



Attitudes toward Physical Education of Adolescent Students in the Philippines and South Korea

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[*Abstract*]

This study examined adolescent male and female students' attitudes toward physical education (PE) from the Philippines and South Korea. Participants were 451 middle school students from the Philippines and South Korea. The Physical Education Attitude Scale (PEAS) was used to measure students' PE attitudes. Overall, students had moderately positive attitudes toward PE. PE attitudes of Korean boys were more positive compared with Filipino boys, while the reverse was found for Korean females and their Filipino counterparts. Based on the different aspects of PE, Filipino girls were more motivated to participate in PE activities and more satisfied with their PE class than Korean girls. Korean boys were highly satisfied, more comfortable, and less anxious during PE compared with Filipino boys. Finally, Filipino boys had less positive view towards their PE teacher than Korean boys. This study shows adolescent students' attitudes toward PE were generally positive,

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complex, and affected by sex and nationality. It also provides additional knowledge on comparative international research on cross-cultural PE attitudes.

Keywords: cross-culture, South-east Asia, Physical Education Attitude Scale, MODE theory

I . Introduction

More than 80% of school-aged adolescents worldwide are physically inactive, and girls (84.7%) are generally less active than boys (77.6%) (Guthold, Stevens, Riley and Bull 2020). Among WHO-member countries, school-aged adolescents in Korea have the highest prevalence of insufficient physical activity (94.2%) for both sexes followed by the Philippines (93.4%). Adolescent boys from the Philippines (92.8%) and Korea (91.4%) have the highest level of physical inactivity. Similarly, school-aged adolescent girls from Korea (97.2) and the Philippines (94.1%) have not achieved World Health Organization (WHO)'s recommendation of 60 minutes of moderate-to-vigorous intensity physical activity daily (Guthold et al. 2020), making them the top two countries with the least physically active youths worldwide. With more than three-quarters of the global youth population aged 11–17 years being substantially sedentary, these school-aged adolescents are not only neglecting the benefits of physical activity but also compromising their health by increasing their risk of developing non-communicable diseases such as diabetes (International Diabetes Federation 2019; Tan 2015) and obesity (WHO 2020). For instance, prevalence rates of overweight and obesity among youths aged 10–19 years are 17.3% and 5.6%, respectively, with a higher rate in boys than girls (WHO 2020). Thus, efforts to treat and prevent these health risks should be implemented, and various health, medical, and educational organizations have identified the importance of schools as a potential environment for youths to increase their physical activity (Centers for Disease Control [CDC] 2004; Department of Health [DOH] 2010; Institute of Medicine 2005; Pate, Davis, Robinson, Stone, McKenzie and Young 2006).

Health organizations such as the Center for Disease Control (CDC) and Department of Health (DOH-Philippines) and researchers in the fields of education and health have highlighted the potential role of schools as conducive environments for promoting physical activity among adolescents (CDC 2004; DOH 2010; Wechsler, Devereaux, Davis and Collins 2000), as schools provide different venues for physical activity. Aside from recess, lunch breaks, sports clubs, and intramural games, physical education (PE) class is a feasible setting to promote physical activity participation among youths. First, PE provides an opportunity for adolescents to participate in various physical activities, understand the importance of physical activity participation, and learn knowledge and appropriate strategies in achieving health and fitness via game, sport and exercise-related movements during class periods. In the Physical Education curriculum of the Philippines for instance, students are taught indigenous games, dual or team sports (i.e. badminton, basketball), and dances (i.e. folk dances, street dance) that can be played or performed in both competitive and recreational settings as well as knowledge related to exercise program development and physical fitness assessment (Department of Education 2016). Second, PE and its related programs can develop students' movement and motor skills as prerequisites for performing various physical activities (Department of Education, 2016). Third, as PE is a subject taught in almost all schools, its program goals related to fitness and health can reach most children and adolescents, regardless of demographic factors such as age, sex, ethnicity, and socioeconomic status (Robertson-Wilson, Dargavel, Bryden and Giles-Corti 2007). Given these conditions, PE as a part of the basic educational program of many schools with learning content that emphasizes fitness and movement acquisition and development (Department of Education 2016, SHAPE America 2015), can therefore be an important school period and setting to promote students' physical activity. However, despite these aforementioned advantages, students' lack of participation or less involvement in physical activities during PE class is prevalent, especially in girls and in older students (Johnston, Delva and O'Malley 2007; Lagestad, Welde, Ranesh and Myhre 2017). The decline in participation has been attributed to various factors such as change of PE status in schools,

insufficient time allocation, large class, and inadequate facilities and equipment (CDC 2014; Hardman 2008). Further, studies have shown that students' attitudes toward PE is one of the reasons for their non-participation (Lineham 2003; Luke and Sinclair 1991).

Attitude is a topic of interest among psychological researchers, as it can provide valuable information for understanding individual motivational and behavioral predisposition regarding people or things toward future behavior (Rikard and Banville 2006). Attitude is defined as the degree that a person likes or dislikes something, and it has the ability to strongly influence a person's behavior (Ajzen and Fishbein 1980). This concept—that attitude guides behavior—is grounded in the Theory of Reasoned Action, which states that a person's personal belief systems influence a person's attitude, which ultimately determines a person's behavior (Ajzen and Fishbein 1980). In contrast, from a contemporary approach—such as the Motivation and Opportunity as Determinants (MODE)—attitude is defined as an overall assessment of a target object based on beliefs, feelings, knowledge, or previous experiences stored in memory that could be either positive or negative. The negative or positive assessment of the target object in memory can also vary in strength (Fazio 2007). Moreover, the basis for evaluating a target attitude object could come from several possible combinations of affective, behavioral, and cognitive components (Fazio 2007; Olson and Fazio, 2008). The model postulates that the influence of attitudes on judgment and behavior operates via spontaneous and/or controlled processing. If one's attitude toward a target object is strong (whether negative or positive), this strong attitude tends to guide his/her behavior in a spontaneous manner (without any conscious deliberation). However, the model also considers motivation and opportunity as major determinants in the attitude-behavior association. That is, for a behavior not to be affected by the strong attitude, particularly the ones that are processed automatically, the target object is consciously processed and scrutinized and provided with the right amount of time and resources to do so (Fazio 1990; Fazio and Olson 2014).

Applying the MODE perspective to PE, students' attitudes toward PE class are therefore evaluated based on their degree of

emotional reactions, levels of knowledge, and positive and negative experiences related to PE. Thus, if students perceive PE to be fun and meaningful, and they have positive memories of PE, they are more likely to hold favorable attitudes toward PE. However, if students think PE is boring and worthless, and they recall a strict PE teacher or dilapidated gymnasiums and equipment, they will most likely have negative attitudes toward PE. Hence, students' positive or negative attitudes toward PE can originate from various sources, such as their level of enjoyment, beliefs about the subject and its curriculum, perception about a teacher's instruction or motivational style, and participation in various physical activities during class. Given that attitude is associated with one's disposition and future behavior, examining students' attitudes toward PE class is therefore a noteworthy undertaking, as it can indicate not only their current motivation in PE class but also their intention to participate in PE programs (El-Sherif 2014) and future involvement in physical activities outside of school (Chung and Phillips 2002; Dismore, Bailey and Izaki 2006; McKenzie 2003).

The formation of students' positive or negative attitudes toward PE can be influenced by various personal and situational factors, including sex, ethnicity, PE teacher, and curriculum. For example, Constantinides (2010) found that, while students' overall attitudes toward PE were less than positive, males had higher PE attitude scores in relation to their PE teacher and curriculum than did females. Contrastingly, Subramaniam and Silverman (2007) found no differences in attitudes toward PE curriculum and teachers between boys and girls. Fügedi, Capel, Dancs, and Bognár (2016) reported sex differences in how middle school students perceived PE as an important subject, and found that a higher percentage of girls than boys perceived PE as important, whereas a higher percentage of boys than girls viewed PE as unimportant. Girls also reported to like gymnastics and playing fun games more than boys did, whereas boys preferred to play soccer and "everything" (physical activities) in PE class more so than girls. However, both boys and girls disliked running more than other physical activities performed during PE.

Chung and Phillips (2002) reported significant differences in PE attitudes based on sex and nationality. They found attitude of

boys towards PE was more positive than girls whereas overall attitude of Taiwanese students towards PE was more positive compared to their American counterparts. Dismore et al. (2006) found that older Japanese students had strong positive feelings toward PE compared with their English student counterparts, whereas more students in England held stronger negative feelings about PE than did students in Japan.

However, despite comparative international research on cross-cultural PE attitudes is available, research to date has conducted west-east (Chung and Phillips 2002; Dismore et al. 2006), and west-west (Carcamo-Oyarzun, Wydra, Hernandez-Mosqueira and Martinez-Salazar 2017) country comparisons to examine PE attitudes of students but has yet to investigate and compare attitudes of students toward PE from both Asian nations, a shortcoming we addressed in the current study. Understanding cross-cultural differences in PE is a valuable endeavor for it can provide insights about students' psychosocial and cultural concerns when it comes to learning (Chung and Phillips 2002), especially that countries are recently becoming multicultural. For instance, according to the Ministry of Education in Korea (2017), the number of students with various cultural backgrounds in Korean public schools has increased from 8,176 to 12,281 in 2015 and 2017, respectively. In addition, Filipinos (12%) make up a proportion of multicultural families with school-aged children in the country. A lack of knowledge about cross-cultural issue could lead to PE teachers creating lessons and physical activities that might be culturally inappropriate for some students, thereby resulting in negative attitudes and eventual disengagement in class. For example, Korean education is deeply rooted in Confucian philosophy wherein the teacher is the principal authority in the classroom and the main provider of knowledge (Levent and Pehlivan 2017) whereas the Philippines follows a western style education. This kind of education commonly follows a student-centered approach to learning in which students are active learners while the teacher serves as facilitator (Harden and Crosby 2000; Lea et al. 2003). In this case, when a multicultural student with a western education background (ie. Filipino) attends PE class in Korea and

asks direct questions and openly expresses his/her thoughts to the Korean teacher, these behaviors may be perceived by the teacher as rude and may show negative responses toward the student. Consequently, the student is likely to feel demoralized and may consider never to participate in PE resulting from the teacher's unpleasant responses. Hence, given that PE is an important school setting for promoting youths' participation in physical activity and preventing further increase of childhood health problems, and since attitude is associated with one's overall assessment of a target object based on beliefs, feelings, knowledge, or previous experiences stored in memory and future behavior (Ajzen and Fishbein 1980; Fazio 2007), a pleasant, adequate, well-designed PE environment could therefore cultivate positive attitudes in students that could influence not only their participation in PE class but also their future physical activity engagement.

This study examined adolescent male and female students' attitudes toward PE from the Philippines and South Korea by comparing students' overall attitude toward PE and different aspects of PE based on students' sex and country of residence. The findings could offer PE teachers, practitioners, and policy makers useful evidenced-based information on how to provide better, more interesting, and culturally relevant PE programs such as physical activity offerings (traditional and new sports, games, dances being played from each country), that may facilitate students' positive attitudes toward PE, influence their active engagement in PE, and promote their involvement in life-long physical activities. The outcomes of this study could extend theoretical knowledge regarding attitudes toward PE, particularly the impact of sex and country of residence on middle school students' attitudes toward PE.

II. Method

2.1 Participants

A convenience sample of 451 middle school (8th and 9th grade) students aged between 13 and 19 years participated. Participants were students from Korea ($n = 221$; male = 110, female = 111) and

Philippines ($n = 230$; male = 109, female = 121). All participants were students from national public high schools located in a metropolitan area in each country.

2.2 Data Collection

Prior to data collection, permission was sought from the school principal of each school. Next, PE teachers were contacted and received explanations regarding the objectives and other details of the study. They were also asked for their permission to administer the survey to their students. Informed consent to participate or permission for students to participate was obtained from the pupils and their authorized representatives, guardians, or parents.

Data collection was performed inside the classrooms during normally scheduled PE classes. The study objectives were explained to the students. Students were encouraged to answer each item as honestly as possible and informed that all information would be kept strictly confidential and data would be used only for research purposes. The questionnaire took approximately 20–30 minutes to complete. This study obtained approval from the school ethics committee and complied with the Declaration of Helsinki ethical standards for human treatment as well as the ethical guidelines of the countries in which the study was performed.

2.3 Questionnaire

The Physical Education Attitude Scale (PEAS; Orlić, Gromović, Lazarević, Čolić, Milanović and Janić 2017) was used to measure participants' PE attitudes. It consists of 43 statements and is rated using a five-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (5). The PEAS has four subscales: satisfaction (12 items), activity (11 items), comfort (12 items), and teacher (8 items). The satisfaction subscale corresponds to one's general emotional experience with PE ("I like to attend PE"). The comfort subscale comprises more specific emotions toward PE, such as relaxation and anxiety ("I think that PE is a waste of time"). The activity subscale relates to the motivational processes for participating in PE classes ("I do my best in PE classes"). The teacher subscale denotes

students' views of their PE teacher ("The PE teacher is friendly toward all of us"). This instrument was utilized to explore other indicators of attitude as well as other factors related to experiences in PE. The questionnaire was translated from English into Korean language and back translated by bilingual educators to check for accuracy. The PEAS has shown good psychometric properties, confirmed construct validity (CFI=.090, TLI=.89), and demonstrated excellent internal reliability (Cronbach's alpha=.92) for the target population and setting (Cruz et al. 2021; Orlic et al. 2017; Thomason and Feng 2016). Cronbach's alpha for the current sample was .791, while each subscale yielded internal consistency coefficients of .883, .826, .845, and .753 for satisfaction, comfort, activity, and teacher, respectively.

2.4 Data Analysis

A 2 (sex) × 2 (country) multivariate analysis of variance (MANOVA) was conducted to determine differences in mean PE attitude scores for all dependent variables. Subsequent univariate analyses and pairwise comparisons were performed, when needed. The significance level was set at $p < .05$ for inferential statistics.

III. Results

Overall attitude and subscales of PE means and standard deviations for sex and country of residence are shown in Table 1. Male and female students from both countries had moderately positive attitudes toward PE overall. Among the dimensions of PE, both Filipino boys and girls had similar scores in all four PE dimensions. Mean scores for satisfaction and comfort dimensions of PE were high for Korean boys. Mean score for activity dimension of PE was the lowest for Korean girls.

Table 1. Physical Education Attitudes Based on Sex and Country

Variable	Philippines				South Korea			
	Boys n=109		Girls n=121		Boys n=110		Girls n=111	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Overall PE Attitude** ^{a,c}	3.65	0.48	3.70	0.43	3.95	0.60	3.46	0.45
Subscale:								
Satisfaction** ^{a,c}	3.76	0.62	3.83	0.49	4.13	0.70	3.44	0.62
Comfort** ^{a,b,c}	3.58	0.57	3.57	0.53	4.07	0.59	3.63	0.53
Activity** ^{a,b,c}	3.81	0.59	3.85	0.54	3.71	0.70	3.22	0.49
Teacher** ^{b,c}	3.40	0.61	3.47	0.59	3.83	0.68	3.59	0.45

Note. PE = physical education. SD = standard deviations. ^asex effect; ^bcountry effect; ^csex and country of residence effect) ** $p < .01$

MANOVA results showed significant differences in PE attitudes based on sex (Pillai’s trace = 0.070, $F(5, 443) = 6.688, p < .001; \eta_p^2 = .070$). Post hoc test results revealed sex had significant effects on attitudes toward PE ($F(1,447) = 23.052, p < .001, \eta_p^2 = .049$), satisfaction ($F(1,447) = 29.888, p < .001, \eta_p^2 = .063$), comfort ($F(1,447) = 17.947, p < .001, \eta_p^2 = .039$), and activity ($F(1,447) = 17.302, p < .001, \eta_p^2 = .037$). Mean scores for boys were significantly higher compared to girls in terms of attitudes toward PE, satisfaction, comfort, and activity. No significant sex differences were found for the teacher dimension.

Results also showed significant main effect of country of residence on students’ PE attitudes (Pillai’s trace = 0.315, $F(5, 443) = 48.814, p < .001; \eta_p^2 = .355$). Post hoc test results revealed country of residence had a significant effect on comfort ($F(1,447) = 26.940, p < .001, \eta_p^2 = .057$), activity ($F(1,447) = 44.014, p < .001, \eta_p^2 = .090$), and teacher ($F(1,447) = 25.010, p < .001, \eta_p^2 = .053$).

Mean comfort and teacher scores of Korean students were significantly higher than Filipino students. Mean activity score of Filipino students was significantly higher than Korean students. No significant difference was found for overall attitudes toward PE and satisfaction dimension of PE based on country of residence.

Significant interaction effect of sex and country on students’

PE attitudes (Pillai's trace = 0.091, $F(5, 443) = 8.869$, $p < .001$; $\eta_p^2 = .091$) was observed. Post hoc test results revealed overall attitude towards PE ($F(1,447) = 32.398$, $p < .001$, $\eta_p^2 = .068$) and all dimensions of PE—satisfaction ($F(1,447) = 43.114$, $p < .001$, $\eta_p^2 = .088$), comfort ($F(1,447) = 17.761$, $p < .001$, $\eta_p^2 = .038$), activity ($F(1,447) = 23.710$, $p < .001$, $\eta_p^2 = .050$), and teacher ($F(1,447) = 8.100$, $p < .01$, $\eta_p^2 = .018$)—were significantly different for sex by country.

The mean overall PE attitude score for Korean males was significantly higher compared with Filipino male students, while the mean PE attitude mean score of Korean females was significantly lower than that of Filipino female students. Among the specific subscales for PE attitudes, the mean satisfaction score for male students in the Philippines was significantly lower than for males in Korea, while the mean satisfaction score for female students in Korea was significantly lower compared with females in the Philippines. The mean comfort score of Korean males was significantly higher than that of Filipino males. The mean activity score of female students in the Philippines was significantly higher compared with females in Korea. The mean teacher score of Korean male students was significantly higher than that of Filipino males.

IV. Discussion

The objective of the current study was to determine adolescent students' attitudes toward PE. Particularly, we compared students' overall attitude towards PE and different aspects of PE based on sex and country of residence. Overall, students had moderately positive attitudes toward PE. Among the total students, only less than 10% of the students' responses were below 3.00 (overall PE attitude) score indicating that most students had positive attitudes toward PE. Previous research found similar results from the students in those studies (Carcamo-Oyarzun et al. 2017; Chung and Phillips 2002; Cruz 2021; Cruz, Kim and Kim 2021; Dismore et al. 2006; Stelzer, Ernest, Fenster and Langford 2004).

4.1 Sex and PE Attitudes

Previous studies showed sex differences in students' attitudes toward PE, with male students tending to have more positive attitudes toward PE than female students (Carcamo-Oyarzun et al. 2017; Chung and Phillips 2002; Cruz 2021; Orlić et al. 2017; Stelzer et al. 2004). The current study found male students reported higher positive attitudes toward PE than females, which supports previous findings.

Additionally, specific factors of PE were also significantly different between males and females. Scores for the satisfaction, comfort, and activity subscales were higher for males than females. However, scores for the teacher subscale were similar between male and female students. Orlić and colleagues (2017) found significant sex differences for all four factors of PE (satisfaction, comfort, activity, and teacher) with male students having higher scores than females. The lack of variance in the teacher subscale might be attributed to the diverse sample of participants from the two countries compared with participants from a single country in the previous study.

Nonetheless, the outcomes suggest that sex has an impact on students' overall attitudes toward PE, as well as specific aspects of PE. Teachers and school administrators should therefore provide better PE experiences to students by making classes less stressful, creating fun and enjoyable activities, and showing more enthusiasm when teaching PE to further enhance the attitudes of adolescent students toward PE, particularly girls.

4.2. Country of Residence and PE Attitudes

International comparative studies related to students' PE attitudes are still scarce. Previous studies showed that culture/ethnicity plays an important role in influencing students' PE attitudes (Carcamo-Oyarzun et al. 2017; Chung and Phillips 2002; Dismore et al. 2006). Interestingly, the results of the present investigation did not show significant differences in attitudes toward PE between Filipino and Korean students. This implies that both Filipino and Korean students had favorable attitude towards PE and that their

demographic location/culture did not affect their positive views toward PE. The questionnaire used may be the reasons for the disparity in results. Dismore et al. (2006) for instance assessed students' PE attitudes using a single-component view that emphasized only students' affective perceptions about PE. Whereas the current study utilized the PEAS instrument (PEAS) which measures not only the affective aspect of PE attitude but also the cognitive and motivational/behavioral aspects of PE attitudes.

As for the dimensions of PE, Filipino students were more awkward and anxious during PE class as compared to Korean students. Korean students felt the activities they performed in class were less motivating and fun than Filipino students did; however, they reported more a favorable view about their teachers than did Filipino students. While findings suggest that country of residence may not be linked with overall PE attitudes in students, more studies are needed to further understand this factor in affecting attitudes of students toward PE since differences in students' perceptions were evident in terms of specific areas of PE.

4.3. Sex, Country of Residence, and PE Attitudes

The findings also revealed that students' attitudes toward PE were influenced by both sex and country of residence. Specifically, Korean male students' general PE attitudes were more positive than those of Filipino males, whereas Korean female students' attitudes toward PE were less positive compared with Filipino females.

Concerning specific PE dimensions, Filipino males were less satisfied with PE than Korean males. Similarly, Korean females were also less satisfied with PE than their female counterparts in the Philippines. Korean male students felt more comfortable in PE compared with Filipino males. Filipino female students had the highest positive attitudes toward activities, compared with Korean females. Finally, Korean male students reported higher positive views about their teachers than Filipino males.

This interaction effect of sex and country of residence on students' PE attitudes, as well as the specific areas of PE, is difficult to substantiate since no research has been published that

investigated students' PE attitudes from these countries. However, several reasons could possibly explain these significant findings. The higher PE attitudes of Korean males paired with a reverse result in Korean females could be attributed to the physical activities included in their PE curriculum and their PE teachers. In the Korean PE curriculum, students are taught individual and team sports such as taekwondo, badminton, Korean wrestling (i.e., *ssirum*), basketball, and soccer. These activities mostly connote a masculine- and competitive-oriented atmosphere (Van Wersch et al. 1992) that seems to be liked by Korean males but disliked by Korean females. The less favorable PE attitudes of Korean females is further corroborated by the activity subscale showing the least favored factor in PE. Upon reviewing the item statements, Korean female students generally reported they did not like difficult exercises. These difficult exercises could be the previously mentioned sports and other physical activities taught in Korean schools, such as gymnastics and track and field, which generally require repetitive jumping, throwing, and running, thereby prompting less positive PE attitudes. Luke and Sinclair (1991) also found that running is a determinant of negative PE attitudes among females. Furthermore, PE teachers' outdated teaching and assessment approach (Yoo and Kim 2005) might have contributed to Korean female students less favorable attitude in PE. Their teaching style could have focused on the technical aspects of the activities, which demand high level of physical abilities to perform. This can be frustrating for females with low physical abilities and consequently led to their lower attitude toward PE. Therefore, to enhance Korean students' positive attitudes, especially those of females, PE teachers in Korea should adjust the intensity of activities during PE classes that is comfortable for both sexes, thus preventing students, particularly females, from being discouraged from participating if the activity is too difficult.

The satisfaction subscale reflects students' general emotional experience regarding PE. Results showed Filipino males and Korean females were less satisfied with their experiences in PE compared with their counterparts. Again, the lessons or activities they perform in PE might explain these findings. In the Philippines, for example,

curriculum content for grades 8–11 is about fitness (Department of Education, 2016). Students in each grade are taught activities that will enhance their physical fitness, such as games, sports, and rhythm and dance (e.g., folk/indigenous, festival, ballroom, and street dances). These dance activities might not have been popular with male students, therefore lowering their satisfaction levels. However, PE curriculum in Korea that focuses on traditional activities may have led to Korean female students feeling less enjoyment with their PE experiences.

The comfort subscale reflects students' levels of anxiety or relaxation during PE classes. Previous studies showed that the physical demands (Dickenson and Sparkes, 1988) and clothing requirements (Luke & Sinclair, 1991) of an activity were the reasons students did not like PE. These reasons might explain differences in comfort levels between male students in Korea and Philippines. Tracing the item statements within the comfort subscale, Filipino male students had the highest scores for statements related to feeling uncomfortable about wearing and changing into PE gear, being anxious about too much competition, and feeling exhausted in PE class. Conversely, Korean male students had the lowest scores for statements related to feeling uncomfortable as soon they entered the school gym, fear in PE class, and fear while exercising in PE class, which further indicates how clothing and overly strenuous PE activities can lead to negative attitudes toward PE.

According to the MODE model, attitude is the overall assessment of a target object coming from combinations of positive or negative beliefs, feelings and experiences stored in memory that may vary in strength (Fazio 2007). It is plausible that during the period of data collection, Filipino male students' perceived discomfort and negative emotions about PE class resulted from the dance lessons they needed to master and subsequently perform in an interclass dance competition, which was included in the curriculum for that academic quarter. This competition required them to wear costumes to complement the dance theme that potentially magnified their frustrations and anxieties during class. Meanwhile, with the revisions to the Korean National Curriculum for Physical Education (KNCPE), teachers are given more freedom with

regard to teaching contents which deemed appropriate to the needs of the students and their learning environment (Lee and Cho 2014). In this case, Korean male students' higher perceived comfort in PE maybe due to the pre-selected activities chosen by the teachers that they think students' mostly favor and very much comfortable to play (ie. soccer/futsal) that brought positive feelings from the experiences.

The activity subscale reflects students' motivation to participate in PE. Korean females were less positive about participating in PE; however, the reverse was found for Filipino female students. The status of PE as a major school subject might explain why these differences in scores existed. The educational system in Korea is highly competitive, especially when students start to prepare for their Korean college scholastic ability test to determine what universities they can enter (Mani and Trines 2018). Normally, students in Korea are encouraged by their teachers and parents to focus on important academic subjects, such as Math, English, and Science, to the point of giving up PE classes to allow students more study time (Lee and Cho 2014). PE teachers cancelling their classes to provide their students more time to study other subjects could have conveyed the message that it is a lower-status subject (Lee and Cho 2014), thus contributing to Korean students' less positive attitudes. This notion is somewhat supported by the reductions in time allotment and required teaching content in PE at the middle and high school levels under the 7th KNCPE (Lee and Cho 2014). Another reason could be that the physical activities offered to students in a particular grade level are ones they either prefer or hate. As mentioned earlier, dance-oriented activities are provided to adolescent students in the Philippines, while traditional individual and team sports with masculine connotations are taught to Korean students. These activities are perhaps preferred by female students in the Philippines but disliked by Koreans.

The teacher subscale reflects students' views of their teachers. Korean males had more favorable attitudes toward their teachers compared with male students in the Philippines. Based on the item statements, Korean male students reported that their PE teachers were very friendly, enthusiastic about teaching new exercises, and not too strict as compared to their counterparts. Therefore, these

positive traits and behaviors of Korean teachers may have contributed to Korean male students' more positive attitudes toward their teachers, whereas the strict and dull teaching behaviors of Filipino teachers may have led to their male students' less positive attitudes toward them.

From a practical viewpoint, these findings suggest that, to promote students' positive attitudes toward PE and subsequently lead to their increased motivation to participate in PE class and even physical activity off school premises, PE teachers and school administrators should consider students' sex and culture when creating lessons, supporting PE programs, and teaching and managing physical activities during PE sessions. These suggestions imply creating a learning environment that promotes diversity, inclusion, and cooperation. For instance, soccer and basketball are highly valued sports in Korea and in the Philippines respectively and are included within the team sport or ball games component of the PE curriculum of the two countries (Department of Education 2016; Yoo and Kim 2005). However, the status of these sports is mostly acknowledged by the male population. In fact, soccer has been the most played sport by Korean adolescent males (39.6%) but only 3.1% of young females participate (Ministry of Culture, Sports and Tourism, 2021). On the other hand, basketball was found to be the preferred sport by male middle school students in the Philippines compared to their female counterparts (Cruz, 2021). With such high popularity of soccer and basketball in males than females in each country, participation is unlikely for the female students. Hence, to ensure inclusion, diversity and cooperation, PE teachers should try to modify the rules of the games such that teams are comprised of both boys and girls. The scoring system can also be changed in a manner that extra points be given to a team when all members performed the ball pass/receive before shooting the ball rather than only skilled players dominate the game. A learning environment that prioritizes safety for students is another recommendation. Since PE teachers in Korea have the autonomy to select activities for their students, careful selection of activities that are safe for all students should be prioritized. On the other hand, since PE teachers in the Philippines follow the government-mandated curriculum, the

compulsory activities should be adjusted based on different skill levels of students while the facilities and equipment are regularly checked for wear and tear.

Investing in professional development training with an emphasis on motivating and promoting the leadership styles of both Filipino and Korean teachers can facilitate a positive, comfortable, and supportive learning environment for students because PE teachers who undergo professional training programs have students reporting greater satisfaction, motivation, classroom engagement, higher perceived skill development, and higher intention toward future physical activity participation (Cheon and Reeve 2013; Cheon et al. 2012; teacher subscale). Teachers, particularly PE teachers in Korea, may also benefit from additional training in developing their instructional strategies and knowledge in new fitness assessment and procedures since it was found that Korean PE teachers were adamant in changing their accustomed routines in relation to teaching and implementing PE programs (Lee and Cho 2014). Investing in multi-functional, modern, and sustainable equipment and facilities (e.g., dressing rooms for students in the Philippines to address their uneasiness when changing PE uniforms) to support PE programs is another recommendation that may promote favorable attitude of students toward PE.

Finally, when teaching sports, games, exercises, and other activities, teachers should not only focus on the technical and strategic aspects of the activities but also highlight their value to one's health and well-being. Fun and enjoyment factors should be considered when designing and preparing class activities because these aspects of PE experiences are major determinants of students' positive attitudes toward PE (Luke and Sinclair 1991; Silverman 2017). Innovating existing activities or traditional sports/games to be more holistic, relevant, and enjoyable to students may be a good starting point; for example, incorporating traditional martial arts movements in arnis (Philippines), or taekwondo (Korea) in modern dance lessons may be perceived as fun and useful, leading to students' positive attitude and consequently more active participation in class (satisfaction, comfort, and activity subscales).

From a theoretical viewpoint, this study highlighted that various affective, cognitive, and motivational information is processed and evaluated in the development of PE attitudes. Results showed that PE attitudes can be assessed using different information from one's general perception about PE and specific personal experiences in PE such as curriculum/activity, teacher, facilities, and environment. The degree of each student's positive or negative PE attitude can come from different sources of information that are evaluated based on his/her feelings, beliefs, and experiences stored in memory. Furthermore, sex and country of residence not only separately influence students' PE attitudes, they also affect students' attitudes toward PE through the interaction of sex and culture. Hence, this study clarifies students' PE attitudes and the factors that can affect the positive or negative development of these attitudes from a cross-cultural viewpoint.

This study has some limitations. Similar to studies using self-reported questionnaires, participants' interpretation of each statement or subconscious responses may have influenced them to respond differently. To minimize this concern, we ensured that statements and their meanings were clearly explained, and any questions were answered appropriately. Students were also informed to avoid skipping any items in the questionnaire and assured that their personal identification would be kept strictly confidential to ensure honest and reliable data. Further research is suggested to elucidate adolescent students' PE attitudes. Since attitudes can lead to behavioral changes, it might be worthwhile to examine students' behavioral outcomes, such as physical activity participation in and outside of school and achievement in PE, in relation to the independent factors (sex and country of residence) we examined. Moreover, further analyzing specific aspects of PE attitudes by adding qualitative research could provide answers to questions such as, "What physical activities in PE can make students feel anxious and how can their anxiety be relieved?" and "What particular behaviors do students prefer from their teachers that would motivate them to be physically active during PE class?" Lastly, although there is a body of knowledge investigating multicultural education in the context of teaching PE (Flory and McCaughtry 2011; Harrison et al.

2010), information about comparative international research on cross-cultural PE attitudes is still scarce. This current study contributes to this existing body of knowledge and more studies are encouraged in the future to shed more light on this topic.

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