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Original Article

The adolescent age transition and the impact of physical activity on perceptions of success, self-esteem and well-being

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Abstract:
Participation in organized youth sports has a long-term effect and is a good predictor of factors, such as the continuation of physical activity later in life or a predisposition to be active in adulthood (Telama et al., 2005). Adolescence is regarded as a period of transition between childhood and adulthood. Adolescents must address a range of biological, social, emotional and psychological transitions to successfully enter the adulthood (Roker & Coleman, 1998), and preparing for a lifetime of physical activity is also a central aim of person (Sallis & McKenzie, 1991). The main purpose of the study was to compare cohorts of adolescent student athletes in terms of their perceptions of success, self-esteem and wellbeing. The subjects were selected from educational institutions where physical education is regarded as a formal subject and where students are under the guidance of a physical education teacher with a structured curriculum. All subjects were adolescent male students within the following broadly divided age categories (Steinberg, 1993)*:* early (11–14 years) with a mean of 12.35 ± 1.04 years, middle (15–18 years) with a mean of 15.92 ± 1.08 years and late (19–21 years) with a mean of 19.98 ± 0.768 years. The questionnaires used in this study included the Perception of Success Questionnaire (POSQ) by Roberts, Treasure and Balague (12 items; 1998), the Rosenberg Self-Esteem Scale (RSE) (10 items; 1965), and the well-being questionnaire by Birleson (18 items, 1980). Descriptive statistics were used to analysis the result. To determine the correlations among the variables, Pearson's correlation was used; to compare the cohorts, we used one-way ANOVA. The results showed significant differences in all of the psychological factors, including success, self-esteem and well-being, between the early, middle and late adolescent students.
Keywords: age transition, success, well-being, self-esteem, adolescent physical activity

Introduction

Physical fitness has been defined as the result of body movement that is generated by muscle action that increases energy expenditure (McArdle, Katch & Katch, 2001). Physical activity is known to be an important factor in promoting health and physical efficiency (U.S. Department of Health and Human Services, 2010; Janssen & LeBlanc, 2010). Childhood and adolescence represent crucial moments of life, and lifestyles and healthy or unhealthy behaviours established at these ages may affect health conditions in adulthood (Ortega, Ruiz, Castillo & Sjöström, 2008). It has been demonstrated that physical fitness determines lifestyle in terms of motor performance and individual's state of health, and this information has led to considerable research that has focused on varying these factors in adolescents (Catley & Tomkinson, 2013; Sandercock, Voss, Cohen, Taylor & Stasinopoulos, 2012; Sauka et al., 2011). The quantity and quality of studies relating to child and adolescent physical activity and sedentary behaviour have rapidly increased, but research directions have been often pursued in a reactive and uncoordinated manner. Adolescents today live in an environment in which opportunities for physical inactivity are increasingly common. They ride to school and colleges rather than walk or bike, many schools are reducing or eliminating physical education classes and time for recess, many parents are afraid to let their children play outside, and labour-saving devices abound. Screens (television, videos, computers, video games, mobile phones) are all around us, and "screen time" is an important component of daily life, which excessively hampers regular participation in games, sports and activity-based recreational programmes. One important social cognitive viewpoint is achievement goal analysis that is derived from independent and collaborative classroom-based research (Nicholls, 1980, 1984, 1989; Dweck & Elliott, 1983; Maehr, 1984; Dweck, 1986; Maehr & Braskamp, 1986; Ames, 1992; Ames & Archer, 1987). This framework is built on the assumption that the individual is an intentional, goal-directed person who operates in a rational manner and that the achievement of goals guides subsequent decision making and behaviour in achievement-

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oriented environments. The goal of action in achievement goal theory is assumed to be a demonstration of competence; thus, the perception of ability is a central variable. It is argued, however, that there is more than one concept of ability (Nicholls, 1984), and these different concepts determine the individual's affective and cognitive responses to achievement efforts. From the studies, it is clearly evident that participation in games and sports could enhance students' levels of perceived success (Roberts & Balague, 1998), self-esteem (Ahmed, Mladenovic, Ho, Lee & Khan, 2014) and well-being (Ahmed, 2013). This study includes adolescent sports players that were divided into three age categories. Adolescence is regarded as a period of transition between childhood and adulthood. One hypothesis is that because of their active participation in games and sports, they would have consistent levels of success, self-esteem and well-being. However, our research aimed to determine if participation in games and sports has a positive impact on these variables. Because the age categories used in this study cover a crucial period during which adolescents undergo critical hormonal changes, we can examine how these hormonal changes impact the study variables at different ages. Concepts related to the adolescents' abilities and the ways they interpret their performance can be understood in terms of the studied perceptions and beliefs. These perceptions and beliefs form a personal theory of achievement for a given activity (Nicholls, 1989). The adopted personal theory of achievement includes one's beliefs about how to be successful in the activity. Therefore, people will differ regarding their concept of ability and how they use this concept (based on their personal theory) to determine what is necessary to be successful. Thus, an individual's goal is to meet the criteria by which he or she evaluates success. Two recent studies have demonstrated that the same developmental process occurs in the physical activity context (Walling, 1994; Whitehead & Smith, 1996). Nicholls (1980, 1984, 1989) contended that two concepts of ability manifest in individuals aged 12 years and older in an achievement context: 1) an undifferentiated concept of ability, in which the ability and effort are not differentiated by the individual and 2) a differentiated concept of ability, in which ability and effort are differentiated (Nicholls, 1984, 1989). Individuals will approach a task with certain goals that reflect their personal perceptions and beliefs about the particular activity in which they are engaged (Dennett, 1978; Nicholls, 1980, 1984, 1989; McArthur & Baron, 1983). These perceptions and beliefs form a personal theory of achievement for the activity (Nicholls, 1989). In a correlation prospective study by Standage and Gillison (2007), 300 British secondary school students responded to a multi-section questionnaires that assessed their motivational processes regarding physical education in school. In addition to encouraging a physically active lifestyle, school physical education also aims to promote and develop self-esteem and perceptions of health. One week after the survey, data pertaining to the general self-esteem and Health Related Quality of Life (HRQoL) were collected. The study found that three competing models provided an excellent fit. All of the models showed that autonomous motivation positively predicted general self-esteem, which in turn positively predicted HRQoL and supported a positive path from autonomous motivation to HRQoL. Then, HRQoL positively predicted general self-esteem. Finally, the models showed that general self-esteem and HRQoL were distinct but related dependent variables that were positively predicted by autonomous motivation regarding physical education. Research on adolescent self-esteem indicates that adolescence is a time in which individuals experience important changes in their physical, cognitive, and social identities. Kort-Butler and Hagewen (2011) conducted a study using three waves of data from the National Longitudinal Study of Adolescent Health (n = 5,399; 47.8% male). The analysis estimated a hierarchical growth-curve model that emphasized the effects of age and a school-based extracurricular activity portfolio, including sports and school clubs, on self-esteem. The results indicated that age had a linear relationship with self-esteem over time. Changes in both the initial level of self-esteem and the growth of self-esteem over time were significantly influenced by the extracurricular activity portfolio. The findings were consistent across race and sex. The results support the usefulness of examining the longitudinal impact of extracurricular activity type on well-being outcomes. Therefore, we hypothesized that a significant difference exists among the three age groups used in this study in terms of perception of success, self-esteem and well-being.

It is well known that participation in sports and physical activities can promote positive experiences, well-being and health in children, adults and the elderly (Coakley, 2007; Tracey & Elcombe, 2004). Recently, Ahmed's (2013) study of 300 active and inactive male students found a significant difference between the active and inactive students. The active students exhibited significantly higher well-being levels, health-related fitness levels and academic achievement levels than the inactive students. The overarching aim of the school system is to 'promote pupils' self-esteem and emotional well-being and help them to form and maintain worthwhile and satisfying relationships based on respect for themselves and for others at home, school, work and in the community'' (Department for Education and Employment and the Qualifications and Curriculum Authority, 1999). This objective encompasses two important indexes of mental health: self-esteem (i.e., "the awareness of good possessed" and Quality of Life (QoL) (i.e., students' overarching subjective evaluations of how well their life is going in relation to their values and expectations) (Campbell, 1984). Among other benefits, physical education classes can provide opportunities for children and adolescents to experience physical fitness gains and feelings of somatic well-being, enhance their competencies, foster social interaction with classmates, and obtain reinforcement from others. Despite these obvious benefits and the promotion of physical education as a vehicle for enhancing perceptions of the self, the existing literature includes many definitional inconsistencies, few empirical tests, and a lack of theoretical applications (Whitehead & Corbin, 1997). In addition to the lack of

research pertaining to self-esteem within the physical education context, past work has failed to explore the relationship between physical education-related variables and QoL. Promoting physical activity in adolescence between the ages of 11 to 21 years and their participation in regular physical activity helps them to develop skills and interests in pastimes activities which are regarded as important throughout their lives (Standage & Gillison, 2007). Like a younger child, an adolescent who participates in physical activity increases his or her muscle and bone strength and lean muscle mass. In addition, physical activity may help an adolescent to reduce body fat and maintain a healthy body weight. Additionally, physical activity can reduce symptoms of depression and anxiety and improve overall mood. Weight-bearing physical activity helps to build greater bone density in adolescence (Standage & Gillison, 2007).

A total of 60 minutes of physical activity daily is important for overall health and to burn calories. The longer an adolescent participates in vigorous physical activity, the greater the health benefits. The Physical Activity Guidelines for American (2008) suggests to have physical activity that is enjoyable, able to provide a sense of mastery or accomplishment, and offers opportunities to build or strengthen peer relationships. It is important to continue to reinforce adolescents' admirable qualities and attributes (intelligence, humour, intuition, empathy, etc.) to buffer them against self-esteem that is based on appearance, weight or shape. Thus, this study aimed to identify the adolescent age transition and the impact of physical activity on perceptions of success, self-esteem and well-being. Nevertheless, the study faced limitations because the subjects were randomly selected; thus, any bias in their response is a limitation of the study. Furthermore, the subjects' personal issues or any personality disorder is also a limitation of this study.

Methodology

After obtaining formal permission from all of the institutions, the principal investigator (PI) and two research assistants met the physical education teachers personally to discuss the study's aims in detail. Then, we addressed the students during one of their leisure time / physical education classes. We requested that the students provide responses to the questions on the questionnaire and not to skip any of the questions.

Participants

For this study, all subjects were adolescent male students in one of the following broadly defined age categories (Steinberg, 1993): early (11–14 years) with a mean of 12.35 ± 1.04 years, middle (15–18 years) with a mean of 15.92 ± 1.08 years and late (19–21 years). Of the participants, 245 (68 early, 93 middle and 84 late adolescent students) were selected from educational institutions where physical education is regarded as a formal subject and in which students are guided by a physical education teacher using a structured curriculum. The studies participate in different games and sports and participate in various tournaments. None of the students were professional athletes.

Instruments

To measure the responses of the subjects to the psychological factors, three different questionnaires were used. The questionnaires collected demographic information such as age, major sports that they participated in, and level of achievement. Goal orientation in the sports domain was assessed using the Perception of Success Questionnaire (POSQ, Adult Version) devised by Roberts, Treasure and Balague (1998). In the POSQ, the respondent is asked to indicate their preferred alternatives by responding on a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The scale consists of task- and ego-oriented subscales with six items each. The stem sentence for each item is "When I am playing sports, I feel most successful when…" The task orientation subscale consists of items that place an emphasis on effort, self-improvement and learning a task (e.g., "I work hard", "I reach a goal" and "I perform to the best of my ability").

To measure the adolescent students' self-esteem levels, the Rosenberg Self-Esteem Scale (RSE) by Morris Rosenberg (1965) was used. This 10-item scale assesses an individual's feelings of self-worth when the individual compares himself or herself with other people. Some of the questions are "I feel that I am a person of worth, at least on an equal plane with others", "I feel that I have a number of good qualities" and "I take a positive attitude toward myself"). Five items are reversed in valence, such as "All in all, I am inclined to feel that I am a failure", "I feel I do not have much to be proud of" and "I wish I could have more respect for myself". The scale is an attempt to achieve a one-dimensional measure of global self-esteem. It was designed to represent a continuum of self-worth with some statements that are endorsed by individuals with low self-esteem and others that are only endorsed by individuals with a high self-esteem. The scale can also be modified to measure the current state of their self-esteem by asking the respondents to reflect on their current feelings.

To measure well-being, the Adolescent Well-being Scale by Birleson (1980) was used. The scale was designed to detect possible depression in older children and adolescents. It has been shown to be effective for this purpose. The scale has proven useful for adolescents during initial assessment and also to monitor their progress. The scale can be used for children as young as 7 or 8 years old; however, the responses are more reliable if the children are 11 years or older. The scale has 18 questions, each relating to different aspects of an adolescent's

life and how they feel about themselves. Respondents are asked to indicate whether the statement applies to them most of the time, sometimes or never. The responses to each question are scored as a 0, 1 or 2. How the responses are scored depending on the nature of the statement that is being responded to and the response: 0 means that the response indicates no concern, 1 indicates possible concern and 2 indicates that the young person is experiencing unhappiness or low self-esteem with regard to that item. For example, for question 8 – "I enjoy my food", if "no/never" is selected, the score is 2. For question 17 – "I feel so sad I can hardly bear it", a score of 2 would be obtained for a response of "most of the time". A score of 13 or more has been found to indicate a likely depressive disorder.

Results

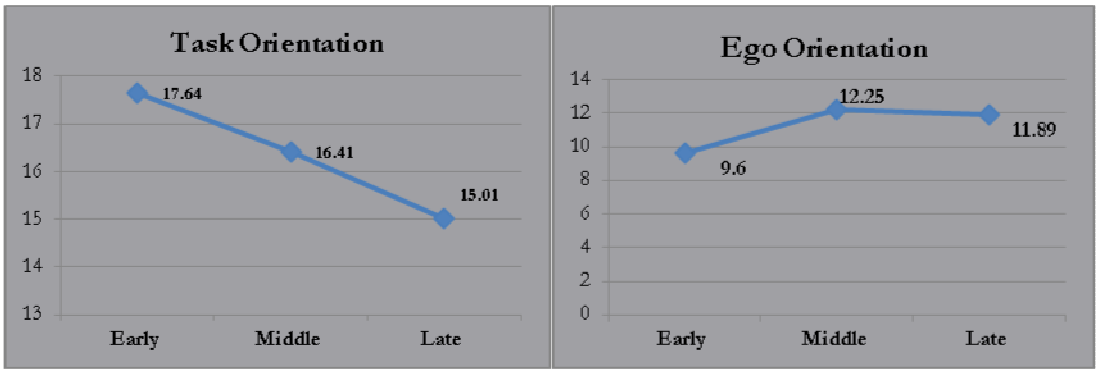
Statistical analysis

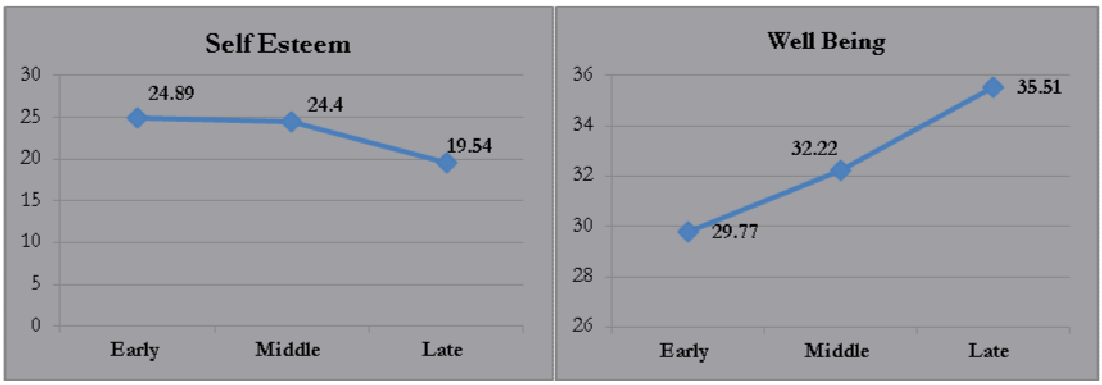
For the purpose of the study, we used descriptive statistics, such as the mean and standard deviation. To determine the correlation among the variables, Pearson's correlation was used, and to compare the participants, ANOVA was used. Results of the study showed a significant difference for all the sub-factors between the early, middle and late adolescent students.

Table 1: Descriptive statistics for all of the combined sub-factors

	N	Mean	SD	SE	Minimum	Maximum
Task Orientation						
Early (11–14 years)	68	17.64	3.21	.39016	12.00	24.00
Middle (15–18 years)	93	16.41	7.27	.75481	11.00	81.00
Late (19–21 years)	84	15.01	2.94	.32158	10.00	24.00
Total	245	16.27	5.18	.33109	10.00	81.00
Ego Orientation						
Early (11–14 years)	68	9.60	1.83774	.22286	7.00	15.00
Middle (15–18 years)	93	12.25	1.16005	.12029	10.00	15.00
Late (19–21 years)	84	11.89	1.92020	.20951	7.00	15.00
Total	245	11.39	1.98828	.12703	7.00	15.00
Self Esteem						
Early (11–14 years)	68	24.89	1.97	.23902	21.00	29.00
Middle (15–18 years)	93	24.40	1.81	.18864	20.00	29.00
Late (19–21 years)	84	19.54	2.74	.29936	15.00	27.00
Total	245	22.87	3.27	.20920	15.00	29.00
Well Being						
Early (11–14 years)	68	29.77	7.53	.91372	18.00	45.00
Middle (15–18 years)	93	32.22	7.78	.80759	20.00	52.00
Late (19–21 years)	84	35.51	10.21	1.11482	16.00	54.00
Total	245	32.67	8.89	.56840	16.00	54.00

Graph 1: Means of all of the factors





Note: Early Adolescent Period (11–14 years), Middle Adolescent Period (15–18 years) and Late Adolescent Period (19–21 years)

Table 2: Bivariate correlations matrix of all of the combined sub-factors

	ETO	EEO	ESE	EWB	MTO	MEO	MSE	MWB	LTO	LEO	LSE	LWB
ETO	1	.004	-.022	-.148	-.176	-.062	-.088	-.117	.015	.023	.052	-.064
EEO		1	.112	-.109	.038	.166	.197	-.143	.075	-.038	.639**	-.001
ESE			1	.057	-.152	-.021	.067	.016	-.063	-.038	-.029	-.054
EWB				1	.056	-.189	-.126	-.003	.061	-.175	-.085	.188
MTO					1	.260*	-.019	-.139	-.047	.155	.042	.190
MEO						1	.016	-.187	-.005	.053	.163	.173
MSE							1	-.071	-.056	.192	.137	.091
MWB								1	.036	-.065	-.222*	.026
LTO									1	-.034	.169	.052
LEO										1	.057	-.045
LSE											1	.077
LWB												1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

ETO: Early Task Orientation, *EEO:* Early Ego Orientation**,** *ESE:* Early Self Esteem, *EWB:* Early Well Being, *MTO:* Middle Task Orientation, *MEO:* Middle Ego Orientation, *MSE:* Middle Self Esteem, *LWB:* Late Well Being, *LTO:* Late Task Orientation, *LEO:* Late Ego Orientation, *LSE:* Late Self Esteem and *MWB:* Middle Well Being.

Table 3: Group comparison using One Way ANOVA

Factors		df	Sum of Squares	Mean Square	F	Sig
Task Orientation	Between Groups	2	263.964	131.982	5.079	.007
	Within Groups	242	6289.163	25.988		
	Total	244	6553.127			
Ego Orientation	Between Groups	2	308.474	154.237	56.88	.000
	Within Groups	242	656.122	2.711		
	Total	244	964.596			
Self Esteem	Between Groups	2	1426.764	713.382	145.12	.000
	Within Groups	242	1189.562	4.916		
	Total	244	2616.327			
Well Being	Between Groups	2	1264.940	632.470	8.480	.000
	Within Groups	242	18048.937	74.582		
	Total	244	19313.878			

As shown in the above table, there were significant differences in all of the calculated sub-factor values at the 0.05 level of significance: Task Orientation ($F(2, 242) = 5.07$, $p > .007$), Ego Orientation ($F(2, 242) = 56.88$, $p < .000$), Self Esteem ($F(2, 242) = 145.12$, $p < .000$) and Well Being ($F(2, 242) = 8.48$, $p < .000$).

Table 4: Pairwise mean comparison of the subfactors

	(I) count	(J) count	Mean Difference (I-J)	Std. Error	Sig.
Task Orientation	Early	Late	2.63*	.831	.007
	Late	Early	-2.63*	.831	.007
Ego Orientation	Early	Middle	-2.65*	.262	.000
	Early	Late	-2.28*	.268	.000
	Middle	Early	2.65*	.262	.000
	Late	Early	2.28*	.268	.000
Self Esteem	Early	Late	5.34*	.361	.000
	Middle	Late	4.86*	.333	.000
	Late	Early	-5.34*	.361	.000
	Late	Middle	-4.86*	.333	.000
Well Being	Early	Late	-5.73*	1.40	.000
	Middle	Late	-3.28*	1.29	.043
	Late	Early	5.73*	1.40	.000
	Late	Middle	3.28*	1.29	.043

*. The mean difference is significant at the 0.05 level.

As shown in the above table 4, there were significant differences for all of the factors (task orientation, ego orientation, self-esteem and well-being) for the three age groups (early, middle and late) at the 0.05 level of significance. *Task Orientation*- Early & Late (2.63*, p< .007), Late & Early (-2.63*, p< .007), *Ego Orientation*- Early & Middle (-2.65*, p> .000), Early & Late (-2.28*, p> .000), Middle & Early (2.65*, p> .000), Late & Early (2.28*, p> .000), *Self Esteem*- Early & Late 5.34*, Middle & Late 4.86*, Late & Early -5.34*, Late & Middle -4.86*, *Well Being*- Early & Late -5.73*, p> .000), Middle & Late -3.28*, p> .000), Late & Early 5.73*, p> .000), Late & Middle 3.28*, p> .000).

Discussions and conclusions

The purpose of this study was to explore the differences in psychological factors, such as success, self-esteem and well-being, between early, middle and late adolescent students. However, the statistical results revealed that these psychological factors differed significantly among the cohorts. Thus, we can assume that the adolescent age transition affected these factors in this study. When we talk about success, we mean that the individual is an intentional, goal-directed person who operates in a rational manner and that achievement of goals guides the person's subsequent decision making and behaviour in future achievement-oriented situations. The goal of action in achievement goal theory is assumed to be a demonstration of competence; thus, the perception of ability becomes a central variable (Roberts et. al., 1998). Individuals will approach a task with certain goals that reflect their personal perceptions and beliefs about the particular activity in which they are engaged (Nicholls, 1989; McArthur & Baron, 1983). The concept of ability that they use and the ways they interpret their performance can be understood in terms of these perceptions and beliefs. These perceptions and beliefs form a personal theory of achievement in the activity (Nicholls, 1989). A person's adopted theory of achievement includes that individual's beliefs about how to be successful in the activity. Therefore, people will differ regarding which of the concepts of ability they use and how they use them depending on their personal theory of what is necessary for success. The two goal orientations (task orientation and ego orientation) act as dispositional tendencies for viewing success according to one concept of ability or another. Thus, the individual's goal is to meet the criteria by which he or she evaluates success (Roberts et. al., 1998). Students at different age levels experience various thoughts and desires; they try to find/establish things themselves and determine whether what they have discovered is meaningful. Positive self-esteem helps an individual develop a sense of meaning and also assists in enhancing interpersonal relationships (Ryan & Deci, 2000). One overarching aim of the school system is to "promote pupils' self-esteem and emotional well-being and help them to form and maintain worthwhile and satisfying relationships, based on respect for themselves and for others, at home, school, work and in the community" (Department for Education and Employment and the Qualifications and Curriculum Authority, 1999, p. 11). This objective encompasses two important indexes of mental health: self-esteem (i.e., "the awareness of good possessed" by Campbell (1984, p. 9)) and quality of life (QoL; i.e., a students' overarching subjective evaluation of how their life is going in relation to their values and expectations) (Standage & Gillison, 2007). Consistent with the findings of our study, Standage and Gillison (2007) found direct correlations of competence to general self-esteem and of relatedness to health-related quality of life (HRQoL). Autonomous motivation was found to positively predict general self-esteem, which in turn positively predicted HRQoL. This supported the existence of a positive path from autonomous motivation to HRQoL, and HRQoL positively predicted general self-esteem. Their results also showed that general self-esteem and HRQoL were independent

of each other, but the related dependent variables were positively predicted by self-directed motivation to participate in physical education. However, to sustain a healthy environment for physical activity, enjoyment in the activity and fun are necessary. Research has explored the relationship between enjoyment of physical activity (EPA), enjoyment of physical education (EPE) and physical activity levels. EPA has been shown to be positively correlated with participation in physical activity (Allender, Cowburn, & Foster 2006; MacPhail, Gorley, & Kirk 2003; Sallis, Hovell & Hofstetter, 1992). EPE has a more complex relationship. Research has shown associations with participation in physical education and physical activity among young children (8-12 years), but fewer studies have examined this association among adolescents (13-18 years) (Barr-Anderson et al. 2012). Well-being makes life worth living (Peterson, 2006). Well-being is not a new concept. Diener (1984) classified subjective well-being as a general sense that life is good accompanied by high levels of positive affect and relatively low levels of negative affect. Our results of the differences in perceived well-being among the adolescent cohorts agrees well with the report of Beardslee, Gladstone and O'Connor (2012), who estimated that 20% of all adolescents experience a depressive disorder by 18 years of age. While there is some debate regarding the causes of depression, there are no doubts that negative life events, individual socio-cognitive characteristics and poor physical health are contributing risk factors (Bhardwaj & Goodyer, 2009; Klein et al., 2013). Other possible factors that contribute to depression in children and adolescents have been identified, including genetic factors (Kendler, 1995), a pessimistic attributional style (Gillham, Shatte, Reivich, & Seligman, 2001; Yapko, 2009) and negative thoughts (Lewinsohn, Clarke, Seeley, & Rohde, 1994) about oneself, the world and the future. However, the attainment of well-being among adolescents is based on six strong predictors of subjective well-being that were identified by Diener, Suh, Lucas and Smith (1999): positive self-esteem, a sense of perceived control, extroversion, optimism, positive social relationships and a sense of meaning or purpose in life (Taylor, 2015).

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