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RESEARCH ARTICLE

Predictors of Physical Educators' Attitudes toward including Students with Disabilities in Inclusive Classes

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Abstract:

Background:

In recent years, inclusion has become an educational system implemented in many countries of the world, and teachers' attitudes towards this system are considered one of the most important factors to ensure its success.

Objective:

The purpose of this study was to examine Saudi Arabian physical educators' attitudes toward teaching students with disabilities in inclusive physical education settings, and to examine the factors that affect such attitudes.

Methods:

Physical educators' attitudes ($N = 1,303$; $M_{age} = 40.07$; $SD = 9.30$) were measured using the Arabic version of the Sentiments, Attitudes and Concerns about Inclusive Education-Revised Scale (SACIE-R).

Results:

Despite the moderately positive attitudes developed by physical educators, females reported more positive attitudes toward inclusion than males (2.51 ± 0.39 vs. 2.345 ± 0.36 ; $Z = -8.545$; $p = 0.001$). Regression analysis indicated that three personal factors (*i.e.*, gender, previous participation in training courses to teach students with disabilities, and knowledge of the Saudi educational legislation or policy) were significant predictors of physical educators' attitudes toward such inclusion.

Conclusion:

The findings provide a database that Saudi Arabian educational decision-makers can refer to when designing teacher preparation programs in universities and educational institutions.

Keywords: Inclusive physical education, Students with disabilities, Physical education teachers, Inclusion, Disability, Children with disabilities.

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1. INTRODUCTION

In the last two decades, considerable efforts have been made to develop educational systems and legislation in many countries around the world. One of the most important of these developments is the wide and great interest in sports and physical education (PE) for students with disabilities.

According to Article 30 of the International Convention on Rights for Persons with Disabilities, students with disabilities have the full right to practice sports and PE with their peers without disabilities in inclusive settings [1]. This confirms the importance of having in place a well-prepared process for physical educators to implement inclusive practices in their regular classes [2]. Attitudes of physical educators towards these practices play a critical role in the extent of their successful application on the ground [3 - 5].

It has been argued that the attitudes of physical educators, whether positive or negative towards teaching students with

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disabilities, have a significant impact on the desire of these teachers and their willingness to include students with disabilities in their regular classes [6, 7]. In recent years, numerous studies in many countries have focused on evaluating the attitudes of physical educators towards the inclusion of students with disabilities to ensure the successful and effective application of such inclusive practices [8 - 11]. Although these studies have also made considerable efforts to explore the factors that may affect the attitudes of physical educators towards the inclusion of students with disabilities, more research is needed in this regard [12].

The literature indicates that the attitudes of physical educators toward inclusion can be influenced by several factors. Gender has been identified as one of the factors that most influence physical educators' confidence and attitudes toward inclusion. For example, Alhumaid [13] found that male Saudi physical educators were more confident and willing to provide inclusive practices than female physical educators. In terms of age, Özer *et al.* [14] reported that, in comparison with older teachers, younger teachers are more likely to have more positive attitudes toward inclusive education; however, no significant differences were found between the two groups in the study by Hutzler and Daniel-Shama [15] and more recently Ginevra *et al.* [11]. In terms of the effect of cultural differences on teachers' attitudes toward students with disabilities, Loreman *et al.* [16] reported that such differences were found between teachers' perspectives from Eastern and Western cultures. Therefore, cultural differences may play a critical role in this regard [7]. Furthermore, a study of education teachers in Greece [17] and a more recent study of physical educators in Italy [11] found that secondary school teachers developed negative attitudes towards students with disabilities more than primary school teachers. Meegan and MacPhail [18] suggested that physical educators felt they did not receive enough training on teaching students with disabilities in PE classes during their undergraduate studies, and expressed concerns about their ability in doing such tasks [19]. Hutzler *et al.* [7] in their narrative review study suggested that more research was needed to better establish the impact of instructional training or interventions on the attitudes of physical educators toward including students with disabilities. Gibbs and Bozaid [20] argued that receiving specialized training enabled education teachers to build their knowledge and understanding of inclusive education. Forlin *et al.* [21] found that Hong Kong teachers' confidence in inclusive practices is more likely to be improved when their knowledge of local legislation and policy is increased. This was consistent with a recent local Saudi study by [22], which suggested that knowledge of policies and laws relating to persons with disabilities should be provided to teachers to improve their self-efficacy toward providing inclusive practices.

Despite the efforts made by many of the above studies, there is still a significant lack of studies examining the attitudes of physical educators towards including students with disabilities and the factors that may affect those attitudes in non-Western countries, especially Arab countries [23]. For this reason, the current study examines the attitudes of physical educators in Saudi Arabia towards inclusion and explores the most important factors (*e.g.*, gender, grade of teaching, region of teaching, previous participation in training courses to teach students with disabilities, and knowledge of the Saudi educational legislation or policy) that may affect such attitudes.

This study is important as it will contribute to understanding the current reality of physical educators towards inclusion and the factors that affect them, which will determine if there is a need for revised curriculum offerings and additional teacher training in the area of disabilities. Based on the previous literature, it is hypothesized that: (a) female physical educators have lower attitudes toward inclusive practices than male physical educators, (b) younger physical educators have more positive attitudes toward inclusion than older physical educators, (c) cultural differences had a significant impact on physical educators' attitudes towards inclusion, (d) primary school physical educators had more positive attitudes than secondary school physical educators, (e) physical educators who reported prior training in teaching students with disabilities had more positive attitudes towards inclusion than those who did not report such experiences, (f) knowledge of disability-related education legislation or policies would positively impact the attitudes of physical educators towards inclusion.

2. MATERIALS AND METHODS

2.1. Participants

A random geographic cluster sampling technique was used for data collection. Public school physical educators in Saudi Arabia (Central Region, Western Region, Northern Region, Southern Region, and Eastern Region) were invited to participate in this study. All participants were asked to complete an electronic questionnaire aimed at assessing their demographic characteristics and level of attitudes towards including students with disabilities in their classrooms. The collected positive results were reviewed, the answers were checked, the incomplete questionnaires were discarded and 1,303 were retained and analyzed.

2.2. Instrument

In this study, the data was collected using an electronic questionnaire. Participants answered several questions related to their demographic characteristics and background information such as their gender, age, grade of teaching, region of teaching, previous attendance on courses related to students with disabilities, and knowledge of the Saudi educational legislation or policy. The Sentiments, Attitudes and Concerns about Inclusive Education-Revised Scale (SACIE-R) [24] were used in this study. The SACIE-R instrument consists of 15 statements to examine three psychometric constructs of inclusion: sentiments (*e.g.* 'I find it difficult to overcome my initial shock when meeting people with severe physical disabilities'), attitudes (*e.g.* 'Students who need an individualized academic program should be in regular classes') and concerns (*e.g.* 'I am concerned that students with disabilities will not be accepted by the rest of the class'). The instrument used a four-point Likert scale, from 1 (strongly disagree) to 4 (strongly agree) to measure participants' attitudes. A higher score indicates a more positive attitude towards inclusion. The Arabic version of the SACIE-R instrument was translated and tested by Alhumaid *et al.* [25], which indicated that the instrument was found to be reliable and valid to investigate Saudi physical educators' attitudes toward inclusion.

2.3. Procedures

Saudi physical educators were invited to participate in this study voluntarily. An online questionnaire platform (Google Forms) was sent to the targeted participants by email and through their educational departments in the five Saudi geographical regions. The email included a link and barcode for the questionnaire so the participants had the option of choosing either way to complete the questionnaire. Clicking on the link or scanning the barcode would display the information sheet so the participants could see and read the details of the study including its aims, and by continuing to the next page, the participants agreed to participate in this study. Completing the questionnaire was not obligatory, so the participants had the right to stop and leave the questionnaire at any time. A total of 1,350 questionnaires was received; however, only 1,303 of them (96.51%) were completed so this number of questionnaires was confirmed in the data analysis stage. The protocol of this study was approved by the Research Ethics Committee at King Faisal University, Saudi Arabia (KFU-REC-2022-MAR-EA000478).

2.4. Data Analysis

To achieve the first research objective, the mean and standard deviation for the items of the SACIE-R instrument was calculated. All distributions were checked for normality using the Shapiro-Wilk test. A Mann-Whitney nonparametric U test and a Kruskal-Wallis test were used for all comparisons. The linearity of the predictor variables was tested using

scatterplots. The normality and homoscedasticity of the residuals were also checked, and the multicollinearity of the independent variables was checked using the variance inflation factor values, all of which were less than 5. Multiple linear regression was used to address the second research objective. Multiple linear regression scores were calculated to predict attitudes towards inclusion among physical educators based on the independent variables. The results are presented as standardized and non-standardized coefficients, partial R and R-squared. The Statistical Package for the Social Sciences (SPSS) (IBM SPSS Statistics 26.Ink, Chicago, IL, USA) was used for statistical analysis. The significance level was set at $p < 0.05$.

3. RESULTS

3.1. Demographic Characteristics

The participant sample consisted of 1,303 physical educators aged between 24 and 57 years old ($M = 40.07$, $SD = 9.30$), randomly selected from the five Saudi geographical regions (Central Region [16.42%], Western Region [24.55%], Northern Region [9.20%], Southern Region [30.08%], and Eastern Region [19.72%]), teaching in Saudi primary, middle, and high schools (45.80%, 32.30% and 21.90%, respectively). Male physical educators represented over 57% of the total participants. Table 1 provides additional relevant information about participants' backgrounds and attitudes toward inclusion.

Table 1. Exploring the level of attitudes toward inclusion scores for independent variables (N = 1,303).

		All Participants			Male Participants			Female Participants			Males vs. Females	
		N	Mean	SD	N	Mean	SD	N	Mean	SD	Z	P
Age (years)	25 and less	51	2.435	0.44	21	2.375	0.412	32	2.475	0.459	-1.39	0.165
	26 – 35	207	2.437	0.416	123	2.388	0.406	89	2.506	0.424	-2.946	0.003
	36 – 45	513	2.435	0.363	223	2.343	0.336	293	2.505	0.368	-5.186	0.001
	46+	532	2.385	0.386	385	2.331	0.361	148	2.525	0.413	-5.651	0.001
	Between groups differences	$\chi^2 = 6.355; P = 0.096$			$\chi^2 = 1.749; P = 0.626$			$\chi^2 = 1.218; P = 0.749$			-	-
Grade of Teaching	Primary School	591	2.405	0.397	326	2.360	0.374	276	2.456	0.417	-3.731	0.000
	Middle School	424	2.427	0.372	252	2.348	0.349	172	2.544	0.376	-5.357	0.000
	High School	288	2.419	0.379	174	2.312	0.361	114	2.581	0.346	-6.458	0.000
	Between groups differences	$\chi^2 = 0.198; P = 0.906$			$\chi^2 = 3.563; P = 0.168$			$\chi^2 = 7.402; P = 0.025$			-	-
Region of Teaching	Central Region	214	2.421	0.353	160	2.383	0.346	56	2.532	0.351	-2.667	0.008
	Western Region	320	2.406	0.389	227	2.324	0.374	95	2.604	0.352	-6.347	0.001
	Northern Region	120	2.377	0.329	76	2.320	0.332	44	2.476	0.305	-2.812	0.005
	Southern Region	392	2.405	0.405	173	2.328	0.369	222	2.464	0.423	-3.675	0.001
	Eastern Region	257	2.452	0.396	116	2.375	0.373	145	2.514	0.405	-3.487	0.001
	Between groups differences	$\chi^2 = 5.353; P = 0.253$			$\chi^2 = 4.351; P = 0.361$			$\chi^2 = 11.135; P = 0.025$			-	-
Participation in a Training Course to Teach Students with a Disability	Theoretical Course	201	2.331	0.422	157	2.296	0.366	45	2.455	0.563	-3.376	0.001
	Practical Course	26	2.212	0.437	21	2.289	0.293	6	1.944	0.734	-0.789	0.430
	Theoretical and Practical Course	135	2.204	0.407	116	2.183	0.392	22	2.312	0.477	-1.180	0.238
	No	941	2.469	0.355	458	2.405	0.342	489	2.529	0.358	-5.518	0.001
	Between groups differences	$\chi^2 = 77.881; P = 0.001$			$\chi^2 = 41.857; P = 0.001$			$\chi^2 = 9.463; P = 0.024$			-	-

(Table 1) contd....

		All Participants			Male Participants			Female Participants			Males vs. Females	
		N	Mean	SD	N	Mean	SD	N	Mean	SD	Z	P
Knowledge of the Saudi Educational Legislation or Policy	Very good	70	2.307	0.498	43	2.228	0.501	29	2.423	0.480	-1.875	0.061
	Good	112	2.244	0.399	75	2.145	0.342	38	2.440	0.435	-3.399	0.001
	Average	220	2.321	0.365	173	2.283	0.354	48	2.460	0.373	-3.233	0.001
	Poor	281	2.403	0.310	197	2.373	0.298	87	2.471	0.329	-2.754	0.006
	None	620	2.497	0.384	264	2.440	0.359	360	2.538	0.398	-3.688	0.001
	Between groups differences	$\chi^2 = 84.927; P = 0.001$			$\chi^2 = 52.367; P = 0.001$			$\chi^2 = 10.458; P = 0.033$			-	-

Table 2. Multiple linear regression analysis to predict physical educators’ attitude toward including students with disabilities.

		Unstandardized Coefficients		Standardized Coefficients			Partial R
		β	Std. Error	β	t	Sig.	
All (N = 1,303)	(Constant)	2.045	0.085		24.115	0.000	
	Age	0.011	0.015	0.024	0.706	0.480	0.020
	Gender	0.083	0.029	0.107	2.865	0.004 **	0.079
	Teaching Grade	0.008	0.013	0.016	0.593	0.553	0.016
	Region of Teaching	-0.009	0.007	-0.035	-1.260	0.208	-0.035
	Training Course	0.031	0.010	0.087	3.149	0.002 **	0.087
	Knowledge of educational policy	0.050	0.009	0.159	5.753	0.001 ***	0.157
Males (N = 752)	(Constant)	2.131	0.094		22.585	0.000	
	Age	-.001	.026	-.002	-.027	.979	-.001
	Teaching Grade	-.029	.016	-.062	-1.754	.080	-.064
	Region of Teaching	.001	.009	.004	.115	.909	.004
	Training Course	.026	.011	.085	2.345	.019 *	.086
	Knowledge of educational policy	.070	.011	.230	6.319	.000 ***	.226
Females (N = 551)	(Constant)	2.274	.126		18.072	.000	
	Age	.007	.021	.014	.327	.744	.014
	Teaching Grade	.061	.021	.121	2.880	.004 **	.121
	Region of Teaching	-.021	.013	-.070	-1.671	.095	-.071
	Training Course	.030	.020	.064	1.503	.133	.064
	Knowledge of educational policy	.025	.014	.076	1.795	.073	.076

3.2. Physical Educators' Attitudes toward Inclusion

Table 1 presents the data regarding Saudi physical educators' attitudes toward the inclusion of students with disabilities in PE classes. The results indicate that participants' attitudes were moderately positive overall (M = 2.415; SD = 0.385). Female physical educators reported more favorable attitudes towards inclusion than male physical educators (2.51 ± 0.39 vs. 2.345 ± 0.36; Z = -8.545; p = 0.001). Furthermore, in relation to their attitudes toward the inclusion of students with disabilities in PE classes, 6.62% of participants had a very low score (scores ≤ 1.8), 58.447% had a low score (between 1.8 and less than 2.6), 32.724% had a medium score (between 2.6 and less than 3.2) and only 2.21% had a high score (between 3.2 and less than 4). Significant differences between research groups were found for three independent variables: gender, previous participation in a training course to teach students with disabilities, and knowledge of Saudi educational legislation or policy (p < 0.001 for all). Educators who have never attended a PE training course for students with disabilities and those who are unaware of Saudi education laws or policies have the highest attitudes towards inclusion. However, significant differences were noted for grade and teaching region only in female physical educators (p < .05 for

all). Table 1 provides additional relevant comparisons between groups by gender and independent variables regarding Saudi physical educators' attitudes toward including students with disabilities in PE classes.

3.3. Predictors of Physical Educators’ Attitude toward Inclusion

Multiple linear regression analysis showed that a significant regression pattern was identified among all participants (F = 18.064; p < .001; R² = .088), males (F = 9.957; p < .001; R² = .074), and females (F = 4.573; p < .001; R² = .047). Therefore, the results of the regression analysis indicate that the independent variables explained 8.8% of the variation in attitude toward inclusion among all participants, 7.4% among males and 4.7% among females. Regression analysis indicates that there is no collinearity in the results, suggesting that the results have adequate statistical significance. Table 2 illustrates the significance, direction, and strength of the relationships between individual predictors and participants' level of attitudes towards including students with disabilities in PE classes. Gender (β = .083; p = .001), as the first predictor with a positive standardized beta value, suggests that female physical educators are more likely to develop more

positive attitudes towards the inclusion of students with disabilities than male physical educators. Participation in a training course to teach students with disabilities and knowledge of Saudi educational legislation or policy also negatively contributed to participants' attitudes towards the inclusion of students with disabilities ($\beta = 0.031$ and 0.050 , respectively). Furthermore, among male physical educators, participation in a training course to teach students with disabilities and knowledge of Saudi educational legislation or policy were significant predictors of their attitudes toward inclusion ($\beta = 0.026$ and 0.070 , respectively); however, among female physical educators, only grade teaching ($\beta = 0.061$) was identified as a positive predictor suggesting that female physical educators teaching in primary schools are more likely to develop lower attitudes toward the inclusion of students with disabilities than those who are teaching in higher schools (*i.e.*, middle and high schools).

4. DISCUSSION

The purpose of this study is to examine the attitudes of Saudi physical educators towards including students with disabilities in their PE classes. It also aims to explore the factors that may influence physical educators' attitudes toward such inclusion. In general, Saudi physical educators reported moderately positive attitudes toward including students with disabilities.

As regards participants' personal factors (*i.e.*, gender, age, grade of teaching, region of teaching, previous participation in training courses to teach students with disabilities, and knowledge of the Saudi educational legislation or policy), the analysis illustrated that significant differences were obtained between the research groups only in terms of their gender, previous participation in training courses to teach students with disabilities, and knowledge of the Saudi educational legislation or policy. In particular, in terms of gender, female physical educators reported more positive attitudes toward inclusion than male physical educators. This finding is inconsistent with a Saudi study by Alhumaid [13] that concluded that male physical educators reported higher levels of confidence and self-efficacy toward including students with disabilities than female physical educators. Based on these results, the first hypothesis of this study has to be rejected. These differences in the above findings partially reflect those reported by Tsakiridou and Polyzopoulou [17] and add to the evidence base indicating that female teachers reported more positive attitudes toward inclusion than male teachers; however, the opposite was reported in terms of their self-efficacy toward inclusion. Tsakiridou and Polyzopoulou [17] explained that these contradictions may be a result of the higher level of stress female teachers may face in their classroom settings with students with disabilities. Therefore, this may be reflected in their feelings and confidence toward the inclusion of students with disabilities even if they show positive attitudes. The school environment could be also a reason for the differences between male and female physical educators' attitudes toward inclusion in Saudi Arabia. As Saudi Arabia's schools are separated by gender, it would be important and worthwhile to explore the impact of the school environment on physical educators' attitudes toward inclusion.

The age of the participants did not influence the attitude of Saudi physical educators towards the inclusion of students with disabilities in their PE classes, so the second hypothesis must be rejected. On the contrary, grade and teaching region only significantly influenced the attitude of female physical educators. Those with the highest levels of education and those working in the central, western, and eastern regions had the highest levels of attitudes towards inclusion. These findings were confirmed by the results of Hutzler *et al.* [26] that girls were more accepting of the norm of doing PE under different conditions, which is embedded in the inclusion approach. However, boys still meet the standard of performing the designated task, such as learning a specific skill, when a child with a disability may pose a threat. Socio-economic differences between regions may also influence educators' attitudes towards inclusion.

In terms of previous participation in training courses to teach students with disabilities, although a significant difference was found between the research groups, those participants who reported not having such previous training showed more positive attitudes towards inclusion than those who reported having such previous training, regardless of whether the training was theoretical, practical or both theoretical and practical. Therefore, this led us to conclude that the fifth hypothesis could not be supported. Despite the fact that participation in training in inclusive practices may affect physical educators' attitudes toward such inclusion [27], the current study's findings may reflect the type and quality of training courses that the participants had received. It has been argued that the quality of training received by in-service or pre-service physical educators to improve their attitudes towards and preparation for the inclusion of students with disabilities is very important to achieve the desired goal of the such training. In support, Granell *et al.* [28] suggested that the quality of the training provided for teachers of students with disabilities has the most significant impact on these teachers' subjective opinions of their own professional and scientific abilities to manage the respective special educational needs and disabilities of such students. Granell *et al.* [28] further pointed out that there is an urgent need to ensure the continuation of the move to improve teacher training for those who teach students with special educational needs and disabilities; such training must facilitate a greater degree of inclusiveness in lesson content both theoretically and practically. This recommendation concurs with that mentioned in an up-to-date study [20] carried out in Saudi Arabia; the researchers proposed that teachers in general education contexts should be provided with tailored tuition on how to provide education for those with special needs that combines the theoretical aspects with their respective practical ones; it was also highlighted that the paucity of classroom resources negatively affects students' subjective perceptions of the quality of their education-related experiences. The findings of the above studies confirm the need for more efforts to be made by educational decision makers to provide high-quality training for general and physical educators to ensure its positive impact on such teachers' attitudes and preparation in order to guarantee that it effectively prepares teachers of students with disabilities to effectively and successfully deliver inclusive education [22].

In terms of knowledge of the Saudi educational legislation or policy, a significant difference was found between the research groups. However, such awareness of the Saudi educational legislation or policy about students with disabilities did not impact the attitudes of the participants in this study toward including students with disabilities. Therefore, the sixth hypothesis for this study might be rejected. This finding contradicted the findings of Tsakiridou and Polyzopoulou [17], which found that Greek teachers who were aware of policies and legislation regarding students with disabilities reported more positive attitudes than those who were not. A possible explanation of the current study's findings might be that the participants were not aware of the most recent changes in the legislation or policy regarding the rights of people with disabilities. In fact, although since the end of the 20th century many countries around the world have begun to modify and change their educational systems in relation to the practices of inclusive education, Saudi Arabia has only recently been working on these modifications and changes [29]. Therefore, this reflects the current study's findings that teachers, and in particular physical educators, were not really aware of the recent changes in the policies concerning teaching students with disabilities. It is critical to raise awareness of laws and policies regarding people with disabilities more effectively. Alnahdi [22] concluded that the educational decision makers in Saudi Arabia and other countries more broadly should work to raise awareness and knowledge among teachers, of the laws and legislations relating to this population and how to deal with them. This movement will undoubtedly be reflected positively in the attitudes and confidence of teachers toward inclusive practices, which will be reflected in the quality of education provided for students with disabilities.

Despite the strengths of this study, two limitations should be discussed. First, the data was collected through an online questionnaire platform; thus, the mood and psychological state of the participants when they were filling out the questionnaire may affect their assessment. However, this approach was applied because Saudi Arabia is a big country, so it was difficult to travel around the country for data collection. Second, because the current research project was based on participant self-reported data collected using the SACIE-R research instrument, this means that it did not collect empirically-based quantitative data on participant behavior gathered in their respective PE-teaching settings. Therefore, the findings of the current study are likely to be influenced by participant bias [30]: the participants are likely to have overstated the positive aspects of their level of SE and overestimated their ability to provide students with autism with an inclusive learning environment in their PE classes. Given this, the researcher suggests that those researching this topic in the future ought to use empirical research instruments such as structured class observations to collect quantitative data to provide a more comprehensive overview of the in-class behaviors of physical educators who teach students with disabilities.

CONCLUSION

Along with the increasing number of students with disabilities in general PE classes [31, 32] the current findings

indicate that Saudi Arabia physical educators have developed moderately positive attitudes toward including such students in their PE classes. This suggests that Saudi educational institutions and government decision makers must exert more effort to guarantee the effective implementation of inclusive PE for students with disabilities by providing more high-quality, practical inclusive training for physical educators. Moreover, the current findings highlight that physical educators in Saudi Arabia should be made aware of the most recent changes in the legislation or policy regarding the rights of people with disabilities. This awareness of such recent changes relating to people (*e.g.*, school students) with disabilities may play an important role in improving physical educators' attitudes toward providing inclusive practices for such populations. Finally, it is recommended that investigations about the influence of other variables (*e.g.*, degree in PE) on physical educators' attitudes toward inclusion are needed.

LIST OF ABBREVIATIONS

- PE** = Physical Education
SACIE-R = Sentiments, Attitudes and Concerns about Inclusive Education-Revised Scale
SPSS = Statistical Package for the Social Sciences

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

This study was approved by the research ethics committee at King Faisal University, Saudi Arabia (KFU-REC-2022-MAR-EA000478).

HUMAN AND ANIMALS RIGHTS

No animals were used in this research. All human research procedures were followed per the ethical standards of the committee responsible for human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2013.

CONSENT FOR PUBLICATION

Written informed consent was obtained from the participants.

STANDARDS OF REPORTING

STROBE guideline were followed.

AVAILABILITY OF DATA AND MATERIALS

Not applicable.

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CONFLICT OF INTEREST

The author declares no conflict of interest, financial or others.

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