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## Original

### DIFERENCIAS EN LAS ACTITUDES HACIA EL EJERCICIO, LA HABILIDAD ATLÉTICA PERCIBIDA, EL ATRACTIVO FÍSICO PERCIBIDO Y LA PARTICIPACIÓN EN ACTIVIDADES FÍSICAS DE NIÑOS Y ADOLESCENTES ENTRE 10 Y 18 AÑOS.

### DIFFERENCES IN ATTITUDES TOWARDS EXERCISE, PERCEIVED ATHLETIC ABILITY, PERCEIVED PHYSICAL ATTRACTIVENESS AND PARTICIPATION IN PHYSICAL ACTIVITY IN CHILDREN AND ADOLESCENTS AGED 10 TO 18 YEARS OLD

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## RESUMEN

El propósito del estudio fue analizar las diferencias entre los griegos de la escuela primaria, secundaria y estudiantes de último año de la escuela en cuanto a: 1. actitudes e intenciones hacia el ejercicio, 2. percepción subjetiva del esfuerzo y el disfrute, 3. auto-percepciones y 4. niveles de actividad física. Por otra parte, el propósito era identificar la edad en que las variables anteriores psicológicas (que son factores decisivos para la participación de los niños la actividad física) tienden a disminuir. En este estudio 573 niños y niñas participaron 630, con edades entre 11-18 años. El estudio se llevó a cabo a través de cuestionarios y de todas las escalas presentan niveles aceptables de consistencia interna ( $0.67 < \alpha < 0.95$ ). Los resultados revelaron que los niños de primaria tenían actitudes más positivas y las intenciones hacia el ejercicio y las puntuaciones más altas en la percepción de competencia deportiva y el atractivo percibido cuerpo en comparación con estudiantes de secundaria y superior. Además, participan más en la actividad física moderada y vigorosa. Además, como se mueven los estudiantes de la escuela primaria a la secundaria que desarrollan la percepción menos positiva sobre su cuerpo y participan menos en la actividad física y el ejercicio. Los resultados del estudio implican la necesidad de fortalecer las actitudes e intenciones hacia el ejercicio, el desarrollo de los alumnos estudiantes de la creencia en su propia capacidad y fomentar su participación en la actividad física, proporcionando oportunidades de éxito.

**Palabras clave:** Actividad física, el perfil de auto-percepción física, los niños y adolescentes

## ABSTRACT

The purpose of the study was to examine differences among Greek elementary, high school and senior school students as to: 1. attitudes and intentions towards exercise, 2. perceived effort and enjoyment, 3. self-perceptions and 4. Physical activity levels. Furthermore, the purpose was to identifying the age at which the above psychological variables (which are deciding factors for children's physical activity participation) tend to decline. In this study 573 boys and 630 girls participated, aged 11-18 years. The study was conducted through questionnaires and all scales had acceptable levels of internal consistency ( $.67 < \alpha < .95$ ). The results revealed that elementary school children had more positive attitudes and intentions towards exercise and higher scores in perceived athletic competence and perceived body attractiveness compared with high and senior school students. Also, they participate more in moderate and vigorous physical activity. Moreover, as students move from the elementary school to the junior high school they develop less positive perception about their body and they participate less in physical activity and exercise. The results of the study imply the need to strengthen students' attitudes and intentions towards exercise, to develop students' belief in their own ability and to encourage their participation in physical activity, providing success opportunities.

**Key words:** Physical activity, physical self-perception profile, children and adolescents.



## INTRODUCCIÓN

Physical education may have an important contribution to students' personal development. It provides opportunities for enjoyment, for learning new motor skills and for cooperation with others through daily physical activity (Hassanda, Goudas, & Chroni, 2003), exercise, and sport participation. Moreover, active participation in sport and exercise has beneficial social and psychological effects, such as increased social acceptance (Weiss & Duncan, 1997), elevated self-esteem and feeling of well-being (Martinsen & Stephens, 1994). Physical activity also is an integral component of a healthy lifestyle and especially during childhood and adolescence is crucial, as it contributes to a normal skeletal development and is necessary for young adults to attain and maintain an appropriate bone mass (Bailey & Martin, 1994).

However, while the positive effects of regular physical activity participation are well established in children and adolescents, there is evidence to demonstrate that young people in many developed nations do not participate in enough physical activity of the type and intensity associated with health benefits<sup>1</sup> (Hagger, Chatzisarantis, Biddle, & Orbell, 2001). Research findings continue to indicate that young people activity level decreases with age and that children and adolescents are choosing to opt out of school physical education programs once the subject becomes elective (Luke & Sinclair 1991; Chatzisarantis, Hagger, Biddle & Smith, 2005). For example, physical education at the elementary school level is generally greeted with great excitement by inherently active young children, but this enthusiastic response has been shown to wane as students move into middle and secondary school programs (Baron & Downey, 2007). Many studies also report that young people's after school physical activity is rapidly diminishing (Telama & Yang 2000; Christodoulidis, Papaioannou, & Digelidis, 2001; Subramanish & Silverman, 2007; Kamtsios & Digelidis, 2008). The more children grow up, the less they exercise. In fact, exercise behaviour gradually decreases even during the school years (Sallis, Simons-Morton, Stone, Corbin, Epstein, et al., 1992; Christodoulidis et al., 2001; Mowling, Brock, Eiler, & Rudisill, 2004). Studies report that during high school, students' effort and enjoyment in PE is gradually diminished (Carlson, 1995; Papaioannou, 1997; Digelidis & Papaioannou, 1999).

Research in physical education has tried to examine why children's activity level decrease with age. It has been found that children's motivation to participate in physical

activity is influenced by a range of psychosocial variables which are positive predictors of physical activity participation, such as attitudes, intentions, perceived competence, effort and enjoyment in physical education lesson and self-perceptions.

Attitudes play an important role in people's exercise behaviours. Attitudes are people's perceptions, ideas or judgments concerning a specific behaviour. Research has identified attitudes as an important antecedent of physical activity and evidence corroborates the conclusion that attitudes influence physical activity behaviour directly (Bentler & Specjart, 1979), or indirectly via intentions (Ajzen & Fishbein, 1980). The adoption of an active lifestyle is often associated with positive attitudes towards exercise. Thereby, the formation of positive attitudes towards exercise is important, taking into consideration the fact that regular exercise has been shown to be beneficial for public health. Since the 1980s there have been supporters of the notion that physical education should facilitate positive attitudes towards exercise as a positive attitude towards exercise was found to be a positive predictor of youngsters' exercise behaviour 7 and 14 months later (Papaioannou, 2000). Intention is important because this is the immediate determinant of behaviour. Intention is considered to be a motivational variable and is a context-specific representation of goal-directed behaviour (Bloom, 2000). Intention models how hard people are willing to try and how much of an effort people are planning to exert toward performance of the behaviour (Ajzen, 1988).

Perceived competence is a factor that has been found to influence children's decisions to be physically active (Welk, 1999). Students with high perceived competence opt for challenges and self determination in learning contexts (Digelidis & Papaioannou, 1999). Children's perceived physical and sport competence related to their physical activity participation. That is, the more children perceived they were competent in regard to physical activity, the more likely they were to be engaged in this activity (Bois, Sarrazin, Brustad., Trouilloud, & Cury, 2004). Nickolls (1989) argues that at the age of 10 years a major decline of perceived ability occurs, which is due to the cognitive maturity of children. From this age on, children can understand that they can not be the best in some activities, even if they make the greatest effort. These ages' related differences in understanding ability and effort probably affect both perceptions of success and outcome attributions.

Perceived body attractiveness (their perceptions of attractiveness of their figure or physique, ability to maintain an attractive body and confidence in appearance) is an important element of physical self perceptions (Fox

<sup>1</sup> Physical activity guidelines suggest that children should engage in 60 minutes of moderate to vigorous physical activity each day (Biddle, Sallis, & Cavill, 1988).



& Corbin, 1989). Research has shown that perceived body attractiveness is connected to peoples' exercise behaviours. It can be reasonably assumed that students who worry about their appearance feel uncomfortable in the physical education context (Digelidis & Papaioannou, 1999).

Enjoyment is an effective factor related to valuing the activity and having fun (Welk, 1999). Children's motivation to participate in physical activity is influenced by their perception of the activity as being fun and worthwhile or boring or unpleasant (Fox, 1991; Martens, 1996). Enjoyment has been linked to perceived competence and mastery (Wallhead & Buckworth, 2004); children find physical activity fun when they can succeed at experiences they find challenging (Martens, 1996; Whitehead & Cordin, 1997).

All the psychological variables that have been mentioned (attitudes, intentions, perceived competence, perceived body attractiveness, enjoyment) are critical factors in motivating children to be physically active (Welk, 1999). These factors may be affected by the type of the activity (McKenzie, Alcaraz, & Sallis, 1994) and the age or gender of the child (Lee, 1997).

The purpose of this study is to examine age-group differences among Greek elementary, junior high school and senior high school students in attitudes and intentions towards exercise, in perceived athletic ability, perceived physical appearance, perceived effort and enjoyment in physical education lesson and participation in physical activity, in an attempt to extend previous research in Greek school age children. Furthermore, the purpose is to identifying the age at which the above psychological variables (which are deciding factors for children's physical activity participation) tend to decline. A decrease in attitudes and intentions towards exercise and in participation in physical activity from elementary school to junior high school and to senior high school was hypothesized. Also, high school students were expected to report lower levels on perceived athletic ability and on perceived physical attractiveness than elementary school children.

## MATERIAL Y MÉTODOS

### Participants

One thousand, two hundred and three children (573 boys and 630 girls), participated in this study. All of them were living in suburban and urban areas of west-northwest Greece. 775 children were in the elementary school, 219 were in high school and 209 in senior school. All physical education classes were coeducational. The subjects' anthropometric characteristics for the entire sample are presented in Table 1.

Table 1. Description of the subject by gender and school level (mean±SD).

	Boys (n=573)			Girls (n=630)		
	Elementary school n=362	High school n=125	Senior school n=86	Elementary school n=413	High school n=94	Senior school n=123
Age (years)	11.22±.76	14.98±1.07	18.08±.58	11.17±.93	14.76±1.26	17.95±.58
Height (cm)	149±.8	166±.09	176±.07	149±.08	162±.07	165±.05
Body mass (kg)	42.91±8.7	56.50±10	71.85±11.4	42.16±8.9	52.96±8.94	57.96±8

### Measures.

Students completed the following scales. "Attitudes". Students responded in four scales (good-bad, healthy-unhealthy, pleasant-unpleasant, useful-not useful), assessing their dispositions toward exercise over the upcoming 12 months (e.g. "for me to exercise the next

12 months is..."). The responses were indicated on 7-point semantic differentiation scales for each of the four scales (e.g. 1=very bad, 2=bad, 3=rather bad, 4=neither good nor bad, 5=rather good, 6=good, 7=very good) (Theodorakis, 1994).



*“Intentions”*. Students responded to two questions assessing their intentions to exercise in the next 12 months. The questions were: “I intend to exercise during the next 12 months” (impossible=1, possible=7) and “I am determined to exercise during the next 12 months” (absolutely no=1, absolutely yes=7) (Theodorakis, 1994).

Previous research has shown that attitudes and intention measures display adequate levels of predictive validity and reliability (Ajzen, & Fishbein, 1980; Theodorakis, 1994; Papaioannou & Theodorakis, 1996). A single-item measure is common and valid in the exercise domain (Courneya, & McAuley, 1995; Courneya, Plotnikoff, Hotz, & Birket 2000).

*“Perceived effort and enjoyment”*. Two subscales of the intrinsic motivation inventory (McAuley, Duncan, & Tammen, 1989) were used to measure students’ effort and enjoyment in the physical education class. The students responded to 10 items on a 5-point scale ranging from 1 (I absolutely disagree) to 5 (I absolutely agree). The validity of these scales in Greek physical education context has been consistent in the past (Papaioannou & McDonald, 1993).

*“Self-Perception”*. The subscales “sport competence” and “attractive body” of Physical Self-Perception Profile (Fox & Corbin, 1989), were used to measure perceived athletic ability and perceived physical appearance, respectively. The competence scale consisted of six items indicating people performing well or not in sport. Children reported on a 5-point scale (exactly as I am=5, I am not at all like this=1). The attractive body scale included 6 items suggesting that the person has an attractive or an unattractive body. The students indicated their responses on a 5-point scale (certainly yes=5, certainly no=1). Sports Competence included the perceptions of sport and athletic ability, ability to learn sport skills, and confidence in the sports environment. Body attractiveness included the perceived attractiveness of figure or physique, ability to maintain an attractive body and confidence in appearance (Biddle & Armstrong, 1992).

*“Physical Activity Levels”*. The Leisure Time Exercise Questionnaire (LTEQ; Godin & Shephard, 1985), were used. LTEQ is a simple questionnaire designed to assess leisure time physical activity over a 7-day period. The participants were asked to indicate the average number of times per week during their free time that they engage in strenuous, moderate and mild exercise for more than 15 minutes. The question is scored by multiplying the number of times per week that the subject indicates he/she has participated in physical activity against corresponding anticipated MET (measurement in exercise testing) value for strenuous (9 METS), moderate (5METS) and mild

exercise (3METS). The sum of the three scores is considered the total score for the question (physical activity index). Independent evaluations of the Leisure Time Exercise Questionnaire found it to be valid, reliable, easy to administer, and to display concurrent validity with objective activity, and fitness indexes (Jacobs, Ainsworth, Hartman, & Leon, 1993). The back translation method was used to translate the original questionnaire into Greek (Brislin, 1986).

*“Students’ daily athletic habits”*. Responders were asked about how often and how many times each week they “participated in sports, swimming or other physical activities, excluding mandatory physical education classes in school”, and about how often and how many times each week they participate in physical activity with their friends, for example “are you an athlete in an athletic club? Yes- No”, or “how many times per week are you training in an athletic club or with your friends?”

*“Anthropometric measurements”*. Age (accurate to 1 month) was recorded. Standing height was measured to the nearest 0.5 cm (Seca Stadiometer 208) with shoes removed, feet together, and head in the Frankfort horizontal plane. Body mass was measured to the nearest 0.5 kg (Seca Beam Balance 710) with shoes, sweaters, coats, and jackets removed. BMI was calculated by dividing weight by height squared (kg/m<sup>2</sup>).

## Procedure

The researcher visited the schools and administered the questionnaire in the classroom. The students were given verbal instructions with regard to how complete the questionnaire. After the opportunity for clarification and questions, they responded to the measures. Generally, the completion of the questionnaires required 15-20 min. The study was conducted with the permission of the Greek Ministry of Education and the children voluntarily chose to participate.

## Data analyses

Means and standard deviations were calculated for attitudes, intentions, effort in physical education lesson, perceived athletic competence, perceived body attractiveness, lesson satisfaction in physical education and for participation in mild, moderate and vigorous physical activity. Statistical significance for the difference between school levels was determined by the use of one-way ANOVA. To examine the linear relationships between the variables, Pearson correlation coefficient was used. Relationships between children from elementary, high and senior school and their daily habits were determined by the use of chi-square tests. The SPSS (version 11 for windows) statistical package was used, and significance



was set at  $p < .05$ . Reliability analysis showed that all scales had an acceptable level of internal consistency. As is shown in Table 2, for all scales but one the reliability alpha coefficients were .67 or above.

Table 2. Internal consistency for the scales

Variables	$\alpha$ - Cronbach		
	Elementary school	High school	Senior school
Attitudes towards exercise	.67	.79	.81
Intentions towards exercise	.86	.85	.93
Attitude strength towards exercise	.87	.86	.94
Lesson satisfaction in physical education	.67	.84	.84
Effort in physical education lesson	.68	.82	.79
Perceived athletic competence	.70	.72	.69
Perceived body attractiveness	.89	.92	.95

## RESULTADOS

Table 3 illustrates mean differences in all scales. One-way Anova results revealed a significant effect of school level to the following scales:

Table 3. Means and standard deviations for the scales.

Variables	Elementary school		High school		Senior school		F	p
	M	SD	M	SD	M	SD		
Attitudes towards exercise	6.65	.38	6.50	.50	6.25	.54	70.72*	.000
Intentions towards exercise	6.40	.70	6.15	.73	5.33	.77	180.57*	.000
Attitude strength towards exercise	6.23	.76	5.86	.71	4.97	.78	228.78*	.000
Lesson satisfaction in physical education	4.53	.44	4.12	.78	4.17	.67	64.23*	.000
Effort in physical education lesson	3.37	.37	3.77	.85	3.29	.83	46.32*	.000
Perceived athletic competence	3.80	.72	3.48	.75	3.07	.69	90.13*	.000
Perceived body attractiveness	3.72	.97	3.27	.93	3.26	.12	27.52*	.000

Table 4 presents mean differences in the physical activity levels. One-way ANOVA results revealed a significant effect of school level to the: 1) participation in moderate physical activity ( $F_{2,1200} = 52.44$ ,  $p < .05$ ), 2)

- Attitudes towards exercise ( $F_{2,1200} = 70.72$ ,  $p < .05$ ).
- intentions towards exercise ( $F_{2,1200} = 180.57$ ,  $p < .05$ ),

- attitude strength towards exercise ( $F_{2,1200} = 228.78$ ,  $p < .05$ ),
- perceived athletic competence ( $F_{2,1200} = 90.13$ ,  $p < .05$ )

Using the post-hoc SIDAK test, differences were found in attitudes, intentions and attitude strength towards exercise. Elementary school children had more positive attitudes, intentions and attitude strength than high school children, and high school children scored higher than senior school children.

- satisfaction from the physical education lesson ( $F_{2,1200} = 64.23$ ,  $p < .05$ ),
- perceived body attractiveness ( $F_{2,1200} = 27.52$ ,  $p < .05$ ).

Post-hoc SIDAK test revealed statistically significant differences between elementary school children and high school children and elementary school children and senior school children.

- effort in physical education lesson ( $F_{2,1200} = 46.32$ ,  $p < .05$ ),

High school children scored higher than elementary and senior school children and elementary school children scored higher than senior school children.

participation in vigorous physical activity ( $F_{2,1200} = 96.08$ ,  $p < .05$ ) and 3) total score in the Leisure Time Exercise Questionnaire (LTEQ) ( $F_{2,1200} = 112.066$ ,  $p < .05$ ). Post-hoc SIDAK test revealed that elementary school



children participated more in moderate and vigorous physical activity and scored higher in the LTEQ than high school and senior school pupils. Also high school children participated more in moderate and vigorous physical activity and scored higher in the LTEQ than senior school children.

There were no statistically significant differences between the three school levels in mild physical activity participation ( $p=.057$ ).

Table 4. Means and standard deviations for physical activity participation

	Elementary school		High school		Senior school		F	p
	M	SD	M	SD	M	SD		
Mild physical activity	7.08	5.62	6.15	4.07	6.8	4.00	2.88	.057
Moderate physical activity	14.23	8.28	12.71	6.58	8.1	5.8	52.44*	.000
Vigorous physical activity	25.11	15.62	20.05	13.13	9.55	11.09	96.08*	.000
Total score in LTEQ#	46.43	20.34	38.92	17.25	24.54	14.8	112.07*	.000

Chi-square tests revealed significant differences between the school levels in the participation in organized athletic sports, as members in an athletic club ( $\chi^2_{(2)} = 13.660$ ,  $p=.001$ ). For example 52% of elementary school children and only 41,3% of senior school children are members in an athletic club. Also, 92,4% of elementary school children and only 80,1% and 71,3% of high and senior school children respective, participating in exercise in leisure time with friends ( $\chi^2_{(2)} = 68.918$ ,  $p=.000$ ).

Table 5. Results from test  $\chi^2$  concerning daily athletic habits.

	$\chi^2$	p
Members in an athletic club	$\chi^2_{(2)} = 13.66^*$	.001
Time of exercise in an athletic club	$\chi^2_{(14)} = 66.70^*$	.000
Exercise in a sport club or gym	$\chi^2_{(4)} = 13.01^*$	.011
Time of exercise in a sport club	$\chi^2_{(12)} = 12.63$	.396
Exercise in leisure time with friends	$\chi^2_{(2)} = 68.92^*$	.000

#### Correlations

Correlations between variables, expressed as Pearson correlation coefficients are shown in table 6. Among all subject significant correlations existed between attitudes and intentions towards exercise ( $r = .57$ ), attitudes and lesson satisfaction in physical education ( $r = .40$ ), lesson satisfaction and effort in physical education lesson ( $r = .37$ ), intentions and lesson satisfaction ( $r = .35$ ). Also, lesson satisfaction was significantly correlated with perceived athletic competence ( $r = .32$ ) and perceived body attractiveness ( $r = .26$ ), while perceived athletic competence was significantly correlated with attitudes and intentions towards physical education ( $r = .27$  and  $r = .31$ ) respectively.



Table 6. Correlations between the variables.

Variables	1	2	3	4	5	6
1 Attitudes towards exercise		.57**	.40**	.20*	.27*	.15
2 Intentions towards exercise			.35*	.19	.31*	.21
3 Lesson satisfaction in physical education				.37**	.32*	.26*
4 Effort in physical education lesson					.11	.10
5 Perceived athletic competence						
6 Perceived body attractiveness						

## DISCUSIÓN

The purpose of the study was to examine age-group differences in attitudes and intentions towards exercise, in perceived athletic ability, in perceived physical attractiveness, in effort and enjoyment in physical education lesson and in the participation in physical activity, as well as to identifying the age at which all the above psychological factors tend to decline. The study (using a sample size of 1200 students) extended previous research and the results demonstrate that elementary school children had more

positive attitudes and intentions towards exercise and higher scores in perceived athletic competence and perceived body attractiveness. Also, they participate more in moderate and vigorous physical activity. In addition, high school students perceive more effort in physical education lesson than primary and secondary school children. Moreover, as Greek students move from the elementary school to the junior high school they develop less positive perception about their body and they participate less in physical activity and exercise.

A number of studies in physical education have revealed that, as children get older and progressed in grade level, they show decreasing scores on effort and enjoyment in physical education lesson, feel less competent, become less task-involved and their exercise frequency decreases (Papaioannou, 1997; Digelidis & Papaioannou, 1999; Marling, Brock, Eiler, & Rudisill, 2004; Subramanian & Silverman, 2007; Baron & Downey, 2007; Hachim, Grove, & Whipp, 2008). As a result there is a decline in their attitudes and intentions towards exercise (Subramanian & Silverman, 2007). The structure and the framework of

Greek educational system may explain age-group differences found in this study. The contemporary Greek physical education curriculum is sports oriented. In grades 4-12 the major activities are football, basketball, volleyball, handball, athletics and dance. However, there is low emphasis on learning goals, particularly in senior high school (Digelidis & Papaioannou, 1999). This curriculum based almost exclusively on competitive activities or on a sport education model (Siedentop, 1994), decrease the participation of students with low athletic ability. Some may feel in a disadvantageous position and form negative attitudes towards exercise (Christodoulidis, Papaioannou, & Digelidis, 2003). Research also indicates that while young children aged 9 to 11 years tend to have very positive attitudes towards exercise (Theodorakis, Doganis, Bagiatis, & Goudas, 1991), older children tend to drop out of physical activity participation at about the age of 14 onwards (Biddle, Cavill, & Sallis, 1998).

As was expected, students' self-perceptions become less positive with age. This is in line with previous literature (Jacobs, Lanza, Osgood, Eccles, & Wigfield, 2002; Sollerhed, Apitzsch, Rastam, & Ejlertsson, 2008). This can be partly ascribed to the cognitive maturity of children. Children's accuracy evaluating their physical self increases with age (McKiddie & Maynard, 1997). Moreover, the biological changes associated with puberty may also be responsible for some of these changes in perception. On the other hand, research has shown that the school and the sport environment is an importance cause for the decrease of students' perceived athletic competence (Digelidis & Papaioannou, 1999). Sports teams become more selective when children are 11-13 years old. At this age, those children with relatively low athletic ability find no place in competitive sport. Sports participants continue to increase their physical abilities, but those who are left out of school system do not. In retrospect, those who lack physical



abilities develop more negative beliefs about their physical self. Moreover, the low emphasis on physical ability in school, particularly in senior high school, does not enable them to compensate for some of these losses (Digelidis & Papaioannou, 1999).

The graduation system and the general teacher behaviors may help explain differences in perceived athletic competence, effort and lesson satisfaction in physical education. According to Nicholls (1984), success that is evaluated through norm-referenced means (e.g. social comparison, grades) is termed ego-oriented, while success evaluated through self-reported means is referred to as task-oriented. It seems possible that at least some of the children would have compared themselves to their peers to assess success, which is more representative of an ego-oriented involvement, rather than considering their own skill mastery (Nicholls, 1984). To enhance children's perceived athletic competence development in varied ways, physical educators must try to provide moderately challenging learning experiences in which the children can ultimately be successful. Perceiving their performance as successful can lead children to make functional attributions, which may lead to increased motivation to continue participating (Wallhead & Buckworth, 2004).

Regarding age-group differences in effort and lesson satisfaction, activities in physical education differ considerably in the settings in which they are performed and in the demands placed on the participants (Goudas, Biddle, & Fox, 1994). As a result children's attributions for their performance success and their satisfaction and enjoyment of different physical activities may differ.

There were also statistically significant correlations between the psychological variables, which were measured in this study. Especially, enjoyment was correlated with self-perceived sport competence, effort and perceived body attractiveness. The balance between skills and challenge is essential for the feeling of enjoyment and competence. Children who thought physical education is fun also perceived their competence as high. Enjoyment is a major reason for the children to be physically active (Hagger, Chatzisarantis, & Biddle 2001). If children find physical activity and physical education pleasant and enjoyment, they probably engage in physical activity more often and thus will improve their fitness and competence and also perceive their competence in physical education as good. Unfortunately, the results of the study demonstrate that enjoyment and effort in physical education declines as children progressed in grade level. The majority of physical activity opportunities existing for children occur within socially comparative settings that typically emphasize performance evaluation. Although physical education lessons are often seen as fun and

enjoyable, they may also trigger negative feelings such as anxiety because of the comparative, competitive and evaluative nature (Barkoukis, Tsorbatzoudis, Grouis, & Rodafinos, 2005).

There were also significant correlations between attitudes, intentions and lesson satisfaction in physical education – perceived athletic competence. According to Hassandra et. al., (2003), perceived athletic competence is positively associated with positive attitudes and intentions towards exercise, that is, if students feel they are competent in a physical education class, they are more intrinsic motivated and they feel more satisfied from their participation. Positive attitudes and intentions, perceived athletic competence and satisfaction for PE lesson influences the motivation to do more physical activity (Weiss & Ebbeck, 1996).

Later longitudinal studies underlined the importance of developing physical activity skills and habits during childhood as a means of increasing the probability of an active lifestyle later in life (Malina, 1996). Taking into account the negative consequences of inactivity and the health benefits of physical activity in adults, it is important that active lifestyles be continued into adulthood. Moreover, it may be more effective to prevent the development of sedentary lifestyles, than to attempt to reverse inactivity in adulthood. Because of this, it is worth identifying the age at which physical activity tends to decrease and the age at which psychological variables that motivated children to be physically active tends to decline. This will allow to focus the programs on the specific age group (Laskeras, Aznar, Merito, & Lopez, 2001).

The adoption of an active lifestyle is often associated with positive attitudes and intentions towards exercise and physical educators can play an important role in facilitating positive attitudes and intentions towards exercise through appropriate educational activities (Digelidis, N., Papaioannou, A., Laparidis, K., & Christodoulidis, 2003). To enhance children's development in varied ways, physical educators must try to provide moderately challenging learning experiences in which the children can ultimately be successful. Perceiving their performance as successful can lead children to make functional attributions, which may then lead to increased motivation to continue participating (Weiner, 1986).

Physical education programs that develop students' belief in their own ability and that encourage participation could influence their long term exercise behaviours and the amount of enjoyment they derive from that participation (Tannehill & Zakrajsek, 1993). Physical education curriculum and programs must be designed to reflect the needs and interests of all children to ensure that both boys



and girls have opportunities to be successful in motor performance and thus develop a belief in their own ability. Curriculum changes also may be in order, instructional format may provide more success opportunities, and allowing learners to set their own goals on what is an appropriate challenge may be important (Tannehill & Zakrajsek, 1993).

Physical activity at the age of 10 to 18 significantly predicts adult physical activity. Persistent physical activity at a young age considerably increases the probability of being active in adulthood. School physical education, organized sports and other programs influencing physical activity among young people should be given all possible support in efforts to develop and implement physical activity programs (Telema, Yang, Viikari, Valimaki, Wanne, & Raitakari, 2005).

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