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PEDAGOGY

Weight Bias Among Physical Educators: A Scoping Review

Luciana Zuest, Mijoo Kim, and Andrea Salazar

Abstract

This study is a scoping review of empirical research examining weight bias among physical educators. Specifically, we sought to determine the extent, range, nature, and findings of research studies concerning weight bias in physical educators. Five online databases were used to identify studies published in English between 1985 and 2021 according to our search criteria. Upon retrieving 19 publications, we conducted a content analysis and appraisal of each publication. Findings were reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analysis extension for Scoping Reviews (PRISMA-ScR; Tricco et al., 2018). Studies from nine countries were categorized into four groups based on their focus. All revised studies demonstrated weight bias among participants. Given that weight bias can act as a barrier to engaging higher-weight youth in physical education, interventions to reduce weight bias in physical educators are warranted.

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Introduction

Research shows that higher-weight youth experience weight stigma across various settings, including schools (Lessard et al., 2021; Puhl & Latner, 2007; Puhl & Lessard, 2020). Weight stigma is defined as the "social rejection and devaluation that accrues to those who do not comply with prevailing social norms of adequate body weight and shape" (Tomiyama et al., 2018, p. 1). In other words, weight stigma refers to weight-related negative attitudes resulting in stereotypes, prejudice, and discrimination (Hart et al., 2021). Weight stigma examples include teasing, bullying, harassment, unfair or inferior treatment, and pressure to lose weight. In a literature review, Puhl and Lessard (2020) reported body weight as a primary reason for bullying in young people. According to Puhl and Lessard (2020), it is estimated that "nearly a quarter to a half of all youth have been bullied for their body weight" (p. 403).

Weight stigma is associated with many adverse outcomes for young people's health and well-being (Guardabassi et al., 2017). Concerning mental health, studies have shown correlations between weight stigma and depression, anxiety, poor self-esteem, and body dissatisfaction in youth (Warnick et al., 2022). In addition, discrimination based on body size has also been linked to lower academic performance and negative social experiences (Puhl & Lessard, 2020). Lastly, weight stigma also impacts children and adolescents' physical health. Weight stigma has been associated with weight gain, maladaptive eating behaviors, and physical activity avoidance (Puhl & Lessard, 2020).

Although peers are the most common source of weight discrimination among young people, research shows that family members and educators can perpetuate weight stigma by holding weight bias (Puhl & Latner, 2007; Puhl & Lessard, 2020). Weight bias refers to negative thoughts, beliefs, feelings, and assumptions about larger-bodied individuals. Often, such beliefs result from stereotypes of fat people, misguided assumptions about the relationship between health and weight, and attributions of responsibility for body size (Chrisler & Barney, 2017; Daníelsdóttir et al., 2021). For example, a common misconception fueling weight bias is that fatness results from moral failures and that higher-weight individuals have control over their body sizes (Puhl & Lessard, 2020). Unfortunately, despite

the evidence that body size is influenced by a wide range of factors beyond diet and exercise (e.g., genetics, stress levels, socioeconomic status; Wright & Aronne, 2012), society continues to blame higher-weight people for their sizes and stereotype them as lazy, unmotivated, or undisciplined, perpetuating weight bias, and consequently, weight stigma (Cossrow et al., 2001; Hinman et al., 2015).

Scholars have shown the presence of weight bias among preservice and in-service health-related professionals, including those in medicine (Sabin et al., 2012), nursing (Darling & Atav, 2019), nutrition (Swift et al., 2013); and exercise fields (Chambliss et al., 2004). Because exercise is seen as a strategy for weight loss, professionals in this area might contribute to highly stigmatizing environments, perpetuating weight stigma. For example, Panza and colleagues (2018) reviewed studies examining weight bias in exercise professionals and concluded that 17 out of 20 reviewed studies showed moderate to high weight bias among their samples. Although studies have confirmed the existence of weight bias among physical educators, to date, no study has summarized and appraised their findings. Thus, questions remain regarding the extent to which weight biases are prevalent among this professional group, how those biases manifest in physical education (PE), and their potential implications for children's health and well-being. In this study, we undertook a scoping review of empirical research examining weight bias among physical educators. Specifically, we aimed to determine the extent, range, and nature of research on weight bias among physical educators, the findings from these studies, and the gaps in the existing literature.

Method

We conducted a scoping review to identify and map the evidence of weight bias among physical educators. In contrast to systematic reviews, scoping reviews aim at answering "broader research questions and to describe concepts and knowledge gaps in an often-emerging field" (McGowan et al., 2020, p. 178). Furthermore, scoping reviews are valuable tools for determining the scope of coverage, available evidence, and knowledge gaps related to a specific topic (Munn et al., 2018).

Eligibility Criteria

This review included empirical studies that explicitly examined weight bias among physical educators, including pre-service and in-service teachers and college professors. Only peer-reviewed articles that were published in English between the years 1985 and 2021 were included. We used this time frame to fit two papers by Tinning (1985, 2020) addressing weight stigma in PE and account for studies published in 2021 (the year we conducted this study). Papers addressing physical activity that showed no relation to PE classes or teacher training were excluded. Conceptual papers and reviews of the literature were also excluded.

Information Sources

After consulting with an experienced librarian and drafting the search strategy, we used the following online databases to identify relevant articles: *Eric*, *SPORTDiscuss*, *APA PsychINFO*, *CINAHL*, and *ProQuest*. The search was conducted during June and July of 2021 and was supplemented by scanning reference lists of recent and relevant studies. We exported the selected sources to *Zotero* (Corporation for Digital Scholarship, 2006), a reference management tool.

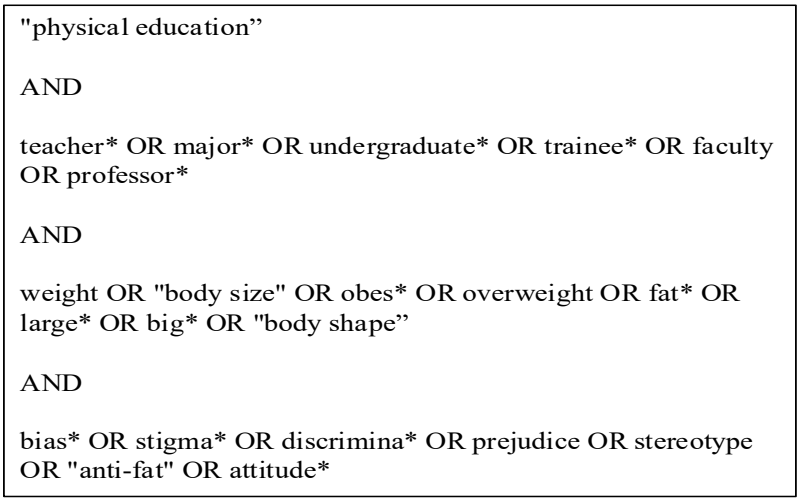
Search

We followed the Scoping Review Guide from the University of South Australia Library (n.d.) to create the search strategy. First, we identified the main key terms related to the study: body weight, bias, and physical educators. Then, for each key term, we listed possible alternative concepts. For example, for bias, we listed stigma, discrimination, prejudice, stereotype, anti-fat, and attitude. Second, we combined the key terms and alternative concepts using the connectors "OR" and "AND." We also use truncation (*) to facilitate phrase searching. Figure 1 shows our final search strategy, which we applied to every database.

Selection of Sources of Evidence

After duplicates were removed, we screened all yielded abstracts independently using *SysRev* (Bozada et al., 2021), an online literature review tool. Initially, we achieved a 95.5% agreement in our screen-

Figure 1
Search Strategy



ing. We then met and discussed our disagreements until we established a consensus, deciding to exclude articles that did not address weight bias, targeted other populations (e.g., health educators), or examined physical educators' perceptions of obesity more broadly. Next, we independently assessed the full text of all remaining publications to determine their eligibility. We established each article's eligibility by examining its measurements. That is, articles that used an instrument designed to assess weight bias were included in this review.

Data Charting Process

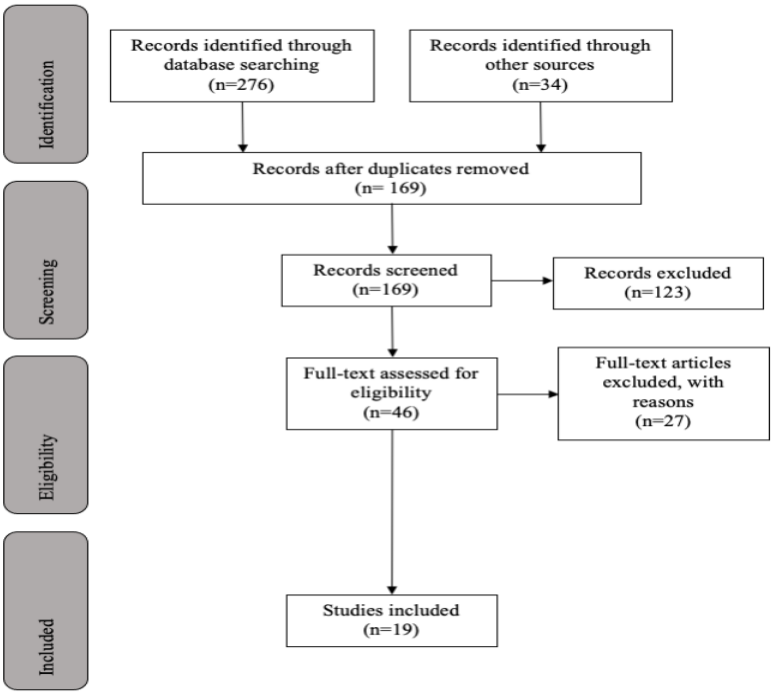
Once we defined the articles to be included in the review, we developed a chart to determine which variables to extract from the studies. We charted the data independently, discussed our findings, and continuously updated the chart through an iterative process. The following variables were extracted from each study: publication year, country, purpose, context, participants, data sources, data analysis, and main findings. Once we charted the data, we re-examined the studies' focus and used content analysis to categorize the reviewed studies according to their primary aims. We categorized all studies independently and met to discuss disagreements until a consensus was established.

Results

Figure 2 outlines the article selection process according to the PRISMA-ScR. Our initial search yielded 276 items, which we added to a reference manager (*Zotero*). We then included another 34 records identified through other sources. We used *Covidence* (Veritas Health Innovation, 2022), a systematic review management tool, to remove all duplicates. After duplicates were removed, both authors screened all 169 remaining abstracts independently using *SysRev*, another literature review online tool. Initially, we achieved a 95.5% agreement in our screening. We met and discussed our disagreements until we established a consensus, deciding to exclude 123 articles during the screening phase. Next, we assessed the full text of 46 articles independently to determine their eligibility. We chose to exclude another 27 articles that did not meet the inclusion criteria. A total of 19 studies were included in this scoping review.

Figure 2

Article Selection Process According to the PRISMA-ScR.



The selected 19 studies included those focusing explicitly on weight bias among physical educators. Table 1 provides a detailed summary of study characteristics. The studies were conducted in nine different countries; however, most were in the United States (*n* =11, 58%). Most studies included multiple participant groups, including PE teachers (*n* = 12, 63%). Several studies focused on PE majors (*n* = 5, 26%), one focused exclusively on PE teachers, and another on physical education teacher education (PETE) professors (*n* = 1, 5.2% each). In terms of the research setting, we identified five different contexts, including universities, K-12 schools, market data, professional organizations, and multiple settings. However, the majority of studies were conducted in universities (*n* = 12, 63%), with K-12 schools coming second (*n* = 4, 21%).

Concerning research methodology, most studies were quantitative (*n* = 17; 89.5%) with a couple of mixed methods (*n* = 2; 10.5%) (Readdy & Wallhead, 2016; Rukavina et al., 2008). Table 2 displays the instruments used to assess participants' weight bias in each study. A wide range of measurements were used, with 13 different instruments identified across the 19 studies. The Implicit Association Test (IAT; Greenwald et al., 1998) was the most prevalent instrument across the reviewed studies (*n* = 10; 52.6%). The Anti-fat Attitudes Questionnaire (AFA; Crandall, 1994) and Anti-fat Attitudes Scale (AFAS; Morrison et al., 1999) were also commonly employed (*n* = 5; 26.3% each), with the Anti-fat Attitudes Test (AFAT; Lewis et al., 1997) coming next (*n* = 4, 21.1%). Interestingly, instruments designed specifically for use with physical educators were least frequently used across these studies: Perception of Obese Students by Physical Education Teachers questionnaire (POSPET; Fontana et al., 2013) (*n* = 1; .05%) and PETE professors' perceptions of obese physical education teachers and majors (Fontana et al., 2017) (*n* = 1; .05%).

Throughout our appraisal, we identified four primary purposes across the 19 studies, including (a) Identification, (b) Comparison, (c) Association, and (d) Intervention. Table 3 offers a list grouped by their primary purpose, and a discussion of each group follows.

Identification

Most studies (*n* = 7; 37%) sought to identify the presence of weight bias in physical educators. Weight bias was identified across a

Table 1
Description of Included Studies (n = 19)

Study variable	Number of studies (%)[1]
Country	
United States	11 (58%)
Australia	1 (5.2%)
Canada	1 (5.2%)
England	1 (5.2%)
Hong Kong (China)	1 (5.2%)
Italy	1 (5.2%)
New Zealand	1 (5.2%)
Spain	1 (5.2%)
Multiple Countries	1 (5.2%)
Participants	
Multiple participant groups	12 (63%)
Physical education teachers	1 (5.2%)
Physical education professors	1 (5.2%)
Physical education majors	5 (26%)
Research Setting	
Universities	12 (63%)
K-12 Schools	4 (21%)
Market data	1 (5.2%)
Professional organizations	1 (5.2%)
Multiple settings	1 (5.2%)

range of samples in the reviewed studies, including PETE professors (Fontana et al., 2017), PE majors (Fontana et al., 2013; Greenleaf et al., 2008; O'Brien et al., 2007; Peters & Jones, 2010), and elementary and secondary PE teachers (Fontana et al., 2013; Greenleaf & Weiller, 2005; Newmark-Sztainer et al., 1999). Researchers reported weight bias in their samples across several of the reviewed studies. In a study in the U.S., Greenleaf and Weiller (2005) found that physical educators expected "normal weight" youth to perform better in endurance, flexibility, coordination, sport competence, and strength than those with larger bodies. Similarly, Peters and Jones (2010) found evidence of anti-fat bias in their sample of PE majors in England. Participants' perceptions of fat children's physical selves were significantly lower for their body image, sport competence, physical condition, physical self-worth, and global self-esteem. Along the same lines, Greenleaf et al. (2008) found that PE majors across three universities in the U.S.

Table 2
Weight Bias Measurement Across All Studies

Weight bias measurement	Number of studies (%)[2]
Implicit Association Test (IAT)	10 (52.6%)
Anti-fat Attitudes Questionnaire (AFA)	5 (26%)
Anti-fat Attitudes Scale (AFAS)	5 (26%)
Anti-fat Attitudes Test (AFAT)	4 (21%)
Attitudes toward Obese Persons Scale (ATOP)	2 (10.5%)
Beliefs About Obese People Scale (BAOP)	2 (10.5%)
Explicit Ratings Test (ERT)	2 (10.5%)
Fat Stereotypes Questionnaire (FSQ)	1 (5.2%)
Modified Children & Youth Physical Self Perception Profile	1 (5.2%)
Modified Fat Phobia Scale	1 (5.2%)
Modified Fat Stereotypes Questionnaire (FSQ)	1 (5.2%)
Perception of Obese Students by Physical Education Teachers questionnaire (POSPET)	1 (5.2%)
PETE professors' perceptions of obese physical education teachers and majors	1 (5.2%)

Table 3
Studies' Primary Purposes

Studies' purpose	Number of studies (%)	Citation
Identification To identify the presence weight bias among physical educators	7 (37%)	Fontana et al. (2013) Fontana et al. (2017) Greenleaf & Weiller (2005) Greenleaf et al. (2008) Neumark-Sztainer et al. (1999) O'Brian et al. (2007) Peters & Jones (2010)
Comparison To compare weight bias between physical educators and the groups	5 (26%)	Alameda & Whitehead (2015) Carmona-Márquez et al. (2021) De Caroli & Sagoni (2015) Lau et al. (2018) Lynagh & Morgan (2015)
Association To examine the association between weight bias in physical educators and other variables	3 (16%)	Peterson et al. (2012) Readdy & Wallhead (2015) Rukavina et al. (2019)
Intervention To evaluate weight bias interventions	4 (21%)	Rukavina et al. (2008) Rukavina et al. (2010) Russell-Mayhew et al. (2015) Tingstrom & Nagel (2017)

strongly endorsed fat stereotypes of larger-bodied children, such as laziness, less physical attractiveness, and lower social competence.

An additional finding from a few studies was weight biases toward larger-bodied physical educators. For example, Fontana et al. (2017) found that despite favoring accepting higher-weight students into PETE programs, professors across the U.S. disapproved of larger-bodied physical educators being role models to children. Greenleaf and Weiller (2005) reported a similar finding, as elementary, secondary, and college teachers across the U.S. strongly endorsed the belief that PE teachers should be role models by maintaining a "normal weight."

Research seeking to identify weight bias in physical educators reported implicit and explicit weight biases and weight control beliefs. Physical education professors, teachers, and majors generally expressed a strong implicit anti-fat bias but a neutral explicit attitude toward larger-bodied individuals (Fontana et al., 2013, 2017). For instance, both Fontana et al. (2013) and O'Brien et al. (2007) found that PETE majors had a strong implicit anti-fat bias, which increased as they neared completion of their training in the program.

In addition to implicit and explicit weight biases, a couple of studies identified weight control beliefs as an indicator of weight bias. For example, Greenleaf and Weiller (2005) found that most physical educators in their study attributed fatness to "poor eating behaviors, sedentary lifestyles, and excessive calorie intake…as well lack of self-control" (p. 415). Similarly, Neumark-Sztainer et al. (1999) found that about half of their sample believed that fatness was caused by overeating and poor eating habits. Still, half also agreed that it could be due to factors outside of their control, such as biological disorders.

Comparison

Five studies (26%) compared weight bias between physical educators and other groups. These studies were rooted in a greater variety of research contexts, including six different countries: the U.S. and Mexico (Alameda & Whitehead, 2015), Spain (Carmona-Márquez et al., 2021), Italy (De Caroli & Sagoni, 2015), Hong Kong (China) (Lau et al., 2018), and Australia (Lynagh & Morgan, 2015). Two studies compared weight bias in higher education settings (Alameda & Whitehead, 2015; Lynagh & Morgan, 2015), three in secondary schools (Carmona-Márquez et al., 2021; De Caroli & Sagoni, 2015;

Lau et al., 2018), and one in the elementary school level (Lau et al., 2018).

The points of comparison differed across the five studies. For instance, Alameda and Whitehead (2015) examined the explicit and implicit anti-fat attitudes of Mexican and American PE and exercise science majors. They found that neither group exhibited problematic explicit anti-fat biases; however, differences emerged regarding implicit anti-fat biases. American students scored higher on good-bad and motivated-lazy subscales, indicating that they tended to associate larger-bodied individuals with being bad and lazy. Although Lynagh and Morgan (2015) also examined weight biases among preservice teachers, their study in Australia compared health and PE specialists to non-specialists. Both groups of preservice teachers had a strong implicit negative bias toward higher-weight children, but this was stronger among health and PE specialists. Explicit anti-fat attitudes were not as evident, but negative stereotypes were.

Whereas these studies compared weight bias across higher education contexts and programs of specialization, two studies compared weight biases among PE and non-PE teachers at the elementary and/or secondary school level. In a study based in Spain, Carmona-Márquez et al. (2021) compared PE and mathematics teachers' anti-fat attitudes and stereotypes, as well as whether PE teachers' biases impacted the obesity-related attitudes and behaviors of their adolescent students. They found that 80% of all teachers had implicit negative attitudes, with no significant differences between them. However, PE teachers showed stronger implicit anti-fat stereotypes. Although they showed sympathetic attitudes toward higher-weight students, they often associated fatness with being bad and lazy, whereas mathematics teachers did not.

In the same vein, in a study based in Hong Kong (China), Lau et al. (2018) compared primary and secondary school PE and non-PE teachers' implicit anti-fat. The male PE teachers had more favorable attitudes towards "normal weight" children, whereas male non-PE teachers had more favorable attitudes toward larger-bodied children. Female PE teachers had more favorable attitudes toward "normal weight" youth, whereas female non-PE teachers had neutral attitudes toward students from all weight statuses. This study (in contrast to most others in this review) demonstrated an interaction between

weight bias and gender. Both male and female PE teachers showed significantly more weight bias than non-PE teachers. Interestingly, age also influenced weight bias, as younger teachers showed more biases than older teachers.

Lastly, in a study based in Italy, De Caroli and Sagoni (2015) investigated the differences between adolescents and their PE teachers/trainers concerning anti-fat attitudes and weight stereotypes. Within this comparison, they further examined the difference between adolescents involved in agonistic versus non-agonistic physical activity (intensive exercise three to seven days a week versus regular exercise twice a week) and PE versus curricular teachers. They found adolescents involved in non-agonistic physical activity expressed higher anti-fat attitudes than others, and curricular teachers expressed a higher dislike for larger-bodied individuals. Adolescents involved in agonistic physical activity and PE teachers attributed positive and negative stereotypes to overweight individuals, including weakness, laziness, and rejection on the one hand and happiness, intelligence, and sweetness on the other.

Association

Researchers of three studies (16%) examined the associations between physical educators' weight biases and other variables. All three studies were in the U.S.: one focused on PE teachers and coaches at the secondary school level (Peterson et al., 2012) and two others on PETE majors (Readdy & Wallhead, 2016; Rukavina et al., 2019). Across the studies, different variables were examined concerning physical educators' weight biases.

Peterson et al. (2012) investigated how students' body weight and gender influenced PE teachers' and sports coaches' expectations of their abilities and performance. They found that participants' expectations, attributions, and attitudes regarding students may be negatively influenced by body weight and differ by student gender. For example, physical educators and coaches held more negative attitudes and had lower expectations for the physical abilities of larger-bodied students. Although participants were more likely to attribute higher-weight females' abilities and performance to external factors (e.g., lack of physical activity, poor eating habits, and home environment), there was no difference in participants' beliefs about the factors influencing the physical ability and performance of males.

Readdy and Wallhead (2015) investigated the associations between anti-fat bias among PETE majors and the quality and quantity of feedback they provided to students of different body sizes. This study was one of the two that used mixed methods, as the researchers also qualitatively assessed the preservice teachers' perceptions of differential behavior toward students based on their weight, including the potential consequences of it and strategies to eliminate it. Findings indicated no significant correlation between teachers' implicit and explicit anti-fat biases. Instructors with strong implicit and explicit bias tended to give more feedback to students of all weight statuses. Those with moderate bias generally interacted less frequently with students they perceived as fat. Based on qualitative interview results, some educators may change their feedback to be more encouraging to higher-weight students. Still, teacher behavior seemed to be influenced more by the desire to use good pedagogy and improve all learners' skills rather than their perception of students' weight.

Additionally, in higher education, Rukavina et al. (2019) examined whether weight-related attitudes mediated the influence of goal orientation on attitudes toward cultural diversity among preservice physical educators. They found that negative stereotypes of fat people's character traits significantly mediated the relationships of task orientation and appreciating diversity, task orientation and valuing diversity, and task orientation and willingness to implement cultural pluralism. In other words, pre-service teachers with a higher orientation toward individual improvement and task mastery were less likely to agree with these negative traits of fat people, which ultimately influenced their attitudes toward cultural pluralism and diversity.

Intervention

Lastly, researchers of four studies (21%) evaluated the outcomes of weight-bias interventions. Three studies were conducted in the U.S. (Rukavina et al., 2008; Rukavina et al., 2010; Tingstrom & Nagel, 2017) and one in Canada (Russell-Mayhew et al., 2015). All interventions targeted undergraduate students and used pre-and post-tests to evaluate their effectiveness. Two studies used control groups (Rukavina et al., 2010; Tingstrom & Nagel, 2017), and one employed a mixed-method design (Rukavina et al., 2008). The interventions

differed in length and content across the studies, and their findings also varied.

In a mixed-methods study in the U.S., Rukavina et al. (2008) conducted a six-week intervention among undergraduate university kinesiology students (including PETE majors) to change students' attitudes toward larger-bodied individuals. The intervention included a classroom component to increase students' awareness of how anti-fat biases can hinder a healthy lifestyle. Students were also involved in a service-learning project using fitness testing with school-aged children. Participants completed the anti-fat attitude test (AFAT) before and after the intervention. They also wrote reflective papers on the factors leading to unhealthy lifestyles and the importance of PE, which were analyzed as the qualitative component of the study. The participants did not report high overall weight bias, but the results indicated certain anti-fat attitudes and stereotypes related to weight control/blame and physical/romantic attractiveness. Participants' attitudes toward people being responsible for their weight significantly reduced after the intervention. However, the perception that fat people are lazy did not.

In a related study, Rukavina et al. (2010) assessed the efficacy of an intervention to reduce kinesiology undergraduate students' explicit and implicit biases. The intervention included both classroom and service-learning components. More specifically, the classroom components included: (a) conscious raising discussion on weight biases in society, (b) perceptions of weight controllability, (c) perspective taking, (d) role-playing on environmental cues that elicit implicit weight bias, and (e) a service-learning project administering fitness testing to expose students to higher-weight children's exercise behavior and their peers' responses. This study included both an experimental and a control group. Findings indicated that participants did not have explicit but strong implicit bias, particularly on the lazy/motivated scale. The intervention decreased participants' explicit bias on the social character disparagement and weight control/blame subscales, but no change in their implicit bias, reinforcing the difficulty of changing firmly established implicit biases.

Tingstrom and Nagel (2017) used a control and experimental group to assess the outcomes of an intervention incorporated into the PETE curriculum in two universities in the U.S. The intervention

was approximately 1 hour and integrated into a PE methods class session. The control group continued with their regular PE methods content instead of receiving the intervention. Specifically, the intervention was designed to be interactive and stimulate student reflection and problem-solving, including environmental factors that affect weight, the relationship between physical educators' attitudes and biases and their teaching behaviors, the challenges faced by larger-bodied individuals in physical activity settings, and best practices and instructional strategies for teaching higher-weight children. Findings indicated a significant decrease in anti-fat bias among students who received the intervention and an increase in bias among those who did not.

Lastly, in a study based in Canada, Russell-Mayhew et al. (2015) assessed the impact of a three-hour professional development workshop delivered to health and PE pre-service teachers. The interactive workshop addressed risk factors that impact the development of eating disorders and obesity, body image, weight bias, self-esteem, media, and diet within the context of school-based health promotion and disease prevention. The purpose of the study was to evaluate the workshop's effectiveness on preservice teachers' attitudes toward body image, size acceptance, eating, and physical activity, along with its impact on participants' perceived self-efficacy to address weight-related issues. Findings indicated that the professional development workshop positively affected participants' anti-fat attitudes, body image, implicit weight bias, and ability to address weight issues.

Discussion

In this scoping review, we examined empirical research on weight bias among physical educators. Although studies have confirmed the existence of weight bias among PE majors, teachers, and PETE professors, to our knowledge, this is the first review to summarize and appraise their findings. The reviewed studies were conducted in nine different countries; however, most were in the U.S. The research setting was mostly higher education and focused on pre-service PE teachers. Regarding research methodology, most studies employed quantitative approaches, with only two using mixed methods (Readdy & Wallhead, 2016; Rukavina et al., 2008).

As a result of this scoping review, we identified some gaps in the literature and made recommendations for future research. As

mentioned, most studies were based in the U.S. Although this may reflect the eligibility criteria, as we exclusively focused on articles published in English, it also points to a potential gap in knowledge because little may be known about weight bias among PE professionals in other parts of the world. Moreover, most studies focused on pre-service teachers. Still, more research should examine weight bias among university professors responsible for teacher education and in-service PE teachers who work directly with children and youth.

Further, most studies were quantitative and relied on a wide range of instruments to measure weight bias (e.g., AFA; Crandall, 1994; AFAS; Morrison et al., 1999; AFAT; Lewis et al., 1997; IAT; Greenwald et al., 1998). It is important to note that most of those instruments were developed in the 1990s when fears of an "obesity crisis" were rising, and anti-fat rhetoric was acceptable (Cain et al., 2022). As a result, those instruments focus on negative traits associated with fatness and higher-weight people, contributing to the stigmatization of those individuals. More recently, scholars have called for the development of non-stigmatizing measures of attitudes toward fatness (Cain et al., 2021). One such instrument, the Fat Attitudes Assessment Toolkit (FAAT; Cain et al., 2022), was designed to assess contemporary attitudes towards higher-weight individuals through a multidimensional and non-stigmatizing approach. Thus, utilizing such an instrument to assess physical educators' attitudes toward larger-bodied people from a comprehensive and nuanced perspective is warranted. In addition, more mixed-methods and qualitative research should be conducted to uncover new insights into weight bias among physical educators and its impact on their teaching.

Lastly, in this scoping review, we identified four primary purposes among the reviewed studies: (a) Identification, (b) Comparison, (c) Association, and (d) Intervention. The most frequent purpose was to identify weight bias among physical educators. A few noticeable gaps emerged from examining these purposes. First, although minimal gender differences were found across the studies, most of the participant populations were predominantly white; therefore, future research should consider the variables of race or ethnicity and weight bias. Across all studies, implicit weight bias was present among physical educators. One potential area of future investiga-

tion is the relationship between physical educators' body image and weight biases.

As this scoping review and the literature show, weight biases are prevalent among physical educators and can create a barrier to creating inclusive climates for young people with diverse bodies. A few studies in this review show that physical educators might have lower expectations for higher-weight youth, provide less feedback during class, and assume that they are lazy. This is problematic since teachers are expected to provide the same quality of instruction to all students regardless of their body size and abilities. Equally concerning was the fact that physical educators might be more biased compared to other majors and teachers of other disciplines.

Given the prevalence and adverse consequences of weight stigma, it is surprising that only four studies have reported on interventions aimed at reducing weight bias in physical educators. These were all focused on undergraduate students. None targeted PETE professors or elementary or secondary school teachers, which points to a noticeable gap. Therefore, designing, implementing, and evaluating interventions to reduce weight bias, stigma, and discrimination in all physical education settings is warranted and an urgent task.

Conclusion and Limitations

All 19 studies included in this scoping review demonstrated some measure of weight bias among their participants, showing that physical educators held weight biases. Moving forward, researchers should consider adopting contemporary and non-stigmatizing instruments to assess physical educators' attitudes toward higher-weight individuals and body fat, such as the FAAT (Cain et al., 2022). Given the harmful association between weight stigma and young people's mental and physical health, researchers should consider the development, implementation, and evaluation of weight stigma interventions targeting physical education majors, teachers, and university professors. This scoping review was limited to articles published in English and within our specified time frame. This review was also limited to studies that purposefully measured weight bias among physical educators. We did not assess the quality of the studies or examine their methods. This decision, although deliberate, may have influenced our interpretation.

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PEDAGOGY

Perception of Inclusion and Cooperative Learning of University Students Related to Physical Activity and Physical Education

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Abstract

The objectives of the present study were, on the one hand, to analyse the internal consistency of four questionnaires referring to the perception and knowledge of inclusion and cooperative learning (CL), and on the other, to discover the perception and knowledge of inclusion and CL in Physical Education (PE) of university students studying courses related to PE, Physical activity (PA) or sport, as well as to analyse the differences by sex and level of studies (degree versus post-graduate studies). Two hundred and eighty university students participated in this study and answered four questionnaires. The results show that the total internal consistency of all the questionnaires was excellent (α = 0.9). Furthermore, it was observed that the participants perceived inclusion and CL in a positive light, although they considered themselves to be not sufficiently trained. Significant differences were also observed according to sex and level of study. The women's group and the post-

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graduate students were those who revealed the most knowledge and best perception of inclusion ($p < 0.05$). The results show that it is necessary to include more training in inclusive PA and PE in the study plans of future PE teachers.

Introduction

In Spain, as established by Organic Law 3/2020 (LOMLOE, 2020), the educational norm specifies that several university studies are available to work as a Physical Education (PE) teacher, both in Primary Education and Secondary Education. Specifically, in the case of Primary Education, to be able to work as a PE teacher, it is necessary to have passed the degree in Primary Education with a minor in PE (LOMLOE, 2020). In turn, to be able to work as a PE teacher in Secondary Education, it is necessary to have passed the degree in Physical Activity and Sports Sciences and the Master's in Teacher Training for Compulsory Secondary Education, the Sixth Form, Vocational Training and Language Teaching (LOMLOE, 2020). Moreover, there are other post-graduate studies with their own qualifications, university experts, official master's degrees, or doctoral studies related to PE, physical activity (AF), or sport (LOMLOE, 2020), that complement the university training of future PE teachers. A large proportion of the students who complete these studies will be the future professionals who will work as PE teachers, both in primary and secondary education. In this regard, it has been stated that it is very important for these students and future teachers to have adequate specific training in different subjects related to PE (Avramidis et al., 2000; Perlado et al., 2019).

Bearing in mind that in both primary and secondary schools there is a great deal of diversity among the students, and it has been indicated that inclusion presents physical, cognitive, emotional, affective and attitudinal benefits (Fernández et al., 2019), future professionals should be trained to face the challenges that may arise, and should acquire in their degree and post-graduate training competencies related, among others, to educational inclusion and diversity, which permit them to develop their future professional work adequately. However, in spite of the importance of acquiring knowledge and competencies related to educational inclusion and diversity, during their university training, several investigations which analysed the

study plans of the different universities, like for example, the Degree in Primary Education, concluded that in general, very few subjects were taught that were related to attention to diversity (Rodríguez et al., 2017; Valencia-Peris & Mínguez-Alfaro, 2018; Valencia-Peris et al., 2020). Although it has been stated that to have adequate knowledge, competencies, abilities and attitudes (Jiménez-Monteagudo & Hernández-Álvarez, 2013; Torres & Fernández, 2015) helps teachers to be better prepared for their professional work, a suitable strategy for achieving quality inclusive education and appropriate attention to diversity may be to train, at the university stage, teachers who are competent, reflective and committed to the values of inclusion (Echeita et al., 2008). Similarly, some studies affirm that the teachers who have specific training in inclusive PE obtain higher scores in self-efficacy regarding inclusion (Abellán et al., 2019; Grassi-Roig et al., 2022; Hutzler & Daniel-Shama, 2017; Reina et al., 2016), reinforcing the idea that it is necessary to go further in the improvement of university training in this subject.

It has also been found that the adequate use of cooperative learning (CL) helps to build inclusive education, so that all the students, with or without a disability, have the possibility to be educated through PE (Bermejo et al., 2022; Klavina et al., 2014; Páez et al., 2018; Qi & Ha, 2012; Simoni et al., 2013; Velázquez et al., 2014; Velázquez, 2018). In this regard, CL is defined as the "pedagogical model in which students work together in small, generally heterogeneous groups, to maximise their own learning and also that of the rest of their classmates" (Velázquez, 2015, p. 26). In this same vein, Fernández-Río (2014, p. 69) affirms that CL is understood as "a pedagogical model in which students learn with, from, and for other students, using a teaching-learning approach which facilitates and potentiates this interaction and positive interdependence in which the teacher and students act as co-learners". Although there may be difficulties to implement CL in PE classes, mainly due to lack of experience and abilities in the students, prior negative experiences, lack of training on the part of the teachers, organisational problems in the school and classroom or lack of control in the classroom (Martínez-Benito & Sánchez, 2020), applying CL in PE seems to favour the inclusion of the students both in Primary (Klavina et al., 2014; Páez et al., 2018) and Secondary Education (Simoni et al., 2013; Muntaner Guasp &

Forteza Forteza, 2021). In this same line of thought, different studies conclude that CL is the methodology that most favours the inclusion of immigrant girl students (Nieva & Lleixà, 2016) and students with a disability (Klavina et al., 2014; Páez et al., 2018) at different educational stages (Simoni et al., 2013). Similarly, CL must be developed and applied in initial teacher training so that teachers can experience and implement this methodology (Herrero-González et al., 2021; Jiménez-Díaz & Salicetti-Fonseca, 2022).

However, despite studies on the perception of university students regarding inclusion or CL, most investigations focus on one topic and do not address them together. There are also a few studies that have analyzed whether there are differences in perception and knowledge of inclusion and CL according to sex among university students. Similarly, no studies have been found that analyze whether there are differences according to the level of studies (degree vs. post-graduate). Conducting this study is crucial because understanding the perceptions of future physical education teachers regarding inclusion and collaborative learning can provide indicators of whether they are adequately prepared to implement inclusive education and whether they have a positive attitude toward these topics. Furthermore, both gender and academic level in this sample can influence the perception and knowledge of inclusion and collaborative learning. Therefore, the objectives of the present study were: 1) to analyze the internal consistency of several questionnaires on inclusion and CL applied to university students, 2) to discover the perception and knowledge of inclusion and CL in PE of university students who are studying topics related to PE and PA or sport, and 3) to analyze the differences according to sex and level of studies (degree vs. post-graduate).

Method

Participants

Two hundred and eighty university students participated in this study (22.1 ± 3.0 years) from five Spanish universities and four different degrees, of whom 97 were women (21.9 ± 2.8 years) and 183 were men (22.2 ± 3.2 years). All the participants were university students who were enrolled in one of the following official study courses related to PA or PE: Degree in Physical Activity and

Sports Sciences, Degree in Primary Education–PE minor, an official Master's Degree related to PA and sport, a Master's Degree in Teacher Training in Secondary Education or a doctoral programme related to PA and sport. The study followed the guidelines established in the Declaration of Helsinki (2013) and was approved by the Ethics Committee for Research on Human Beings at the University of the Basque Country (UPV/EHU) (CEISH M10/2021/165).

Procedure

Four previously validated questionnaires on inclusion and CL were used to understand the perception and knowledge of university students regarding inclusion and CL in PE: 1) (Tárraga et al., 2013), 2) (González-Gil et al., 2017), 3) (Traver & García, 2007), and 4) (García et al., 2012). The questionnaires were sent out between November 24, 2022, and February 16, 2023, via email to the various management organs of the faculties, departments, master's academic committees, and doctoral programs at the Spanish universities offering official courses. After the corresponding approval from the management organs of the various courses, university students received the questionnaire via the corporate email system. A reminder was sent one month after the questionnaire was sent out. Data collection was conducted via the Google Forms platform, and the data were later downloaded into an .xls file for further analysis.

Measurements

Bearing in mind that the validation of the four questionnaires had been conducted between 2007 and 2017 (García et al., 2012; González-Gil et al., 2017; Tárraga et al., 2013; Traver & García, 2007), and that between five to 15 years had passed, the questionnaires were minimally adapted to the current terminology. The modifications were minimal and specifically addressed the formulation of items using inclusive language regarding gender. The adaptation was carried out by two experts in questionnaires and the study topic, one with more than 20 years' scientific experience and practice in the field of PE and many scientific publications on the topic, and the other a graduate of Primary Education and Master's in Physical Activity and Sports Sciences.

Questionnaires On Inclusion In Physical Education

The questionnaire "The scale of attitudes towards special educational needs (EANEE by its Spanish acronym)" was validated by Tárraga et al. (2013) and used to discover the perception of the university students regarding inclusion in PE. This is the Spanish adaptation of the *Opinions Relative to Integration of Students with Disabilities Scale* (ORI) by Antonak and Larrive (1995). The adaptation by Tárraga et al. (2013) had been used recently by Abellán and Sáez-Gallego (2020) in a study with similar characteristics to the present investigation. The questionnaire contains 23 items with answers on a Likert-type scale with 5 options: 1= "strongly disagree," 2 = "disagree," 3 = "indifferent," 4 = "agree," 5 = "strongly agree" and is divided into five blocks. The first block (n = 9 items) refers to the benefits of inclusion. The second block (n = 4 items) focuses on generalist attention vs. specialist attention. The third block (n = 4 items) analyses the methodology and management of behaviour in the classroom. The fourth block (n = 3 items) refers to the effort and dedication of the teachers toward the students with special educational needs. Lastly, the fifth block (n = 3 items) examines the training and competence of the teachers.

The questionnaire "Teachers' evaluation of educational inclusion (adaptation of the CEFI-R for university students)", previously validated by González-Gil et al. (2017), was used to discover the perception and knowledge of the participating university students in studies on inclusion and how to implement it. This scale is based on the CEFI-R questionnaire, which assesses teacher training in inclusion by González-Gil et al. (2019). The CEFI-R questionnaire has often been used in studies of similar characteristics aimed at university students (Falla et al., 2022; Rojo-Ramos et al., 2020) and teachers (Tárraga-Mínguez et al., 2022; Triviño-Amigo et al., 2022b; Triviño-Amigo et al., 2022a). The questionnaire contains 16 items with answers on a Likert-type scale with 5 options: 1 = "strongly disagree," 2 = "disagree," 3 = "indifferent," 4 = "agree," 5 = "strongly agree" and is divided into four dimensions. The first dimension (n = 4 items) refers to the conception of diversity. The second dimension (n = 5 items) relates to methodology. The third dimension (n = 4 items) examines the teachers' support. The last dimension (n = 3 items) examines the community's participation. For the present study, the original Likert

scale of 1 to 4 (González-Gil et al., 2017) was modified to equate the answers to those of the rest of the questionnaires.

Questionnaires On Cooperative Learning In Physical Education

The questionnaire "Scale of teachers' attitude toward educational innovation using cooperative techniques (CAPIC)", validated by Traver and García (2007), was used to discover the perception of the university students regarding CL. This questionnaire had been used recently in a study with participants of similar characteristics (Fernández and Espada, 2016). The questionnaire is composed of 19 items with answers on a Likert-type scale with five options: 1 = "strongly disagree," 2 = "disagree," 3 = "indifferent," 4 = "agree," 5 = "strongly agree" and is divided into 13 categories: 1. It improves the interpersonal relations of the students (n = 2 items); 2. It favors the integration of students with special educational needs, both of an affective nature and relative to academic performance, facilitating adaptation to different learning paces (n = 3 items); 3. It avoids or at least counters competitiveness, favouring mutual help and giving value to collaboration (n = 2 items); 4. Positive evaluation of individual contributions to the solution of group conflicts, using a personal contribution to a common task (n = 2 items); 5. It improves the ability to express oneself both individually and in a group, making possible and favouring the communication of everyone at several levels (n = 2 items); 6. It enriches the group through the contribution of new ideas (n = 1 item); 7. It motivates students much more, fomenting their participation in the work developed in the classroom (1 item); 8. It favours debate and group work (2 items); 9. It favors the acquisition of the habit of group coexistence and respect for others (n = 2 items); 10. It favours and potentiates student socialisation; 11. We all learn: students and teachers; interactively building knowledge, becoming aware that we all learn from everyone, not just the teacher (n = 2 items); 12. It favors and makes possible the existence of the group, creating a "group climate" and giving it cohesion (n = 1 item); 13. It favours the attitude of solidarity (n = 1 item); and 14. It favours taking on responsibility (n = 2 items).

The questionnaire "Analysis of Cooperation in Higher Education (ACOES)", previously validated by García et al. (2012) was used to discover the perception and knowledge of the participants on the use of CL. The ACOES questionnaire had been used recently in a study

with participants with similar characteristics and aimed at university students of the Degree in Primary Education (Feria-Madueño et al., 2017). The questionnaire is composed of 49 items with answers on a Likert type scale with 5 options 1 = strongly disagree", "2 = disagree", "3 = indifferent", "4 = agree", "5 = strongly agree, and is divided into 7 dimensions: conception of group work (n = 5 items); usefulness of group work for their training (n = 6 items); planning of group work by the teachers (n = 4 items); criteria for organising the groups (n = 8 items); norms for the groups (n = 9 items); internal working of the groups (n = 7 items); and efficacy of group work (n = 10 items). Moreover the ACOES scale incorporates three open questions at the end of the questionnaire.

Statistical Analysis

The results are presented as mean ± standard deviation. A descriptive analysis was also conducted calculating the frequencies and percentages of the replies of the participants for each item or question. The Kolmogorov-Smirnov and Levene tests were performed to check the normality of the data and equality of variance, respectively. Cronbach's Alpha (α) was used to calculate the internal consistency of each questionnaire and of the different dimensions or blocks of each questionnaire, and was qualitatively interpreted as follows: acceptable (0.60 – 0.70) and excellent (0.70 – 0.90) (Nunnally & Bernstein, 1994). The Mann Whitney U test was used to calculate the difference in means between the results obtained from the men and women or of those obtained according to the level of studies (degree vs. post-graduate). The magnitudes of the differences was calculated using the probability of superiority (PS) (Erceg-Hurn & Mirosevich, 2008), according to the following qualitative interpretation: no differences between means (PS = 0.00 – 0.50), small (PS = 0.50 – 0.56), medium (PS = 0.56 – 0.71) and large (PS > 0.71) differences (Grissom, 1994). The χ^2 test was used to analyse the differences in the distribution of frequencies and percentages of answers between men and women and the level of studies. The statistical analysis was performed with the Statistical Package for the Social Sciences (SPSS Inc, version 27.0, Chicago, IL, USA.). Statistical significance was established at $p < 0.05$.

Table 1
Results of the Internal Consistency of all the Items in Each Questionnaire and Each Block

EANEE	
1. Benefits of inclusion (9 items)	0.5
2. Generalist attention vs. specialist attention (4 items)	0.4
3. Methodology and management of behaviour in the classroom (4 items)	0.3
4. Effort and dedication of the teachers towards the students with special educational needs (3 items)	0.6
5. Training and competence of the teachers (3 items)	0.2
Total items EANEE (23 items)	**0.7**
CEFI-R	
1. Conception of diversity (4 items)	0.7
2. Methodology (5 items)	0.9
3. Support (4 items)	0.6
4. Participation of the community (3 items)	0.8
Total items CEFI-R (16 items)	**0.7**
CAPIC	
1. It improves students' interpersonal relations (2 items)	0.9
2. It favours the integration of students with special educational needs, both of an affective nature and related to academic performance, facilitating adaptation to different learning paces (3 items)	0.1
3. It avoids or at least counters competitiveness, favouring mutual help and giving value to collaboration (2 items)	-0.2
4. Positive evaluation of individual contributions to the solution of group conflicts, using a personal contribution to a common task (2 items)	0.8
5. It improves the ability to express oneself both individually and in a group, making possible and favouring the communication of everyone at several levels (2 items)	-0.5
6. It enriches the group through the contribution of new ideas (1 item)	-
7. It motivates students much more, fomenting their participation in the work developed in the classroom (1 item)	-
8. It favours debate and group work (2 items)	-0.2
9. It favours the acquisition of the habits of group coexistence and respect for others (2 items)	0.7
10. It favours and potentiates student socialisation (2 items)	0.8
11. We all learn: students and teachers; building knowledge in an interactive manner, becoming aware that we all learn from everyone, not just the teacher (2 items)	0.8
12. It favours and makes possible the existence of the group, creating a "group" climate and giving it cohesion (1 item)	-
13. It foments an attitude of solidarity (1 item)	-
14. It favours taking on responsibility (2 items)	0.8
Total items CAPIC (25 items)	**0.8**
ACOES	
1. Conception of group work (I consider group work to be) (5 items)	0.8
2.Usefulness of group work for their training (Personally, group work helps me to) (6 items)	0.9
3. Planning of the group work by the teachers (On the planning that the teachers carry out for group work I think that) (4 items)	0.8
4. Criteria for organising the groups (The constitution of the group should be) (8 items)	0.4
5. Norms of the group (The operating norms of the group) (9 items)	0.7
6. Internal working of the groups (Normally, when doing a group task) (7 items)	0.8
7. Efficacy of group work (The performance of the group improves if) (10 items)	0.9
Total items ACOES (52 items)	**0.9**
Total questionnaires (113 items)	**0.9**

CEFI-R = Teachers' evaluation of educational inclusion, EANEE = The scale of attitudes towards special educational needs, CAPIC = Scale of teachers' attitude towards educational innovation using cooperative techniques, ACOES = Analysis of Cooperation in Higher Education.

Results

The results of the internal consistency of the different questionnaires used are presented in Table 1. The CEFI-R questionnaire obtained an excellent value for total internal consistency (n = 16 items, α = 0.7), and an acceptable or excellent consistency per block (α = 0.6-0.9). The EANEE questionnaire obtained excellent values of internal consistency in all the items (n = 23 items, α = 0.7), although the consistency per block was lower (α = 0.2-0.6). The CAPIC questionnaire obtained an excellent internal consistency (n = 25 items,

α = 0.8), although the internal consistency of some blocks was also lower (α = -0.5, 0.9). Lastly, the ACOES questionnaire showed an excellent total consistency (n = 52 items, α = 0.9), as did the consistency per block (α = 0.7-0.9) except in one of the blocks where it was lower (α = 0.4). Moreover, the internal consistency of all the items of all the questionnaires was excellent (n = 113 items, α = 0.9).

The EANEE Questionnaire

Table 2 shows the results obtained by the participants on the EANEE questionnaire. High percentages in favour of inclusion were observed in the items related to the block "Benefits of inclusion." Regarding the blocks "Generalist attention vs. specialist attention" and "Effort and dedication of the teachers towards the students with special educational needs," high percentages were obtained in the most of the items for the "indifferent" and "I agree" options. Regarding the blocks "Methodology and management of behaviour in the classroom" and "Training and competence of the teachers," high percentages were seen in the "I disagree," "Indifferent," and "I agree."

The men obtained higher values than the women in items 5, 9, 10, 12, 14, 16, 17, 18, and 20 ($p < 0.05$, PS = 0.58 – 0.65, medium, χ^2 = 8.7 – 20.9, $p < 0.01$). Moreover, they also obtained higher values than the women in item 8 ($p < 0.05$, PS = 0.60, medium), although significant differences were not observed in the χ^2 test ($p > 0.05$). However, the women obtained higher values than the men in items 15, 19 and 21 ($p < 0.05$, PS = 0.38 – 0.40, χ^2 = 10.6 – 16.5, $p < 0.01$). There was no difference in the means of men and women in item 23, but significant differences were obtained in the Chi^2 test (χ^2 = 10.8, $p < 0.05$).

Regarding the differences according to level of studies (graduate vs. post-graduate), no significant differences were found ($p > 0.05$) in any of the items on the EANEE questionnaire.

The CEFI-R Questionnaire

Table 3 presents the descriptive results obtained by the participants in the CEFI-R questionnaire. In the items related to the block "Conception of diversity," high percentages were obtained in the options "I strongly disagree," "I disagree," and "Indifferent." Regarding the block "Methodology" high percentages were obtained in the

Table 2

Results Obtained by all the Participants (N = 280) on the Questionnaire Scale of Attitudes Toward Special Educational Needs (EANEE)

Item	Mean ± SD	I strongly disagree	I disagree	Indifferent	I agree	I strongly agree
BENEFITS OF INCLUSION						
18. Inclusion probably has a negative effect on the emotional development of the students with special educational needs..	1.9 ± 1.1	45.7% (128)	31.8% (89)	12.1% (34)	7.5% (21)	2.9% (8)
10. The behaviour of the students with special educational needs is a bad example for their classmates without special educational needs.	1.8 ± 1.1	53.2% (149)	24.3% (68)	13.9% (39)	5.7% (16)	2.9% (8)
19. Students with special educational needs should be given the opportunity to be integrated into generalist classes whenever possible.	4.3 ± 0.8	1.4% (4)	1.8% (5)	10.0% (28)	37.9% (106)	48.9% (137)
2. The inclusion of students with special educational needs facilitates interactions between students with and without special educational needs and foments understanding and acceptance of differences among students.	4.3 ± 0.8	0.7% (2)	1.8% (5)	13.6% (38)	39.6% (111)	44.3% (124)
15. The inclusion of students with special educational needs can be beneficial for students without special educational needs.	4.2 ± 0.8	1.1% (3)	3.2% (9)	10.0% (28)	42.5% (119)	43.2% (121)
12. The inclusion of students with special educational needs does not promote their social independence.	2.2 ± 1.2	31.4% (88)	33.9% (95)	17.1% (48)	13.6% (38)	3.9% (11)
5. The "extra" attention required by students with special educational needs has negative repercussions for the rest of the students in the classroom.	2.1 ± 1.1	34.3% (96)	36.8% (103)	16.1% (45)	10.7% (30)	2.1% (6)
16. Students with special educational needs probably create confusion in the generalist classroom.	2.5 ± 1.1	18.6% (52)	32.1% (90)	29.2% (79)	19.3% (54)	1.8% (5)
1. The majority of students with special educational needs make the necessary efforts to carry out their school tasks.	3.8 ± 0.8	1.1% (3)	7.1% (20)	22.9% (64)	52.9% (148)	16.1% (45)
GENERALIST ATTENTION *vs.* SPECIALIST ATTENTION						
11. The students with special educational needs will probably develop academic abilities more quickly in a generalist classroom than in a specialist classroom.	3.3 ± 0.9	2.9% (8)	14.6% (41)	39.3% (110)	34.3% (96)	8.9% (25)
6. The challenge of being in a generalist classroom foments the academic progress of students with special educational needs.	3.7 ± 0.9	1.4% (4)	7.5% (21)	27.5% (77)	45.4% (127)	18.2% (51)
4. The best option for students with special educational needs is to be included in generalist classrooms.	3.9 ± 0.9	2.5% (7)	5.7% (16)	20.4% (57)	46.1% (129)	25.4% (71)
22. Being separated in specific classrooms has a positive effect on the emotional development of students with special educational needs.	2.5 ± 1.1	17.9% (50)	32.9% (92)	31.1% (87)	14.3% (40)	3.9% (11)
METHODOLOGY AND MANAGEMENT OF BEHAVIOUR IN THE CLASSROOM						
3. Students with special educational needs will probably exhibit behavioural problems in generalist classrooms.	3.1 ± 1.0	5.7% (16)	26.1% (73)	31.1% (87)	29.6% (83)	7.5% (21)
8. The increase in freedom in a generalist classroom creates too much confusion in students with special educational needs.	2.8 ± 1.0	9.3% (26)	28.9% (81)	37.1% (104)	21.4% (60)	3.2% (9)
23. The students with special educational needs are not socially isolated in generalist classrooms.	2.8 ± 1.1	12.5% (35)	27.1% (76)	31.8% (89)	14.3% (40)	3.9% (11)
7. The inclusion of students with special educational needs requires significant changes in the methodology of the generalist classroom.	3.5 ± 1.0	1.8% (5)	14.3% (40)	27.9% (78)	39.6% (111)	16.4% (46)
EFFORT AND DEDICATION OF THE TEACHERS TOWARDS THE STUDENTS WITH SPECIAL EDUCATIONAL NEEDS						
20. The behaviour in class of a student with special educational needs does not generally require more patience on the part of the teacher compared to the behaviour of students without special educational needs.	2.9 ± 1.0	8.2% (23)	28.6% (80)	33.6% (94)	23.6% (66)	6.1% (17)
14. The students with special educational needs do not monopolise the time the generalist teacher devotes to their students.	3.1 ± 1.0	4.3% (12)	22.9% (64)	34.3% (96)	32.1% (90)	6.4% (18)
13. It is not more difficult to maintain order in a classroom with a student with special educational needs than in a classroom without students with special educational needs.	3.2 ± 1.1	6.1% (17)	21.8% (61)	30.0% (84)	32.9% (92)	9.3% (26)
TRAINING AND COMPETENCE OF THE TEACHERS						
9. Generalist teachers have sufficient professional competence to work with students with special educational needs.	2.6 ± 1.1	17.1% (48)	32.9% (92)	25.0% (70)	20.7% (58)	4.3% (12)
17. Generalist teachers have sufficient training to teach students with special educational needs..	2.5 ± 1.1	17.5% (49)	42.1% (118)	20.0% (56)	15.7% (44)	4.6% (13)
21. Specialist teachers attend to students with specialist educational needs better than generalist teachers.	3.9 ± 1.0	2.5% (7)	9.6% (27)	12.1% (34)	47.9% (134)	27.9% (78)

SD = standard deviation. The data from the Likert scale are shown in percentages and frequencies.

options "Indifferent,", "I agree," and "I strongly agree". Referring to the items related to the block "Support" and "Participation of the community," high percentages were observed in the options "I agree" and "I strongly agree."

The men recorded higher values than the women in items 1 and 4 ($p < 0.05$, PS = 0.57 – 0.65, medium, $\chi^2 = 15.8 – 21.1$, $p < 0.01$). In contrast, the women recorded higher values than the men in items 10 and 14 ($p < 0.05$, PS = 0.39 – 0.41, $\chi^2 = 10.5 – 14.3$, $p < 0.05$). Moreover, the women recorded higher values than the men in item 9 ($p < 0.05$, PS = 0.41), although no significant differences were seen in the Chi^2 test ($p > 0.05$).

With regard to the differences according to level of studies (graduate vs. post-graduate), the post-graduate students obtained higher values than the graduate students in items 10 and 14 ($p < 0.05$, PS = 0.30 – 0.33, $\chi^2 = 10.3 – 15.4$, $p < 0.05$). Similarly, the post-graduate students obtained higher values than the graduate students in items 11, 13, 15 and 16 ($p < 0.05$, PS = 0.34 – 0.37), although no significant differences were observed in the χ^2 test. Moreover, although no differences in means were found between the graduate and post-graduate students in item 4, there were significant differences in the χ^2 test ($p < 0.05$).

The CAPIC Questionnaire

Table 4 shows the results obtained by the participants in the CAPIC questionnaire. High percentages were obtained in "I agree" and "I strongly agree" in most of the items, except items 5, 10, 13, 15, and 22 in which high percentages were obtained in "I strongly disagree" and "I disagree." In item 22, a high percentage was recorded in the options "Indifferent" and "I agree."

The men got higher values than the women in items 6, 10, 13, and 15 ($p < 0.05$, PS = 0.59 – 0.64, medium, $\chi^2 = 12.4 – 21.2$, $p < 0.01$). In contrast the women got higher values in items 1, 2, 3, 4, 7, 8, 9, 11, 12, 17, 18, 19, 20, 21, 23, 24, and 25 ($p < 0.05$, PS= 0.33 – 0.39, $\chi^2 = 12.1 – 27.9$, $p < 0.01$ or $p < 0.05$). Moreover, the women got higher values than the men in item 16 ($p < 0.05$, PS = 0.43) although no significant differences were observed in the χ^2 test ($p > 0.05$). Significant differences were not observed between the women's and men's means in items 5 and 14, but there were significant differences in the χ^2 test ($\chi^2 = 14.9 – 22.9$, $p < 0.01$).

Table 3

Replies Obtained by all the Participants (N = 280) on the Teachers' Evaluation of Educational Inclusion (Adaptation of The CEFI-R for University Students) Questionnaire

Item	Mean ± SD	I strongly disagree	I disagree	Indifferent	I agree	I strongly agree
CONCEPTION OF DIVERSITY:						
1. I would prefer not to have students with special educational needs in my classroom.	2.5 ± 1.1	46.4% (130)	17.5% (49)	27.5% (77)	6.8% (19)	1.8% (5)
2. A child with specific needs for educational support interrupts the classroom routine and hinders the learning of their companions.	1.0 ± 0.9	40.4% (113)	41.1% (115)	11.1% (31)	6.8% (19)	1.8% (5)
3. Students with special needs for educational support cannot follow the daily programme.	2.2 ± 1.1	32.1% (90)	36.8% (103)	13.9% (39)	15.0% (42)	2.1% (6)
4. I worry that my work load will increase if I have a child with special needs for educational support in my classroom.	2.0 ± 1.1	43.6% (122)	26.8% (75)	16.4% (46)	10.4% (29)	2.9% (8)
METHODOLOGY:						
5. I would know how to teach each of my students differently according to their individual characteristics.	3.4 ± 1.0	5.0% (14)	18.9% (53)	17.5% (49)	51.4% (144)	7.1% (20)
6. I would know how to develop didactic units and classes bearing in mind student diversity.	3.4 ± 1.0	3.6% (10)	16.1% (45)	20.0% (56)	53.2% (149)	7.1% (20)
7. I would know how to adapt my form of assessment to the individual needs of each of my students.	3.6 ± 1.0	2.9% (8)	14.6% (41)	16.1% (45)	52.1% (146)	14.3% (40)
8. I would know how to manage and adapt the didactic material to respond to the needs of each of my students.	3.6 ± 0.9	2.9% (8)	11.4% (32)	15.4% (43)	58.9% (165)	11.4% (32)
9. I would be able to adapt my communication techniques to ensure that all the students can be successfully included in the ordinary classroom.	4.0 ± 0.9	1.8% (5)	6.4% (18)	11.4% (32)	53.2% (149)	27.1% (76)
SUPPORT:						
10. Joint planning between teachers and support teachers would facilitate the support being provided in the classroom.	4.5 ± 0.7	0.4% (1)	1.4% (4)	5.4% (15)	35.0% (98)	57.9% (162)
11. I think that the best way to provide support for the students is that the support teacher be incorporated into the classroom instead of being in the support classroom.	4.2 ± 0.9	1.1% (3)	3.9% (11)	15.4% (43)	36.4% (102)	43.2% (121)
12. The function of the support teachers is to work with all the students in my classroom.	3.2 ± 1.3	10.7% (30)	20.0% (56)	24.3% (68)	26.8% (75)	18.2% (51)
13. I consider that the place for the support teachers is in the ordinary classrooms with each of the teachers.	4.0 ± 0.9	1.1% (3)	6.8% (19)	15.4% (43)	44.6% (125)	32.1% (90)
PARTICIPATION OF THE COMMUNITY:						
14. The educational project should be reviewed with the participation of the different agents in the educational community (teachers, parents, students).	4.2 ± 0.9	1.1% (3)	4.3% (12)	8.9% (25)	43.9% (123)	41.8% (117)
15. It is fundamental to have a close relationship between the students and the rest of the agents in education (parents' association, neighbourhood association, school council, …).	4.3 ± 0.8	1.1% (3)	2.1% (6)	11.1% (31)	35.7% (100)	50.0% (140)
16. The school should work in conjunction with the neighbourhood resources (library, social services, health services,…).	4.3 ± 0.8	0.7% (2)	2.5% (7)	7.9% (22)	44.3% (124)	44.6% (125)

SD = standard deviation. The data from the Likert scale are shown in percentages and frequencies.

With regard to the differences according to level of studies (graduate vs. post-graduate), the post-graduate students had higher values in items 7 and 24 ($p < 0.05$, PS = 0.37 – 0.38) although significant differences were not observed in the χ^2 test ($p > 0.05$). No differences were observed in the means of the graduate and post-graduate students for item 5, but there were significant differences on the χ^2 test ($\chi^2 = 11{,}1$, $p < 0.05$).

The ACOES Questionnaire

Lastly, Table 5 shows the data obtained by the participants in the ACOES questionnaire. A strong majority of the items related to the blocks, "I consider that group work is," "Personally, group work helps me to," "Normally, when doing group work," and "Group per-

Table 4

Replies Obtained from all the Participants (N = 280) in the "Scale of Teachers' Attitude Towards Educational Innovation using Cooperative Techniques" (CAPIC) Questionnaire

Item	Mean ± SD	I strongly disagree	I disagree	Indifferent	I agree	I strongly agree
1. I am convinced that if my future students use cooperative working methods their interpersonal relations will improve.	4.4 ± 0.8	0.4% (1)	3.2% (9)	6.8% (19)	40.0% (112)	49.6% (139)
2. I consider that the application of cooperative working methods among my future students in my group will develop abilities of social interaction among these same students.	4.3 ± 0.7	0.4% (1)	1.4% (4)	6.4% (18)	47.5% (133)	44.3% (124)
3. If I organised the activities in my future class so that they had to work in groups, it would favour the integration in the class of the students with special educational needs.	4.3 ± 0.7	0.4% (1)	1.4% (4)	8.9% (25)	44.3% (124)	45.0% (126)
4. The application of cooperative working methods in my future class group will facilitate my adaptation to the different learning paces.	4.2 ± 0.7	0.4% (1)	1.8% (5)	11.1% (31)	50.0% (140)	36.8% (103)
5. I believe that the application of cooperative working methods does not improve the performance of students with greater difficulties.	2.3 ± 1.3	31.4% (88)	34.6% (97)	11.1% (31)	14.3% (40)	8.6% (24)
6. I consider that even though I organised my class so that my future students could work in a cooperative manner, it would not avoid competitiveness among them.	3.1 ± 1.1	8.6% (24)	24.6% (69)	26.8% (75)	31.1% (87)	8.9% (25)
7. I am convinced that one of the best ways I have to favour mutual help in my future students is to make them value collaboration and work cooperatively in class.	4.2 ± 0.7	0.4% (1)	0.7% (2)	11.4% (32)	49.3% (138)	38.2% (107)
8. If I accustom the students in my future class to work in a cooperative manner, I will contribute to their valuing individual contributions to solve group conflicts positively.	4.3 ± 0.8	0.4% (1)	1.8% (5)	10.7% (30)	44.6% (125)	42.4% (119)
9. I am convinced that making students work cooperatively in class favours their willingness to collaborate, through their personal contribution to the common task.	4.3 ± 0.7	0.4% (1)	2.5% (7)	7.9% (22)	50.0% (140)	39.3% (110)
10. I believe that, although my future students work with cooperative methods in class, it wlll not favour communication among them.	2.2 ± 1.2	33.2% (93)	40.0% (112)	9.6% (27)	11.4% (32)	5.7% (16)
11. Using the application of cooperative forms of work among my future students, I consider that their capacity for expressing themselves both personally and as a group will improve.	4.2 ± 0.7	0.4% (1)	2.9% (8)	8.9% (25)	52.5% (147)	35.4% (99)
12. I believe that the fact that the students in my future class work cooperatively will enrich the group through the contribution of new ideas.	4.3 ± 0.7	0.7% (2)	0.7% (2)	10.0% (28)	45.0% (126)	43.6% (122)
13. I am convinced that the use of methods of cooperative work among the students of my future class will not favour motivation towards learning.	2.4 ± 1.2	26.8% (75)	36.8% (103)	11.1% (31)	19.3% (54)	6.1% (17)
14. CI consider that the fact that the students in my future class work cooperatively, will favour new channels of communication and enrich group discussion.	4.0 ± 0.9	2.1% (6)	3.6% (10)	14.3% (40)	48.2% (135)	31.8% (89)
15. I think that if the students work as a group the ones with higher achievements will suffer.	2.3 ± 1.2	31.8% (89)	31.1% (87)	17.5% (49)	15.4% (43)	4.3% (12)
16. I am convinced that participating in group discussions in the classroom helps students to put themselves in the others' places and better understand their reasons.	4.2 ± 0.8	1.1% (3)	2.9% (8)	11.8% (33)	45.7% (128)	38.6% (108)
17. Using methods of cooperative work in my future classroom, I consider that I will favour the acquisition of habits for group coexistence.	4.3 ± 0.7	0.4% (1)	1.4% (4)	9.3% (26)	47.9% (134)	41.1% (115)
18. I am convinced that the use of methods of cooperative work among the students in my future class will favour and potentiate their socialisation.	4.3 ± 0.7	0.4% (1)	2.1% (6)	8.9% (25)	46.4% (130)	42.1% (118)
19. I think the fact that the students in my future class work cooperatively will help them to see the social diversity in their own group.	4.3 ± 0.7	0.4% (1)	0.7% (2)	7.5% (21)	46.4% (130)	45.0% (126)
20. If the students in my future class work cooperatively, I believe they will become aware that all of us can learn from everyone.	4.4 ± 0.7	0.4% (1)	2.5% (7)	6.4% (18)	42.9% (120)	47.9% (134)
21. I think that participating in group work in the classroom will favour the building of knowledge in an interactive manner.	4.2 ± 0.7	0.4% (1)	1.8% (5)	11.4% (32)	50.0% (140)	36.4% (102)
22. I am convinced that, although my future students work cooperatively, the group will not be more cohesive because of it.	2.7 ± 1.3	17.9% (50)	35.0% (98)	17.1% (48)	19.3% (54)	10.7% (30)
23. If my future students work cooperatively, I consider that it will make them more aware of those classmates who have learning difficulties or personal problems	4.1 ± 0.8	0.7% (2)	3.9% (11)	13.9% (39)	48.6% (136)	32.9% (92)
24. I think that belonging to a group doing cooperative work makes the students feel more responsible for the tasks they have to do.	4.1 ± 0.8	1.1% (3)	3.6% (10)	13.2% (37)	50% (140)	32.1% (90)
25. I believe that working cooperatively, my students stimulate their sense of co-responsibility.	4.1 ± 0.7	0.4% (1)	2.5% (7)	11.4% (32)	53.6% (150)	32.1% (90)

SD = standard deviation. The data from the Likert scale are shown in percentages and frequencies.

formance improves if" obtained very high percentages in the options "I agree" and "I strongly agree." Regarding the blocks: "With respect to the planning of group work by the lecturers at my university, I think that …" "The constitution of the group should be…," and "The operating norms of the group," very high percentages were recorded in the options "Indifferent" and "I agree" in most of the items, except item 24, which obtained very high percentages in the options "I strongly disagree" and "I disagree." Regarding item 23, which refers to the suitable number of participants per group, the results show that groups of four (48.9% of participants), five (20.4% of participants) and 3 (9.6% of participants) were considered the most suitable.

The last three questions on the ACOES questionnaire are open questions on strengths, weaknesses and suggestions regarding cooperative learning. Item 50 reads "Point out some STRENGTHS of group work that have not been included in the previous items." This item was answered by 107 participants (38.2% of the total). Many of them affirmed that it is a methodology that "motivates" and foments "empathy," "leadership," "responsibility," "companionship," "cohesion," respect," and "debate." Similarly, many of the participants stated that it can help to "manage emotions," "work with different people," "get to know classmates better," "see different points of view," and "understand one's own classmates." Moreover, a large number of the participants reinforced the idea that CL "helps to develop social abilities." Furthermore, the participants consider that CL helps "learning" and that it "can become meaningful."

With item 51, "Point out some WEAKNESSES of group work that have not been included in previous items," 103 participants (36% of the total) answered this question. Several participants affirmed that there are "difficulties to implement it," "many aspects to take into account," "lack of knowledge and difficulty in implementing it," and that "the mere fact of carrying out an Aronson puzzle, does not ensure that there is actual cooperation." Similarly, the participants agreed that "not all the students work equally hard" assessing that "not all the members of the group are equally committed" and therefore "the roles should be changed every so often to avoid the students becoming complacent?"

Table 5

Results Obtained by all the Participants (n = 280) in the ACOES (Analysis of Cooperation in Higher Education) Questionnaire

Item	Mean ± SD	I strongly disagree	I disagree	Indifferent	I agree	I strongly agree
I CONSIDER THAT GROUP WORK IS …:						
1. A good method for developing my social competencies: (reasoning, dialogue, listening ability, debating skills, respect for contrary opinions...)	4.4 ± 0.7	0.4% (1)	1.1% (3)	7.5% (21)	41.8% (117)	49.3% (138)
2. An opportunity to get to know my companions better	4.4 ± 0.7	0.4% (1)	0.7% (2)	8.9% (25)	39.6% (111)	50.4% (141)
3. A way of getting a better understanding of knowledge	4.3 ± 0.7	0.4% (1)	1.1% (3)	12.1% (34)	42.5% (119)	43.9% (123)
4. A way of sharing the total volume of work	4.2 ± 0.9	1.1% (3)	4.3% (12)	10.4% (29)	43.2% (121)	41.1% (115)
5. A way to facilitate preparation for exams	4.0 ± 0.9	2.1% (6)	3.2% (9)	21.1% (59)	42.9% (120)	30.7% (86)
PERSONALLY, GROUP WORK HELPS ME TO …:						
6. Present and defend my ideas and knowledge in front of other people	4.2 ± 0.8	0.7% (2)	2.9% (8)	10.4% (29)	45.7% (128)	40.4% (113)
7. Feel an active part of my own learning process	4.2 ± 0.8	1.1% (3)	2.1% (6)	11.8% (33)	45.7% (128)	39.3% (110)
8. Understand the knowledge and ideas of my companions	4.3 ± 0.7	0.7% (2)	0.7% (2)	8.9% (25)	42.1% (118)	47.5% (133)
9. Understand the importance of coordinated work in my professional future as a teacher	4.3 ± 0.8	0.4% (1)	3.2% (9)	11.4% (32)	40.0% (112)	45.0% (112)
10. Reach agreements when faced with different opinions	4.3 ± 0.8	0.7% (2)	1.4% (4)	8.9% (25)	41.1% (115)	47.9% (134)
11. Look for information, investigate and learn autonomously	4.0 ± 0.9	1.1% (3)	5.7% (16)	16.8% (47)	41.1% (115)	35.4% (99)
ON THE PLANNING OF MY UNIVERSITY LECTURERS OF GROUP WORK, I THINK THAT …:						
12. The amount of group work requested is suitable for the teaching load of the course	3,5 ± 1,1	5,4% (15)	16,1% (45)	18,9% (53)	44,6% (125)	15,0% (42)
13. The level of difficulty of the group work is suitable for our training	3,7 ± 0,9	1,8% (5)	7,5% (21)	22,5% (63)	55,4% (155)	12,9% (36)
14. There is coordination among the group work tasks requested in the different subjects	3,1 ± 1,2	10,4% (29)	21,8% (61)	23,9% (67)	32,5% (91)	11,4% (32)
15. Attendance at practical classes resolves the doubts that arise when doing group work	3,7 ± 1,1	5,4% (15)	7,9% (22)	20,4% (57)	43,2% (121)	23,2% (65)
THE CONSTITUTION OF THE GROUP SHOULD BE …:						
16. Decided by the students applying criteria based on friendship	3.1 ± 1.1	7.9% (22)	23.6% (66)	27.5% (77)	30.4% (85)	10.7% (30)
17. Decided by the students applying academic criteria	3.2 ± 1.2	8.2% (23)	20.7% (58)	23.2% (65)	34.3% (96)	13.6% (38)
18. Decided by the teachers applying academic criteria	3.0 ± 1.2	11.8% (33)	24.3% (68)	24.6% (69)	27.1% (76)	12.1% (34)
19. Made up of a diversity of group members (age, sex, training, experience...)	3.9 ± 1.0	2.5% (7)	5.7% (16)	16.8% (47)	45.0% (126)	30.0% (84)
20. Stable during the subject, term, year...	3.6 ± 1.2	5.0% (14)	14.6% (41)	18.2% (51)	37.5% (105)	24.6% (69)
21. Modified for the development of different activities in the same subject	3.6 ± 1.1	5.7% (16)	12.5% (35)	20.4% (57)	43.6% (122)	17.9% (50)
22. Decided incorporating the designation of a group coordinator	3.7 ± 1.0	2.9% (8)	7.1% (20)	26.8% (75)	40.0% (112)	23.2% (65)
23. Decided with a minimum of participants (indicate in the blank square the number you consider most appropriate)	6.0 ± 4.7	-	-	-	-	-
OPERATING NORMS OF THE GROUP:						
24. There should not be any norms	1.9 ± 1.1	43.6% (122)	32.1% (90)	13.9% (39)	6.8% (19)	3.6% (10)
25. There should be norms, but established by the students	3.7 ± 1.0	2.1% (6)	9.6% (27)	23.9% (67)	45.7% (128)	18.6% (52)
26. There should be norms, but established by the teachers	3.0 ± 1.1	10.4% (29)	23.6% (66)	28.9% (81)	31.4% (88)	5.7% (16)
27. They should be negotiated between the teachers and the students	3.9 ± 1.1	5.0% (14)	7.1% /(20)	17.5% (49)	38.2% (107)	32.1% (90)
28. They should be presented in a document which defines the responsibilities assumed by the group	3.8 ± 0.9	2.9% (8)	4.3% (12)	23.9% (67)	46.1% (129)	22.9% (64)
29. They should define the roles of each of the individuals that constitute the group	3.9 ± 0.9	1.1% (3)	5.0% (14)	23.6% (66)	48.2% (135)	22.1% (62)
30. They should include the consequences for the participants of not fulfilling their commitments.	3.9 ± 0.9	1.8% (5)	5.7% (16)	19.6% (55)	47.1% (132)	25.7% (72)
31. They should specify the timetable and place for the meetings	3.8 ± 1.0	3.6% (10)	6.4% (18)	22.5% (63)	44.3% (124)	23.2% (65)
32. They should include the obligation to attend the meetings	3.8 ± 1.0	2.9% (8)	6.8% (19)	20.7% (58)	44.6% (125)	25.0% (70)
USUALLY, WHEN DOING GROUP WORK:						
33. We meet at the beginning to plan the different steps which we have to take	4.0 ± 0.9	1.4% (4)	6.1% (17)	8.9% (25)	55.7% (156)	27.9% (78)
34. We consult the basic documentation provided by the teacher	4.1 ± 0.8	0.7% (2)	3.2% (9)	11.8% (33)	58.2% (163)	26.1% (73)
35. We carry out a search for information from different sources (Internet, library, …)	4.2 ± 0.7	0.4% (1)	1.1% (3)	7.9% (22)	55.4% (155)	35.4% (99)
36. We make consensual decisions, to guarantee the general coherence of the group work	4.2 ± 0.8	0.7% (2)	3.6% (10)	6.8% (19)	53.6% (150)	35.4% (99)
37. During the development of the work we carry out “briefings” so that all the group knows what the others are doing and we have a good idea of how the activity is progressing	4.1 ± 0.8	1.1% (3)	4.3% (12)	11.4% (32)	51.4% (144)	31.8% (89)
38. All the members of the group participate equally	3.8 ± 1.1	4.3% (12)	12.9% (36)	15.0% (42)	38.6% (108)	29.3% (82)
39. We assess and make proposals for improvement	3.8 ± 1.0	2.5% (7)	11.1% (31)	17.9% (50)	40.0% (112)	28.6% (80)
GROUP PERFORMANCE IMPROVES IF:						
40. The teachers facilitate clear guidelines for the group activities to be developed	4.3 ± 0.7	0.7% (2)	2.5% (7)	6.4% (18)	51.4% (144)	38.9% (109)
41. The activities proposed by the teachers require analysis, debate, reflection and criticism	4.1 ± 0.8	0.7% (2)	2.9% (89	13.2% (37)	54.3% (152)	28.9% (81)

With reference to the last questions, "Point out some SUGGESTIONS" to improve cooperative methodology, it was answered by 61 participants (21.8% of the total). The participants think it convenient to change the groups more often so that "all the students interact with one another." They also suggest "working in different groups during the year and if a group works well to maintain it, and if not to modify it." Moreover, they think it is convenient "to establish very clearly defined guidelines," "that are applied from early childhood," "to leave time at the end of the class so that the participants can meet together," and to "give the students the possibility to choose the topic to be used, within the available possibilities." Another consideration contributed by a participant is worthy of being highlighted: "Nowadays it has not been possible to extract 100% of the benefits of working following the cooperative methodology." Lastly some participants consider that "we should try to transmit the values of working cooperatively from a young age, to be able to grow up with the values that this way of working offers, and which are very interesting for our growth as a society."

The men obtained higher values than the women in item 24 ($p < 0.05$, PS = 0.60, medium, $\chi^2 = 13.0$, $p < 0.01$). In contrast, the women obtained higher values than the men in items 1-11, 17, 20, 30, 33-36, and 40 ($p < 0.05$, PS = 0.36 – 0.44, $\chi^2 = 9.7 – 23.6$, $p < 0.01$). The women also obtained higher values than the men in items 31, 32, and 48 ($p < 0.05$, PS = 0.42 – 0.43), although no significant differences were observed in the χ^2 test ($p > 0{,}05$). However, no differences between the women's and men's means were observed in items 18, 37, 38, 41, and 42, but significant differences were obtained in the χ^2 test ($\chi^2 = 9.6 – 13.5$, $p < 0.05$).

With respect to the differences according to level of studies (graduate vs. post-graduate), the post-graduate students recorded higher values in items 1, 2, 3, 22, 23, 29, and 41 ($p < 0.05$, PS = 0.32 – 0.37) although no significant differences were observed in the χ^2 test ($p > 0{,}05$). In contrast, no differences were observed between the means of graduate and post-graduate students in items 7, 8, 17, and 28, but significant differences were revealed in the χ^2 test ($\chi^2 =$ 10.9-12.0, $p < 0.05$).

Discussion

The main objectives of this research were, in the first place, to analyse the internal consistency of several questionnaires on inclusion and CL applied to university students and, in the second place, to know the perception and knowledge of inclusion and CL of university students who are following studies related to PE, PA, or sport, according to the sex and level of studies (graduate vs. post-graduate) of the participants. Although there are studies on the perception and knowledge that university students have of inclusion and CL (Abellán et al., 2019; Block et al., 2021; Hortigüela-Alcalá et al., 2016; Pegalajar & Colmenero, 2013; Prieto et al., 2016; Sánchez-Molina et al., 2021), very few analyse if there are differences according to sex and level of studies. The results of this study show that the questionnaires used have excellent internal consistency and that the total internal consistency of all of the questionnaires is even better, Differences were observed according to sex in the EANEE (items 5, 8, 9, 10, 12, 14, 15-21, and 23), CEFI-R (items 1, 4, 9, 10, and 14), CAPIC (items 1-21, 23-25) and ACOES (items 1-11, 17,18, 20, 24, 30-38, 40-42, and 48) questionnaires. Moreover, differences were observed according to level of studies in the CEFI-R (items 4, 10, 11, 13-16), CAPIC (items 5, 7, and 24) and ACOES (items 1, 2, 3, 7, 8, 17, 22, 23, 28, 29, and 41) questionnaires. Therefore, it can be observed that both sex and level of studies can influence the perception and knowledge of inclusion and CL in university students of PE, PA and sport.

It has been stated that it is important to know the internal consistency of the questionnaires used in research, in order mainly to assess the reliability of the measurement instruments (Cascaes da Silva et al., 2015). The results of the internal consistency of the four questionnaires used in the present study and administered to university students of PE, PA, and sport were excellent, and moreover showed excellent internal consistency in the items of all the questionnaires together. Equally, similar results have been obtained in the validation of the questionnaires in comparable studies that have analysed their internal consistency (Abellán & Sáez-Gallego, 2020; García et al., 2012; González-Gil et al., 2017; Traver & García, 2007; Triviño-Amigo et al., 2022a; Tárraga-Mínguez et al., 2022). However, the results of the present study showed that in some specific blocks of the EANEE, ACOES, and especially the CAPIC questionnaire, the inter-

nal consistency was somewhat lower than the internal consistency results of the all the items in each questionnaire. Another previous investigation also found similar results of lower internal consistency to the ones obtained in the present study in some of the blocks in the CAPIC questionnaire. (Traver & García, 2007). Likewise, in the validation of the ACOES questionnaire, as in the present study, a low value of internal consistency was found in block 4, "criteria for organising the groups." Although the internal consistency was not good in some blocks of some questionnaires, possibly due to the fact that in these blocks the different items deal with open topics, the obtention of excellent values of internal consistency in all the items of each questionnaire and in the totality of the items of all the questionnaires seems to evidence that the questionnaires can be used for university students studying PE, PA, and sport.

As well as determining the internal consistency of questionnaires, previous studies have indicated the importance of knowing the conception and knowledge of university students regarding inclusion in education (Abellán et al., 2019; Aldabas, 2020; Hortigüela-Alcalá et al., 2016; Tárraga et al., 2013), due to the fact that once they have finished their university studies, teachers have to be prepared to teach in heterogeneous classrooms that include students with and without a disability (Akalin et al., 2014). It has been said that teachers with specific training in inclusive PE obtain higher values in self-efficacy regarding inclusion (Abellán et al., 2019; Grassi-Roig et al., 2022; Hutzler & Daniel-Shama, 2017; Reina et al., 2016). However, the initial training of teachers related to inclusion is scarce (García-Barrera, 2017) and can generate rejection (Mosia, 2014). The results of the present study show that the participants had a good perception and knowledge of educational inclusion. The results obtained are similar to previous studies in university students of Infant, Primary and Secondary education, and in teachers of Infant, Primary and Secondary education (Abellán & Sáez-Gallego, 2020; González-Gil et al., 2017; Tárraga-Mínguez et al., 2022; Triviño-Amigo et al., 2022a). These good results are possibly due to the fact that particularly in the studies for Infant, Primary and Secondary Education, as well as studies related to PE, PA and sport, subjects are included that specifically deal with inclusion in education. However, one of the main novelties of the present study is the analysis of the differences

in the knowledge and perception of inclusion according to sex and level of studies, aspects that have hardly been investigated to date. The present study revealed significant differences according to sex in the EANEE questionnaire (significant differences in 14 items) and in the CEFI-R questionnaire (significant differences in 5 items) in which the women obtained higher results. These differences in the knowledge and perception of inclusion according to sex may be due to the different academic self-concept possessed by women and men (Chacón-Cuberos et al., 2020). Bearing in mind that academic self-concept has a positive influence on the improvement in performance, on the increase in motivation and on the increase in academic self-concept (Wang & Yu, 2023), it has been indicated that men have a higher general, emotional and physical self-concept; however, women obtain higher values in academic self-concept (Chacón-Cuberos et al., 2020). Similarly, differences were observed according to the level of studies in the CEFI-R questionnaire (significant differences in 7 items) with the post-graduate students being those with the best values. As was affirmed in a previous study, the study plan which the participants have followed or even if they have or have not had specific training in inclusion (Abellán et al., 2019; Grassi-Roig et al., 2022) can determine their knowledge and perception of inclusion. Possibly post-graduate studies can help improve the perception and knowledge of inclusion because the students study specific subjects in greater depth and extend their knowledge of inclusion. Another of the possible reasons for the differences found could be that the post-graduate students have been able to have previous professional experiences or ones parallel to their post-graduate studies and thus, as stated by Alshehri (2023) experiences influence the attitude towards inclusion. However, in most graduate and post-graduate training it seems that few subjects are taught that are related to attention to diversity (Rodríguez et al., 2017; Valencia-Peris & Mínguez-Alfaro, 2018; Valencia-Peris et al., 2020), so that it could be necessary to extend this specific training.

Previous studies have also suggested the importance of knowing the perception and knowledge that university students have of CL (Muñoz et al., 2020; Nguyen et al., 2021; Rodríguez et al., 2017; Sánchez-Molina et al., 2021), as its adequate use can favour the building of an inclusive education, and equally, so that all the students,

with and without a disability, have the possibility to learn through PE (Bermejo et al., 2022; Páez et al., 2018; Velázquez et al., 2014). The results of the present study show that the participants had a good perception of CL, in spite of not feeling sufficiently trained to implement it. The results obtained are similar to those revealed in recent studies carried out on students of Infant, Primary and Secondary Education, PE, Medicine, and PE teachers (Feria-Madueño et al., 2017; Fernández & Espada, 2016; Matzumura-Kasano et al., 2019; Vicent & Aparicio-Flores, 2019) and may be due to the fact that the participants had never experienced CL, bearing in mind that an experience in initial training favours and improves knowledge and self-efficacy for using this pedagogical model (Völlinger & Supanc, 2020). As in the section on inclusion, one of the main novelties of this study is the analysis of the differences in the knowledge and perception of CL according to sex and level of studies, aspects that have hardly been studied to date. The results obtained in the present study show significant differences according to sex in the CAPIC questionnaire (significant differences in 24 items), with the men obtaining higher scores, and in the ACOES questionnaire (significant differences in 28 items) with the women obtaining higher values. These results may be due to the physical self-concept and motivation of the students in the PE classes, bearing in mind that the lack of motivation and participation is related to a lower physical self-concept (Taylor et al., 2014). It is important to highlight that CL is a methodology that favours the participation of all the students as well as motivation towards PE (Bores-García et al., 2021; Fernández-Río, 2017). Therefore, it can be sensed that the students with less motivation and a worse physical self-concept prefer CL as a methodology as it helps all the students to participate and feel more motivated. Moreover, significant differences were observed according to the level of studies (graduate vs. post-graduate) in the CAPIC questionnaire (significant differences in 3 items) and the ACOES questionnaire (significant differences in 11 items) with the post-graduate students the ones scoring the highest values. These results coincide with those obtained by Pegalajar & Colmenero (2013), as they observed that the older participants, given that they have received more training, perceive CL in a more positive way. Thus, it seems that both age and higher training can

improve the perception and knowledge of university students regarding CL.

Conclusions

The results of the study show that, in spite of the fact that in some specific blocks of some questionnaires the internal consistency was somewhat lower, excellent values for internal consistency were obtained in all the questionnaires and the set of items of all the questionnaires, which seems to evidence that the questionnaires can be used for university students studying topics related to PE, PA or sport. Moreover, good values were obtained for perception and knowledge of inclusion and CL in students of PE, PA, and sport. However, differences were found according to sex and level of studies. The women affirmed that they had a better perception than the men in the EANEE, CEFI-R and ACOES questionnaires. Equally, the post-graduate students showed a better perception of inclusion and CL than the degree students. From the results obtained, both sex and level of studies can influence the perception and knowledge of inclusion and CL in university students of PE, PA, and sport.

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PEDAGOGY

The Effects of Ethnic Identity on Motivation to be Physically Active in Schools in Hawai'i

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Abstract

The Hawaiian Islands and people have been affected by Western influences, and many of them have not benefited from them. Because of this, acculturation has taken place. Briefly, acculturation has been defined as the cultural changes that occur over time, affecting a culture (Redfield et al., 1936). The purpose of this study was to examine the relationship between students' ethnic identity and their motivation towards physical activity (PA), with a particular interest in students who self-identify as Hawaiian. It was generally found that the population of this study was intrinsically motivated toward PA with moderate levels of amotivation. The results of this study highlight the importance for physical education (PE) teachers in Hawaii to engage their students in Hawaiian sports and activities.

Introduction

Explorer Captain James Cook arrived in Hawaii in 1778, a day that would forever change the native Hawaiians, their culture, and their behaviors; not always for the better. Under the rule of King Kamehameha and with the aid of Western weaponry (Kamakau, 1961), the Hawaiian Islands were united in 1810, creating a common cultural identity. Individualistic, tribal-centered notions gave

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way to a collectivist unity among the Hawaiian Islands. For centuries, Hawaiians lived in relative isolation and anonymity, cultures and identity intact. Eventually, however, life in the islands would drastically change with the continued arrival of foreigners. Western businessmen during the late 19th century found the Hawaiian Islands especially alluring as a location for sugar mills and plantations that required labor sourced from places such as Japan, China, and Portugal, generating an influx of diverse cultural practices. By the year 1900, immigrant populations had grown to be over 60,000 Japanese, 25,000 Chinese, and 18,000 Portuguese (Kaeppler, 1972). This would eventually lead to intermarriage between foreigners affecting native Hawaiians (McDermott et al., 1980), adding to one of the many factors affecting Hawaiians. Other events that impacted the Hawaiians included the introduction of Christianity and changes in the law of the land (Kamakau, 1961). This steady chain of events would eventually acculturate Hawaiians evermore away from traditional values of their pure historic cultural identity.

Acculturation and Ethnic Identity Erosion

Acculturation has been defined as cultural change that continues over a period of time between two different cultural groups (Redfield, et al., 1936). Often, within this process, the original culture is altered through greater acculturation as the dominant culture is imposed on traditional culture (Park, 1928). Based on the acculturation by Redfield and colleagues (Redfield et al., 1936), there must first be a form of contact that happens between two different groups (e.g., the arrival of Cook). Next, as new cultures are introduced, some are received voluntarily, while others are overwhelmed due to the dominance of a group. Subsequent acculturation occurs as aspects of a dominant culture are either accepted or resisted by the receiving group. Thus, individuals or a group develop and employ acculturation strategies to cope with cultural changes they experience (Berry, 1997). Deciding on a plan to manage cultural changes depends on the degree to which one maintains a traditional cultural identity and strengthens connections with aspects of the dominant culture (Berry, 1992). Four acculturation strategies include (a) assimilation, (b) integration, (c) separation, and (d) marginalization. Assimilation is when maintaining traditional cultural identity is not important, but strengthening the connection with the dominant culture (e.g.,

wearing clothes and speaking the language of the dominant culture). Integration is when both traditional cultural identity and strengthening relations are important (speaking the language of the dominant culture while maintaining the native language). Separation is when importance is only given to preserving cultural identity (e.g., only affiliates with others of the same ethnic group). Lastly, marginalization is when both cultural identity and relations with the dominant culture are not important (i.e., it does nothing to instill either culture into one's identity), resulting in cultural loss.

Western influences during the 19th century brought significant changes to the Hawaiian lifestyle by introducing a diverse array of cultures. The influx of foreigners to Hawaii brought (a) biological changes, such as a shift in diet and exposure to unfamiliar diseases, (b) economic changes, such as new forms of work and employment, and (c) cultural changes, such as clothes, language, and religion (Berry, 1997). Regardless of the mode of acculturation, lifestyle, well-being, and identity have been significantly impacted by foreign influence.

Ethnicity is either determined at birth or by others, depending on the background of the individual, but how an individual forms their own ethnic identity is developed over time as they build a sense of self and attitudes toward what it means to be a member of that group. (Phinney & Ong, 2007). Several components (Phinney, 1992) significantly impact one's ethnic identity within a group. The first is self-identification, which is how one labels oneself based on their ethnicity ("I am Hawaiian because my dad is Hawaiian"). Second, ethnic behaviors and practices, which is participating in social activities and cultural traditions of the ethnic group (e.g., hula, singing in Hawaiian). Next is affirmation and belonging which is feeling they belong to an ethnic group ("I know that I am Hawaiian, and I feel that I belong with other Hawaiians). Lastly, ethnic identity achievement is having a "firm commitment to one's ethnicity based on an exploration that has led to a clear understanding of ethnicity" (Phinney & Ong, 2007, p. 275). While Hawaiians could strengthen their commitment to their identity by exploring traditional and cultural practices, the exploration of foreign practices introduced an alternative lifestyle that not only impacted the Hawaiian identity but also had an effect on the physical health and well-being of Hawaiians.

Cultural Association with Chronic Diseases

Another acculturation factor affecting the Hawaiian population was the prevalence of chronic diseases. Diseases such as obesity and diabetes are common among Hawaiian and Pacific Islander populations. According to the State of Hawaii Behavior Risk Factor Surveillance Survey (2009), 49.3% of Native Hawaiians in Hawaii are considered obese and have higher rates of chronic diseases associated with obesity in comparison with European Americans (Mau et al., 2009). As of 2018, obesity rates of Hawaiians and Pacific Islanders in Hawaii are at 44.4 % compared to 32.5% of Hawaiians living in the mainland U.S. (America's Health Rankings, 2019). Between 2013 and 2018, the prevalence of diabetes among Hawaiians and Pacific islanders is 15.5% in Hawaii, compared to 10.3% of Hawaiians in mainland U.S. A study on modes of acculturation and diabetes found that Hawaiians in a traditional (or separation) mode were 27% more likely to have diabetes compared to Hawaiians with integrated modes (15.4%), assimilated modes (12.5%), and marginalized modes (10.5%) (Kaholokula, et al., 2008). In Hawaii during 2018, physical inactivity rates of Hawaiians were at 24.7%, much smaller compared to Hawaiians living in the mainland U.S. at 32.1% (America's Health Rankings, 2019). While inclusion of Western athletics is not detrimental to the Hawaiian lifestyle, other Western lifestyle behaviors can be devastating among Hawaiian adults, such as alcohol consumption (28.5%) and smoking (20.8%), only inhibiting the health of Hawaiians with other diseases (America's Health Rankings, 2019).

Hawaiians suffering from chronic disease is prevalent in Hawaii due in part to foreign influence on culture and lifestyle. A Hawaiian can choose to assimilate or separate from the behaviors and practices of Western culture. Still, the strategy to manage one's culture is independent of how others choose to do so. An individual is in control of how they acculturate and is responsible for the consequences associated with it.

Self-Determined Motivation

According to Self-Determination Theory (SDT), motivation is either self-determined: volitional and supported by an individual's sense of self; or controlled, dictated by external forces (Ryan & Deci, 2016). Within SDT, there are three psychological needs that

precede one's motivation: autonomy, competence, and relatedness. Individuals who experience autonomy (a sense of "I can choose"), competence (a sense of "I can do"), and relatedness (a sense of "I belong") are more likely to be motivated in an activity or behavior. When these basic psychological needs are satisfied within the individual, self-determined motivation, mental and emotional growth, and well-being are expected to improve (Standage et al., 2005).

Self-determined behavior can be described by three motivational states: amotivation, lacking motivation; intrinsic motivation, engaging in the activity for reasons within self or in the activity; and extrinsic motivation, engaging for reasons outside of self (Ryan & Deci, 2016). These behaviors fit on a continuum, actuated by either external or internally regulated processes. The low end of the continuum is amotivation, which is the absence of motivation in the activity ("Participating in basketball is not important to me"). Next, extrinsically motivated individuals engage in activity to gain or avoid a consequence ("I am participating so I can get a good grade"). Last, intrinsic motivation occurs when individuals engage in activities that are of interest to themselves ("I surf at the beach because it is fun"). Within external motivation are four types of external regulation (Ryan & Deci, 2016): (a) external regulation, an action or behavior is performed in order to gain a reward (participating in PE to get a good grade) or avoid punishment; (b) introjected regulation, internal rewards are sought for pride, gratifying ego (gaining praise from teacher or peers) or because an individual feels guilty; (c) identified regulation, identifying with the value of a behavior and seeing the importance of it ("I lift weights to get stronger"); and (d) integrated regulation, identifying with the value of a behavior and bringing it into harmony with core interests and values (e.g., "Eating vegetables is important for my health").

It is important to look at contexts such as PE and the effect it has on one's motivation toward their own personal physical activity. Through incorporating self-determination theories, Standage et al. (2003) found that adolescents with higher levels of self-determination in PE class were more likely to be physically active outside of class. Several key findings indicate that an autonomy-supportive environment has a positive impact on adolescents' autonomy, competence, and relatedness. When support is given to personally based compe-

tence, and the adolescent's belief that success is obtained with hard work and a desire to learn, adolescents' autonomy of their achievement increases in PE (Treasure & Robert, 2001). Social contexts that support these three psychological needs increase motivated action (Deci et al., 1991). Studies show that the need for autonomy, competence, and relatedness across ethnically diverse cultures is important (Ryan & Deci, 2016). Chirkov et al. (2003) found that internalization of cultural practices predicted greater psychological well-being in observed college students in South Korea, Russia, Turkey, and the United States. Seeking to meet the three psychological needs is important within an educational setting, as well as self-determined motivation in PE and across diverse ethnic and cultural groups.

The Hawaiian people have been exposed to numerous external factors that have impacted their culture. Thus, the purpose of this study was to examine if there is a relationship between students' ethnic identity and their motivation towards PA and levels of PA, with a particular interest in students who self-identify as Hawaiian.

Methods

Participants and Setting

Participants (n = 301, 165 males, 136 females) comprised sixth-grade (n = 76), seventh-grade (n = 139), and eighth-grade (n = 86) students from a public school (n = 252) and a private school (n = 49), both located in the Hawaiian Islands. Schools were selected based on their higher population of Pacific Islanders and the greater likelihood of participants identifying specifically as Hawaiian.

Of the 301 participants, 24.3% identified as Hawaiian (n = 73), 6.3% identified as Pacific Islander (n = 19), 13.6 % identified as White (n = 41), 13.6% identified as Hispanic (n = 41), 40.5 % identified as Asian (n = 122), 1.3% identified as African American (n = 4), and .3% identified as none of the above mentioned (n = 1). All procedures received university, IRB, district, and school approval before the study began. Parental permission and child assent forms were distributed and signed prior to data collection.

This is a descriptive/cross-sectional study that will use convenience sampling as described to examine the effects of (a) personal ethnic identity and (b) gender of Hawaiian school adolescents on

motivation, physical activity (via pedometer steps) during PE class, and participation in various sporting activities.

Procedures

Prior to data collection, a researcher contacted teachers and principals via email and phone calls to obtain permission to conduct research with their students. The lead researcher arrived at the schools one week prior to data collection to explain the procedures to teachers and students, including the use of pedometers and completing the survey. All teachers (n = 4) taught the same lesson plan, adjusting their 60-minute classes to allow for similar dressing time, gave the same instructions for using pedometers during the lesson, and had the same amount of time for game play, followed by students taking the 10-minute survey.

At the end of the lesson, students received the surveys, recorded pedometer steps, and answered the questions before dressing. The 10-minute survey consisted of 33 items, including gender, six ethnic identity choices, 16 motivational items, six ethnic identity items, and a list of possible sports and extracurricular activities, including traditional Hawaiian activities. Members of the research team and the teacher circulated throughout the class to help clarify or answer students' questions.

Instruments

Multigroup Ethnic Identity Measure—Revised (MEIM-R)

The MEIM-R (Phinney & Ong, 2007) consists of six items, three of which pertain to *exploration* of ethnic identity ("I have often done things that will help me understand my ethnic background better") and three pertaining to *commitment* to ethnic identity ("I have a strong sense of belonging to my own ethnic group"). Participants respond on a 5-point Likert scale with 1 point = "Strongly disagree," 2 points = "Disagree," 4 points = "Agree," 5 points being "Strongly agree," and 3 points = neutral response. An ethnic identity score will be calculated by finding the mean of the respective subscales' items. The MEIM-R has shown reliability and validity among diverse populations such as African American, Asian American, and Latino ethnicities in college but has yet to be used with Hawaiian

and Pacific Islander populations or middle school students (Phinney & Ong, 2006).

Situational Intrinsic Motivation Scale (SIMS)

The SIMS (Guay et al., 2000) is a 16-item, four-subscale instrument that measures the motivational constructs of intrinsic motivation (IM), identified regulation (IR), external regulation (ER), and amotivation (AM) and has been found valid and reliable for use in this population (Standage et al., 2003). Examples of items used include "Because I think that this class is interesting" and "I do PE but I am not sure if it is worth it." Adolescents score items using a scale with 1 point = "Corresponds not at all," 4 points = "Corresponds moderately," and 7 points = "Corresponds exactly." Four subscale scores will likewise be calculated by forming means of respective subscale items. Subscale means will be used for all subsequent motivation and ethnic identity analyses.

Pedometers

The pedometer (Yamax Digi-Walker LS 2525) is a uniaxial, lever-arm pedometer that records step count, distance, and time in activity. For this study, only one pedometer was used and placed on the hip on the left side to track students' PA and to record on their survey (Vincent & Sidman, 2003). When prompted, students placed their pedometers on their hips and reset them to zero prior to beginning class activities. Pedometer counts were recorded at the end of each class and the researchers collected pedometers.

Data Collection

Data was collected one day at the private school, while data was collected over a two-day period at the public school due to having more participants than the researchers had pedometers. Data collection occurred only once for each participating class within one week. Completed surveys were collected at the end of each class and placed in a large sealable folder, kept under the care of one of the researchers. Survey information contained demographic information such as grade and gender, MEIM-R and SIMS item responses, and extracurricular activities. All identifiers were removed once data input and rechecking were complete.

Data Analysis

Demographic variables include grade (sixth, seventh, or eighth), gender (male or female), school (private or public), and student ethnicity. All response scores were input into SPSS.25.0 and inspected for input error. Data from MEIM-R was reduced from 6 items to two subscales (exploration and commitment) by finding the means of corresponding items. Similarly, data from SIMS were reduced from 16 items to four subscales (AM, ER, IR, IM). SIMS. A Self-Determination Index (SDI, Pelletier et al., 1995) by weighting subscales as follows: 2 ∗ IM + IDR - ER – 2 ∗ AM. The SDI score is a useful measure of one's overall degree of self-determined behavior, and its interpretation is straightforward—the higher the score, the more one is influenced by intrinsic motivations than extrinsic or lack of motivation.

All response variables and subscale means were inspected for normality (skewness and kurtosis), and standard deviations were calculated. Correlation analysis was used to examine the strength and direction of selected variables. MANOVA was used to examine significant differences among group variables (gender and ethnic identity) for selected variables (motivational indices, ethnic exploration, ethnic commitment, and steps). Tests of assumptions for MANOVA were conducted. Follow-up comparisons were made as necessary via one-way ANOVA and *Tukey's HSD* for gender and ethnic identity.

Results

Descriptive statistics for all dependent variables were examined by ethnic group and by gender, and are found in Tables 1 and 2. Taken as a whole (n = 301), participant mean scores revealed that they were generally (a) intrinsically motivated (M_{IM} = 5.73), (b) have good perceptions of identified regulation (M_{IDR} = 5.92), (c) driven by moderate levels of external regulation (M_{ER} = 4.39), (d) had moderate levels of amotivation (M_{AM} = 5.73), and (e) had a positive SDI score (M_{SDI} = 7.76). Mean scores also reveal that participants explore their ethnic identity ($M_{Explore}$ = 3.62) more than not and have a moderate commitment towards embracing their identity (M_{Commit} = 3.86). Further, students' step counts during PE averaged M_{Steps} = 1984. Students also indicated that, on average, they participate in

Table 1

Means, Standard Deviations, and Eta² for all Dependent Variable Measures by Gender

	Male		Female		
	N = 165		*N* = 136		
	M	*SD*	*M*	*SD*	*Eta²*
IM	5.94*	1.17	5.47	1.12	.04
Total	*M* = 5.73, *SD* = 1.17				
IDR	6.01	1.07	5.82	1.01	.01
Total	*M*= 5.92, *SD* = 1.05				
ER	4.55**	1.31	4.20	1.22	.02
Total	*M*= 4.39, *SD* = 1.28				
AM	2.77*	1.61	2.42	1.16	.02
Total	*M*= 2.61, *SD* = 1.43				
SDI	7.80	5.35	7.72	4.74	.00
Total	*M*= 7.76, *SD* = 5.07				
Explore	3.49**	1.04	3.78	.70	.03
Total	*M*= 3.62, *SD* = .91				
Commit	3.74*	.98	4.00	.74	.02
Total	*M*= 3.86, *SD* = .89				
Steps	2072**	610	1877	667	.02
Total	*M*= 1984, *SD* = 642				
Sports in general	2.88***	2.04	2.07	1.70	.04
Total	*M*= 2.52, *SD* = 1.94				
Hawaiian sports	.72	1.04	.53	.79	.01
Total	*M*= .64, *SD* = .94				

Note: * = $p < .05$, ** = $p < .01$, *** = $p < .001$

between two and three sports and physical activities (M_{Sports} = 2.51) outside of PE. Lastly, results suggest that participants engage in one or fewer Hawaiian sports and activities ($M_{HISports}$ = .63).

Bivariate correlations are found in Table 3 and reveal (a) small to moderate correlations among measured variables, (b) the proposed simplex pattern among motivational subscales is supported, with the strongest correlations found in adjacent variables (see Table 3). Notably, the relationships between motivational indices and measures of ethnic identity exhibit small but significant correlations (see Table 3).

MANOVA tests revealed significant gender (Wilks l = .934, p = .018) and ethnic identity effects (Wilks l = .046, $p < .001$). Post-hoc

Table 2
Means, Standard Deviations, and Sample Size for all Dependent Variables by Ethnic Group

	Hawaiian n = 73		Pac. Islander n = 19		White n = 41		Hispanic n = 41		Asian n = 122		African American n = 4	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
IM	5.84	1.23	5.80	.96	5.88	1.19	5.62	1.11	5.61	1.18	6.50	.84
IDR	5.98	.94	5.95	.87	6.18	.90	5.81	1.01	5.79	1.17	6.94	.13
ER	4.28	1.39	4.89	1.39	4.32	1.35	4.21	1.25	4.47	1.18	4.38	1.09
AM	2.18	1.27	3.07	.41	1.87	1.23	2.96	1.60	2.97	1.34	2.00	.79
SDI	9.02	5.03	6.53	5.12	9.87	4.68	6.93	4.49	6.59	5.04	11.56	3.86
Explore	3.72	.87	3.72	1.37	2.98	1.11	3.63	.84	3.75	.71	3.83	.84
Commit	3.94	.94	4.07	1.18	3.36	1.05	3.80	.87	3.94	.70	4.33	.27
Steps	2041	683	2013	596	2182	716	1968	626	1882	590	2049	859
Sports	2.84	2.11	3.16	1.86	3.02	1.98	2.80	1.87	1.98	1.76	2.00	.82
HI Sports	.90	1.11	.79	1.13	.93	1.06	.46	.87	.43	.70	.25	.50

comparisons revealed gender effects (see Table 1) for all response variables with the exception of IDR. Significant ethnic identity effects were found for AM and SDI, ethnic exploration, and ethnic commitment, but not steps (see Table 2). With participants who self-identified as African American, given that only four students lack statistical power, conclusions on findings from this ethnic group cannot be drawn.

Motivational Indices

Intrinsic Motivation. Significant gender effects were noted in IM (F (1, 299) = 12.47, p <.001) with male students being significantly more intrinsically motivated towards PA (M_{IM} = 5.94) than female students (M_{IM} = 5.47, Eta^2 = .04). No significant ethnic identity effect was noted.

Identified Regulation. No significant gender or ethnic identity effects were noted.

External Regulation. Significant gender effects were noted in ER (F (1,299) = 5.89, p = .02), with males being significantly more externally regulated toward PA (M_{ER} = 4.55) than females (M_{ER} = 4.20; Eta^2 = .02). No significant ethnic identity effect was noted.

Amotivation. Significant gender effects were noted in AM (F (1,299) = 4.54, p = .03) with males being significantly more amotivated toward PA (M_{AM} = 2.77) than females M_{AM} = 2.42, Eta^2 =

Table 3
Correlations of Measures of Motivational Indices, Ethnic Identity Measures, and Steps

	IM	IDR	ER	AM	SDI	Mean Explore	Mean Commit	Steps
IM		.77**	.09	-.16**	.69**	.17**	.18**	.22**
IDR			.07	-.25**	.68**	.18**	.22**	.20**
ER				.36**	-.40**	.01	-.002	.07
AM					-.78**	.01	-.03	-.10
SDI						.11	.14*	.18**
Explore							.75**	.03
Commit								.040

Note: * = $p < .05$, ** = $p < .01$

.015). A significant difference was noted where Hawaiian students demonstrated significantly lower AM (M_{AM} = 2.18) than Hispanic students (M_{AM} 2.96; Tukey, p = .046) and Asian students (M_{AM} = 2.97; Tukey, p = .002). Significant differences were noted between White students (M_{AM} (M_{AM} = 1.87) and Pacific Islanders (AM = 3.07; Tukey, p = .023), Hispanic (M_{AM} = 2.96; Tukey, p = .005), and Asian students (M_{AM} = 2.97; Tukey, $p < .001$).

Self-determination Index. No significant gender effects were noted on SDI. There were significant ethnic identity differences noted with Hawaiian students demonstrating significantly higher SDI scores (M_{SDI} = 9.02) than Asian students (M_{SDI} = 6.59; Tukey, p = .012). Also, White students (M_{SDI} = 9.87) demonstrated higher SDI scores than Asian students (M_{SDI} = 6.59; Tukey, p = .004).

Ethnic Identity Measures

Exploration

Significant gender effects were noted in Exploration (F (1,299) = 7.64, p = .01), that female students explore their ethnic identity more ($M_{Explore}$ = 3.78) than male students ($M_{Explore}$ = 3.50, Eta^2 = .025). White

students explore ($M_{Explore}$ = 2.98) their ethnic identity significantly less than students who identified as Hawaiian ($M_{Explore}$ = 3.72; Tukey, $p < .001$), Pacific Islander ($M_{Explore}$ = 3.72; Tukey, $p = .03$), Hispanic ($M_{Explore}$ = 3.63; Tukey, $p = .01$), and Asian ($M_{Explore}$ = 3.75; Tukey, $p < .001$). No significant differences were noted between other ethnic identity groups for ethnic exploration.

Commitment

Significant gender effects were noted in Commitment (F (1,299) = 6.53, $p = .01$), that female students were more committed toward their ethnic identity (M_{Commit} = 4.00) than male students (M_{Commit} = 3.74, $Eta^2 = .021$). White students (M_{Commit} = 3.36) displayed a significantly lesser commitment to their identity than Hawaiian students (M_{Commit} = 3.94; Tukey, $p = .009$), Pacific Islander students (M_{Commit} = 4.07; Tukey, $p = .040$), and Asian students (M_{Commit} = 3.94; Tukey, $p = .003$). No other significant differences were noted for Hispanic students (M_{Commit} = 3.80), and African American students (M_{Commit} = 4.33) compared to other ethnic groups.

Sports and Physical Activities

Physical Activity in PE (Steps). Step counts by gender are found in Table 1 and by ethnic identity in Table 2. Significant gender effects were noted in steps (F (1,299) = 7.05, $p = .01$) with male students having more steps (M_{Steps} = 2072) than female students (M_{Steps} = 1877, $Eta^2 = .023$) during the lesson. No significant step differences were noted between ethnic groups.

Sports in General. Significant gender effects were noted in Sports (F (1,299) = 13.47, $p < .001$) in that male students participated in more sports and physical activities (M_{Sports} = 2.88) than female students (M_{Sports} = 2.07, $Eta^2 = .043$).

Hawaiian Sports and Activities. No significant differences were noted for Hawaiian sports and activities between genders, nor among ethnic groups. Participants as a whole participated in one or fewer Hawaiian sport or activity ($M_{HISports}$ = .64).

Discussion

The purpose of the study was to examine if there is a relationship between students' ethnic identity and their motivation towards

PA and levels of PA, with a particular interest in students who self-identify as Hawaiian.

Motivational Indices

Interestingly, males were more intrinsically motivated as well as more externally regulated towards PA than females. This could be an indicator that males enjoy participating in PA in general but also participate on their own volition during PE because participation in PA is being graded in the class, making the connection that their participation in PA will reward them with a grade (Ryan & Deci, 2016). Yet, in contrast, males were also more amotivated toward PA than females. Studies have shown that students who were more externally regulated experienced anxiety and difficulty handling failure (Deci et al., 1991), and it could be the same reason males are amotivated because of difficulty with aspects of PA in their PE class, and knowing they will not meet expectations of the task and gain no reward even if they do participate. During the lesson, some male students made comments about not taking the activity seriously because it would not affect their grade, or comments about seeing no benefit to themselves if they participated.

Based on the results, the population of participants was generally intrinsically motivated toward PA with moderate levels of amotivation. SDI scores were positive, revealing that students experience greater intrinsic motivation and identified regulation than being amotivated and externally regulated towards PA.

In comparison to Asian students, Hawaiian students and white students have significantly greater SDI, indicating that these ethnic groups demonstrate more intrinsic motivation and identified regulation towards PA. Furthermore, Hawaiian students were significantly less amotivated toward PA than Hispanic and Asian students. White students were also significantly less amotivated toward PA than Pacific Islander, Hispanic, and Asian students. It is interesting that two ethnic groups (Hawaiian and white) have similar motivational measures with high SDI scores (Hawaiian SDI = 9.02, white SDI = 9.87) and low AM (Hawaiian M_{AM} = 2.18, White M_{AM} = 1.87). Reasons for this could be that adolescents have assimilated aspects of the mainstream culture, such as taking a liking to Westernized sports and activities, and are more familiar with the current sport-centered PE curriculum that uses those sports within the curricu-

lum. Results from the current study show students having a greater interest in sports in general (M_{Sports} = 2.52) than they do in Hawaiian sports ($M_{HISports}$ = .64). It was noted in the field notes that students at both school sites participate in Makahiki games, yet it is not a requirement. Although Makahiki games deal with sports and activities that are intended for competition and training, greater awareness and participation in these traditional games could lead to greater participation in other Hawaiian sports and activities, such as diving, canoe paddling, and surfing, and may lead to increased cultural explorations.

Given that the study took place in Hawai'i, teachers need to have an understanding of the *'Ohana* culture (Handy & Pukui, 1950), which is prevalent among not just Hawaiian individuals but throughout the Hawaiian Islands, and can be implemented. Despite the traditional culture of Hawai'i, the demographic makeup of the islands is largely mixed race. Learning how to accommodate these differences in school can be taxing on teachers to differentiate instruction for every student within such a large variety, which could explain why certain ethnic groups demonstrate more intrinsic motivation towards a class, such as PE, than another ethnic group.

Ethnic Identity Measures

Females were significantly more likely to explore their ethnic identity and feel more committed to their ethnic identity than males. While males may demonstrate higher levels of motivational indices, Females have a significantly stronger connection to their ethnic identity through actively exploring their culture and having an even stronger sense of belonging to their ethnic group. This is interesting to consider how males and females were approaching the lesson in their class in terms of Hawaiian ethnicity and being a collectivist culture. Individuals belonging to a collectivist culture have more concern for others within their group and taking care of the group instead of taking care of themselves (Hui & Triandis, 1986). In most of the classes, it was the females that were developing strategy, keeping the team together by defending or moving offensively as a team, and rescuing group members that have been tagged out. Male students generally acted alone, relying more on their speed and agility instead of strategy. Also interestingly, when males scored for

their team, it was because of their individual effort that they won, but when their team lost it was because of others.

White students explored their ethnic identity significantly less than Hawaiian, Pacific Islander, Hispanic, and Asian students. White students were also considerably less committed to their ethnic identity than Hawaiian, Pacific Islander, and Asian students. This is interesting because both Hawaiian and White students had similar motivational measures and SDI scores but differed in how students from these groups connect with their ethnic identity. Components of ethnic identity are interaction within ethnic behaviors and traditions, affirmation and belonging to one's own ethnicity (Phinney, 1992), which is actively being involved within one's ethnic culture, and also having a sense of belonging with others in the same ethnic group. The reason for white students not exploring or being committed towards their ethnic identity could be that they are in a culture that is not marginalized and doesn't need to explore or seek affirmation from other people of the same ethnicity.

Although there are no significant differences noted between gender or ethnic groups with Hawaiian sports and activities, the surprising result is that participants as a whole were involved in less than one Hawaiian sport or activity. This could be in large part due to participation in at least two sports and activities, perhaps assimilating to the mainstream culture in the aspect of sports and activities, which could be more appealing to adolescents than canoe paddling or hula. In the list of sports and activities, under the section marked "other," some students wrote playing video games as their other activity. The list of sports was to help students identify the physical activities that they participate in freely on their own choice, but it was still surprising how little Hawaiian sports and activities were participated in. With items such as video games, smart mobile devices, and toys like kendamas vying for adolescents' attention and time, it is more likely that students will assimilate into a mainstream culture instead of the culture tied to their ethnic identity.

Practical Implications

Participants show involvement in at least two sports, but less involvement in Hawaiian sports and activities. Although Hawaiian students show moderate results in being intrinsically motivated towards PA, it is concerning that they participate in less than one

Hawaiian sport or activity (M_{HISports} = .90). Although both schools participate in Makahiki games and compete with other participating schools, not all schools within the state of Hawai'i participate or have a PE curriculum that is culturally grounded. Hawaiian studies teachers could collaborate more with PE teachers in creating a PE curriculum that infuses culturally grounded activities into the PE program. PE teachers are in a unique position when it comes to creating lessons, as they help students feel successful in the skills they learn. Creating a lesson where students can generate the feeling of success while also understanding the practical application of the skill for themselves will incline them to be more positively motivated towards PA.

Conclusion

This study has shown that Hawaiian students who explore their culture and are committed to their ethnic identity are more likely to be positively motivated towards PA, indicating that there is a relationship between students' ethnic identity and their motivation towards PA. The importance of this study goes beyond trying to have students motivated about PA, but recognizing that the culture of these students plays an important part in their motivation. Classes like Hawaiian Studies are essential in helping to strengthen Hawaiian students' ethnic identity. This reveals a need for a curriculum that enriches both healthy lifestyles and Hawaiian identity to strengthen Hawaiian students' commitment to their culture instead of assimilating to aspects of mainstream culture that are detrimental to their motivation toward PA and overall health. Much of the purpose of engaging in PA is for the purpose of sport and becoming an athlete rather than the purpose of providing help to others, family, and community.

In a time where monitoring the health and PA of young students is being put on the back burner of education, it needs to be noted that it is important in ensuring that the future of one's culture is preserved throughout the coming generations. Much of that preservation is dependent on a healthy generation that is positively motivated towards PA and has a firm grasp of their ethnic identity. It is a culture that is solely based on the protection and care of the community and all its members.

Limitations

The current study had a relatively small sample size with participants coming from two schools on one island. Having a larger sample size and collecting data on school sites from neighboring Hawaiian Islands would enable more in-depth data collection on ethnic identity, particularly among Hawaiian populations.

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PEDAGOGY

The Relationship Between Trait Anxiety and Superstitious Behaviors: A Study on Female Soccer Players

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Abstract

The aim of this study is to determine the relationship between trait anxiety and superstitious belief tendency levels of female soccer players. The study was conducted with 161 soccer players selected by a simple random method among 272 active soccer players playing in nine teams competing in the first group of the Women's 1st League of the Turkish Football Federation. The study utilized the Trait Anxiety Scale, the Superstitious Belief and Behavior Scale in Sports, and a Personal Information Form as instruments for data collection. Data analysis was performed using the IBM SPSS statistical software. Employing a survey model within the framework of quantitative research methods, the research aimed to gather and analyze data systematically. Frequency distributions, arithmetic averages, standard deviations, skewness, and kurtosis values were analyzed to evaluate the data obtained. Pearson product-moment correlation analysis (r) was applied to determine the relationship between the scores obtained from the scales in the study. As a result, a low positive correlation was found between trait anxiety levels and superstitious behavior levels of female soccer players. It is thought that this situation may be due to the inability of athletes to

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manage their anxiety states that arise as a result of their fear of losing or their ambition to succeed, and that they turn to superstitious behaviors that exist in all beliefs from past to present and are widely used in sports fields as well as in daily life.

Introduction

Anxiety is generally defined as a feeling of tension arising from the feeling that bad things may happen to an individual (Berutu & Mutiawati, 2023; Muir-Cochrane et al., 2017; Öncül, 2000; Sieber et al., 2013), as well as the feeling that an individual experiences in the face of a possibility of danger from the outside world or a situation that is thought to be in danger (Alisinanoğlu & Ulutaş, 2003; Chorpita & Barlow, 1998; Tahılar et al., 2017). According to Spielberger (1972), anxiety is defined as the unpleasant emotional and observable reactions to stressful situations, such as sadness, perception, and tension. Similarly, anxiety is a reflection of complex emotions as an individual's response to both internal and external stimuli. This includes not only the situations that individuals face in their current life circumstances, but also uncertainties about the future. However, the individual's perception, life experience, and environmental factors play an important role in the emergence of anxiety. Anxiety is an emotion that should be evaluated in both positive and negative aspects. The negative aspect is that anxiety negatively affects individuals' mental health and makes their thoughts pessimistic.

On the other hand, the positive aspect of anxiety is that it contributes to the personality and character development of individuals by improving their ability to cope with challenging situations and improving their mental resilience. In this context, the positive aspect of anxiety is that it increases individuals' ability to struggle (Manav, 2011). In this context, anxiety can have profound effects on the psychological and physiological state of individuals and negatively affect their daily functioning. In summary, anxiety is a condition that affects an individual's mental health and can have serious consequences if left untreated; therefore, it is of great importance to develop appropriate strategies for the management and treatment of anxiety. This is an issue that should be taken into consideration not only for individuals but also for the general health of society.

While anxiety is of considerable importance in our daily lives, it is also of vital importance in the lives of athletes. In the world of sports, anxiety emerges as an important factor shaping the performance of individuals and becomes especially evident before the competition. Given the high levels of anxiety and stress that athletes often face before and after competitions, uncontrolled anxiety can adversely impact their performance and lead to suboptimal outcomes (Bali, 2015; Başaran et al., 2009; Pepe, 2020; Yılmaz et al., 2021). It is also thought that athletes' anxiety of not being able to show the desired performances may cause them to react to their anxiety with superstitious beliefs or behaviors by repeating the attitudes and behaviors they remembered in their previous successful performances. In other words, one of the reasons why athletes exhibit superstitious behaviors may be their anxiety and concerns about events.

Superstition or superstitious behavior is a concept in which we attribute some things to supernatural powers in the face of negativities in the world, or we attribute the necessity of divine control that we cannot explain in a reasonable way. In other words, superstition generally evokes some negative, religious, or mystical concepts (Kurudirek, 2018; Schippers & Van Lange, 2006; Skinner, 1992). Superstitious behaviors are characterized as atypical, repetitive, and rigid actions that individuals believe may have a beneficial impact on outcomes. However, it is important to note that there is no actual causal relationship between these behaviors and the results of events (Dömötör et al., 2016; Womack, 1992). Budak (2005) defined superstition in his psychology dictionary as "the belief that the course of natural events can be changed by supernatural or magical forces such as prayer, magic, carrying objects believed to bring good luck, writing amulets, and summoning spirits." Burger and Lynn (2005) define superstitious behavior as people's efforts to transform some uncontrollable forces into controllable forces and state that it is an effort to take uncontrollable forces under our control with a certain probability.

Superstitious beliefs have been found to reduce perceived stress. Similarly, it has been stated that superstitious belief orientation increases significantly with the increase in anxiety level in athletes (İnce, 2021; Işık et al., 2015). These findings reveal the role of superstitious beliefs in the anxiety management of athletes and pave the

way for their evaluation as a potential strategy to reduce the effects of anxiety. In sports, some soccer players want to enter the field first, some want to join the field last, and some want to touch the grass as soon as they enter the field. Again, some players like to wear the same cleats, the same socks, or even the same underwear for a long tournament or league period. Such superstitious behaviors can be diverse, including lucky objects, team rituals, and prayers according to religious beliefs performed before or during the match. Countless examples can be defined as superstitious behaviors in sports. In light of these findings, it is seen that superstition and superstitious behaviors have an important effect on the anxiety management of athletes. Especially athletes who are under high stress often resort to such rituals. Superstitious behaviors, such as lucky objects or team rituals, play an important role in balancing athletes' anxiety levels and increasing their performance. In this context, superstitious behaviors can be considered not only as a means of psychological relaxation but also as an important method used by athletes in coping with anxiety. Therefore, anxiety and superstition in sport emerge as important issues in increasing the mental endurance of athletes and ensuring the continuity of success.

In the literature review, studies examining the anxiety (Arısoy et al., 2020; Beisecker et al., 2024; Faizan et al., 2024; Polat et al., 2010; Reardon et al., 2024; Sanfilippo et al., 2024; Yoka et al., 2022) and superstition (Chuang et al., 2024; Işık et al., 2015; Kurudirek, 2018; Schippers & Van Lange, 2006; Todd & Brown, 2003) of various individuals engaged in sports were found. However, there is no study examining the anxiety levels and superstitious behaviors of female soccer players. This study is important in terms of providing new information to the literature. In this context, the aim of the study is to determine the relationship between anxiety levels and superstitious belief behaviors in female soccer players.

Method

Research Ethics

Within the scope of the study, an approval was obtained from Süleyman Demirel University Health Sciences Ethics Committee with the decision dated 01.08.2024 and numbered 78/40.

Research Model

In the study, descriptive and correlational survey methods were used to determine the degree and/or change between or together with two or more descriptive variables to reveal the current situation (Karasar, 2004). The relational survey model is conducted to determine whether the existing variables change together and if a change is detected and in which direction this change lies. (Büyüköztürk et al., 2018). The descriptive survey model describes the situation or event in the research directly as it is (Kaya et al., 2012).

Population and Sample

The Women's 1st League of the Turkish Football Federation consists of two groups, organized according to geographical conditions. The first group had nine teams, and the second group had eight teams. 161 soccer players selected by a simple random sampling method (Çıngı, 1994) from 272 active soccer players playing in nine teams competing in the first group of Women's 1st League of the Turkish Football Federation voluntarily participated in the research. The simple random sampling method allows each individual in the research group to be selected equally. The sample group considered to take part in the study is randomly selected from a list (Çepni, 2010).

Data Collection Tools

Personal information form, trait anxiety scale, and superstitious behavior scale were used as data collection tools in the study.

Personal Information Form

The personal information form includes four questions to obtain information about the age, education level, sports age, and national team status of the amateur soccer players participating in the study.

When Table 1 is examined, it has been determined that according to age groups, 42.9% are 18-20 years old, 40.4% are 21-24 years old, 16.7% are 25 years and above; according to educational level, 42.9% of them have secondary school, 10.6% have associate, 46.5% have undergraduate degree; according to the age of sports, 34.2% of them are 1-5, 29.8% are 6-10 years, 36% are 11 years and above and

Table 1
Demographic Characteristics of Participants

	Variables	n	%
Age (years)	18-20	69	42.9
	21-24	65	40.4
	25 and above	27	16.7
Education Level	Secondary education	69	42.9
	Associate Degree	17	10.6
	Bachelor's Degree	75	46.5
Sports Age (years)	1-5	55	34.2
	6-10	48	29.8
	11 and above	58	36.0
National Team Background	Yes	49	30.4
	No	112	69.6

according to national team background, 30.4% of them are national and 69.6% of them are not national.

Spielberg Anxiety Inventory

The State-Trait Anxiety Inventory (STAI), comprising the State Anxiety Scale (Form TX-1) and the Trait Anxiety Scale (Form TX-2), was developed by Spielberger et al. (1964) and adapted into Turkish by Öner and Le Compte (1983). This inventory consists of 40 items structured as a 4-point Likert-type scale. It is divided into two sections: the 20-item "State Anxiety Form," which assesses current feelings, and the 20-item "Trait Anxiety Form," which evaluates feelings experienced over the preceding week. In this study, the Continuous Anxiety Scale was utilized. The State Anxiety Form captures immediate emotional states, whereas the Trait Anxiety Form reflects longer-term anxiety experiences (Doğru & Arslan, 2008). The Continuous Anxiety Scale includes seven reversed items (items 1, 6, 7, 10, 13, 16, and 19). To calculate the continuous anxiety score, negative item scores are subtracted from positive item scores, followed by the addition of a constant value of 35. This yields a score that ranges from 20 to 80, with higher scores indicating elevated levels of anxiety. In the applications conducted, the average score typically falls between 36 and 41. Anxiety scores are categorized as follows: 20–35 indicates low anxiety, 36–42 denotes moderate anxiety, 43–60 reflects high anxiety, and 61–80 signifies severe anxiety (Dalkıran, 2012; Üngören, 2007). The scale exhibits Alpha reliability coefficients ranging from .83 to .87, test-retest reliability scores between .71 and .86, and item reliability has been found to be .34 (Öner & Le Compte, 1983).

Superstitious Behavior Scale

Barut (2008) conducted the Turkish adaptation of the scale developed by Buhramn et al. (1982) to assess superstitious behaviors among athletes, reporting a test-retest correlation coefficient of 0.95. This inventory comprises 37 items structured as a 5-point Likert-type scale and is organized into seven distinct categories. These categories include superstitious behaviors related to clothing and appearance, objects perceived as lucky, pre-game rituals, in-game behaviors, and team-related superstitions and prayers. Respondents, specifically football players, were instructed to evaluate the effectiveness of the behaviors described in the questions concerning their sports experiences using the following scale: (1) Not effective, (2) Less effective, (3) Occasionally effective, (4) Effective, and (5) Very effective. The evaluation of the scale is based on these 5-point Likert-type value ranges, with interpretations as follows: 1-1.8 signifies very low superstition, 1.81-2.6 indicates low superstition, 2.61-3.4 denotes medium superstition, 3.41-4.2 represents high superstition, and 4.21-5 reflects very high superstition averages.

Data Collection

After the necessary explanations about the questionnaire were made to the athletes participating in the study, the questionnaire was applied face-to-face by the researchers.

Data Analysis

The Kolmogorov-Smirnov test was used to evaluate the normality of the obtained data. In accordance with statistical procedures, the results of distortion and pressure distributions are presented in Table 2.

Upon examination of the Kolmogorov-Smirnov test results, it was found that the distribution of participants' trait anxiety scores was normal ($p > 0.05$). However, significant deviations from normality were observed in the superstitious behavior subcategories and total scores ($p < 0.05$), as illustrated in Table 2. According to George and Mallery (2016), skewness and kurtosis values are ideally regarded as acceptable within the range of ±1, while Demir et al. (2016) indicated that values within ±2 can also be considered indicative of normality. Based on these criteria, it was concluded that the

Table 2
The Skewness-Kurtosis and Kolmogorov-Smirnov Test Results of the Soccer Players' Scale Scores

Scales	n	Skewness	Kurtosis	Kolmogorov-smirnow
Trait Anxiety Score	161	.210	-.136	.200
Clothing and Appearance	161	1.185	1.467	.000
Lucky Objects	161	.854	.067	.000
Pre-match Behaviors	161	.582	-.294	.001
While-match Behaviors	161	.939	.010	.002
Team Behavior	161	.823	.232	.000
Praying	161	-.009	-.497	.000
Overall Superstition Total Score	161	.601	.052	.038

data exhibited a normal distribution, thereby justifying the use of parametric statistical analysis tests. The arithmetic mean and standard deviation of participants' scores from the scales are presented as X±SD. To examine the relationships between the scores obtained from the various scales, Pearson product-moment correlation analysis (r) was conducted.

Findings

It was determined that the average level of trait anxiety of the footballers participating in the study was 39.16±8.56. When the sub-dimensions of the superstition scale were examined, it was determined that clothing and appearance were 1.94±0.66, the object considered lucky was 2.03±0.94, the behaviors before the competition were 2.28±0.83, the behaviors during the competition were 1.93±0.29, the team behavior was 2.02±0.98, the praying was 3.08 ± 1.09, and the total level of general superstition was 2.21±0.71 (Table 3).

In Table 4, while no relation was found between the trait anxiety levels of soccer players and the superstition sub-headings of clothing and appearance (r=.196, p=.012*) and lucky objects (r=.209, p=.008*), positive relation at low level was found between pre-match behaviors (r=.300, p=.000*), while-match behaviors (r=.297, p=.008*), team behaviors (r=.221, p=.005*), praying (r=.249, p=.001*) and overall superstition total score (r=.320, p=.000*).

Table 3
Descriptive Statistics of Soccer Players' Scores from Scales

Scales	n	Min	Max	X±SD
Trait Anxiety Score	161	20.00	62.00	39.16 ± 8.56
Clothing and Appearance	161	1.00	4.40	1.94 ± 0.66
Lucky Objects	161	1.00	5.00	2.03 ± 0.94
Pre-match Behaviors	161	1.00	4.46	2.28 ± 0.83
While-match Behaviors	161	1.00	5.00	1.93 ± 1.01
Team Behavior	161	1.00	5.00	2.02 ± 0.98
Praying	161	1.00	5.00	3.08 ± 1.09
Overall Superstition Total Score	161	1.02	4.33	2.21 ±0.71

Table 4
The Relationship Between Participants' Trait Anxiety and Superstitious Behaviors

	n		Clothing and Appearance	Lucky Objects	Pre-match Behaviors	While-match Behaviors	Team Behavior	Praying	Overall Superstition Total Score
Trait Anxiety	161	r	.196	.209	.300	.297	.221	.249	.320
		p	.012*	.008*	.000*	.000*	.005*	.001*	.000*

Discussion and Conclusion

The impact of anxiety on athletes' ability to successfully showcase their performance is an important research topic. It is known that the psychological states of athletes and the levels of anxiety they are exposed to can affect their motivation and the levels related to the respective sport (Hall & Kerr, 1997; Mottaghi et al., 2013; O'Rourke et al., 2014). While athletes' anxiety levels depend on many factors, factors and behaviors that trigger or reduce anxiety are being researched (Jones et al., 2009; Zhang et al., 2018). Anxiety is generally examined under two main segments: state anxiety and trait anxiety. State anxiety is defined as a temporary state of anxiety that individuals feel in response to certain dangerous situations. This type of anxiety, which everyone can experience from time to time, is considered a normal emotional response. On the other hand, some individuals experience a constant state of anxiety regardless of environmental threats, and this condition is referred to as "chronic anxiety." Chronic anxiety is defined as a personality trait and is generally considered a condition that requires treatment (Öner & Le Compte,

1983). Athletes can exhibit behaviors that we might call superstitious behaviors due to the anxiety levels caused by the fear of losing or the desire to win. However, it is believed that studies examining the impact of anxiety on such superstitious behaviors are insufficient. For this purpose, it is important to investigate the relationship between the tendency of female soccer players toward superstition and their levels of trait anxiety.

Considering that the total score obtained from the State-Trait Anxiety Inventory can range from 20 to 80 points (Spielberger et al., 1964), it was determined in our study that the anxiety levels of female soccer players were at a moderate level. When the literature is examined, in studies on trait anxiety levels, Kolayiş and colleagues (2015) found that the trait anxiety levels of female athletes who participate in team sports were at a moderate level. A study conducted by Başaran and colleagues (2009) involving athletes in basketball, volleyball, handball, taekwondo, and wrestling found that female athletes participating in these sports exhibited moderate levels of trait anxiety. Kaya et al. (2014) stated in their study with students studying at the School of Physical Education and Sports that the students' levels of constant anxiety were at a high level. In a study conducted by Karabulut et al. (2013) with male soccer players, it was found that athletes experienced high levels of trait anxiety. It is thought that there are several reasons for the differences between the findings in the literature and the findings obtained in this study. Considering the competitive environment in sports, there are many factors affecting anxiety levels, and some sports branches may have more mental and physical pressure than others.

For this reason, while anxiety may be higher in some sports branches, anxiety levels experienced by athletes in some sports branches may be lower. At the same time, factors such as athletes' current mental endurance and sport experiences also affect the anxiety levels of athletes. On the other hand, gender is among the important factors affecting anxiety. Therefore, the social and cultural pressures faced by female athletes may also increase their anxiety levels. Finally, sample sizes of the studies and demographic characteristics of the participants are also among the important factors affecting anxiety levels. In our study, there are several possible reasons for the moderate anxiety levels of female soccer players. Firstly,

social support among athletes in team sports, such as soccer, may be an important factor in reducing anxiety. The solidarity and communication established among team members help athletes cope with stress. Additionally, conducting training processes and pre-competition preparations in an orderly manner can be effective in helping athletes manage their anxiety levels. In addition, the psychological resilience of female soccer players may have been shaped by their training and competition experiences, which have contributed to their anxiety levels remaining at a moderate level.

When the mean values of the superstitious belief behaviors and sub-dimensions of the soccer players were examined, it was determined that the general superstitious belief behavior levels were at a low level, and the mean of the 'prayer' sub-dimension was higher than the means of other sub-dimensions (Table 3). Kurudirek (2018) examined the relationship between superstitious belief and anxiety in ice hockey players and reported that superstitious belief behaviors were at a low level. The mean of the prayer sub-dimension was at a medium level and higher than the other sub-dimensions. Işık et al. (2015) reported that the mean superstitious belief score of female athletes was at a very low level, and the mean superstitious belief score of male athletes was at a lower level compared to women. While Kavi (2019) found the superstitious behavior of professional soccer players at a high level in his study, Çakmak (2019) found the average superstitious behavior score of professional soccer players at a medium level, in parallel with our study. The higher level of prayer sub-dimension behavior compared to the other sub-dimensions can be interpreted as the athletes' strong belief in the power of prayer to achieve success and that their prayers will be accepted. On the other hand, it is believed that prayer enhances athletes' mental endurance and has a positive impact on coping with performance anxiety. At the same time, it can be said that the search for spiritual support in order to achieve success, combined with belief systems, strengthens the athletes' superstitious behaviors and thus positively affects the results.

In the study, a low-level positive correlation was found between the anxiety levels of female soccer players and the average of general superstitious behaviors. In the literature review, Işık et al. (2015) found a positive and significant relationship between athletes' anxi-

ety levels and superstitious behaviors. Kurudirek (2018) found a statistically significant inverse relationship between the superstitious behaviors of ice hockey players and their anxiety levels. Erol and colleagues (2022) conducted a study on the impact of athletes' superstitions on success and reported that there are positive and moderately significant relationships between the level of belief and the anxiety that arises when superstitions and behaviors are not fulfilled. Schippers and Van Lange (2006) reported that four out of every five professional athletes engaged in at least one superstitious behavior before a competition. Additionally, Todd and Brown (2003) found that athletes in higher level leagues exhibited significantly more superstitious behavior than those in lower level leagues. Individuals who cannot cope with their anxieties are more prone to superstitions and compulsive behaviors. Undoubtedly, the feelings of anxiety and fear that lie at the center of religion can never be eliminated in us humans. However, anxiety towards behaviors and beliefs can be reduced and directed in some way. (Arslan, 2004).

On the other hand, Burger and Lynn (2005) examined the effects of superstitious behaviors on athletes in their research conducted on baseball players in different cultural contexts. While it has been determined that superstitious behaviors positively contribute to the individual performance of American baseball players, it has been emphasized that these behaviors affect the team performance of Japanese baseball players. This study reveals that superstitious behaviors vary within the framework of cultural differences. These findings provide important data for understanding the relationship between athletes' anxiety levels and superstitious behaviors. The positive correlation between anxiety and superstitions indicates that athletes resort to spiritual or ritualistic behaviors in their efforts to manage their worries. In particular, it can be said that individuals who have difficulty in coping with anxiety tend to develop more superstitious behaviors than other individuals due to the feelings of uncertainty and lack of control they experience. This situation reveals that the religion and belief systems that individuals believe in have the capacity to reduce anxiety and provide relief for individuals.

As a result, a low positive correlation was found between anxiety levels and superstitious behavior levels of female soccer players. It is thought that this situation may be due to the fact that athletes cannot

manage their anxiety states that arise as a result of fear of losing or ambition to succeed and that they turn to superstitious behaviors that exist in all beliefs from past to present and are widely used in sports fields as well as in daily life. This finding provides important results supporting the relationship between anxiety and superstitious behaviors in the sport psychology literature. In order to understand the psychological factors affecting the performance of female soccer players better, investigating the role of superstitious beliefs in anxiety management processes can be considered an important area for future studies.

Recommendations

Anxiety and superstitious belief levels can be examined with larger soccer player sample groups. Anxiety and superstitious belief levels of athletes who play team sports such as soccer can be investigated. Factors that may mediate anxiety and superstitious belief behaviors in sports can be investigated. The impact of superstitions on performance can be investigated in future studies. Athletes' religious and superstitious beliefs should be respected, and appropriate environments and facilities should be provided for them to perform their religious rituals.

A study can be conducted on the relationship between superstition and anxiety, as well as intercultural differences. This study can contribute to the sports psychology literature by examining the impact of superstitions on anxiety levels in different cultural contexts.

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COACHING EDUCATION

Teacher Competencies and Sport Experiences as Keys to Coaching Eligibility of Physical Educators

Harold Deo Cristobal

Abstract

This study examines the pivotal role of MAPEH (Music, Arts, Physical Education, and Health) teacher-coaches in integrating sports into the Philippine basic education system. Guided by Kolb's Experiential Learning Theory, the research examines how the personal sports backgrounds and professional competencies of MAPEH teachers influence their effectiveness in coaching roles. A comparative-correlational research design was employed, utilizing surveys to assess variables such as coaching experience, certification, professional development, and sports management skills among Junior High School MAPEH teachers. The findings highlight that teacher-coaches with extensive sports experience and formal certifications exhibit significantly greater coaching efficacy. Gaps in current professional development programs, particularly in mentorship and advanced certifications, were identified as critical areas needing attention. This study highlights the importance of structured support systems in enhancing teacher-coaches' competencies, emphasizing the importance of continuous professional growth and equitable access to coaching opportunities. A key contribution of this research is the proposed Coaching Eligibility Program, designed to establish standardized criteria and provide targeted development opportunities for teacher-coaches. This initiative includes mentorship programs, collaboration with recognized sports organizations, and training to enhance sports management, athlete advocacy, and coach-

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ing capabilities. The implications of this study highlight the importance of professional development in promoting effective sports education, fostering student-athlete success, and achieving a balanced integration of academics and athletics. These findings provide policymakers and educational leaders with practical insights for optimizing teacher-coach performance and enhancing the quality of sports programs in Philippine schools.

Introduction

The integration of academics and athletics in the Philippine basic education system has gained increasing importance in recent years. This dual focus seeks to develop well-rounded students who excel both academically and athletically. In this context, MAPEH (Music, Arts, Physical Education, and Health) teacher-coaches play a pivotal role. These educators are not only responsible for delivering classroom instruction but also for coaching students in various sports. This dual responsibility requires competencies that extend beyond traditional teaching skills, encompassing effective coaching strategies, mentorship, and sports management capabilities. Teacher-coaches' effectiveness is influenced by various factors, including their athletic backgrounds, professional training, and access to development opportunities. As highlighted by Santos (2020), teacher-coaches in the Philippines face unique challenges in balancing these dual roles, particularly in resource-constrained settings. Kolb's Experiential Learning Theory (1984) provides a useful framework for understanding how the sports experiences of teacher-coaches contribute to their competencies. This theory posits that individuals learn and grow through direct experiences, making the personal athletic history of teachers a significant determinant of their coaching effectiveness. Despite their critical role, gaps persist in the training and development of teacher-coaches. Velasco and Alforja (2021) emphasized the need for structured professional development programs to enhance coaching qualifications, while Salazar (2019) identified resource limitations as a significant barrier. These gaps underscore the need for targeted interventions, such as mentorship programs and certification initiatives, to support teacher-coaches in effectively fulfilling their roles.

This study examines the competencies of MAPEH teacher-coaches in Cluster 1 Junior High Schools within the Philippine basic education system. It examines the relationship between their sports experiences and coaching effectiveness, highlighting the importance of professional development and institutional support. Building on findings by Ramos (2021) and Reyes (2020), this research proposes a Coaching Eligibility Program to address identified gaps and promote the holistic development of students through effective sports education. The study contributes to the broader discourse on integrating academics and athletics by offering actionable insights for policymakers, educators, and stakeholders. By aligning with national and international standards, this research underscores the critical role of MAPEH teacher-coaches in shaping student-athletes. It emphasizes the need for continuous learning, equitable resource distribution, and structured support systems, as advocated by Gano-Overway et al. (2020) and Valenzuela and Buenvinida (2021). This introduction sets the stage for an in-depth exploration of the competencies, challenges, and opportunities in the intersection of teaching and sports coaching in the Philippine education system.

Methods and Materials

Research Design

The study employed a comprehensive research method, specifically tailored to collect information about the prevailing conditions pertinent to the selected field of study. According to Padillo et al. (2021), descriptive survey research is a method that delineates and interprets the current state of "what is." It illuminated existing or non-existing conditions, prevailing or non-prevailing practices, held or upheld beliefs, points of view or attitudes, ongoing processes, felt effects, and emerging trends. Utilizing this research method allowed the researcher to acquire the necessary data and gain comprehensive insights into the study. Specifically, the study employed a descriptive, comparative, and correlational research design. This methodology was chosen to explore the complex relationships between experience and teacher competencies in sports coaching. According to Fraenkel et al. (2019), the descriptive comparative-correlational research design sought to provide a methodical summary by carefully outlining the traits and profiles of educators who coached sports,

utilizing statistical metrics. The comparative analysis aimed to identify differences and similarities in the experiences and competencies of teachers across various groups, highlighting patterns and trends. Correlation coefficients were used in the correlational exploration process to measure the direction and degree of the relationships between teacher experiences and competencies. By integrating these components, the study aimed to provide a targeted and comprehensive understanding of how teacher competencies and experiences interact within the context of sports coaching.

Respondents of the Study

During the data collection process, the researcher considered variables including eligibility and teacher competencies in athletic coaching, as well as convenience, reliability, and location. Within a given division, a particular group of junior high schools served as the source of responses. The survey was conducted during the academic year 2023–2024 on the campuses of several schools in this division, taking into account these parameters. Participants in the study were designated as MAPEH faculty members who were allocated coaching positions at particular Junior High Schools in the targeted cluster. These people were purposefully chosen for their relevance to the study. During the 2023–2024 academic year, a consensus of faculty members employed at these schools participated in the survey as respondents. To establish their eligibility requirements for handling coaching assignments, the researcher gathered data from respondents on important aspects of teacher competencies in sport coaching. A survey questionnaire was used to collect data, with reference to the academic year 2023–2024. Teachers working in topics other than MAPEH, those outside the defined cluster, and those departing from MAPEH employment without having a sports coaching teaching load throughout the study period were all excluded.

Research Instrument

The study employed a specialized instrument, validated and endorsed by an advisor and five experts in Physical Education and Sports, to assess teacher competencies in sports coaching and eligibility. The instrument consisted of two parts: a checklist questionnaire that profiled respondents against qualification standards, and a survey questionnaire that probed various study-specific vari-

ables to capture respondents' perceptions. In pursuit of clarity, the researcher facilitated participant understanding by aiding with the questionnaire, which was designed for simplicity and comprehensibility. Anticipating positive outcomes, face-to-face administration of the instrument was conducted, enabling effective data collection and insights into the competencies required for sports coaching and eligibility. Building on Velasco and Alforja's (2021) methodological innovation, Salonga (2022) applied their framework to assess sports coaches' performance and experiences in Tarlac Province. This adaptation demonstrated the methodology's flexibility and effectiveness in a regional context, contributing to the understanding of sports coaching and emphasizing the importance of rigorous research methods. Participants were involved in a single session, lasting approximately 30 minutes, to provide demographic information and complete a structured questionnaire on sports coaching competencies. Participation was voluntary, with the option to withdraw at any stage, and participants were encouraged to contact the researcher with any questions regarding the study's procedures.

Data Gathering Procedures

The MAPEH Department Office, strategically located and well-equipped, served as the venue for the study's data collection, ensuring participant privacy and minimal research interruptions. The face-to-face methodology included obtaining informed consent, collecting demographic information, and administering a structured questionnaire on sports coaching competencies. Researcher aided and addressed queries throughout, with participant feedback sought for data validation, concluding with thanks for their contributions. Statistical analysis comprised percentage calculations, weighted means, and a ranking procedure for questionnaire items. Additionally, the Mann-Whitney U Test investigated the impact of gender on coaching experiences and competencies, the Kruskal-Wallis Test examined age-related differences in sports experiences and teaching competencies, and the Kendall Tau Test assessed correlations between sports experiences and teaching competencies, all contributing to a nuanced understanding of factors influencing sports coaching efficacy.

Table 1
Teacher-Coach Competencies and Sports Integration

Domain	Indicators	Weighted Mean	Standard Deviation	Verbal Interpretation
Athletic Background	Active participation in school-level sports	3.29	0.81	Very true of me
	Participation in sports for several years	2.95	0.99	True of me
	Belief that sports experience contributed to coaching skills	2.95	0.95	True of me
	Participation in regional/national competitions	2.08	1.20	Slightly true of me
	Recognition for sports achievements	2.05	-1.10	Slightly true of me
Coaching Effectiveness	Motivating and inspiring athletes	3.25	0.75	Great extent
	Building rapport and trust with athletes	3.32	0.79	Very great extent
	Managing group dynamics	3.28	0.70	Very great extent
	Developing individualized coaching plans	2.97	0.87	Great extent
	Using a student-centered and skill-based coaching philosophy	3.17	0.70	Great extent
	Holding beginner/intermediate/advanced certifications	2.08	-1.10	Slightly true of me
	Holding national/international certifications	2.19	-1.10	Not true of me
	Belief in the relevance of certifications	3.20	0.887	True of me
	Considering future certification pursuit	2.72	1.068	True of me

Results and Discussions

Teacher-Coach Competencies and Sports Integration

This study identifies critical insights into the competencies of MAPEH teacher-coaches, highlighting the intricate relationship between their sports experiences and professional effectiveness. Teacher-coaches with robust personal athletic backgrounds demonstrate a greater ability to inspire, engage, and develop student-athletes. For example, respondents with substantial sports involvement during their academic years, such as active participation in school-level competitions, scored higher in coaching effectiveness metrics, particularly in areas such as athlete motivation and rapport building (mean = 3.32). These findings align with Ingersoll (2019), who emphasized the influence of experiential learning on professional efficacy, and Santos (2020), who explored the challenges and opportunities of teacher-coaches in Philippine basic education. Despite

Table 2
Mentorship and Professional Development

Domain	Indicators	Weighted Mean	Standard Deviation	Verbal Interpretation
Professional Development & Mentorship	Session planning with mentor support	2.85	0.852	Great extent
	Individualized coaching through mentorship	2.97	0.865	Great extent
	Assessment and feedback from workshops/seminars	3.11	0.640	Great extent
Sports Management Skills	Planning and organizing sports programs	3.15	-0.60	Great extent
	Budgeting for training and compensation	2.62	0.930	Great extent (lowest area)
	Leading and evaluating sports initiatives	3.20	-0.66	Great extent

these strengths, significant gaps were noted in advanced coaching certifications. The average scores for certification-related competencies, such as holding national or international coaching certifications, remained low (mean = 2.19). This highlights the limited access to advanced training opportunities, as noted by Velasco and Alforja (2021), who emphasized the need for structured programs to enhance coaching qualifications. This finding highlights a pressing need for certification initiatives that equip teacher-coaches with standardized knowledge and skills to lead effective sports programs, as supported by the frameworks proposed by Trudel et al. (2020).

Mentorship and Professional Development

Mentorship emerged as a pivotal element in enhancing coaching effectiveness. Schools with experienced teacher-coaches serving as mentors demonstrated improved team outcomes and coaching satisfaction rates. Respondents highlighted the importance of mentorship in areas such as session planning (mean = 2.85) and individualized coaching (mean = 2.97). Mentors provide nuanced guidance, fostering a culture of continuous improvement, consistent with findings by Ramos (2021), who demonstrated the impact of mentorship programs on teacher-coach competencies in the Philippines. However, a lack of formalized mentorship programs limits the scalability of these benefits. Professional development initiatives were also found to have a significant influence on coaching competencies. Teachers who actively engaged in workshops and sports management seminars exhibited stronger assessment and feedback capabilities (mean = 3.11), corroborating findings by Reyes (2020), who emphasized the importance of aligning teacher competencies with coaching roles in

Table 3
Significant Differences Between Coaching Effectiveness and Gender

	Gender	N	Mean Rank	Sum of Ranks	Mann-Whitney U	P-VALUE	VERBAL INTERPRETATION
Coaching Effectiveness	Man	25	36.92	923.00			
	Woman	40	30.55	1222.00	402.000	.186	not significant
	Total	65					

Legend: N= Population, a. Mann-Whitney U Test, b. Grouping Variable: Sex

Table 4
Gender and Experience in Coaching Effectiveness

Domain	Indicators/Examples from Manuscript	Weighted Mean	Standard Deviation	Verbal Interpretation
Gender-Based Competency	Rapport building and trust with athletes	3.32	0.79	Very great extent
	Strategic team management	3.28	0.70	Very great extent
	Motivation and inspiration	3.25	0.75	Great extent
Experience-Based Competency	Assessment and feedback provision	3.11	0.64	Great extent
	Planning and structuring coaching sessions	2.85	0.85	Great extent
	Demonstrating sports techniques and skills	2.95	0.72	Great extent
	Developing individualized coaching plans	2.97	0.87	Great extent
	Utilizing technology and resources in coaching (younger coaches)	2.98	0.82	Great extent
Professional Growth Factors	Using a student-centered and skill-based coaching philosophy	3.17	0.70	Great extent
	Engagement in workshops/seminars	3.11	0.64	Great extent
	Assessment and feedback capability	3.12	0.65	Great extent
	Collaboration with other coaches for consistent assessment	3.12	0.76	Great extent

education. However, the inconsistent availability of such programs across schools exacerbates disparities in teacher performance, particularly in underfunded institutions, as suggested by Valenzuela and Buenvinida (2021).

Gender and Experience in Coaching Effectiveness

The study explored gender differences in coaching competencies, finding no statistically significant variations between male and female teacher-coaches. This result aligns with Villalon and Martin (2020), who found that coaching efficacy is not influenced by gender but rather by training and institutional support. Years of experience

Table 5
Institutional and Resource Limitations

Domain	Indicators	Weighted Mean	Standard Deviation	Verbal Interpretation
Budget Constraints	Allocated budget for player training and program implementation	2.62	0.93	Great extent (lowest score)
	Compensation for players and coaches (allowances, benefits)	2.80	0.89	Great extent
	Budget and cash flow projections are regularly reviewed	2.71	0.84	Great extent
Facility Limitations	Maintenance of sports facilities (fields, courts, centers)	3.12	0.761	Great extent
	Availability of suitable spaces for sports activities	3.15	-0.70	Great extent
Certification Access	Holding a national coaching certification	1.72	1.11	Not true of me
	Holding an international coaching certification	1.66	1.08	Not true of me
	Considering the pursuit of additional certification	2.72	1.09	True of me

similarly showed limited correlation with higher coaching effectiveness. While seasoned teacher-coaches often excelled in rapport building and strategic team management, younger teachers introduced innovative methods. They were more adaptable to integrating technology into coaching practices (mean = 2.98), as noted by Griffo et al. (2019). These findings suggest that professional growth opportunities, rather than tenure alone, are critical in fostering effective coaching practices.

Institutional and Resource Limitations

The findings reveal systemic barriers that hinder the full potential of teacher-coaches. Inadequate funding for sports facilities, insufficient budgets for training, and limited access to advanced certifications emerged as recurring challenges. For example, competencies related to budget planning scored the lowest among sports management skills (mean = 2.62), reflecting the constraints faced by schools in maintaining and expanding sports programs. These findings align with Salazar (2019), who emphasized resource constraints as a barrier to effective coaching in Philippine schools. Additionally, disparities in resources across schools contributed to inconsistencies in student-athlete performance and participation rates, as discussed by Escasa (2022).

The Coaching Eligibility Program: Addressing Identified Gaps

To address the challenges highlighted, this study proposes the Coaching Eligibility Program, which aims to:

- **Standardize Coaching Competencies**: Establish clear criteria for teacher-coaches, ensuring alignment with international standards. Key focus areas include advanced certifications and continuous professional development, consistent with frameworks outlined by Trudel et al. (2020).
- **Enhance Mentorship Opportunities**: Formalize mentorship programs within schools to facilitate knowledge transfer and foster a culture of collaboration among teacher-coaches, as recommended by Ramos (2021).
- **Promote Inclusivity and Equity**: Advocate for equitable access to resources, ensuring that all schools, regardless of funding levels, can provide quality sports education, as supported by Reyes (2020).
- **Strengthen Institutional Support**: Partner with recognized sports organizations to deliver training programs, improve resource allocation, and develop robust sports management frameworks, as suggested by Gano-Overway et al. (2020).

By addressing these key areas, the program aims to enhance the quality of sports education, ensuring that MAPEH teacher-coaches are well-equipped to effectively balance their dual roles as educators and coaches.

Relationship Between Sports Experience and Teaching Competencies

The study found a moderate positive correlation ($r = 0.552$, $p < 0.05$) between sports experiences and teaching competencies. Teachers with extensive participation in sports at various levels exhibited superior skills in athlete assessment, motivational strategies, and fostering inclusivity in sports programs. These competencies were particularly pronounced among teachers who actively participated in community or school-based sports initiatives (mean = 3.43). However, the lack of advanced competitive experience, such as participation in regional or national competitions (mean = 2.03),

highlighted a gap in practical exposure, which could be addressed through structured professional development, as advocated by Concordia (2022).

Implications for Policy and Practice

The findings underscore the critical role of professional development and institutional support in enhancing the effectiveness of teacher-coaches. Policymakers and educational leaders should prioritize:

- **Formalized Certification Programs**: Collaborating with sports organizations to provide accessible pathways for obtaining advanced coaching certifications, as recommended by Trudel et al. (2020).
- **Resource Allocation**: Ensuring equitable distribution of funding for sports infrastructure, training, and professional development, aligning with insights from Valenzuela and Buenvinida (2021).
- **Continuous Learning Opportunities**: Encouraging teacher-coaches to engage in ongoing education through workshops, seminars, and international training experiences, supported by Reyes (2020).

Additionally, integrating mentorship as a core component of the proposed Coaching Eligibility Program can help address the challenges of balancing teaching and coaching roles. By leveraging the expertise of seasoned coaches, schools can build a sustainable model for professional growth.

Conclusions

The findings of this study highlight the crucial role of MAPEH teacher-coaches in promoting the integration of academics and athletics within the Philippine basic education system. Teacher-coaches with robust athletic backgrounds and formal certifications demonstrated higher coaching efficacy, particularly in areas such as athlete engagement, rapport building, and strategic team management. However, significant gaps in professional development, mentorship opportunities, and access to advanced certifications hinder their potential. Mentorship emerged as a transformative factor, with seasoned teacher-coaches contributing to the development of less

experienced colleagues and fostering a collaborative environment. Nevertheless, the absence of formal mentorship programs limits the scalability of these benefits. Similarly, inconsistencies in professional development opportunities across institutions exacerbate disparities in coaching effectiveness. The findings reinforce the importance of structured training initiatives to ensure equitable access to resources and standardized competencies among teacher-coaches. Resource limitations, including inadequate funding for sports facilities and training programs, remain significant barriers. Addressing these systemic challenges requires collaborative efforts among policymakers, educational leaders, and sports organizations. This study's proposed Coaching Eligibility Program provides a comprehensive framework for addressing these issues. By establishing standardized criteria, promoting mentorship, and ensuring continuous professional development, this program aims to elevate the quality of sports education and foster the holistic development of students.

The relationship between sports experiences and teaching competencies highlights the value of experiential learning in shaping effective teacher-coaches. While experience is crucial, it must be supplemented with targeted professional development to sustain growth and adapt to evolving educational demands. The study's findings align with Kolb's Experiential Learning Theory, emphasizing the role of direct experiences in enhancing professional capabilities.

For policymakers, this study provides actionable insights into improving the integration of academics and athletics. Prioritizing investments in professional development, equitable resource distribution, and formalized mentorship programs is essential. Educational leaders should also advocate for partnerships with sports organizations to facilitate advanced training opportunities and certification pathways. The proposed Coaching Eligibility Program offers a sustainable solution to address the identified gaps. By focusing on certification attainment, pedagogical skill enhancement, and inclusive sports management practices, the program aims to empower MAPEH teacher-coaches and improve the overall quality of sports education. Success metrics, including increased certification rates, participant feedback, and improved sports program outcomes, will serve as indicators of its effectiveness. Ultimately, this study highlights the importance of investing in MAPEH teacher-coaches as

catalysts for student success in both academics and athletics. By addressing systemic challenges and fostering professional growth, the education system can achieve a balanced and holistic approach to student development, ensuring that sports and academics are mutually reinforcing pillars of education.

Recommendations

To enhance the capabilities and effectiveness of MAPEH teacher-coaches, it is essential to implement structured and accessible certification programs aligned with international standards, offering levels such as beginner, intermediate, and advanced, recognized by sports organizations. Collaborative efforts with educational institutions and sports organizations should provide regular workshops and seminars focusing on innovative coaching strategies, inclusive sports management, and athlete advocacy. Formal mentorship programs should pair experienced teacher-coaches with less experienced colleagues, fostering knowledge sharing, skill development, and collaboration, with mentorship being a core component of the proposed Coaching Eligibility Program for continuity and scalability. Increased funding is necessary to improve sports facilities, acquire advanced training equipment, and support participation in competitive events, ensuring equitable resource distribution to minimize disparities in sports education quality. Inclusive sports programs should promote equal opportunities for all students, regardless of gender, socioeconomic background, or physical ability, with adaptive sports initiatives supporting students with disabilities to foster inclusivity. Policymakers must establish standardized guidelines for MAPEH teacher-coaches, including eligibility criteria and competency benchmarks, while promoting partnerships between the Department of Education and sports organizations to align educational goals with athletic development. Future research should evaluate the long-term impact of professional development programs and explore socio-cultural factors affecting the integration of academics and athletics in Philippine schools, enabling context-specific interventions. By addressing these recommendations, stakeholders can foster continuous improvement in sports education, creating a supportive environment where MAPEH teacher-coaches and students can thrive both academically and athletically.

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PHYSICAL ACTIVITY

Effects of Music on Physical Activity Rates and Enjoyment of High School Physical Education Students

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Abstract

Music is a daily influence in our lives. One aspect of music is being used in a physical activity (PA) setting. One specific area where music is being used is in K-12 physical education (PE) classes. Previous research has been conducted in elementary and junior high school PE. For this study, the effect on high school PE students' PA was investigated when music was played and when it was not. For this study, 75 high school students (49 males and 26 females) participated. Participants wore pedometers to measure steps taken and time in activity. Student enjoyment in the activities was also measured. The participants participated in two activities: pickleball and badminton. Generally, it was found that high school students took more steps and had more time in the activity when music was playing. This study is the third study dealing specifically with K-12 PE, investigating music's effect on PE students' rates of PA.

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Introduction

Music is all around us in our daily activities. We hear music in the workplace setting, as we shop in our local mall, and in physical activity (PA) settings. A large body of literature has dealt with music's effect on physical activity (PA), touting its benefits (Priest-Lee et al., 2004). Research on music in PA has established a conceptual framework to better support the effect of music on participants. Four tenets make up this framework: (a) rhythm response, (b) musicality, (c) cultural impact, and (d) association. Rhythm response refers to musical rhythm, most notably tempo. Tempo refers to the speed of music as measured in beats per minute (BPM). Musicality refers to the pervasiveness of music within society. Association refers to extramusical association, such as emotions that a piece of music may evoke (Karageorghis et al., 2006). Also, from the literature, it has been found that music during PA (a) improved motor performance, (b) increased aerobic endurance, (c) enhanced the exercise experience by serving as a distraction and lowering perceived effort, and (d) provided a positive environment to learn and practice skills (Karageorghis & Terry, 1997). These findings are highly encouraging and helpful for health and fitness individuals as well as K-12 physical educators.

The research concerning music in the K-12 PE context has studied the effects of music as a classroom management tool in elementary PE. Barney and Prusak (2022) studied music as a management tool in elementary PE. For this study, a school administrator, a PE teacher, and 17 elementary-aged students were interviewed. Interview data revealed that music served as a good start and stop signal for the students; students preferred the music over the PE teacher's loud voice or whistle, and music helped them focus on the PE teacher's instructions. From these themes, interview statements were, "When the music stops, we freeze. If we have equipment, we put it down as we freeze;" "I like the music so much more. I don't like the whistle;" and "Miss L. tells us what she wants us to do when the music stops. She doesn't want to waste time, and we move from one activity to another quickly."

Another study investigating music in the K-12 PE context examined the effect of two conditions—those with and without the incorporation of music—on the PE environment and student moods

(Barney et al., 2021). For this study, 948 junior high school PE students (501 males and 447 females) were surveyed after participating in basketball game play with music playing and no music. The findings from this study suggest that music incorporated in the PE context can positively affect student moods. More specifically, music was found to positively reduce students' tension, anger, fatigue, depression, and confusion. Also, students left class with more vigor, and their self-esteem was positively affected. These results translate into junior high school students going to their other classes after PE class being more responsive to the lessons they will be taught.

The nature of PE classes is to provide the K-12 student the opportunity to be physically active in their class activities (Pangrazi, 2003). Here, music serves as a valuable tool in increasing the physical activity rates of K-12 students. For example, Barney and Prusak (2015) examined the effects of using music on the PA rates, using pedometers, of elementary school children during entire PE lessons. For this study, third-, fourth-, and fifth-grade students participated in two class activities (walking activities and Frisbee). For each activity, the students participated in one lesson when music was playing and a second lesson with no music playing. It was found that students were more active (with higher step counts and longer time spent in activity) in both lessons with music playing. A second study of a similar nature investigated junior high school students' PA rates (Brewer et al., 2016). For this study, junior high school students participated in two lessons (basketball and volleyball), one lesson with music and the second lesson with no music playing in both activities. The data from this study indicated significant differences between activities with music playing and those without music playing. Step counts and time in activity were higher than when music was not playing. The results from both studies strongly imply that music can positively affect student activity during PE class. With these two studies investigating PA rates of elementary and junior high school students, this provides an opportunity to study the effects of music on high school PE students' PA rates. Thus, the purpose of this study was to better understand the effects of using music on high school PE students' PA rates in two lessons in pickleball and badminton, and enjoyment with music.

Methods

Participants and Setting

Participants for this study were 75 high school students (49 males and 26 females) from three intact classes (ages 15-18) separated by gender. The school's classes ran on a block schedule, with A-day and B-day, each consisting of class periods lasting approximately 60 minutes from bell to bell. The participants were predominantly middle-class, comprising 72.8% Caucasian and 21.3% Hispanic individuals (USA School Information, 2023). The teacher who participated in this study has taught high school PE for six years. The university institutional review board (IRB) and the school district approved to conduct the study.

Procedures and Data Collection

Students participated in a total of four lessons during the collection of data. During the first part of the lesson, the students were introduced to the pedometer, shown how to wear it (Vincent & Pangrazi, 2002), and shown how to reset the pedometer to "0" and put it on for the class activities. On the days of data collection, students repeated these procedures. Once all students had completed these procedures, the PE teacher would begin the lesson. When the lesson was finished, students would record the number of steps, the time in the activity, and the enjoyment of the activity. Only the PE teacher and researchers had access to the students' data. Pedometer data were collected from three intact classes for the pickleball and badminton lessons. On the days when music was used, the PE teacher would play music throughout the lesson except when giving instructions. Instructions were designed to be kept to a minimum, and then the music was immediately turned back on. Instructions were also designed to be consistent across conditions. The music used in this study consisted of popular, upbeat tempo (120 to 160 beats per minute) songs suggested by the PE teacher and researchers. A total of 40 songs were compiled and eventually narrowed down to songs that were appropriate to play during pickleball and badminton gameplay. The songs were played over a sound system in the gymnasium.

Data Analysis

For summary statistics, repeated measures ANOVA for a continuous variable and Mantel-Haenszel Chi-Square for an ordinal variable are used to assess the effect of activity type (pickleball and badminton) and whether music is played or not on the number of steps taken, time in activity, and level of enjoyment. Additionally, a mixed linear model was developed to assess the effect size based on activity and music type, while adjusting for demographic characteristics. All data analyses were conducted using SAS software, Version 9.4 of the SAS System for Windows (SAS Institute Inc., Cary, NC, USA).

Results

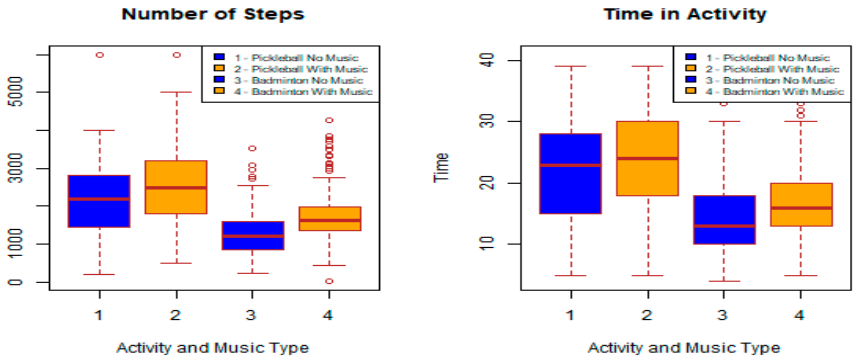
From the measures during pickleball and badminton physical activities, on average, the participants had a greater number of steps and time in activity when music was played compared to when no music was played, and a greater number of steps during the second recording compared to the first recording. During the first recording, the participants had on average 380 more steps, 2.1 more minutes for pickleball, and 504.3 more steps, 4.1 more minutes for badminton when music was played compared to when no music was played. Similar results were observed during the second recording. The number of steps and time in activity were higher during pickleball physical activity compared to badminton, whether music is played or not. The repeated ANOVA analysis indicated that the differences were all statistically significant, for both the number of steps and time in activity, the P-value < 0.0001, Table 1 and Figure 1. Similar results were observed from the mixed linear model analysis after adjusting for gender. On average, the measures (number of steps and time in activity) during all the physical activities were the highest for males. During pickleball physical activity, when music was played, the differences were all statistically significant. On average, male participants had 409.4 more steps (P-value = 0.0073) and 2.8 more minutes in activity time compared to female participants. Participants had 374 more steps with pickleball when music played, 819.6 fewer steps with badminton when no music played, and 367 fewer steps with badminton when music played compared to pickleball when no music played (P-values < 0.0001). Similar results were

Table 1
Average Pedometer Measures by Types of Music Played and Curriculum

Measure	Recording	Pickleball No Music (M ± SE)	Pickleball With Music (M ± SE)	Badminton No Music (M ± SE)	Badminton With Music (M ± SE)	P-Value
Number of steps	First	2039.0 (90.62)	2419.0 (101.19)	1307.0 (94.11)	1811.3 (98.67)	<.0001
	Second	2278.2 (123.72)	2646.3 (115.19)	1371.1 (83.53)	1771.9 (74.06)	<.0001
Time in activity (min)	First	21.1 (0.83)	23.2 (0.86)	13.4 (0.71)	17.5 (0.78)	<.0001
	Second	22.7 (1.05)	24.9 (0.92)	15.1 (0.82)	17.6 (0.63)	<.0001

Notes:
1. Overall P-value from repeated measures ANOVA after adjusting for gender.
2. Values are Mean (Standard Error).
3. P-values are from repeated measures ANOVA after adjusting for gender.

Figure 1
Activity and Music Type and Time in Activity



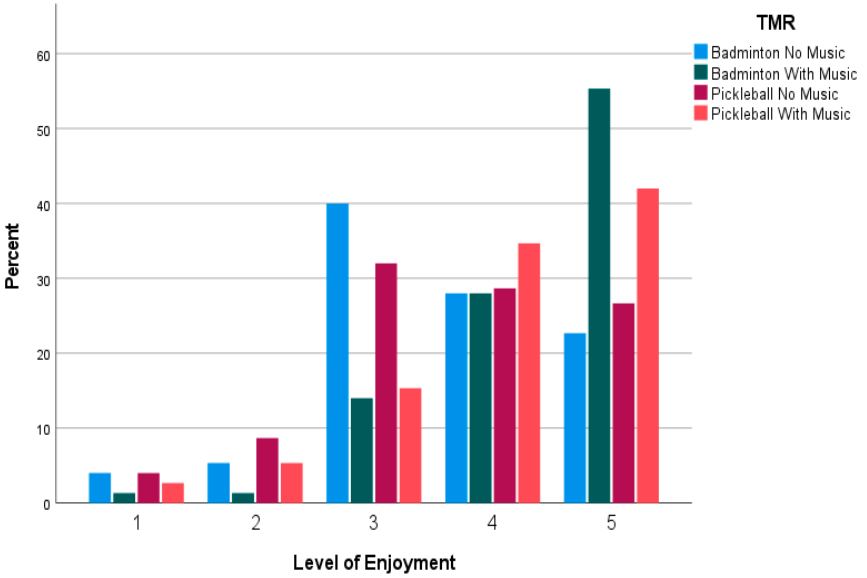
observed for time in activity, Table 2. Comparing the participants by the level of enjoyment during the physical activities, 73.3% of the participants responded enjoyable or very enjoyable with pickleball when music played and 80% with badminton when music played, while the percentage were only 52% with pickleball and 49.3% with badminton when no music played during the first recording (P-value < 0.0066) and similar higher percentage were observed during the second recording. Stratifying further the level of enjoyment by gender, a statistically significant difference was observed during pickleball physical activity; however, no statistically significant difference was observed during badminton. During pickleball physical activity, when no music was played, 61.2% of males responded that the physical activity was enjoyable or very enjoyable. In comparison, the percentage for female participants was only 34.6% (P-value = 0.0443).

Table 2
Effect of Music During Activities on Pedometer Measures, Adjusted for Genders

Characteristics	Estimate	P-Value
Number of Steps		
Gender (ref = Female)		
Male	409.4	0.0073
Type of Activity and Music (ref = Pickleball No Music)		
Pickleball With Music	374.0	<.0001
Badminton No Music	-819.6	<.0001
Badminton With Music	-367.0	<.0001
Time in Activity (minutes)		
Gender (ref = Female)		
Male	2.8	0.0221
Type of Activity and Music (ref = Pickleball No Music)		
Pickleball With Music	2.2	0.0006
Badminton No Music	-7.6	<.0001
Badminton With Music	-4.3	<.0001

[1] P-value from Mixed Linear Model adjusted for gender and music.

Figure 2
Level of Enjoyment by Activity and Music Type



When music was played, the percentages were 83.7% for males and 53.9% for females (P-value = 0.0024) during the first recording, and similar results were observed during the second recording.

Discussion

The purpose of this study was to better understand the effects of using music on high school PE students' PA rates in two lessons in pickleball and badminton, and enjoyment with music. From this study, the data indicated that differences were noted when music was played and not played during badminton and pickleball activities. Generally, it was found that more steps were taken and the time spent on the activity for students was higher when music was played. The findings coincide with the study conducted by Barney and Prusak (2015). In this research, elementary-aged PE students participated in walking and Frisbee activities with music playing and no music. It was learned that when music was played in both activities. Students took more steps and spent more time in the activity. In another study, similar results were found by Brewer et al. (2016), who investigated junior high school PE students playing basketball and volleyball with and without music. For this study, junior high school PE students took more steps and spent more time in activity when music was played during both activities. From this current study, the results coincide with previous research of music positively affecting K-12 PE students' PA. When looking closer at the four lessons in both pickleball and badminton lessons that had music playing, it resulted in higher step counts and more time in activity. In the pickleball lessons, students took over 360 more steps and spent two more minutes in the activity. In the badminton lessons, students took over 400 more steps and spent three more minutes in the activity. It can be inferred that the increase in step counts and time in activity is significant and shows music's impact on PA during these activities.

Another variable investigated in this study was the effect of music on students' enjoyment during pickleball and badminton activities. Barney et al. (2016) examined the effects of music on fourth-grade students' enjoyment in activities during PE class. For this study, students participated in tossing/catching activities with music and hula hoop activities without music. Students were surveyed and interviewed at the end of the lessons. For the interviews, students made the following statements regarding music's effect on student enjoyment during class activities. A female student stated, "I love PE class, but when the music was playing, it made what we're doing in class a lot funner." A male student said, "When there is not music

playing, class wasn't as fun." A third student commented, "Music made the class fun." For this study, students stated that pickleball (73%) and badminton (80%) were either enjoyable or very enjoyable when music was playing. For this study, there was no qualitative data regarding music's effect on student enjoyment. Yet, a large majority of the high school students found music's positive impact on their enjoyment when playing pickleball and badminton. They were smiling, laughing, and dancing to the music between points; these were outward expressions of the students, making class a positive experience. With these positive experiences with music during these activities, it is hoped that they will translate into a lifetime of participation in PA for high school students.

Impact of Study

From previous research, music has been shown to increase the number of steps taken and the time spent in activity when music is playing. The activities used in the previously mentioned research have been walking and Frisbee (Barney & Prusak, 2015), basketball and volleyball (Brewer et al., 2016), and, for this study, pickleball and badminton. From the six different activities used in the above-mentioned research, these activities illustrate the variety of activities that have positively affected student participation. This should confirm to K-12 physical educators the impact that music has on student activity in various activity settings. Another point is that the research has been conducted with students in elementary, junior high school, and high school settings. Music has no boundaries and can positively affect students of all grade levels to greater activity.

Study Limitations

The investigators have noted limitations placed upon the study. The participants for this study came from one high school. Because the participants came from a single school, it may not provide a representative sample of high school students from other schools, thus limiting the generalizability of the findings. Further study should explore the reproducibility of the process and findings with multiple high school PE programs at different schools and in different regions of the United States.

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YOU AND THE LAW

Review of Key Golf Cart Cases 1960–1979

Part 1[1]

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Introduction

Golf carts today are a necessity for golf courses. The days of walking the course have almost vanished. With the declining rounds played, golf course operators/owners need more and more of the revenue generated by golf carts. Golf carts come with liability, as will be seen in the review of the cases below. These cases are those that have been appealed, which is about 10% of all cases brought to lower courts for a resolution. The following are case summaries of court records of key golf cart cases related to golf course incidents, 1960-1979:[2]

[1]This is the first of a three-part series reviewing key golf cart cases between 1960 and 2016.

[2]The following articles and book were used as resources to gather the case summaries in this manuscript: Robert D. Lang, A Good Ride Spoiled: Legal Liability and Golf Carts, 23, *Marquette Sports Law Review*, 393; Michael Flynn, Cart 54, Where are you? The Liability of Golf Course Operators for Golf Cart Injuries, 14 *University of Miami Entertainment & Sports Law Review, 127* (1997); and Thomas H. Sawyer (2005), *Golf and The Law: A Practitioner's Guide to the Law and Golf Management,* Carolina Academic Press.

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Gillespie v. Chevy Chase Golf Club, 9 Cal. Rptr. 437 (Cal. Ct. App. 1960)

The Court found that even though the golf cart path was bumpy, the golf course owner did not breach his duty to maintain the golf course reasonably. The court ruled that the plaintiff's golf cart accident was not caused by the rough ride on the cart path. Rather, the court said the plaintiff's injuries occurred when the plaintiff's golf bag, held by the plaintiff instead of being placed in the golf cart's bag rack, hit the tiller of the cart. The driver lost control of the golf cart, and the cart rolled over in the middle of the fairway of the 9th hole. In short, the court ruled that the maintenance of the golf cart path did not have anything to do with the plaintiff's injuries.

Fort Lauderdale Country Club v. Winnemore, 189 So. 2d 222 (Fla. 4th Dist. Ct. App. 1966)

The plaintiff was injured by another golfer's golf cart. The golf course leased the carts and split the profits with the lessor. When the golf carts were delivered to the golf course, each had a rubber brake pedal cover. The golf cart that ran over the plaintiff was missing the brake cover. According to the plaintiff's evidence, the golf cart driver's metal spiked golf shoes slipped off the brake pedal, and he was unable to stop the golf cart before hitting the plaintiff. The jury found the golf course owner liable because he knew or should have known that the golf cart did not have a rubber cover over the brake pedal.

Miller v. Robinson, 216 A.2d 743 (Md. 1966)

A golfer who fell out of a golf cart sued the golfer/driver of the golf cart. The plaintiff alleged that but for the excessive speed of the golf cart, the driver's failure to control the golf cart, and the driver's failure to warn the plaintiff when the golf cart was going to turn, the plaintiff would not have been thrown from the golf cart and injured. The plaintiff testified that he knew the defendant's ball was on the left side of the fairway; that a left turn could not be made surreptitiously *by* the driver; and that it was not usual for the driver to warn a passenger that he was going to turn. Moreover, there was no evidence of anything other than a prudent speed. The only evidence of negligence was the plaintiff's own descriptive testimony of the defendant's

actions in operating a golf cart. The court held that such testimony by itself was insufficient to infer negligence.

Nepstad v. Randall, 152 N.W.2d 383 (S.D. 1967)

The South Dakota Supreme Court rejected the defendant's argument that since the cart was a motor vehicle, the plaintiff fell under the state's guest statute. The guest statutes prevented a guest in a motor vehicle from recovering against a driver for injuries absent willful and wanton misconduct. The court held that a golf cart on a golf course was not a motor vehicle.

England v. United States, 405 F.2d (5th Cir. 1968)

The plaintiff was injured when he was thrown from the golf cart he was riding downhill. The plaintiff argued that the golf cart's brakes malfunctioned so that the plaintiff could not control the golf cart as it raced downhill. The evidence indicated that the golf cart brakes were tested by the golf course attendant before the plaintiff rented the golf cart. According to the testimony of the golf course attendant, the brakes worked fine. In addition, the plaintiff testified that through the first 12 holes, the brakes on the golf cart worked fine. The plaintiff's expert testified that the sudden failure of the brakes between the 12th and 13th holes meant something had broken since the last application of the brakes. The court again found the golf course owner not liable for the plaintiff's injuries because the golf course owner did not know and could not have known about the sudden malfunction of the golf cart brakes.

United States v. Marshall, 391 F.2d 880 (1st Cir, 1968)

A golf course owner was not found liable when a golfer's golf cart fell into a ravine. The plaintiff and her husband were playing golf on a course that featured a deep ravine that was obscured by a large hill. The ravine was only noticeable to golfers travelling from the men's tee on the 17th hole to the green on the 17th hole. The plaintiff used the women's tee on the 17th hole and never saw the ravine. When it started to rain, the plaintiff drove from the woman's tee back to the men's tee of the 17th hole to pick up her husband and then drove under a tree to seek shelter. To get to the tree, the plaintiff had to drive through grass that was three to four feet high. Instead of reaching the tree, the cart slid down the hill into the ravine. The plaintiff's

husband testified he was aware of the ravine, but he did not know it extended to the area of the tree. The Court found that the golf course defendant could not anticipate that a golfer would drive into this high grass area, and, therefore, was not liable for the plaintiffs' injuries because the golf course did not have any duty to protect the plaintiff or warn of hidden dangers in this untraveled area.

McRoy v. Riverlake Country Club, Inc., 426 S.W.2d 299 (Tex. Civ. App. 1968)

The plaintiff hit his ball into the grass approaching the green on the 18th hole. Plaintiff's partner drove their golf cart into the rough to look for McRoy's ball. The cart's axle caught on a tree stump, causing the cart to come to a sudden stop, and threw the plaintiff from the cart. The plaintiff claimed that the stump was obscured by the grass. The Court ruled that the plaintiff was entitled to a jury trial on the issue of whether the failure to remove an unmarked, grass-obscured, tree stump from the travelled areas of the golf course amounted to negligent maintenance of the golf course by the golf course owner.

Baker v. City of Seattle, 484 P.2d 405 (Wash. 1971)

The court stated that the disclaimer contained in the golf cart rental agreement could have insulated the golf course from a negligence claim by an injured golfer. However, the court noted that the disclaimer clause was hidden in the middle of the text of the golf cart rental agreement and was typed in the same size print as the rest of the agreement. The court ruled that for a disclaimer to be binding, it must be conspicuous. The court went on to say that when a business, like a golf course, regularly requires the lease of equipment to its customers, like a golf cart to a golfer, if the golfer wants to play golf, then this type of business relationship also supports the need for any disclaimer to be conspicuous.

Bona v. Graefe, 285 A.2d 607 (Md. 1972)

The driver of the golf cart was not responsible when the plaintiff was injured after the golf cart's brakes failed while traveling downhill, tossing the plaintiff from the cart at the bottom of the hill. The defendant saw a course employee test the golf cart brakes before releasing the golf cart for the defendant's use. The uncontroverted testimony was that this testing of golf cart brakes before renting any

golf cart was the standard operating procedure for the golf course. Additionally, the plaintiff did not present any evidence that the defendant failed to use reasonable care when driving the golf cart. Hence, the court found the defendant golf cart driver not negligent.

Dashiell v. Keauhou-Kona Co., 487 F.2d 957, 958 (9th Cir. 1973)

The plaintiff, while visiting Hawaii, was with her husband on the Keauhou Golf Course on the Island of Hawaii. After nine holes of golf and lunch, the couple decided to rejoin some friends on the tenth tee, and the plaintiff drove the cart that way. However, she made a wrong turn and headed back toward the tenth tee along a maintenance road. As the golf cart went down an incline, the plaintiff lost control of the cart, failed to make the 10th tee turn-off, sped into a parking area, and collided with a truck, which was backing out of the area. The plaintiff sued the golf course as well as the manufacturer of the golf cart. The jury found that, although the golf cart had a defect in the steering mechanism, the plaintiff assumed that risk by continuing to use the golf cart. However, it was decided that the assumption of that risk was not the proximate cause of the accident. Rather, the jury found, and the appellate court affirmed, that the golf course was negligent in its failure to adequately warn of the dangers of steep inclines. This negligence was a proximate cause of the accident.

Lash v. Noland, 321 So. 2d 104 (Fla Dist. Ct. App. 1975)

The plaintiff went to play golf at a country club in New Smyrna Beach, Florida. After driving to the first tee in a golf cart obtained from the club and parking the cart on an incline, he set the brake and exited the cart to speak to friends. The cart rolled backward, pinning the plaintiff against an automobile parked nearby, causing him injury. The plaintiff sued the manufacturer of the golf cart, the company that serviced it, and the owner of the service company. The verdict of the lower court was granted in favor of the defendants. The plaintiff appealed, and the Florida Appellate Court ruled that he failed to present sufficient evidence that the brake portion of the cart was faulty.

Goodwin v. Woodbridge Country Club, Inc., 365 A.2d 1158 (Conn. 1976)

The golf course owner was found liable for the golfer's injuries when he was pinned between two golf carts. In this case, another golfer's golf cart began rolling toward the plaintiff and eventually crushed him. The plaintiff sued the golf course owner for negligence, claiming the golf cart that hit the plaintiff had faulty brakes. The plaintiff presented evidence that upon inspection of the brakes, the golf course staff should have noticed the wear-through of the brake pads.

Sipari v. Villa Olivia Country Club, 380 N.E.2d 819 (Ill. App. Ct. 1978)

The disclaimer clause in the golf cart rental ticket did not bar a golfer's claim against a golf course owner when the golf cart tipped over on the plaintiff. The plaintiff sued the golf course owner based on strict liability. The golf course owner asserted that the disclaimer clause in the golf cart rental ticket precluded liability. The court held that since the plaintiff's claim was based on strict liability, a theory of liability not based on fault, the disclaimer clause could not "function to preclude imposition of liability for using products whose defective conditions make them unreasonably dangerous to the user.

Cavers v. Cushman Motor Sales, Inc., 157 Cal.Rptr. 142 (California Court of Appeals 1979)

A plaintiff was injured while riding on a motorized golf cart at the Oakridge Golf Club in San Jose. On April 26, 1973, appellant was assisting in coordinating activities on behalf of his employer, General Adjustment Bureau, at an independent insurance agents' golf tournament at the Oakridge Golf Club in San Jose. A motorized golf cart was rented from the club's pro shop. No manual or instructions were furnished with the cart, and appellant did not request any. Appellant's experience with carts consisted of having driven and ridden as a passenger on one or two previous occasions. Upon returning items to her car in the parking lot, the driver of the cart turned toward the car and the cart tipped over, and the appellant fell out of the cart and injured herself. The lower court ruled against the plaintiff, and its ruling was upheld by the appellate court.

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