disabilities had a better attitude. Age had no influence. Girls had better attitudes than boys.
(De Boer et al., 2013)	<ul style="list-style-type: none"> • Indirect contact • Simulation • Information 	<p>“Special Friends” program.</p> <p>A proposal for each age group, with the same structure but with adaptations:</p> <ul style="list-style-type: none"> • 5–8 years old: storytelling. • 8–12 years old (movies or true stories). Three types of disability (physical, intellectual severe physical, and intellectual disability) were discussed. • First session: describing disability using videos or stories, then engaging in discussion. • Second session: simulation. 	Attitudes improved. There was no guarantee that this improvement would be maintained for a long time (5–6 years old). Similar or more negative results were obtained. The older the age, the lower the awareness and the worse the attitude. Girls were more sensitized than boys. There was greater awareness of physical disability and less awareness of intellectual disability (7–11 years old).

Table 2. Cont.

Article	Technique of Sensitization	Intervention	Results
(Lindsay & Edwards, 2013)	<ul style="list-style-type: none"> Information 	<p>Two different programs:</p> <ul style="list-style-type: none"> First session: answering questions as a game. Second session: watching a play and then answering/reflecting on some questions. 	<p>They indicated that they had little knowledge about disability and that they had learned from this intervention. They saw that people with disabilities also had abilities and that they could have a good time. They learned how to adapt the games to seek the participation of all. They said they would like to learn more.</p>
Abellán et al. (2018a)	<ul style="list-style-type: none"> Direct contact Information 	<p>Group A:</p> <ul style="list-style-type: none"> A day of inclusive sports with people with intellectual disabilities (athletics and indoor soccer). <p>Group B:</p> <ul style="list-style-type: none"> A visit to an occupational center for people with intellectual disabilities (2 h). A day of inclusive sports with people with intellectual disabilities (athletics and indoor soccer). 	<p>Group B had the greatest positive impact, and their attitudes improved. Direct contact helped to raise awareness. Although Group A improved, the results were less significant. Previous information about the life of people with intellectual disabilities and having direct contact with them afterwards were the most highly regarded experiences.</p>
(Nowakowska & Pisula, 2021)	<ul style="list-style-type: none"> Direct contact 	<ul style="list-style-type: none"> Session 1: lecture + movie on intellectual disabilities (the objective of the movie was to help students recognize the importance of promoting self-determination and autonomy for young adults with disabilities) + debate. Session 2: An art session. There was direct contact with people with intellectual disabilities, as they were the ones organizing or giving the talk, and they worked together to make art pieces. There were coordinators to manage the full process. The intervention took place during a lesson of any subject. 	<p>There were no significant changes. People with intellectual disabilities were nicer and calmer than they imagined. Students felt that they lacked emotion and were more mature. The program helped to reduce the stigma toward people with intellectual disabilities.</p>
(Firat, 2020)	<ul style="list-style-type: none"> Direct contact Information 	<p>Seven sessions, in which they talked about a specific disability.</p> <ul style="list-style-type: none"> Each session consisted of two parts: the first part involved giving information about a certain disability, which varied from week to week. In the second part, a student with the special need which was the focus that week was invited into class. Students were encouraged to chat, play games, and spend time with her/him. 	<p>Greater recognition was given to physical, hearing, visual, and learning disabilities. Less tolerance for intellectual disability and autism. Recognition of all disabilities increased or improved. Students with high intellectual abilities had greater acceptance at both the pre and post stages.</p>
(Trufero Miguel, 2021)	<ul style="list-style-type: none"> Simulation 	<p>Four sessions. Each of the following disabilities was worked on in each session: visual disability, hearing disability, motor disability, and intellectual disability.</p>	<p>No significant results were obtained; there was a significant change in only one of the 3 dimensions: subjective beliefs in boys and girls. The other dimensions (behavioral beliefs and control beliefs) were neutral or without major changes. There were rather high values in the pre stages, which lessened the positive impact.</p>

Table 3. Results of each study.

Article	Positive Results	Results Showed No Effects	Negative Results
Abellán et al. (2018b)	x (AISDPE)		x (ASSDPE)
(Pan et al., 2023)	x		
(Rillotta & Nettelbeck, 2007)	x		
(De Boer et al., 2013)	x	x	
(Lindsay & Edwards, 2013)	x		
Abellán et al. (2018a)	x		
(Nowakowska & Pisula, 2021)		x	
(Firat, 2020)	x		
(Trufero Miguel, 2021)		x	

AISDPE: The Attitudes towards Inclusion of Students with Disabilities in Physical Education; ASSDPE: Attitude Scale for Students with Disabilities in Physical Education.

3.3. Impact of Awareness Programs on Attitudes Towards Disability

The study results showed a general improvement in attitudes toward disability following educational intervention (Abellán et al., 2018a; Abellán et al., 2018b; De Boer et al., 2013; Firat, 2020; Pan et al., 2023; Rillotta & Nettelbeck, 2007). Although attitudes toward various types of disabilities had generally improved, awareness of people with intellectual and developmental disabilities was still lower compared to those with physical, visual, hearing, or high abilities (De Boer et al., 2013; Firat, 2020).

3.4. Most Effective Awareness-Raising Techniques

The most effective awareness-raising techniques were direct contact and information dissemination (Abellán et al., 2018a; Abellán et al., 2018b; De Boer et al., 2013; Firat, 2020; Lindsay et al., 2012; Nowakowska & Pisula, 2021; Rillotta & Nettelbeck, 2007), followed by the simulation technique (Abellán et al., 2018b; De Boer et al., 2013). These approaches were shown to significantly improve participants' attitudes toward and understanding of disability. Direct contact and information-sharing techniques were reported to have the most consistent and widespread impact on changing attitudes.

3.5. Demographic Factors Influencing Awareness

Girls consistently demonstrated greater awareness than boys (De Boer et al., 2013; Pan et al., 2023; Rillotta & Nettelbeck, 2007). In addition, the level of sensitization was higher at younger ages but tended to decrease with age (De Boer et al., 2013; Pan et al., 2023).

3.6. Duration of Intervention

The duration of the intervention appeared to be a significant factor in determining its effectiveness. It was also observed that shorter interventions (1–2 sessions) tended to have a smaller impact, whereas those lasting 7–8 sessions had a more pronounced effect.

3.7. Family and Community Involvement

Family and community participation in awareness programs was also found to be highly regarded by participants. The studies showed that programs involving family and community members tended to have a greater impact, with increased support from these groups reinforcing the messages of the intervention (Pan et al., 2023).

4. Discussion

Disability awareness programs have a positive impact on improving the attitudes of students without disabilities (Abellán et al., 2018a; Abellán et al., 2018b; De Boer et al., 2013; Firat, 2020; Pan et al., 2023; Rillotta & Nettelbeck, 2007). By participating in activities

that promote disability awareness, students learn to value diversity and recognize the unique abilities of each individual (M. Campos & Entresede, 2024). These programs also help reduce stigma and discrimination, creating an educational community in which all students feel valued and accepted.

However, an analysis of the results shows that not all programs have been equally successful. In three specific cases, no effect on student attitudes was observed (De Boer et al., 2013; Nowakowska & Pisula, 2021; Trufero Miguel, 2021), and in one particular case, the perception of people with disabilities even worsened (Abellán et al., 2018b). In light of the varying results observed in some awareness programs, several factors can be identified that may have contributed to the lack of success or even a decline in positive attitudes toward individuals with disabilities. In addition to program duration, factors such as program design and content, the quality of facilitators, student engagement, and the cultural and social context of participants can play a crucial role (Abellán et al., 2022; Felipe et al., 2018). These results underscore the importance of designing and implementing awareness programs in a careful and effective manner. Along these lines, one study concluded that it is advisable to design programs with more than eight class sessions to ensure a significant change in attitudes and behaviors (Felipe et al., 2018). It seems that paying special attention to the structure and characteristics of the programs is relevant to ensure that the intervention has a positive impact.

The results of this study provide significant evidence about the effectiveness of educational programs in improving attitudes towards disability (Abellán et al., 2018b; Firat, 2020; Lindsay et al., 2012). Sensitization techniques based on direct contact and the provision of information were shown to be the most effective, followed by the simulation technique (Abellán et al., 2018b; Rillotta & Nettelbeck, 2007). Similarities were identified with a previous study where techniques such as information, contact, and experience were employed, alongside guided discussions. The results suggested that the intervention was effective and that its impact persisted over time, albeit with some fluctuations, as the effects did not last as long as desired (Aguado et al., 2004; Ocete Calvo et al., 2015). Among the main theoretical positions that have been adopted so far to explain the acquisition and modification of attitudes, the most notable are consistency theories (Sabatés & Capdevila, 2010) and contact theory (Felipe et al., 2018; Reina et al., 2016a). Direct contact with people with disabilities is essential in cultivating positive attitudes toward them, which contributes to the awareness of and sensitization to the subject (Abellán et al., 2020; Alcedo et al., 2013). It also shows that those who have had contact with a person with a disability have a more positive attitude toward people with disabilities compared to those who have not had that experience (Suriá, 2011). There is therefore agreement that promoting the implementation of awareness programs can contribute to favorable changes in attitudes toward disability (K. I. Campos et al., 2023; Felipe et al., 2018). Ideally, these programs should be systematically integrated into the school curriculum, thus ensuring that inclusive education is promoted from an early age and that respect and understanding for people with disabilities in society is cultivated. This would not only benefit students with disabilities but would also enrich the educational experience of the entire school community. Despite overall improvements in attitudes toward different disabilities, the current levels of awareness of people with intellectual and developmental disabilities remain lower and pose a major challenge (De Boer et al., 2013; Firat, 2020). A differential analysis found that people with intellectual disabilities had the worst indicators of inclusion in both the educational and employment spheres (Huete, 2017). Although rejection is gradually being eliminated, there is still distrust, a lack of recognition, and considerable ignorance, which prevents society from moving toward respecting and enabling the right to equality for this group (García-Sanz et al., 2022). A previous study showed that professionals often

have low expectations about the capabilities of individuals with intellectual disabilities, further contributing to their exclusion and limited opportunities (Moreno et al., 2022). This finding suggests that current interventions may not be adequately addressing the specific biases and stereotypes associated with these disabilities. It is crucial to develop more targeted educational strategies that include accurate information and opportunities for direct contact with people with intellectual and developmental disabilities, thereby promoting deeper understanding and broader acceptance (Alcedo et al., 2013). The social inclusion of individuals with intellectual disabilities is therefore an increasingly important factor, given their significant need for an independent and autonomous life (García-Sanz et al., 2022). Another noteworthy observation is the gender difference in awareness, with girls showing greater sensitivity to people with disabilities compared to boys (De Boer et al., 2013; Pan et al., 2023; Rillotta & Nettelbeck, 2007). However, it is important to further investigate the reasons behind this difference in order to develop awareness strategies that are equally effective for both genders.

Several studies in this systematic review indicated that the decrease in sensitization with age is a worrisome finding (De Boer et al., 2013; Pan et al., 2023), stressing the need to implement continuous interventions adapted to the different stages of development.

The participation of families and the entire community in awareness programs has been found to be welcomed (Pan et al., 2023). The community, society, and teachers are in part responsible for creating an inclusive environment (Plancarte, 2017). The role of teachers is essential, as they not only transmit knowledge but are also responsible for fostering an environment in which all students feel valued, respected, and supported, regardless of their individual differences (Camaño Carballo et al., 2019; García-Sanz et al., 2022).

Another study found that when teachers value diversity, they help to prevent prejudice and stereotypes and reject discrimination and exclusion, i.e., they become facilitators (Nieto & Morriña, 2021). However, instead of promoting inclusion, some teachers sometimes create barriers that hinder the ongoing development and success of these students. This points to evidence that there are still educators who do not understand the principles of inclusive education and that much remains to be done in schools (Nieto & Morriña, 2021), underscoring the urgent need to raise awareness among teachers.

5. Conclusions

The comprehensive review conducted reveals that awareness programs in schools have a significantly positive impact on students' perceptions and attitudes toward their peers with intellectual and developmental disabilities. This finding highlights the effectiveness of these initiatives in fostering inclusion and mutual respect within the school environment. However, this review identified key characteristics to ensure the interventions' effectiveness, including age, gender, and educational stage. It also highlighted the importance of analyzing the intervention strategies used and how each one influences the impact of awareness programs.

Nevertheless, beyond these important issues, this review also identified key challenges that must be addressed to optimize the effectiveness and sustainability of these programs. Among them is the urgent need to raise awareness among educational staff, who play a crucial role in the implementation and ongoing support of these initiatives. Additionally, effectively and sustainably integrating these programs into the school curriculum remains a challenge that requires strategic attention and adequate resources. Future research will be fundamental to continue advancing in the construction of an inclusive, equitable, and quality education system for all students, regardless of their individual conditions and characteristics.

6. Limitations of This Study and Recommendations for Future Research

A key limitation of this study is that many reviewed programs did not focus solely on individuals with intellectual and developmental disabilities but instead addressed a broader range of disabilities. This makes it difficult to draw specific conclusions about the effectiveness of programs for the target group. The variety of sensitization techniques used across programs also poses a challenge, as it is hard to isolate the impact of individual methods when analyzing multiple techniques often combined in each intervention.

The focus on elementary through to high school environments and students limits the generalizability of the findings to other educational levels or environments, such as higher education, family, or workplace settings. The lack of long-term follow-up in the studies also restricts the understanding of the sustained effects of these programs.

It is therefore recommended that future studies use longitudinal techniques to focus on evaluating the long-term effects of these programs across different educational contexts. This approach will not only provide a better understanding of the long-term benefits for both students with and without disabilities but also help identify best practices for effective implementation in various school situations. Including the perspective of other agents within the educational context, as well as family and community, is also an important aspect in assessing the broader impact of awareness programs.

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