



ORIGINAL SCIENTIFIC ARTICLE

CHILDREN'S ATTITUDES TOWARDS INCLUSION OF VISUALLY IMPAIRED STUDENTS IN PHYSICAL EDUCATION CLASSES: GENDER DIFFERENCES

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Abstract

Study purpose. The study purpose was to investigate gender differences in children's attitudes toward the inclusion of a student with visual impairment in physical education classes.

Materials and methods. The study sample comprised 419 able-bodied primary school students in 6th to 9th grade (boys, $n = 204$, mean age 13.23 ± 1.17 years; girls, $n = 215$, mean age 13.08 ± 1.19 years). A modified version of the standardized attitudinal questionnaire CAIPE-R for the inclusion of visually impaired (VI) students was used as a research method. The internal reliability of CAIPE-R was measured using Cronbach's α . The Shapiro-Wilk test was used to assess the normality of sample distribution. The non-parametric Mann-Whitney U-test was used to assess differences between boys and girls, and the Wilcoxon Signed-Rank test assessed differences between general and sport-specific attitudes.

Results. Boys presented rather neutral or indifferent (mean scores 3.19, 3.44 points) attitudes, and girls had slightly positive (mean scores 3.59, 3.74 points) attitudes toward inclusive physical education (PE). Girls, compared to boys, expressed more positive general ($U=16786$, $p=0.000$) as well as sport-specific ($U=16586$, $p=0.003$) attitudes towards the inclusion of the VI student in PE classes. Both groups of children declared more positive general attitudes than sport-specific attitudes towards the inclusion of VI students (boys, $Z=-4.230$, $p=0.000$; girls, $Z=-3.015$, $p=0.003$).

Conclusions. Girls expressed more positive general and sport-specific attitudes towards the inclusion of VI students in PE classes than boys. Boys' attitudes were only neutral or indifferent, and girls' attitudes were only moderately positive. Both genders declared more positive general attitudes towards the inclusion of VI students in PE classes compared to sport-specific attitudes. Taking into consideration the above, to find the most appropriate solutions as regards the inclusion of students with different kinds of disabilities in PE classes, it is necessary to learn more about the attitudes towards inclusion from students, teachers, and school management.

Keywords: girls, boys, inclusive physical education, visual impairment, general attitudes, sport-specific attitudes.

Introduction

Strategy 2020 in the European Union establishes that fighting against social exclusion is the main objective (European Commission, 2010), seeking to develop innovative programs designed to face discrimination toward people with disabilities, although substantial improvements are still needed toward the inclusion of students with disabilities into physical education (PE) classes (Klavina & Kudláček, 2011). More and more PE teachers face the reality of teaching these pupils in inclusive physical education (IPE) together with stu-

dents without disabilities (Wang, 2019; Li, Haegele, McKay, & Wang, 2021). IPE includes pupils with disabilities in regular PE classes (Cosier, Causton-Theoharis, & Theoharis, 2013; Theoharis & Causton, 2014; Rogers & Johnson, 2018). IPE supports pupils with disabilities who want to participate in other physical activities before, during, and after school and encourages them to have the same roles and experiences as their peers who do not have a disability (CDC, 2020).

The perspective of individuals with visual impairments (VI), and particularly children with VI, has so far received much less attention than the viewpoints of professionals, and just a few studies focusing specifically on subjective constructions of PE by children with VI (Alves, Haegele, & Duarte, 2018; Haegele & Buckley, 2019). Even though

many pupils with VI had positive experiences in inclusive education, one-third felt lonely or isolated and dissatisfied with their social relationships (Jessup, Bundy, Hancock, & Broom, 2018). Unfortunately, some students were teased or bullied because of their disabilities (Chang, & Schaller, 2002; Brydges, & Mkandawire, 2017). Challenges exist both socially and academically. PE is one of the academic subjects where pupils and students with VI experience isolation and exclusion (Haegele, & Porretta, 2015; Haegele, & Zhu, 2017). These negative experiences appear to be informed by instances of being bullied or ostracized by peers (Haegele, Hodge, Zhu, Holland, & Wilson, 2020), as well as being removed or isolated from activities by physical educators or paraeducators because of perceptions of inability (Alves, Haegele, & Duarte, 2018). Importantly, pupils with VI have reported that physical educators may unknowingly influence social dynamics by communicating ideals of inability while belittling or discriminating against pupils with VI in front of peers without VI (Yessick, & Haegele, 2019; Ruin, Giese, & Haegele, 2021).

One of the variables that significantly influence attitudes towards IPE is a gender. Findings of the Slininger, Sherrill, and Jankowski (2000) study showed that attitudes towards inclusion in PE classes is more positive for females than for males. Authors Loovis and Loovis (1997) utilized a One-Group Pretest-Posttest Design and the Children's Attitude Toward Handicapped Scale (Rapier, Adelson, Carey, & Croke, 1972) to measure attitudes of 430 elementary school pupils. The disability awareness program, among other, consisted of disability simulations such as orientation and mobility when blindfolded. Females in the study showed statistically significant, positive attitude improvement after the training, while the males showed moderate but not statistically significant attitude improvement.

The objective of the study was to investigate the gender differences in the children's attitudes towards the inclusion of a pupil with visual impairment in physical education classes.

Materials and Methods

Study participants

The research sample comprised a total of 419 able-bodied primary school pupils of the 6th to 9th-grade level (6th grade – $n = 69$; 7th grade – $n = 120$; 8th grade – $n = 109$; 9th grade – $n = 94$), representing two schools in the Slovak cities Bratislava and Púchov. 204 boys (mean age 13.23 ± 1.17 years), and 215 girls (mean age 13.08 ± 1.19 years) participated in the questionnaire survey. Able-bodied primary school pupils were informed of the purpose of the research and the procedure for filling out the questionnaire. The questionnaire was completed in the presence of their headteacher and the researchers. In this study, informed consent was obtained from the pupils' legal representatives, i.e., the parents. The research was approved by the Ethics Committee of the Faculty of Physical Education and Sports, Comenius University in Bratislava, Slovakia (No. 10/2019).

Instrument and organisation

A modified version of a standardized diagnostic tool an attitudinal questionnaire entitled CAIPE-R (Children's At-

titude toward Inclusive Physical Education-Revised) (Block, 1995) was used as a primary research method. The CAIPE-R is generalizable to more than one disability label and appears to be a valid and reliable instrument for measuring the attitudes of children without disabilities towards including children with disabilities in PE. Czech version (CAIPE-CZ) of the questionnaire (Kudláček, Ješina, & Wittmannová, 2011) was translated into the Slovak language (Nemček & Bumbera, 2021) and modified for the inclusion of visually impaired pupils (Olekšák, Nemček, & Ruman, 2022). The questionnaire consists of basic questions, where we were informed about each student (gender, age, class, and place of residence). Then a description of a child with VI called Richard was used for the present study. However, we decided not to use a vignette, following a similar format as Kudláček, Ješina, and Wittmannová (2011). The last part of the questionnaire consisted of 12 following statements regarding the inclusion of Richard in PE classes which are shown in Table 1. Six statements were aimed at the inclusion of VI pupils in the PE classroom (general attitude towards IPE; Table 2), and six statements regarding possible adaptations in team sports (soccer) that would promote the inclusion of pupils with VI (sport-specific attitude towards IPE; Table 3). Between two parts of statements, we ask able-bodied pupils the question "Which rules in soccer, where you play with a ball that makes a sound, do you think we could change if someone like Richard played with us?". Each statement was accompanied by a 5-point scale from point 1 (strongly disagree) to point 5 (strongly agree). Overall children's attitudes (general and sport-specific) were calculated by summarizing scores of all 6 statements (total score). A higher mean point score meant a more positive attitude and a lower point score more negative attitude towards the inclusion of pupils with visual impairment in PE classes.

Statistical analysis

The program IBM SPSS Statistics version 23.0 was used for data processing. The data were described using absolute and relative frequencies, including the mean (M) and standard deviation ($\pm SD$). The internal reliability of the modified CAIPE-R was measured using Cronbach's α . A Shapiro-Wilk test was used to assess the normality sample distribution. Shapiro-Wilk showed a significant departure from normality [$W(419) = 0.984, p = 0.000$], therefore the Non-parametric Mann-Whitney U-test (two independent samples) was used to assess differences in children's attitudes between boys versus girls, and the Non-parametric Wilcoxon Signed Rank test (two related samples) was used to assess differences between general and sport-specific attitudes in boys' and girls' groups. The significance level was set at $\alpha \leq 0.05$ (*) and $\alpha \leq 0.01$ (**).

Results

The internal consistency (Cronbach's α) of the modified attitudinal questionnaire CAIPE-R for the inclusion of pupils with VI in PE classes was 0.789 (Table 1). The item-total correlation > 0.7 indicated acceptable correlation (George & Mallery, 2003).

In both groups of able-bodied children, we revealed the most positive attitudes towards the inclusion of a VI pupil

Table 1. Internal consistency of the modified CAIPE-R

Statements	Internal consistency (n=419)		
	Mean score $\pm$ SD	Item-total correlation	Cronbach's α if the item is deleted
1. It would be OK having Richard come to my P.E. class.	3.71 $\pm$ 1.18	0.488	0.769
2. Even Richard cannot play sports very well; he would not slow down the game for everyone.	3.07 $\pm$ 1.21	0.287	0.788
3. If we were playing a team sport such as soccer, it would be OK to have Richard on my team.	2.97 $\pm$ 1.30	0.437	0.774
4. P.E. would be fun if Richard was in my P. E. class.	3.74 $\pm$ 1.12	0.349	0.782
5. If Richard were in my P.E. class, I would talk to him and be his friend.	4.09 $\pm$ 1.01	0.504	0.769
6. If Richard were in my P.E. class, I would like to help him practice and play the games.	3.99 $\pm$ 1.11	0.602	0.759
7. When practicing soccer skills, I cover my eyes with a shade to put myself in Richard's position.	2.88 $\pm$ 1.45	0.421	0.777
8. In soccer, passes that are directed at Richard must not be blocked.	3.13 $\pm$ 1.36	0.396	0.779
9. In soccer I would allow Richard to shoot into an empty goal.	3.36 $\pm$ 1.41	0.402	0.778
10. Richard could stay in the area in front of the goal longer than the rules allow.	3.59 $\pm$ 1.25	0.482	0.769
11. In soccer it would be good if nobody could steal the ball from Richard while passing.	3.03 $\pm$ 1.30	0.456	0.772
12. If Richard got the ball during the game, I would help him with verbal instructions to score a goal, since he is a player of my team.	4.39 $\pm$ 0.99	0.403	0.778
Total score	3.50 $\pm$ 0.68		0.789

Table 2. Gender differences in general attitudes towards IPE

No	Statement	Boys (n = 204)	Girls (n = 215)	Mann-Whitney U-test	
		Mean score $\pm$ SD		U	p
1.	It would be OK having Richard come to my P.E. class.	3.58 $\pm$ 1.22	3.84 $\pm$ 1.14	19182*	0.021
2.	Even Richard cannot play sports very well, he would not slow down the game for everyone.	2.90 $\pm$ 1.31	3.23 $\pm$ 1.08	18464**	0.004
3.	If we were playing a team sport such as soccer, it would be OK having Richard on my team.	2.88 $\pm$ 1.30	3.05 $\pm$ 1.31	20447	0.221
4.	P.E. would be fun if Richard was in my P. E. class.	3.66 $\pm$ 1.16	3.82 $\pm$ 1.07	20277	0.165
5.	If Richard were in my P.E. class, I would talk to him and be his friend.	3.89 $\pm$ 1.06	4.29 $\pm$ 0.91	16957**	0.000
6.	If Richard were in my P.E. class, I would like to help him practice and play the games.	3.74 $\pm$ 1.19	4.22 $\pm$ 0.97	16829*	0.000
The general attitude towards I.P.E.		3.44 $\pm$ 0.74	3.74 $\pm$ 0.73	16786**	0.000

by stating that if he were in their PE class, they would talk to him and be his friends. On the other hand, the least positive attitude was prevalent in both groups in the third statement whereby they declared that they would not want a VI pupil in their team very much. The overall general attitude towards IPE was significantly more positive in girls compared to boys which were supported by four of the six statements (statement no. 1, 2, 5, 6) falling under general attitudes towards IPE (Table 2).

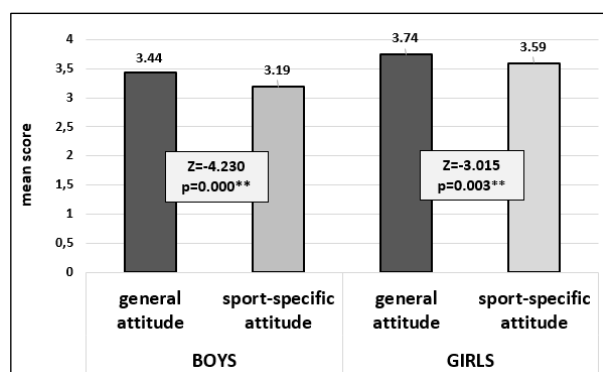
Analysis of the sport-specific attitudes of the children revealed lower rates of positive attitudes towards the inclusion of pupils with VI in PE class in the boys' group compared to the girls' group, across all statements (Table 3). Both

groups of able-bodied children were least likely to agree that when they practice soccer skills, they cover their eyes with a shade to put themselves in the position of a VI pupil. On the other hand, both groups of children according to gender declare the most positive attitude in the twelfth statement, where they agree to the highest extent that if a VI pupil got the ball during the game, they would help him with verbal instructions to score a goal since he is a player of their team. The overall sport-specific attitude towards IPE was significantly more positive in girls compared to boys which were supported by five of the six statements (statement no. 7, 8, 9, 11, 12) falling under sport-specific attitudes towards IPE (Table 3).

Table 3. Gender differences in sport-specific attitudes towards IPE

No	Statement	Boys (n=204)	Girls (n=215)	Mann-Whitney U-test	
		Mean score $\pm$ SD		U	p
7.	When practicing soccer skills, I cover my eyes with a shade to put myself in Richard's position.	2.67 $\pm$ 1.47	3.09 $\pm$ 1.40	18201**	0.002
8.	In soccer, passes that are directed at Richard must not be blocked.	2.84 $\pm$ 1.46	3.40 $\pm$ 1.19	16982**	0.000
9.	In soccer, I would allow Richard to shoot into an empty goal.	3.15 $\pm$ 1.51	3.56 $\pm$ 1.27	18701**	0.008
10.	Richard could stay in the area in front of the goal longer than the rules allow.	3.48 $\pm$ 1.35	3.69 $\pm$ 1.13	20568	0.254
11.	In soccer, it would be good if nobody could steal the ball from Richard while passing.	2.81 $\pm$ 1.36	3.24 $\pm$ 1.21	17991**	0.001
12.	If Richard got the ball during the game, I would help him with verbal instructions to score a goal, since he is a player of my team.	4.21 $\pm$ 1.14	4.56 $\pm$ 0.81	18388**	0.001
Sport-specific attitude towards I.P.E.		3.19 $\pm$ 0.90	3.59 $\pm$ 0.67	16586**	0.000

Summarising the data, boys presented a rather neutral or indifferent general (mean scores 3.44 ± 0.74 points) and sport-specific (mean scores 3.19 ± 0.90 points) attitudes towards IPE. Girls showed slightly positive general (mean scores 3.74 ± 0.73 points) and sport-specific (mean scores 3.59 ± 0.67 points) attitudes towards IPE.

**Fig. 1.** Differences between general and sport-specific attitudes towards IPE

A comparison of general and sport-specific attitudes towards the inclusion of VI pupils in PE revealed significantly more positive general attitudes compared to sport-specific attitudes in both the boys' and girls' groups (Figure 1).

Discussion

The objective of the present study was to investigate the gender differences in the children's attitudes towards the inclusion of a pupil with visual impairment in physical education classes. In general attitudes towards the inclusion of VI in PE class, we found significantly more positive attitudes for girls compared to boys by saying that it would be OK to have a VI pupil in PE class, he would not slow down everyone's play, they would have fun with him and be his friend and help him practice and play games. Several research studies have found significantly more positive attitudes towards the inclusion of pupils with disabilities in groups of girls

compared to boys (Slininger, Sherrill, & Jankowski, 2000; Bossaert, Colpin, Pijl, & Petry, 2011; Hutzler, 2012), and this has been also confirmed by the present research. Girls have more favourable attitudes as well as are more responsible than boys toward peers with disabilities (Tripp, French & Sherrill, 1995; Kalyvas, Koutsouki, & Skordilis, 2011). On the other hand, the results of some studies show the same baseline attitude level towards IPE between both genders (Panagiotou, Evaggelinou, Doulkeridou, Mouratidou & Koidou, 2008).

In the present study also in sport-specific attitudes towards the inclusion of VI in PE class, was revealed significantly more positive attitudes for girls compared to boys. Girls were significantly more likely to cover their eyes while learning motor skills, they were more likely to agree that passes to a VI pupil should not be blocked, that he could shoot into an empty net, and that no one could steal the ball while passing, and they would help him to score with verbal instructions. For boys, the adapted games as a part of IPE are not very challenging because these are too easy, not competitive, and different from that they used to play at general PE classes (Kalyvas & Reid, 2003). Different results were revealed in the research, which found that boys expressed higher mean scores in sport-specific attitudes towards IPE compared to girls, by integrating VI pupils (Cordente-Mesas, González-Vílora, Block, & Contreras-Jordán, 2016). Even though children with VI enjoy sports and physical activity as much as able-bodied children (Pashkevich & Kriventsova, 2017; Fyodorov, Erlikh, Khafizova, & Bendíková, 2019; Foley, Santarossa, Tindall, & Lieberman, 2020), boys of the present study express rather neutral or indifferent attitudes towards the inclusion of VI pupils in PE classes. Kurková and Nemček (2016, 2018) and other authors found, that pupils with VI have a higher percentage of positive attitudes than students who are deaf or hard of hearing in indicators: popularity, importance, students' efforts, and their feelings towards PE classes (Změlíková & Kurková, 2021).

The results of the present study further revealed significantly more positive general attitudes towards IPE compared to sport-specific attitudes. Researchers Mesas, Vílora, and Jordán (2017) have sought to improve the attitudes of able-bodied pupils towards people with VI through a formative

PE program. They conducted an experiment where able-bodied pupils (n=910) simulated VI during eight lessons of PE in the context of play and sports. The results of their study indicated a significant improvement in children's attitudes toward persons with VI. The authors of the research recommend the application of a formative PE program in schools to promote better attitudes towards the inclusion of students and pupils with VI (Mesas, Villora, & Jordán, 2017).

This study has potential limitation. The research would have a significant scientific interest if it were supplemented with the results of children's reactions to the direct inclusion of visually impaired pupils in the process of physical education, not only considering their possible reactions.

Conclusions

The present study's results confirmed that able-bodied girls expressed more positive general attitudes and sport-specific attitudes towards the inclusion of VI pupils in PE than able-bodied boys. Boys' attitudes towards inclusion were only neutral or indifferent and girls' attitudes were only moderately positive. Both girls and boys declared more positive general attitudes towards the inclusion of VI pupils in PE classes compared to sport-specific attitudes. Taking into consideration, the most appropriate solutions to include pupils with different kinds of disabilities in the PE classes, it is necessary to learn more about the attitudes towards inclusion from pupils, teachers, and school management.

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Conflict of interest

The author declares that there is no conflict of interest.

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СТАВЛЕННЯ ДІТЕЙ ДО ІНКЛЮЗІЇ УЧНІВ ІЗ ПОРУШЕННЯМИ ЗОРУ ДО ЗАНЯТЬ ІЗ ФІЗИЧНОГО ВИХОВАННЯ: ГЕНДЕРНІ ВІДМІННОСТІ

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Авторський вклад: А – дизайн дослідження; В – збір даних; С – статаналіз; D – підготовка рукопису; Е – збір коштів

Реферат. Стаття: 9 с., 3 табл., 1 рис., 40 джерел.

Мета дослідження. Метою цього дослідження було вивчення гендерних відмінностей у ставленнях дітей до інклюзії учня з порушенням зору до занять із фізичного виховання.

Матеріали та методи. Досліджувана вибірка включала 419 фізично здорових учнів 6–9 класів загальної початкової школи (хлопчики, $n = 204$, середній вік $13,23 \pm 1,17$ року; дівчинки, $n = 215$, середній вік $13,08 \pm 1,19$ року). Як метод дослідження використовували модифікований варіант стандартизованої ставленнєвої анкети «Ставлення дітей до інклюзивного фізичного виховання» (нова редакція) щодо інклюзії учнів із порушеннями зору. Внутрішню надійність анкети «Ставлення дітей до інклюзивного фізичного виховання» (нова редакція) вимірювали з використанням коефіцієнта альфи Кронбаха. Для оцінки нормальності розподілу вибірки використовували критерій Шапіро-Вілка. Для оцінки відмінностей між хлопчиками та дівчинками використовували непараметричний U-критерій Манна-Вітні, а відмінності між загальними та зумовленими спортивною специфікою ставленнями оцінювали з використанням критерію знакових рангів Вілкоксона.

Результати. Хлопчики показали досить нейтральні або байдужі (середні оцінки 3,19; 3,44 очка) ставлення, а дівчинки мали дещо позитивні (середні оцінки 3,59; 3,74 очка) ставлення до інклюзивного фізичного виховання. Дівчинки, порівняно з хлопчиками, виявили позитивніші загальні ($U = 16786$, $p = 0,000$), а також зумовлені спортивною специфікою ($U = 16586$, $p = 0,003$) ставлення до інклюзії учня з порушенням зору до занять із фізичного виховання. Обидві групи дітей висловили позитивніші загальні ставлення, ніж зумовлені спортивною специфікою ставлення до інклюзії учнів із порушеннями зору (хлопчики, $Z = -4,230$, $p = 0,000$; дівчинки, $Z = -3,015$, $p = 0,003$).

Висновки. Дівчинки виявляли позитивніші загальні та зумовлені спортивною специфікою ставлення до інклюзії учнів із порушеннями зору до занять із фізичного виховання, ніж хлопчики. Ставлення хлопчиків були лише нейтральними або байдужими, а ставлення дівчинок були лише помірно позитивними. Обидва гендери висловлювали позитивніші загальні ставлення до інклюзії учнів із порушеннями зору до занять із фізичного виховання, порівняно із зумовленими спортивною специфікою ставленнями. Беручи до уваги вищевикладене, для знаходження найдоцільніших рішень щодо інклюзії учнів із різного роду інвалідністю до занять із фізичного виховання необхідно більше дізнатися про ставлення до інклюзії з боку учнів, учителів і шкільної адміністрації.

Ключові слова: дівчинки, хлопчики, інклюзивне фізичне виховання, порушення зору, загальні ставлення, зумовлені спортивною специфікою ставлення.

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