



Inclusion and adolescence: Attitudes towards students with disabilities and cyberbullying behavior in physical education

Inclusión y adolescencia: Actitudes hacia alumnos con discapacidad y conductas de ciberacoso en Educación Física

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Abstract

The use of information technologies has increased exponentially in recent years and with it the consequences of misuse. For almost two decades, attention has been focused on cyberbullying, which can affect people of any age who have access to technology. This behavior, which is an extension of bullying, can become detrimental to health, individual development and academic performance. Taking into account that physical education classes are the ideal scenario to combat cyberbullying through education, the aim of this study is to know the association between the European Cyberbullying Intervention Project Questionnaire (ECIPQ) and The Attitudes Scale towards Students with Disabilities in Physical Education (EAADEF) in a sample of 1155 students of Compulsory Secondary Education and Baccalaureate in the Region of Extremadura (Spain), where 48.8% are boys and 51.2% are girls and with an average age of 14.71 years. The Kolmogorov-Smirnov test was used to validate the assumption of normality in the statistical analysis. When this assumption was not met, nonparametric tests were used. The U-Mann Whitney statistical test was used to examine possible sex-related differences in the scores of both the ECIPQ and EAADEF dimensions. The relationship between the scores of each of the dimensions of the questionnaires was also examined using Spearman's Rho test. Finally, Cronbach's alpha was used to assess internal consistency. This study has shown that there is a high correlation in variables such as female sex, urban environment and high school with respect to the ECIPQ and the EAADEF. It would be interesting to develop preventive measures against cyberbullying, as well as to educate in the use of new technologies, in emotion management and inclusion. It should not be forgotten that it is necessary to involve the whole educational community and the family.

Keywords: cyberbullying; ECIPQ; EAADEF; physical education; disabilities; new technologies; educational stage.

Resumen

El uso de las tecnologías de la información ha aumentado exponencialmente en los últimos años y con él las consecuencias de un mal uso. Desde hace casi dos décadas, la atención se centra en el ciberacoso, ya que puede afectar a personas de cualquier edad que tengan acceso a la tecnología. Este comportamiento, que es una extensión del acoso escolar, puede llegar a ser perjudicial para la salud, el desarrollo individual y el rendimiento académico. Teniendo en cuenta que las clases de Educación Física son el escenario ideal para combatir el ciberbullying a través de la educación, el objetivo de este estudio es conocer la asociación entre el Cuestionario del Proyecto Europeo de Intervención en Ciberbullying (ECIPQ) y La Escala de Actitudes hacia los Estudiantes con Discapacidad en Educación Física (EAADEF) en una muestra de 1155 estudiantes de Educación Secundaria Obligatoria y Bachillerato de la Comunidad Autónoma de Extremadura (España), donde el 48.8% son chicos y el 51,2% son chicas y con una edad media de 14.71 años. Para validar el supuesto de normalidad en el análisis estadístico se utilizó el test de Kolmogorov-Smirnov. Cuando no se cumplió este supuesto, se utilizaron pruebas no paramétricas. Se utilizó la prueba estadística U-Mann Whitney para examinar las posibles diferencias

relacionadas con el sexo en las puntuaciones de las dimensiones ECIPQ y EAADEF. También se examinó la relación entre las puntuaciones de cada una de las dimensiones de los cuestionarios mediante la prueba Rho de Spearman. Por último, se utilizó el alfa de Cronbach para evaluar la consistencia interna. Este estudio ha demostrado que existe una alta correlación en variables como el sexo femenino, el entorno urbano y el nivel de estudios secundarios con respecto al ECIPQ y al EAADEF. Sería interesante desarrollar medidas preventivas contra el ciberbullying, así como educar en el uso de las nuevas tecnologías, en la gestión de las emociones y en la inclusión. No hay que olvidar que es necesario implicar a toda la comunidad educativa y a la familia.

Palabras clave: ciberacoso; ECIPQ; EAADEF; Educación Física; discapacidad; nuevas tecnologías.

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Introduction

According to the most recent studies from various scientific fields, the use of information technology has increased exponentially in recent years (Garrido & García-Collantes, 2022). In 2020, there were 4,540 million internet users worldwide, or 59% of the world's population, up 7% from 2019 («Digital 2020», 2020). In addition, the number of social network users worldwide has increased by more than 13% year over year to 4.2 billion (490 million new users), with more than 53% of all people on the planet using social networks («Digital Report 2021», 2021). Around one out of every three internet users worldwide are children and adolescents under the age of 18, and they are using the internet at younger and younger ages. Furthermore, the use of mobile devices, such as smartphones and tablets, enables continuous online activity (UNICEF, 2019). This context demonstrates how technological advancement has altered the world in which we live, but it also has negative effects on it that make children and teenagers more vulnerable to risks when using technology, especially the internet, such as access to inappropriate content, cyberbullying, improper use of private information, grooming, etc. (Orosco & Pomasunco, 2020).

Since 2004, cyberbullying as an extension of bullying has received more research attention, with an emphasis on the determinants and results of victimization and perpetration (Sadagheyani & Tatari, 2021). Measures of wellbeing such as depression, social support, and self-esteem have been incorporated in the outcomes (Holmgren et al., 2020). Cyberbullying can impact people of any age who have access to technology and is described as "an hostile, intentional act carried out by a group or individual, using electronic forms of interaction, repeatedly and over time against a victim who cannot easily defend him or herself" (p. 376 (Smith et al., 2008). In this sense, three different behaviors can constitute participation in cyberbullying: victimization (receiving harmful electronic communications), perpetration (starting harmful electronic communications that another person would be compelled to avoid), and observers (observing cyberbullying) (Chocarro & Garaigordobil, 2019). With social media, where functions like "like" and "share" make it simple to change roles, the distinctions between victims, perpetrators, and spectators may become especially hazy (Chan et al., 2021). In addition a study involving focus groups with adolescents aged 11-18 years suggested that social networks pose a threat to well-being, are a common setting for cyberbullying, and can create addiction (O'Reilly et al., 2018). In comparison to teens and young adults who did not use social media, researchers found that those who did were 5.5 times more likely to be victims of cyberbullying (Chiza-Lozano et al., 2021). Craig and colleagues (Craig et al., 2020) discovered that social media use, particularly problematic social media use, was strongly linked with both cyberbullying victimization and perpetration in a recent study of adolescents in 42 countries. In addition, the importance of a number of individual differences in predicting the degree to which a person may be a victim of cyberbullying on social media has also highlighted (Lanzillotti & Korman, 2020).

With regard to the aforementioned, it has been noted that a number of traits, such as emotional and interpersonal issues, poor social skills, and a narrower network of friends, contribute to the risk that students with disabilities would be victimized (Kathy, 2021). "A person with a disability is a person

who, due to an impairment of a bodily structure or function (physical, sensory or intellectual), has limitations when it comes to activities that would be normal" (Iñiguez et al., 2017). People with disabilities can experience harassment in the school setting even more than students who do not have a disability (Kathy, 2021), in fact, disability is a risk factor for being a victim of bullying (Suárez et al., 2020), despite the fact that 59% of those with intellectual disability don't use cell phones and, if they do, the vast majority of them are used for phone calls, 80% don't use the Internet, and when they do, the majority of them use it to look for information (Begara et al., 2019). However, even if these people do not have social networks or barely use them, that does not prevent other classmates from taking pictures of them and sharing the images through digital platforms, even hiding through anonymity and having impunity over their acts (López & Sánchez, 2019). On the other hand, students with disabilities are also more likely to take part in bullying as helpers, such as joining in on bullying that another student has started, and as defenders, such as attempting to defend a victim or telling the bully to stop or seeking assistance (Malecki et al., 2020).

In the end, cyberbullying can have a more serious effect on mental health than conventional bullying because of its inherent characteristics (Gómez & Correa, 2022). The adolescent's issues from the school environment carry over to and persist online, considered a global phenomenon of the first magnitude in the school context (Gasso et al., 2018), due to the inadequate management of social networks by students (Vega et al., 2020). The perpetrator can remain unidentified, and the information spreads widely and quickly gains a wide audience (Hutson et al., 2018). The inability to escape the aggressions that can be recreated at any moment and through a virtual scenario makes the victim more vulnerable and worsens the victim's loss of control over his or her life (Gómez & Correa, 2022). Cyberbullying can also have additional negative effects, including depression, substance misuse, sleep difficulties, physical ailments, poor academic performance, and dropping out of school, with suicide being the most severe one (Ordóñez, 2021). In this regard, cyberbullying is a worldwide issue that calls for increased international cooperation to solve. UNICEF stated that "no child is absolutely safe in the digital world" (UNICEF, 2019). Since homes are where children between the ages of 5 and 17 are most likely to connect to the Internet, it is essential for families to take action against this kind of behavior and to monitor what their minor children do on social networks and other digital platforms (Machuca Rubio & Cabrera Duffaut, 2020). Additionally, physical education (PE) classes are the ideal setting for combating cyberbullying through education (Alcántara & Ruiz, 2022), as they encourage greater interaction between students with and without disabilities, encourage active and effective participation from all students, and foster positive relationships (Fernández et al., 2019). To fully achieve acceptance and inclusion, however, tangible and ongoing measures must be planned for and put into place, and these actions must be tailored to students with disabilities.

The European Cyberbullying Intervention Project Questionnaire (ECIPQ) is one tool used to assess cyberbullying (Del Rey et al., 2015). The ECIPQ consists of 22 items broken down into two dimensions (victim and bully) that gauge several elements of cyberbullying, such as its frequency, persistence, and intensity. Additionally, it has questions that gauge the victims of cyberbullying's behavioral and emotional responses. The Spanish version is also accessible (Ortega et al., 2016). It should be stressed, nevertheless, that no tool can entirely capture the intricacy of cyberbullying, therefore additional measures could be required to fully comprehend this issue. The scientific literature is not clear regarding the results on cyberbullying. There are studies where no significant differences were found between gender, educational level and school context (Varela et al., 2014; Cortés, 2020). Also, due to the various techniques employed, most research cannot conclusively show how victim and aggressor conditions are distributed by sex. However, recent studies show that girls are more likely to be bullies than boys and experienced cyberbullying to a greater extent than boys (Garaigordobil et al., 2019; Thumronglaohapun et al., 2022). In terms of educational context, another study showed that urban schools had more aggressors and that rural schools have a higher percentage of victims of verbal bullying, exclusion and cyberbullying (Vilela, 2022). In the educational context, there is also no consensus. A recent study showed that the older the age, the higher the likelihood of cyberbullying (Redondo, 2022), however another research highlighted that adolescents aged 13-15 are the most likely to provoke cyberbullying behaviours (Ordóñez & Prado, 2019).

On the other hand, , the Spanish version of the Attitudes towards Students with Disabilities in Physical Education Scale (EAADEF) is considered a viable and reliable tool to measure attitudes towards students with disabilities in PE in the Spanish context (Iñiguez et al., 2017). This new scale is a succinct and simple-to-use tool that: (i) would assist researchers in identifying the causes and effects of attitudes toward including students with disabilities in physical education; and (ii) would provide PE teachers with a tool to assess the use of an inclusive methodology (Iñiguez et al., 2017) and disability being a risk factor for cyberbullying and in view of the scarcity of literature on the subject, for this reason, the purpose of this study is to determine the association between ECIPQ and EAADEF scores, assessing possible associations between cyberbullying behaviors, either as victim or aggressor, and attitudes towards students with disabilities, according to sex, school context and students' level of education.

Materials and Methods

Participants

The sample consisted of 1155 compulsory secondary school and high school students from public and private schools in Extremadura (Spain). A convenient sampling method was used for recruitment. Table 1 presents the sociodemographic data of the participants. According to data provided by the National Statistics Institute (INE) in its Census Report (www.ine.es), the population between 12 and 18 years of age in the Autonomous Community of Extremadura, (Spain), amounts to 74,992 individuals. The research had a sample of 1,155 participants, exceeding the minimum required of 383 subjects to reach a Confidence Level of 95% and maintain a margin of error of $\pm 5\%$.

Table 1

The sample's sociodemographic composition (N = 1155)

Variables	Categories	N	%
Sex	Male	564	48.8
	Female	591	51.2
Educational Stage	CSE	877	75.9
	Baccalaureate	278	24.1
Center Environment	Rural	368	31.9
	Urban	787	68.1
Center type	Public	869	75.2
	Private	286	24.8
Province	Cáceres	627	54.3
	Badajoz	528	45.7
Variables		M	SD
Age		14.71	1.58

Note: CSE: compulsory secondary education, N: number, %: percentage, M: mean, SD: standard deviation

Instruments

To collect sociodemographic characteristics, analyze the phenomenon of cyberbullying among students and attitudes towards students with disabilities in Physical Education, a compendium of measurement instruments composed of three main questionnaires, integrated into a single instrument self-reported by the participants, was used.

Sociodemographic Questionnaire: In order to obtain the sociodemographic characteristics of the participating sample, a preliminary questionnaire was developed that included questions on sex,

educational stage, school environment and type of center the students attended. The sociodemographic questions were structured mainly as categorical variables, allowing clear and direct dichotomous responses to facilitate analysis of the sample composition.

Involvement in cyberbullying: In addition, in order to assess the possible involvement in cyberbullying, we have used the Spanish version of the *European Cyberbullying Intervention Project Questionnaire* (ECIPQ) (Ortega-Ruiz et al., 2016) composed of 22 items distributed in two factors: cyberaggression (11 items) and cybervictimization (11 items) was also administered. Each response of the questionnaire receives a score based on a Likert scale (0-4) where 0 denotes never and 4 denotes always. The authors of the instrument reported reliability indices from Cronbach's alpha coefficient of $\alpha=0.88$ for the cyberaggression dimension, while victimization obtained an index of $\alpha=0.87$.

Attitudes towards disability: Finally, the *Attitudes towards students with disabilities in physical education questionnaire* (EAADEF) was used to measure students' attitudes about disability during physical education classes (Iñiguez Santiago et al., 2017). The four items of the EAADEF, validated in Spanish, are preceded by the sentence "During PE and in relation to students with disabilities..." and are scored on a Likert-type scale from one (strongly disagree) to five (strongly agree). A more positive mindset was reflected in higher scores because the items were reversed. Moreover, the unifactorial structure was corroborated by the psychometric characteristics of the EAADEF questionnaire, which also provides satisfactory reliability values by Cronbach's alpha ($\alpha>0.79$) (Iñiguez et al., 2017).

Procedure

The database of the Consejería de Educación y Empleo de la Junta de Extremadura (Regional Ministry of Education and Employment of the Regional Government of Extremadura) was accessed to find out which centers teach Physical Education for Compulsory Secondary Education up to Baccalaureate (from 12 to 18 years of age). Physical Education teachers were contacted by e-mail, informed of the objective of the study and provided with the informed consent of the parents. If they had the school's authorization and wished to collaborate with the study, they were invited to schedule a visit by the researcher to administer the questionnaire to the students once the teacher had collected the duly completed informed parental consents. A total of 12 schools participated (6 schools in the province of Cáceres and 6 schools in the province of Badajoz). Initial access to the questionnaire was provided during Physical Education class time to the students (who, in addition to having informed parental consent, showed voluntary interest in participating in the study) through tablets connected to a portable router, both resources owned by the research team. Each item was explained to them one by one so that they would not have any doubts when answering. In order to prepare the data for subsequent blinded analysis by a second researcher, the researchers sorted, cleaned and anonymized the data once all the questionnaires had been collected. The data were collected between February and May 2024. A protocol adhering to the guidelines of the Declaration of Helsinki was approved by the Biosafety and Bioethics Committee of the University of Extremadura in Spain (Registration Code 72/2022).

Statistical Analysis

The data was processed using IBM SPSS statistical software for MAC, version 23 (Chicago, IL, USA). First, the assumption of normality in the data distribution of the continuous variables was investigated using the Kolmogorov-Smirnov test. It was discovered that this presumption was false, hence nonparametric statistical tests were chosen. The U-Mann Whitney statistical test was employed to examine any potential sex-related differences in the scores of the dimensions on both the ECIPQ and the EAADEF. The link between the scores of each of the questionnaires' dimensions was also examined using Spearman's Rho test. The thresholds suggested by Mondragón-Barrera (Barrera, 2014) were used to interpret the correlation coefficients: from .01 to .10 for low correlation, from .11 to .50 for medium correlation, from .51 to .75 for considerable correlation, from .76 to .90 for very high correlation, and from .91 to 1.00 for perfect correlation. Finally, Cronbach's alpha was utilized to evaluate each instrument's dependability. In order to interpret the reliability test results, we used Nunnally Bernstein's (Nunnally & Bernstein, 1994) values of .70 (poor), .71 to .90 (good), and $>.91$ (excellent) as a guide.

Results

Table 2 displays both the descriptive data and the differences found in the two ECIPQ dimensions according to sex, school setting, and the students' educational stage. Females often score higher on the ECIPQ's victimization component and similarly on the second, although there were no statistically significant sex differences in either dimension (ECIPQ-Victim and ECIPQ-Abuser). Likewise, regardless of the school environment, the scores of both dimensions did not show significant differences, despite the fact that students from urban areas had a greater dispersion in the responses of the first dimension of the ECIPQ. As opposed to CSE students, individuals who were Baccalaureate showed higher scores on both aspects, albeit only the facet pertaining to abusive behaviors indicated a significant difference.

Table 2

Descriptive results ECIPQ according to sex, center environment and educational stage

Item	Sex			Center Environment			Educational Stage		
	Female Me (IQR)	Men Me (IQR)	<i>p</i>	Rural Me (IQR)	Urban Me (IQR)	<i>p</i>	CSE Me (IQR)	Baccalaureate Me (IQR)	<i>p</i>
1.ECIPQ-Victim	1.09 (0.36)	1.18 (0.36)	.09	1.10 (0.27)	1.10 (0.36)	.59	1.09 (0.36)	1.18 (0.36)	.71
2.ECIPQ-Abuser	1.00 (0.18)	1.00 (0.18)	.45	1.00 (0.18)	1.00 (0.18)	.07	1.00 (0.18)	1.09 (0.27)	<.01**

Note: Me = median value; IQR = interquartile range. Differences are significant at ** $p < 0.01$; * $p < 0.05$. Each score is obtained is based on a Likert scale (0–4): 0 is “Never” and 4 “Always”.

Similarly, the descriptive results of the different items and the total score of the EAADEF are shown, as well as the differences obtained between the different sex groups, school environment and educational stage (Table 3). In terms of sex, significant differences were obtained in all the items, as well as in the total score of the questionnaire, with female students showing better attitudes towards disability. In the case of the center's environment, no differences were obtained along the items, but differences were obtained in the total score, with better scores being obtained by those students who belonged to rural areas. Finally, the educational stage does not seem to be an indicator that influences attitudes towards disability, since the responses obtained are very similar for both the items and the total scores.

Table 3

Descriptive results EAADEF according to sex, center environment and educational stage

Item	Sex			Center Environment			Educational Stage		
	Female Me (IQR)	Men Me (IQR)	<i>p</i>	Rural Me (IQR)	Urban Me (IQR)	<i>p</i>	CSE Me (IQR)	Baccalaureate Me (IQR)	<i>p</i>
1. I prefer not to associate with people with disabilities	1 (0)	1 (1)	<0.01**	1 (1)	1 (1)	0.29	1 (1)	1 (1)	0.24
2. I would avoid doing class work with a person with a disability	1 (0)	1 (1)	<0.01**	1 (1)	1 (1)	0.27	1 (1)	1 (1)	0.56
3. I would avoid a person with a	1 (0)	1 (1)	<0.01**	1 (1)	1 (1)	0.07	1 (1)	1 (1)	0.40

disability for my team.

4. I would not propose a person with a disability as captain of my team.

EADEF	4 (2)	5 (5)	<0.01**	4 (3)	5 (4)	0.04*	4 (4)	4 (3)	0.16
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Note: Me = median value; IQR = interquartile range. Differences are significant at ** $p < 0.01$; * $p < 0.05$. Each score obtained is based on a Likert scale (1–5): 1 is “Strongly disagree” and 5 “Strongly agree”.

The possible correlations between the ECIPQ dimensions (victim and abuser) and the EAADEF final score were also analyzed (Table 4), offering the same correlations according to the sociodemographic variables previously inspected. In general, both dimensions of the ECIPQ showed significant, direct and average correlations, with higher correlations for the dimension related to the abuser. Similarly, the results shown by sex expressed mean, significant and direct relationships, with the female sex showing greater associations in both dimensions. On the other hand, students from rural environments do not show correlations with the first dimension (victim) of the ECIPQ, but do show a direct, significant and average association with the second dimension. On the other hand, the students from urban areas show direct, direct and significant mean associations for both dimensions (victim and abuser). Finally, regardless of the educational stage of the students, the correlations are characterized by being direct, medium and significant; however, high school students show greater associations in both dimensions.

Table 4

Correlations between the EAADEF score and the ECIPQ characteristics, broken down by the student's sex, center environment and educational level

ECIPQ Dimensions	EAADEF ρ (p)	Sex		Center Environment		Educational Stage	
		Men	Women	Rural	Urban	CSE	Baccalaureate
		Me (IQR)	Me (IQR)	Me (IQR)	Me (IQR)	Me (IQR)	Me (IQR)
1) ECIPQ-Victim	0.15 (<0.01)**	0.14 (<0.01)**	0.20 (<0.01)**	0.01 (0.06)	0.16 (<0.01)**	0.14 (<0.01)**	0.15 (<0.01)**
2) ECIPQ-Abuser	0.21 (<0.01)**	0.21 (<0.01)**	0.25 (<0.01)**	0.15 (<0.01)**	0.23 (<0.01)**	0.21 (<0.01)**	0.22 (<0.01)**

Note: Differences are significant at ** $p < 0.01$; * $p < 0.05$.

Exploration of the correlations between individual EAADEF questionnaire items and their overall rating with the ECIPQ total score reveals significant and direct relationships. Specifically, both the individual items and the EAADEF total score correlate significantly with the ECIPQ scores. When analyzing the differences by sex, it is observed that women present higher correlations in the items related to avoiding doing class work with people with disabilities ($\rho = 0.16$) and reluctance to propose a person with a disability as a team captain ($\rho = 0.22$), as well as in the final EAADEF rating ($\rho = 0.23$). On the other hand, the context of the educational center (rural or urban) also shows significant associations, with urban students exhibiting higher correlations in all dimensions, with the exception of the item about avoiding doing class work with people with disabilities, where the differences are not as marked. Finally, Baccalaureate students present higher associations ($\rho_{\text{item2}} = 0.16$; $\rho_{\text{item3}} = 0.19$; $\rho_{\text{item4}} = 0.23$) compared to Compulsory Secondary Education (ESO) students in all items, except for the one related to the preference of not relating to people with disabilities ($\rho = 0.14$), where Compulsory Secondary Education students showed a higher association ($\rho = 0.17$) than Baccalaureate students ($\rho = 0.14$).

Table 5

Correlations between EAADEF items and ECIPQ score, according to sex, center environment and educational stage of the student body

Item	ECIPQ ρ (p)	Sex		Center Environment		Educational Stage	
		Female ρ (p)	Men ρ (p)	Rural ρ (p)	Urban ρ (p)	CSE ρ (p)	Baccalaureate ρ (p)
1. I prefer not to associate with people with disabilities	0.16 (<0.01)**	0.14 (<0.01)**	0.20 (<0.01)**	0.15 (<0.01)**	0.16 (<0.01)**	0.17 (<0.01)**	0.14 (<0.01)**
2. I would avoid doing class work with a person with a disability	0.14 (<0.01)**	0.16 (<0.01)**	0.15 (<0.01)**	0.15 (<0.01)**	0.15 (<0.01)**	0.12 (<0.01)**	0.16 (<0.01)**
3. I would avoid a person with a disability for my team.	0.16 (<0.01)**	0.16 (<0.01)**	0.19 (<0.01)**	0.16 (<0.01)**	0.17 (<0.01)**	0.14 (<0.01)**	0.19 (<0.01)**
4. I would not propose a person with a disability as captain of my team.	0.17 (<0.01)**	0.22 (<0.01)**	0.16 (<0.01)**	0.19 (<0.01)**	0.20 (<0.01)**	0.14 (<0.01)**	0.23 (<0.01)**
EAADEF	0.18 (<0.01)**	0.23 (<0.01)**	0.18 (<0.01)**	0.19 (<0.01)**	0.21 (<0.01)**	0.17 (<0.01)**	0.20 (<0.01)**

Note: Differences are significant at ** $p < 0.01$; * $p < 0.05$.

Finally, the Cronbach's alpha values for the ECIPQ dimensions were 0.874 for the victimization dimension and 0.879 for the abuser factor, therefore, they are considered satisfactory. In addition, the EAADEF value can also be considered as excellent (Cronbach's Alpha = 0.919).

Discussion

The aim of this study is to understand the association between cyberbullying and attitudes towards students with disabilities. For this purpose, the ECIPQ and the EAADEF were used as measurement instruments, in addition to sociodemographic variables in secondary and baccalaureate students in the region of Extremadura.

First, there were no significant differences between males and females in the study with respect to the ECIPQ, which is in line with previous research (Cortés, 2020) demonstrating that cyberbullying can be committed equally and without overt sex inequalities. Most research cannot conclusively indicate how victim and offender conditions are distributed by sex because of the diverse techniques used (Tajahuerce et al., 2018). However, recent studies reveals that girls experienced cyberbullying at a higher rate than males (Garaigordobil et al., 2019; Thumronglaohapun et al., 2022) and are more likely to be agresors (Lee & Shin, 2017; Palermi et al., 2017). Females, those who had previously experienced Sex discrimination, and those who had dealt with male transgressors were more likely to assume that others would stand up for them if they were victims of sex-based cyberbullying. In addition, participants' expectations of not supporting the cyberbully and supporting the victim of sex-based cyberbullying increased as they became more adept at perceiving and understanding emotions (Herry & Mulvey, 2022). On the other hand, there were no differences in the educational environments (rural or urban), even though students from metropolitan regions showed more variation in their victimization responses. In neither dimension, Rodríguez-Álvarez et al. (Rodríguez-Álvarez et al., 2022) discovered

any significant changes. There is no difference in the prevalence of victimization overall because victims can experience multiple forms of bullying simultaneously, but there is when we look at the percentages separately, according to a study (Bergmann & Baier, 2018). Another study, however, indicated that urban schools had more students who are aggressors and that rural schools have a higher rate of verbal bullying, exclusion, and cyberbullying victims (Vilela, 2022). Educational stage was the final ECIPQ variable to be examined. Although there were only statistically significant differences in abusive behaviors, baccalaureate students had the highest scores in both categories. Thumronglaohapun et al. (2022) observed that girls in particular in their last academic years are more aware of the issue and more inclined to engage in cyberbullying behaviors supports this. According to another study, cyberbullying is common among baccalaureate students and is linked to perceived stress because students who engage in more victimization and perpetration behaviors exhibit higher levels of stress (Larzabal et al., 2019). In this sense, it is underlined that as students get older, the likelihood of becoming a cybervictim declines each year, but the likelihood of becoming a victim of cyberbullying tends to rise with age and older kids are more likely to make threats against others online (Redondo, 2022). But according to earlier research, adolescents in secondary school, or those between the ages of 13 and 15, are the ones who engage in these behaviors most frequently (Ordóñez & Prado, 2019).

Second, with respect to the EAADEF, significant differences were obtained, with female students showing better attitudes towards disability in terms of sex in all items, as well as in the total score of the questionnaire. Generally, girls are more accepting of pupils with disabilities (Rojo-Ramos et al., 2023). Other prior research, however, have shown that women are more likely than men to reject those with disabilities (Sáez-Gallego et al., 2020). No changes were found in terms of the center's environment along the items, but there were variances in total scores, with the pupils who went to rural areas achieving higher scores. In this sense, a recent study indicated that students from rural schools had better attitudes than those from urban schools (Rojo-Ramos et al., 2022), in contrast to more than a decade ago when there were no distinctions in the classroom environment (Parra & Rojas, 2012). Finally, in the educational stage, no significant differences were discovered, as reported in 1997 (Loovis & Loovis, 1997), but attitudes toward disability in PE are better as people get older and therefore enroll in higher grades (Sáez-Gallego et al., 2020), as well as when there has been prior contact with people with disabilities, particularly if that contact is with a family member (Abellán et al., 2018).

Finally, the correlations between the ECIPQ and the EAADEF were analyzed. In general, both dimensions of the ECIPQ showed significant correlations with the EAADEF, but especially the second one (that of the abuser). Specifically, as mentioned above, the female sex is the one that shows the highest associations in both dimensions, i.e., they are both cybervictims and cyberabusers. This may be due to the fact that girls are more likely than boys to be targets of cyberbullying (Garaigordobil et al., 2019; Thumronglaohapun et al., 2022), with the assumption that other girls will stand up for them because of their sex (Herry & Mulvey, 2022). However, girls are also more likely to engage in cyberbullying themselves (Lee & Shin, 2017; Palermi et al., 2017), as their bullying tendencies are based on "indirect" or "relational" aggression, which entails promoting exclusion from the group and undermining reputation (Navarro, 2016). Regarding the educational setting, it has been demonstrated that students from rural areas do not correlate with the first dimension of the ECIPQ. This may be because of a lack of resources or even because these students are not fully included in the classroom because they are more resistant to a model change (Espada et al., 2021). It is obvious that if the requirements of such vulnerable groups as individuals with disabilities are not met, it will be impossible to attain high-quality inclusive education (González & Espada, 2020). However, as was already mentioned, a recent study found that pupils in rural as opposed to urban schools showed more positive attitudes toward their peers with impairments (Rojo-Ramos et al., 2022). This may be because, despite the correlations between the two dimensions in urban areas, the rural dimension predominates because people tend to share more spaces with one another, such as homes with family and friends, than they do in urban areas, and because it is not as continuous harassment as it can be in the urban area. Therefore, metropolitan areas are more empathetic due to the knowledge and acceptance of diversity and more abusive due to the fact that the prevalence is higher when the role of the aggressor is taken into account (Álvarez-García et al., 2011). Last but not least, the correlation between CSE and baccalaureate may be

partially attributed to the fact that teenagers access the Internet at a younger age (Garrido & García, 2022; UNICEF, 2019). However, this comes with its own set of advantages and disadvantages, including the ability to be more informed and communicate with people even if they are located in a different part of the city, the country, or the world, as well as the ability to hide behind a screen, be anonymous, create false profiles, and as a result, be a victim of cyberbullying (Gómez & Correa, 2022; Hutson et al., 2018; Ordóñez, 2021; Orosco & Pomasunco, 2020). Though baccalaureate students, who are older and more cognizant of the issue but also more susceptible to cyberbullying, have the largest correlation (Larzabal-Fernández et al., 2019; Redondo, 2022; Thumronglaohapun et al., 2022).

Practical Implications

To help prevent cyberbullying by outlining clear guidelines and expectations for technology use, this study will give information on the status of cyberbullying among students with disabilities in physical education classes (Gunnlaugsson et al., 2020). In order to accomplish inclusive education (González & Espada, 2020), the guidelines should meet the requirements of the group with disabilities and stress proper behavior as well as the repercussions of breaking the rules (Azeez et al., 2021). In order to ensure that all students feel valued and respected, it is crucial to establish a safe and welcoming learning environment (Machado, Caridade, Araújo, & Faria, 2022). In addition, physical education (PE) classes are the ideal environment for preventing cyberbullying through education (Alcántara & Ruiz, 2022) because they promote increased interaction between students with and without disabilities, active and effective participation from all students, and the development of strong relationships (Fernández et al., 2019). It is also important to promote empathy as a protective variable against bullying (Zych et al., 2019), which promotes group cohesion in general and to improve school climate (Lázaro et al., 2019). It is furthermore recommended to work on the KIVA method (Del Mar, 2017), i.e. to provide training on the real functioning of group dynamics in bullying situations. And in this sense, it is essential to work on it in the subject of Physical Education due to its content on physical condition, self-image, self-perception, control of emotions, empathy, group cohesion, etc (Rodríguez et al., 2015).

Limitations and future lines of research

This study has many obstacles, just like other studies. First off, given that the sample consisted solely of Extremadura CSE and baccalaureate students, there are a number of variables that could have affected the findings, including the answers provided to the sociodemographic questions and the replies to the instruments evaluated. Additionally, non-probabilistic convenience sampling was used to choose the participants, thus care should be taken when presenting the results. Finally, it should be mentioned that even with the wealth of knowledge about social media, new technology, and cyberbullying, the proportion of kids engaging in this behavior is rising and doing so at younger ages. Therefore, potential future lines of research include expanding the sample to a national level and in all educational stages, learning the aggressors' motivations for abusing their victims (such as family relationships or problems, low self-esteem, a desire for attention, stress, etc.), learning the reasons why bystanders do not intervene when they witness abuse, train teachers and give them the appropriate tools and resources so that there is a good atmosphere in class including all students and with the necessary adaptations, educate students from primary education to high school in relation to the management of emotions, new technologies and social networks, the advantages and disadvantages they have, and, of course, the influences that can be exerted on a person when abused so that everyone is aware and internalize how harmful they can be for mental health and in their day to day life in general. As a result, it's crucial to come to an agreement with other researchers from various communities in order to gather all the necessary data. Additionally, all educational agents must be involved, including family members since the majority of this practice occurs at home, in order to completely eliminate cyberbullying and other forms of abuse and ensure the inclusion of all students.

Conclusions

This study has demonstrated the correlation between the ECIPQ and the EAADEF. It has shown a high correlation in the two dimensions of the ECIPQ with the female sex, with the urban area and with

baccalaureate, and to a lesser extent, mainly in a single dimension with the rural environment and CSE. Taking all this into account, it will be necessary to act with preventive measures that are adapted to all students, achieving full inclusion, informing them of the advantages, but above all of the disadvantages of social networks and their possible consequences on health. It should be borne in mind that it is necessary to involve the entire educational community and families.

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