



































































































































































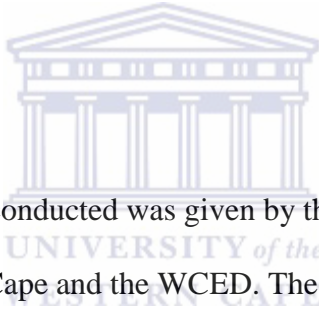


on the relationship between a dependent variable and one or more independent variables. More specifically, regression analysis helps one understand how the typical value of the dependent variable (or 'criterion variable') changes when any one of the independent variables is varied. Most commonly, regression analysis estimates the conditional expectation of the dependent variable given the independent variables that is, the average value of the dependent variable when the independent variables are fixed (Field, 2009, page 627). Regression analysis is also used to understand which independent variables are related to the dependent variable, and to explore the forms of these relationships.

Many techniques for carrying out regression analysis have been developed. Familiar methods such as linear regression and ordinary least squares regression are parametric, in that the regression function is defined in terms of a finite number of unknown parameters that are estimated from the data (Field, 2009, page197). A regression analysis was performed in the present study to determine which factors were the strongest predictors of PA. Regression analysis quantifies the strength of relationships between the dependent variable with multiple predictor variables (Chen et al., 2014). The predisposing, reinforcing and enabling factors were each separately tested. Coefficients were calculated and presented in numerical value, indicating the best significant predictor of PA. Finally, a summary of the most significant predictors was presented indicating the strongest predictor of PA overall. Pearson's correlation was performed for each of the predictors. Pearson correlation between factors and the outcome variable were then compared to determine possible co-linearity and to establish whether the factors correlated significantly with the outcome variable. Co-linearity refers to the non-independence of predictor variables, usually in a regression analysis. Co-linearity describes the situation where two or more predictor variables are linearly related (Field, 2009; Chen et al., 2014). Each factor was

regressed with the number of 60 minutes PA sessions. Pearson correlation was performed for each of the predictors. Pearson correlation between factors and the outcome variable were compared to determine possible co-linearity and to establish whether the factors correlated significantly with the outcome variable. Regression analysis was done to determine which factors were the strongest predictors of PA. Regression analysis quantified the strength of relationships between the dependent variable with multiple predictor variables (Chen et al., 2014). The predisposing, reinforcing and enabling factors were each separately tested in the present study. Coefficients were calculated and presented, indicating the best significant predictor of PA. Finally, a summary of the most significant predictors was presented. Statistical significance was set at  $p < 0.05$ .

### 3.9 Ethics



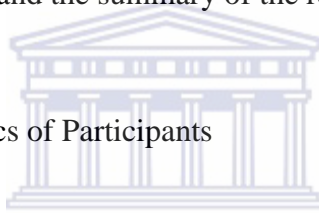
Permission for the study to be conducted was given by the Senate Research Committee of the University of the Western Cape and the WCED. The study was conducted according to ethical practices pertaining to the study of human subjects as specified by the Faculty of Community and Health Sciences Research Ethics Committee of the University of the Western Cape. Ethics considerations in this study entailed obtaining informed consent/assent from all participants, parents, guardians and school principals. Consent forms were provided for the parents, and guardians, and permission forms to school principals, with assent forms used for the participants. The information form clarified the details of the study, while the consent form requested voluntary consent to participate in the study, and included a clause allowing participants to withdraw from the study at any stage with impunity. All information provided by the participants was kept confidential. The participants' identities were kept anonymous by assigning each participant a number and storing the data in a safe and secure manner.

# Chapter Four

## Results

### 4.1 Introduction

The aim of the study was to identify the predisposing, reinforcing and enabling factors and to determine which predisposing, reinforcing, and enabling factors were the strongest predictors of PA participation in 11 to 13 year-old primary school children in the MSED of the Western Cape. The following chapter include the demographic characteristics of participants, descriptive results of each variable, a summary of factors, the most strongest predictors of PA are identified and the summary of the results.



### 4.2 Demographic Characteristics of Participants

Demographics may be useful to describe characteristics of the sample (Welk, 1999; Chen et al., 2014). The male participants were 151 or 43.4 % and the females were 197 or 56.6% in the present sample (n=348). The overall response rate for females in the study was 56% and 61% for male participants. The smaller school, school A, had a greater response rate of 63% females and 59.2% males while the bigger school, school B, had a response rate of 51.1% from the females and 62.1% from the males. The age-groups consisted of 11 year old participants (n=140), 12 year old participants (n=105) and 13 year old participants (n=103). The female participants outnumbered the male participants in both schools. The 11 year-old participants were the biggest group within the three groups (n=140).The response from the 11 year-olds in terms of returning consent forms was better than their counterparts. This indicates that parents were more involved with school related issues of younger children in the present sample.

Table 4.1 Description of age and gender of participants

Variable	Gender	Number (n)	Percentage (%)
1. Gender of total group	Total	348	100
	Male	151	43.4
	Female	197	56.6
2. Age	11 years	Total	140
		Male	58
		Female	82
	12 years	Total	105
		Male	44
		Female	61
	13 years	Total	103
		Male	49
		Female	54

#### 4.3 Level of Physical Activity of Participants

A description of the number of 60 minute sessions of PA per week is illustrated in Table 4.2. A total of 13.1% of the females in the sample selected “0 sessions” compared to only 1.3% of the males. The daily PA requirements for adolescents should do 60 minutes per day on at least 3 days per week (US Department of Health and Human Services, 2008; YBRS, 2013). Twenty six females in the present sample selected “0 sessions”, 36 selected “1 session” per week and 27 selected “2 sessions” per week. The number of female participants who engaged in less than three sessions of PA per week was 45% of the sample. Of the males in the sample, two participants selected “0 sessions”, 22 selected “1 session” per week and 14 selected “2 sessions” per week. Thirty eight (25.1%) male participants engaged in an insufficient amount of PA per week. A total of 113 (74.8%) of the male participants engaged in a sufficient amount of PA per week, in other words they engaged in three or more 60 minute sessions of PA per week. Compared to the males, 108 females (54.8%) of the females engaged in a sufficient amount of PA per week. The grade 6 male group (13.2%) indicated the highest rate of PA overall for the category “7 sessions of 60 minutes per week. The males in the sample have a higher level of PA participation than the females in the present sample.

Table 4.2 Description of the number of 60 minute sessions of physical activity per week

Gender	Number of 60 min sessions	11years	12years	13years	Totals	%
Males	0	0	2	0	2	1.3
	1	10	12	0	22	14.5
	2	5	6	3	14	9.2
	3	5	8	9	22	14.5
	4	4	9	4	17	11.2
	5	5	11	7	23	15.2
	6	0	0	6	6	3.9
	7	8	20	17	45	29.8
		37	68	46	151	100
Females	0	3	7	16	26	13.1
	1	7	12	17	36	18.2
	2	5	9	13	27	13.7
	3	8	19	10	37	18.7
	4	10	5	7	22	11.1
	5	3	15	6	24	12.1
	6	6	2	0	8	4.0
	7	5	5	7	17	8.6
	Total	47	74	76	197	100

According to CAPS (2012), the weekly requirement for LO lessons is two hours per week to be spent on PE and the remaining hour will be split among the other four topics (CAPS, 2012). Table 4.3 describes the number of PE days per week at the schools. The results of the present study indicated that 197 participants or 56.6 % indicated that they had no PE sessions at school. Only 151 participants or 43.3% indicated that they had one or two sessions a week. Table 4.4 illustrates the description of the number of sport teams of the participants in the present study. The results in the present study indicated that 120 of the participants or 34.4% belonged to 0 teams. The participants of the present study indicated that 120 or 34.4% belonged to 0 teams. Furthermore, 94 of the participants indicated they belonged to 1 sport team. Lastly, 22.1 % of the participants belonged to two teams and 57 or 16.3% belonged to 3 teams. Overall, more males belonged to teams than females.

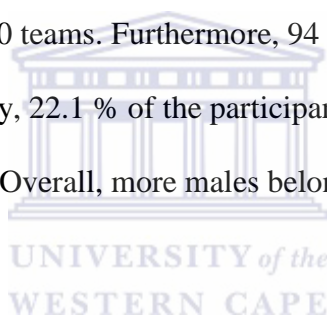


Table 4.5 describes the number of hours adolescents spent watching television. The results indicated that 3.0% of the participant did not watch television. However, 102 participants indicated that they watched 5 or more hours of television on an average day, i.e. on any ordinary school day. More female participants (31.4%) indicated that they watched 5 hours or more television daily compared with the males (26.4%). The results indicated that 65 female participants (32.9%) in the sample did not play video games, and 33 male participants (21.8%) reported the same. The results relating to those participants who played 5 hours or more of video games on an average day showed that 32 female participants (16.2%) and 23 (15.2%) male participants played video games for 5 hours or more per day.



Table 4.3 The Number of PE lessons of participants

Variable	Sessions	Number of subjects	Percentage (%)
1. Number of PE days			
Combined age groups	0 days	197	56.6
	1-2 sessions	151	43.1
2. Age			
11 years	Males		
Males	0 days	33	9.4
	1-2 sessions	33	9.4
Females	0 days	43	12.3
	1-2 sessions	27	7.7
12 years			
Males	0 days	26	7.4
	1-2 sessions	18	5.1
Females	0 days	48	13.7
	1-2 days	16	4.5
13 years			
Males	0 days	27	7.7
	1-2 sessions	44	12.6
Females	0 days	18	5.1
	1-2 sessions	15	4.3

Table 4.4 The number of sport teams

Gender	Number of teams	11years	12years	13years	Total	%
Females	<u>(n=197)</u>					
	0 teams	13	45	37	95	48.0
	1 team	15	19	15	48	24.3
	2 teams	11	8	14	33	16.7
	3 teams	8	3	10	21	10.6
	Total	47	74	76	197	100
Males	<u>(n=151)</u>					
	0 teams	3	15	7	25	16.5
	1 team	15	18	11	46	30.4
	2 teams	13	20	11	44	29.1
	3 teams	6	15	15	36	23.8
	Total	37	68	46	151	100



Table 4.5 Number of hours playing video games and watching television

<b>Video Games</b>	<b>Number of hours</b>	<b>11years</b>	<b>12years</b>	<b>13years</b>	<b>Total (n=348 )</b>	<b>%</b>
Hours: Females	0	16	29	20	65	32.9
	1	2	9	12	23	11.6
	2	7	12	15	34	17.2
	3	5	2	6	13	6.5
	4	6	0	7	13	6.5
	5 or more hours	12	16	4	32	16.2
			Subtotal	197		
Hours: Males	0	8	18	7	33	21.8
	1	3	12	9	24	15.8
	2	10	6	6	22	14.8
	3	6	10	4	20	13.2
	4	2	9	18	29	19.2
	5 or more hours	1	10	12	23	15.2
			Subtotal	151		
<b>Television watching</b>						
Hours: Males	0	1	2	2	5	3.3
	0.5	10	7	10	27	17.8
	1	4	9	11	24	15.8
	2	8	7	4	19	12.5
	3	12	5	5	22	14.5
	4	4	4	6	14	9.2
	5	10	10	20	40	26.4
Hours: Females	0	2	2	2	6	3.0
	0.5	13	10	10	33	16.7
	1	7	5	7	19	9.6
	2	8	12	8	28	14.2
	3	10	10	12	32	16.2
	4	5	6	6	17	8.6
	5	18	24	20	62	31.4

Table 4.6 illustrates the descriptive statistics for each predisposing, reinforcing and enabling factor. The means and standard deviations of the various factors were computed. The results indicated that “attraction to PA” was not a significant predictor ( $\bar{x}=17.03$  and  $SD=3.027$ ). The predisposing factors “perceived self-efficacy” ( $\bar{x}=65.61$  and  $SD=8.992$ ) and “perceived PA competence” ( $\bar{x}=17.32$  and  $SD=3.537$ ) were, however, significant predictors ( $p<0.05$ ). Parental role-modelling” ( $\bar{x}=12.60$  and  $SD=2.758$ ) and “peer influence” ( $\bar{x}=14.16$ ,  $SD=2.695$ ) were not significant predictors of PA. However, “parental influence” ( $\bar{x}=13.94$  and  $SD=2.577$ ) was a significant predictor of PA. Enabling factors indicated that the “environmental factors” were not significant predictors ( $\bar{x}=14.18$  and  $SD=2.748$ ) of PA.

#### 4.4 Correlation and Regression Analysis of Predictors

The final stage of data analysis entailed correlation and regression analysis of the predictors with the outcome variable, i.e., 60 minutes of PA. Table 4.7 illustrates the regression analysis of predictors with the outcome variable. The significance was determined for each variable and is illustrated in Table 4.9. The results for each predictor were summarised in the conclusion to Chapter 4.

Table 4.6 Correlation analysis of the predisposing, reinforcing and enabling factors

<b>Variables</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b><math>\beta</math></b>	<b><i>r</i></b>
<b>Predisposing factors:</b>				
Attraction to PA	17.03	3.027	0.400	0.202
Perceived self-efficacy	65.61	8.992	0.012	0.000
Perceived competence	17.32	3.537	0.058	0.000
<b>Reinforcing factors:</b>				
Parental role modelling	12.60	2.758	0.760	0.225
Parental influence	13.94	2.577	0.000	0.000
Peer influence	14.16	2.695	0.519	0.012
<b>Enabling factors:</b>				
Environmental factors	14.18	2.748	0.427	0.412

Table 4.7 Regression analysis of the predisposing, reinforcing and enabling factors

Predicting Variables	Coefficients		Correlations		Factor summary	
	$\beta$	p- value	<i>r</i>	p-value	R	R <sup>2</sup>
<b>Predisposing factors:</b>						
Attraction to PA	-0.048	0.400	0.480	0.202	0.235	0.060
Perceived self-efficacy	2.511	0.012	0.212	0.000*		
Perceived competence	1.905	0.058	0.192	0.000*		
<b>Reinforcing factors:</b>						
Parental role modelling	-0.017	0.760	0.041	0.225	0.239	0.057
Parental influence	0.225	0.000	0.236	0.000*		
Peer influence	0.037	0.519	0.121	0.012*		
<b>Enabling factors:</b>						
Environmental factors	-0.041	0.427	0.010	0.412		

Note: \* indicate significant correlations

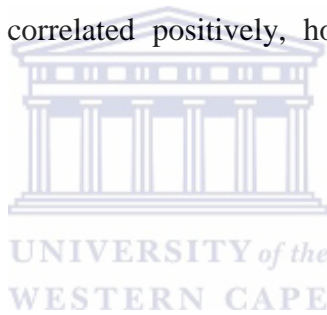
Table 4.8 The strongest predictors of physical activity

Predicting Variables	Coefficients		Correlations		Factor summary		Mean	Standard Deviation
	$\beta$	p-value	<i>r</i>	Significance	R	R <sup>2</sup>		
Parental influence	0.225	0.00	0.236	0.000*	0.239	0.057	13.96	2.577
Perceived self-efficacy	2.511	0.012	0.212	0.000*	0.235	0.06	65.61	8.992
Perceived competence	1.905	0.058	0.192	0.000*			17.32	3.537

Note: \* indicate the most significant correlations

#### 4.5 Predisposing Factors

Table 4.7 contains the results of the regression analysis for the predisposing factors. An analysis of the predisposing factors included perceived PA competence, attraction to PA, and PA self-efficacy with the outcome variable PA. The predisposing factors account for only 5.5% of the variation 60 minutes of PA. Perceived self-efficacy was the strongest predictor within the predisposing factors. The Durbin-Watson value was 1.38, thus the assumption of independent errors was met (Field, 2009). Pearson's correlation was performed to determine the relationship with the outcome variable. Perceived PA self-efficacy and perceived competence all correlated significantly with the outcome variable while perceived self-efficacy correlated positively, however with only a small effect ( $r=0.212, p<0.05$ ).



#### 4.6 Reinforcing Factors

An analysis of the reinforcing factors (independent variables) included parental role modelling, parental influence and peer influence. The correlation matrix indicated a possible co-linearity between parental and peer influence ( $r=0.387, p<0.01$ ). Only one of the three predictors did not correlate significantly with the outcome variable, namely parental role-modelling. Peer influence correlated significantly with the outcome variable ( $r=0.012, p<0.05$ ), as well as parental influence ( $r=0.236, p<0.01$ ) and the latter was thus the strongest predictor overall. The reinforcing group of factors accounted for 5.7% of the variance in PA.



#### 4.7 Enabling Factors

The regression analysis completed for the enabling factors included environmental predictors, none of which were significant in predicting PA. Enabling factors which included the environmental predictors did not correlate significantly with the outcome variable PA. The significant predictors were perceived PA self-efficacy, perceived PA competence peer influence and parental influence.

#### 4.8 Summary of Results

The results for the predisposing factors perceived PA self-efficacy and perceived competence all correlated significantly with the outcome variable, while perceived self-efficacy correlated positively, however with only a small effect ( $r=0.212$ ,  $p<0.05$ ). Within the reinforcing factors parental influence had the highest correlation with PA, ( $r=0.236$ ,  $p<0.01$ ) and was thus the strongest predictor overall. Peer influence significantly correlated with the outcome variable ( $r=0.012$ ,  $p<0.05$ ). Enabling factors which included the environmental predictors did not correlate significantly with the outcome variable PA.

## **Chapter Five**

### **Discussion, Conclusion and Recommendations**

#### 5.1 Introduction

The aim of this study was to identify the predisposing, reinforcing and enabling factors and to determine which predisposing, reinforcing, and enabling factors were the strongest predictors of PA among 11-to-13 year-old primary school children in the MSED of the Western Cape. The first objective of the current study was to determine the level of PA of participants and to identify the predictors that influence their participation in PA. In addition, the objective was also to determine which predisposing, reinforcing and enabling factors were the strongest predictors of PA overall. To realise the objectives of the study, 348 participants (151 males and 197 females) were surveyed on their habitual PA patterns and the predictors of PA were examined. The results were compared with the findings of other researchers and appropriate recommendations made. The discussion is presented with the summary of the study, as well as the strengths and limitations.

##### 5.1.1 Application of the Youth Physical Activity Promotion Model

There are multiple factors that impact positively and negatively on children's PA (Chen et al., 2014). The YPAPM used in this study examined personal, social, and environmental influences on PA. The model was explored in chapters one and two. The YPAPM enabled researchers to apply the model in promoting PA (Chen et al., 2014). The theoretical framework of the YPAPM was applied in the present study to understand the multiple influences on children's PA behaviour. Moreover, the YPAPM synthesized the research

findings and helped to explain PA behaviour in youth. Although, the study was based on the constructs of the model it served mainly to identify and group predictors according to the predisposing, reinforcing and enabling factors.

#### 5.1.2 Level of Physical Activity of Adolescents

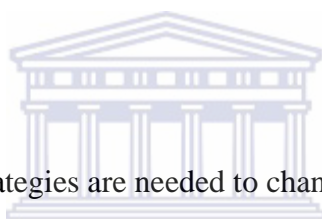
Promoting PA is complex, because there are many factors that either encourage or inhibit participation (Welk, 1999; Chen et al., 2014). Children and adolescents should do 60 minutes or more of PA each day, for at least three days per week (Department of Health and Human Services, 2008). According to Strong et al. (2005), school-age youth should participate daily in 60 minutes or more of moderate to vigorous PA that is developmentally appropriate, enjoyable, and involves a variety of activities. Many children and adolescents engage in insufficient amounts of PA. The results indicated that more females compared to males do not participate in sufficient amounts of PA. A total of 74.8 % of the male participants in the study engaged in sufficient levels of PA compared to 54.8% of the females. In contrast to the present study, the results of the Physical activity and health longitudinal (PAHL) study by Monyeki et al., (2012) revealed that girls were significantly more active than boys. Higher PA levels among boys that is consistently reported in the literature may reflect a higher internal drive among boys that may predispose them to greater participation regardless of influences from their social and physical environments (Chen et al., 2014; Draper et al., 2014; Mokabane et al., 2014; Sedibe et al., 2014).

According to Dollman and Lewis (2009), various predictors of PA influence the participation patterns of all adolescents. This helps to explain the widely reported decline in girls' PA when they pass through adolescence (Dollman & Lewis, 2009). Increasing the level of habitual moderate-to-vigorous intensity PA in youth is a health promotion and a disease-prevention strategy (Dollman & Lewis, 2009). Sedentary youngsters should

progress toward the recommended level of PA gradually. The HAKSA report (2014) revealed that a grade D was given to PA levels of South African children. The meaning of the grade was that 89% of children failed to accumulate the recommended PA levels. Thus, any interventions since the previous HAKSA reports failed. Therefore, adolescents and children should be the foremost targets of interventions aimed at enhancing habitual PA.

According to CAPS (2012) the weekly requirement for PE opportunities at schools are two hours per week. One hour per week will be spent on PE. The other hour is divided between the remaining PE components. The results of the present study indicated that 56.6% of the participants had no PE sessions at school and 151 participants or 43.3% indicated that they had one or more sessions per week a variety of PE experiences existed at the two schools sampled. It was evident that although the requirements for PE were set at 2 hours per week, the weekly requirements were not met at either of the schools. It was possible for some participants in one grade to select “0 opportunities” and other participants in the same grade and school to select “1 or more opportunities”. The reason for this was that more than one educator may be responsible for the PE per grade per school. The one educator may take the class outside for PE, while the other may choose to keep the participants in the classroom for PE and continue with the mainstream school curriculum. The results of the present study with regard to the number of days allocated for PE is confirmed nationally (Chen et al., 2014). According to the YRBS (2010), PE has an important role to play in education, yet the results from the survey showed that 34% of South African schools offer no PE. The lack of specialist teachers, infrastructure and the fact that periods set aside for PE are not utilized effectively, are challenges that policy makers face (Van Deventer, 2009).

The HAKSA report (2014) allocated a D-grade to PE prevalence at schools in South Africa. The meaning of the grade was that PE in schools persists in providing limited opportunities for participation by children. According to HAKSA (2014), organized sport participation in South Africa scored a C. Meaning that more than half of all South African children participate in some sort of organized sport. However, in some areas only 20% belong to teams. Results in the present study indicated that 34.4% of the participants did not belong to a sports team. Amongst the girls, the PA levels decreased significantly in adolescence. Understandably, more males belonged to sports teams than females. Efforts must be made to create more opportunities for organized sport, especially to engage more girls.



More effective intervention strategies are needed to change the health behaviours, especially of females. The females were the most inactive in all age groups. Many researchers found similar trends in the PA levels of males and females (Welk, 1999; Wattanasit, 2009; King et al., 2011; Belton et al., 2014; Methala et al., 2014). A possible explanation for the difference in PA behaviours of males and females is that parents believe that boys should be more involved in sports and PA than girls (Methala et al., 2014). Also, parents tend to protect their female children more for safety reasons (Methala et al., 2014). Parents are more concerned about the safety of their daughters and, therefore, allow them less time to explore and be active (Methala et al., 2014). Thus, females are not given as much freedom as males. Therefore, parents play a vital role in encouraging adolescent females to be more active. The resulting socialization process of boys and girls can become a self-fulfilling prophecy that shapes a child into patterns of PA or inactivity for life (Welk, 1999). Since PE is the primary form of instruction that children receive

about PA knowledge, attitudes, skills, and ultimately behaviours, a collaborative approach between health education and the PE curricula should be advocated that spans throughout preschool and high school.

As children age and move through the adolescent years, they become increasingly inactive (HAKSA, 2014). The participants in the present study indicated that 31.4% of females watched 5 or more hours television on an average day compared to 26.0% of males. The recent HAKSA (2014) report gave an F grading for television viewing and screen time of adolescents. The grade meant that there has been no improvement since the previous report of 2010 (HAKSA, 2014). The same disconcerting results were indicated for playing video games in the present study. More males preferred to play video games compared to females in the present sample. The fact that some children spend more than three hours a day playing computer/video games, and watching TV for more than three hours a day was confirmed by King et al. (2011). According to King et al. (2011), further investigation into the potential health risks associated with television, computer and video use, revealed negative relationships with PA time. Similarly, Muthuri et al. (2014) confirmed that children who watched more television were less likely to participate in vigorous PA and tended to have higher body mass indices.

The school PE environment is challenged by a lack of resources, facilities and lack of time in the schedules. Firstly, the capacity building of educators to enable the effective implementation of PE in schools and prioritizing of the implementation of PE will be vital for the way forward. Schools have the potential to establish lifelong, healthy PA patterns with the help of educators and coaches. Moreover, schools are an environment for providing PA skills that may reach most children and adolescents. The habits taught at

schools may track into children's day-to-day health behaviours and may influence the entire family (Methala et al., 2014). It is important for health educators to continually work with communities to provide PA opportunities for children as they become older. Additionally, health educators should promote communication among parents, teachers and community members regarding the benefits of targeting the development of children's PA.

### 5.1.3 Factors Predicting Physical Activity Promotion Amongst Adolescents

The results of the present study revealed that the predisposing factors that correlated significantly with PA were perceived self-efficacy and perceived PA competence. Other studies also showed that children who held a higher level of PA self-efficacy were more likely to be physically active after school than children with a lower level of PA self-efficacy (King et al., 2011). Furthermore, children who perceived themselves to be competent in physically active games and sports activities were more likely to be physically active than children with lower levels of perceived PA competence (King et al. 2011). Perceived self-efficacy is a predisposing factor that can be fostered and cultivated through effective, quality programming designed to improve children's knowledge, attitudes, and skills in learning and performing a variety of PAs (King et al. 2011). Similarly to the present study, in a cross-sectional Thai study conducted by Wattanasit (2009), perceived PA self-efficacy was positively correlated with PA. However, in contrast to the present study, perceived PA attraction was a significant predictor to PA in Thai adolescents. Perceived attraction to PA was not a significant predictor of PA in the present study.

Physical activity enjoyment was deemed an important factor that influenced children's PA behaviour (Chen et al., 2014). When children enjoyed participating in PA programs, the likelihood that they will continue participation is greater (Chen et al., 2014). It is important for communities and schools to offer a variety of PAs for children of all ages and skill levels so that children can find and participate in activities that attract and hold their interest. Children who felt competent in physically active games, sports, and activities were more likely to be physically active than those with lower levels of PA attraction (Chen et al., 2014).

Perceived PA competence was a significant predictor of PA in the present study. The participants who felt capable of competently performing physical activity, and valued PA were predisposed to an active lifestyle. A possible explanation for the finding was that adolescents value what they are good at and prefer doing those activities. As a result, children who had higher levels of perceived competence were more likely to be physically active. The reinforcing factors were parental role modelling, parental influence, and peer influence. Parental influence correlated significantly with PA. Parental influence was the strongest predictor of PA among the reinforcing predictors and the strongest predictor of PA overall. This meant that children who have greater support and positive role modelling from parents are more likely to be physically active. Previous research suggested that children who felt that significant others in their lives were supportive of their PA pursuits were more likely to be physically active than children whose do not have significant others who were supportive (Belton et al., 2014; Chen et al., 2014).

Parental role modelling was not a significant predictor of PA in the present study. Parental role modelling has been frequently researched and is usually seen as the most effective



tool for reinforcing PA (Welk, 1999; Chen et al., 2014). Encouraging families to model and support participation in regular PA is one of the key strategies for increasing PA levels in youth (Chen et al., 2014). It is recommended that PA should be fun, promote confidence, and be shared with friends and family. Role modelling is a direct form of influence, where parents' efforts and interests in being physically active are displayed (Chen et al., 2014). In most studies, the relationship between role modelling and PA behaviour has been found by correlating parents' and children's activity levels (Welk et al., 2003; Chen et al., 2014). The results have been mixed (Welk et al., 2003). Some studies found that parental role modelling had a positive association with children's PA behaviour. Parental influence may involve making efforts to encourage children to participate in PA. Parents playing directly with children, or providing access or opportunities for PA pursuits are likely to see positive health changes in their children. According to McKintosh (2011), parents may be significant barriers (grounding) or enablers (encouraging) to children's PA participation. The meaning of this is that parents may have a greater influence over their children's involvement in PA with the ability to both facilitate and impede participation (McKintosh, 2011). The various findings suggest that although role modelling may play an important role, other parental influencing strategies can positively affect children's PA behaviour as well (McKintosh, 2011). Families, therefore, play a powerful and important role in promoting health-enhancing behaviours (McKintosh, 2011). Thus involving parents and the whole family appears fundamental to increasing children's PA levels (McKintosh, 2011).

The findings of the current study support the literature by identifying a strong effect of parental influence on PA. According to Welk (1999), various socialization factors influence a child's interest and involvement in PA by promoting parental involvement. The

most common factor that was evident was role-modelling of children with active parents. Children copy the health behaviours of the adults in their lives. Others argue that parental encouragement, support, and beliefs may be more powerful influences. Parents who expect their children to be successful in sports or PA and who value success in this area will be more likely to influence their children to pursue this behaviour (Welk, 1999, Macintosh, 2011). This could include family walks, practicing a physical skill or playing “catch”, where the parents throw the ball and the child is taught the skill of catching. The involvement of the parents demonstrates to their children that they feel PA is important (Chen et al., 2014).

Peer influence was a significant predictor of PA in the present study. Similar to the results from the present study, Veloigne et al. (2014) examined the associations between children's physical activity and the social context. Adolescents engaged in less intense activity when alone than when in the presence of others, and in more intense activity in the presence of peers and friends. Although many investigators have examined peers as a moderator of social and emotional development (Welk et al., 2003; Chen et al., 2014; Veloigne et al., 2014), the present study contributes to the literature by demonstrating that peer relationships play an important role in children's PA by indicating that it was a significant predictor of PA.

Enabling factors referred to the environmental factors in the present study. Although, environmental factors are not positive predictors of PA in the adolescent of the present study, they enabled adolescents to be physically active irrespective of their environment. In contrast to the present study, King et al. (2011) found that access to sports equipment was a statistically significant predictor of middle school children's after-school PA level.

Accessibility, opportunities, and aesthetic attributes had significant associations with PA. Providing access to PA is an increasingly important responsibility for children to be physically active. Children who felt that they had active toys, games, equipment, and supplies at home were more likely to be physically active than children who felt that they did not have adequate access to equipment (King et al., 2011).

Weather and safety showed less strong relationships (King et al., 2011). Parental concerns (real or perceived) about the safety of parks and playgrounds and an increasing reliance on after-school programs are two factors that contribute to physical inactivity in children (King et al., 2011). A major concern for parents when adolescents participate in school sport activities is safety and having reliable transport for participants to be transported home if the activity takes place after school (King et al., 2011) (reference). Because these factors are out of a child's control, schools, parents and communities need to accept responsibility for opportunities for children to be physically active on a daily basis (Welk, 1999). Children who felt that they had access to play spaces, activities and equipment toys, such as bicycles, skates, balls, or jump ropes at home, were more likely to accumulate more PA. If a parent cannot afford to purchase toys or sports equipment, then the child will not have access to activity promoting items, thus negatively impacting PA participation (Chen et al., 2014; Welk, 1999).

## 5.2 Study Strengths and Limitations

This study used a large sample size that resulted in statistical power sufficient to detect effects. The study strength was that the sample was representative of both genders. The present study is unique in utilizing the YPAPM to synthesize the findings in the MSED.

The limitations of the present study were as follows: of the use of questionnaires were dependent upon the children's recall ability. A child's perception of his or her PA may be inaccurate. The accurate description of and recording of the amount of time engaging in PA may be misjudged. Using convenient sampling as the selection method limited the generalizability of the findings.

## 5.3 Future Research and Recommendations

The strongest predictors of PA in the present study could be explored further in future research. The results in the present study indicate that females are less active than males. Therefore, future research should include intervention programs to counter these health risk behaviours in females specifically.

The findings of the study have implications for policy and practice, as well as challenges to the family, schools and National Education Department. The recommendations are provided in order to address the challenges confronting adolescents at risk of negative health behaviour, especially regarding participation in regular PA:

- Sport participation and PE at schools should be encouraged, since schools provide protective environments for children to engage in PA.
- The WCED should find creative ways to engage children in the recommended levels of physical activity daily.

- School personnel, students, families, community organizations, and businesses should collaborate to develop, implement, and evaluate physical activity instruction and programs for young people.
- One way to achieve this collaboration is to form a coalition amongst local resources that are available to schools and community groups that might be useful in promoting physical activity among young people.
- Schools and communities should coordinate their efforts to make the best use of their resources in promoting PA among young people.
- Within the school, efforts to promote PE among students should be part of a coordinated, comprehensive school health program.
- Physical activity programs have been effective in enhancing the students' PA - related knowledge, attitudes, and behaviour and their physical fitness. Programs need to focus on predictors that influence PA participation (parental influence, peer influence, perceived self-efficacy and perceived PA competence).
- The Western Cape Education department should provide ongoing training for Life Orientation educators to promote PA at school level.
- The PA programs should involve families and focusing on community needs, resources, standards, and requirements.
- Training for parents to increase PA awareness should be a priority, as the results of the present study indicated that parental influence was the most significant predictor of participation in PA.
- Adolescents should be encouraged to engage daily in at least 30 minutes of moderate-to-vigorous PA. The target should be increased to 60 minutes or more, since activity levels tend to decrease with age.

## 5.4 Conclusion

Physical activity self-efficacy, parental influence, peer influence, and perceived PA competence were all strong predictors of PA in the present study. Parental influence was the strongest predictor of PA overall. Adolescents will see long-term health benefits if parents encourage, role-model and participate in PA with their children. Strong foundations for PA fostered during the adolescent phase can help avoid the trend towards inactivity as adolescents approach adulthood. Predisposing factors and reinforcing factors predicting PA are vital to promote PA participation among adolescents.



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Appendix A: Ethics Approval from Higher Degrees committee

Appendix A: Ethics Approval from Higher Degrees committee



OFFICE OF THE DEAN DEPARTMENT OF  
RESEARCH DEVELOPMENT

09 May 2012

To Whom It May Concern

I hereby certify that the Senate Research Committee of the University of the Western Cape has approved the methodology and ethics of the following research project by: Mrs C Cozett (SRES)

Research Project: An investigation of factors influencing participation in physical activity in 11-13 year old primary school children in the Western Cape.

Registration no: 12/4/26



*Ms Patricia Josias  
Research Ethics Committee Officer  
University of the Western Cape*

Private Bag X17, Bellville 7535, South Africa  
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A place of quality,  
a place to grow, from hope  
to action through knowledge



## Appendix B: Letter From WCED Granting Permission for the Study

[Audrey.wyngaard2@pgwc.gov.za](mailto:Audrey.wyngaard2@pgwc.gov.za)

tel: +27 021 467 9272

Fax: 0865902282

Private Bag x9114, Cape Town, 8000

wced.wcape.gov.za

**REFERENCE:** 20120620-0099

**ENQUIRIES:** Dr A T Wyngaard

Mrs Colleen Cozett  
Department of Sport, Recreation and Exercise Science  
UWC

**Dear Mrs Colleen Cozett**

### **RESEARCH PROPOSAL: FACTORS INFLUENCING PARTICIPATION IN *PHYSICAL ACTIVITY* IN 11 – 13- YEAR OLD PRIMARY SCHOOL CHILDREN IN THE WESTERN CAPE**

Your application to conduct the above-mentioned research in schools in the Western Cape has been approved subject to the following conditions:

1. Principals, educators and learners are under no obligation to assist you in your investigation.
2. Principals, educators, learners and schools should not be identifiable in any way from the results of the investigation.
3. You make all the arrangements concerning your investigation.
4. Approval for projects should be conveyed to the District Director of the schools where the project will be conducted.
5. Educators' programs are not to be interrupted.
6. The Study is to be conducted from **20 July 2012 till 28 September 2012**
7. No research can be conducted during the fourth term as schools are preparing and finalizing syllabi for examinations (October to December).
8. Should you wish to extend the period of your survey, please contact Dr A.T Wyngaard at the contact numbers above quoting the reference number?
9. A photocopy of this letter is submitted to the principal where the intended research is to be conducted.
10. Your research will be limited to the list of schools as forwarded to the Western Cape Education Department.
11. A brief summary of the content, findings and recommendations is provided to the Director: Research Services.
12. The Department receives a copy of the completed report/dissertation/thesis addressed to:  
**The Director: Research Services  
Western Cape Education Department  
Private Bag X9114  
CAPE TOWN  
8000**

We wish you success in your research.

Kind regards.

Signed: Dr Audrey T Wyngaard

for: **HEAD: EDUCATION**

**DATE: 20 June 2012**



## UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-959 2350, Fax: 27 21-959 3688

E-mail: [colleencozettconsulting@hotmail.com](mailto:colleencozettconsulting@hotmail.com)

### Principal Permission Form

The Principal

School

Dear Sir/ Madam,

**Project Title: Factors influencing participation in physical activity in 11-13 year-old primary school children in the Metro South Education District of the Western Cape**



I would like to request permission to conduct a research project on the physical activity participation patterns among school going children and adolescents. The learners will be asked to fill in two surveys asking questions about how often they participate in physical activity and what activities they participate in. All the learners personal information will be kept confidential. To further protect their confidentiality, only the researcher will have access to their information. Their participation in this research is completely voluntary. Should you have any questions regarding this study or wish to report any problems you have experienced related to the study, please contact the study coordinator:

**Study Coordinators Names: Dr. L. Leach**

**University of the Western Cape**

**Private Bag X17, Belville 7535**

**Telephone: (021) 9592653**



## UNIVERSITY OF THE WESTERN CAPE

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E-mail: colleencozettconsulting@hotmail.com

### Parental Information Sheet

**Project Title:** Factors influencing participation in physical activity in 11-13 year-old primary school children in the Metro South Education District of the Western Cape

#### What is the study about?

This is a research project conducted by Colleen Cozett at the University of the Western Cape in completion of a Masters in Sport Recreation and Exercise Science. We are inviting your child to participate in this research project because he/ she is a school going child.

#### What will I be asked to do if I participate?

Your child will be asked to fill in two questionnaires asking questions about how often he/ she participates in physical activity and what activities he/ she participates in. The second questionnaire consists of questions about the factors that influence their participation. All the steps will be explained clearly to him/ her and the teacher. I will be present if they have any questions.

#### Would my participation in this study be kept confidential?

All his/ her personal information will be kept confidential. To further protect his/ her confidentiality only the researcher will have access to his/ her information. I will collect

the questionnaires personally and I will be responsible for ensuring their storage in a locked and secure place. Your child's participation in this research is completely voluntary. If your child decides not to participate in this study or if participation is stopped at any time, he/ she will not be penalised.

**What are the risks of this research?**

There are no known risks with participating in this research project. The child merely has to recall physical activity information about him/ herself.

Should you have any questions regarding this study or wish to report any problems you have experienced related to the study, please contact the study coordinator:

**Study Coordinator's Name: Dr. L. Leach**

**University of the Western Cape**

**Private Bag X17, Belville 7535**

**Tel: (021) 959265**



**Student's Name: Colleen Cozett**

**Telephone: (021) 9592377**

**Cell: 0843250513**



## UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-959 2350, Fax: 27 21-959 3688

**E-mail:** colleencozettconsulting@hotmail.com

### Parental Consent Form

**Title of Research Project:** Factors influencing participation in physical activity in 11-13 year-old primary school children in the Metro South Education District of the Western Cape

The study has been described to me in language that I understand and I freely and voluntarily agree to participate. My questions about the study have been answered. I understand that my child's identity will not be disclosed and that he/ she may withdraw from the study without giving a reason at any time and this will not negatively affect him/ her in any way.

Participant's name.....Participant's signature.....

Date.....

Parent's name/Guardian.....Parent's signature.....

Date.....

Witness name..... Signature of witness.....

Date.....

Should you have any questions regarding this study or wish to report any problems you have experienced related to the study, please contact the study coordinator:

**Study Coordinator's Name: Dr. L. Leach**

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### Participant Information Sheet

**Project Title:** Factors influencing participation in physical activity in 11-13 year-old primary school children in the Metro South Education District of the Western Cape

Dear Participant,



Kindly accept my sincere thanks for taking the time to read about the study. My name is Colleen Cozett and I am a Masters student at the University of the Western Cape. Mr. L. Leach is a Lecturer at the University of the Western Cape and he is helping me finish my research project so I can graduate. If you need any further information please do not hesitate to contact me or my supervisor whose details are at the end of this letter.

#### **What is the study about?**

This is a research project conducted by Colleen Cozett at the University of the Western Cape. We are inviting you to be a part of the study about physical activity.

#### **What will I be asked to do if I participate?**

You will be asked to fill in two questionnaires asking questions about how often you participate in physical activities and which activities and what influences you to

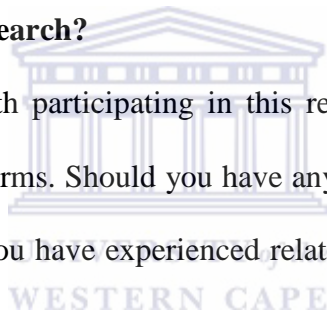
participate. All the steps will be explained clearly to you and your teacher. I will be present if you have any questions.

**Would my participation in this study be kept confidential?**

All your personal information will be kept private. To further protect your confidentiality, only the researcher will have access to your information. I will collect the questionnaires personally and will be responsible for ensuring their storage in a locked and secure place. Your participation in this research will be completely voluntary. If you decide not to participate in this study or if participation is stopped at any time, you will not be penalised.

**What are the risks of this research?**

There are no known risks with participating in this research project. You will only be writing on the questionnaire forms. Should you have any questions regarding this study or wish to report any problems you have experienced related to the study, please contact the study coordinator.



**Study Coordinators Names: Dr. L. Leach**

**University of the Western Cape**

**Private Bag X17, Belville 7535**

**Tel: (021) 959265**



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E-mail: [colleencozettconsulting@hotmail.com](mailto:colleencozettconsulting@hotmail.com)

### Participant Assent Form

**Title of Research Project:** An investigation of factors influencing participation in physical activity in 11-13 year-old primary school children in the Western Cape.

The study has been described to me in language that I understand and I freely and voluntarily agree to participate. My questions about the study have been answered. I understand that my identity will not be disclosed and that I may withdraw from the study without giving a reason at any time and this will not negatively affect me in any way.

Participant's name.....Participant's signature.....

Date.....

Parent's name/Guardian.....Parent's signature.....

Date.....

Witness name.....Signature of witness.....Date.....

Should you have any questions regarding this study or wish to report any problems you have experienced related to the study, please contact the study coordinator:

**Study Coordinators Name: Dr. L. Leach**

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### CHILDREN'S PHYSICAL ACTIVITY QUESTIONNAIRE (CPAQ) PHASE A: SCREENING PHASE

**An investigation of factors influencing participation in physical activity in 11-13 year old primary school children in the Western Cape.**



**BY**

**COLLEEN COZETT**

**STUDENT NUMBER: 9192285**

**Please answer all questions honestly and if you do not understand a question feel free to ask. All the information that is filled out on these forms will be kept confidential.**

**PART 1: SOCIO-DEMOGRAPHIC INFORMATION**

**NO.** \_\_\_\_\_

**AGE:** \_\_\_\_\_ years

**DATE OF BIRTH:** (day) \_\_\_\_\_ (month) \_\_\_\_\_ (year) \_\_\_\_\_

**GRADE:** \_\_\_\_\_

**SELECT THE BEST OPTION BY MAKING A TICK.**



**GENDER:** MALE \_\_\_\_\_ FEMALE \_\_\_\_\_

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## **PART 2: CHILDREN'S PHYSICAL ACTIVITY QUESTIONNAIRE (CPAQ)**

### **Level of physical activity:**

How many times in the past week have you done at least 60 minutes (session) of exercise hard enough to make you breathe heavily and make your heart beat fast? (Example: playing netball, soccer, jogging, dancing).

### **CIRCLE THE RESPONSE**

- A 0 sessions
- B 1 sessions
- C 2 sessions
- D 3 sessions
- E 4 sessions
- F 5 sessions
- G 6 sessions
- H 7 sessions



### **TELEVISION AND VIDEO/ COMPUTER GAMING:**

On an average day how many hours and minutes do you spend sitting or lying down watching TV while doing nothing else?

### **CIRCLE THE RESPONSE**

- A I do not watch TV on an average school day.
- B Less than 1 hour per day
- C 1 hour per day

- D 2 hours per day
- E 3 hours per day
- F 4 hours per day
- G 5 or more hours per day

On an average day after school, how many hours do you play video or computer games or use a computer for something that is not school work? (Include activities such as Nintendo, Game Boy, PlayStation, Xbox, computer games, and the Internet.

**(Do not include games that are active such as Wii or Dance Revolution.)**

**CIRCLE THE RESPONSE**

- A I do not play on computers on an average school day.
- B Less than 1 hour per day
- C 1 hour per day
- D 2 hours per day
- E 3 hours per day
- F 4 hours per day
- G 5 or more hours per day



On an average school week when you are at school, how many days do you go to Physical Education (PE) classes?

**CIRCLE THE RESPONSE**

- A 0 days
- B 1 day
- C 2 days

During the past 12 months, on how many sports teams did you play (count any teams run by your school or community groups).

**CIRCLE THE RESPONSE**

- A 0 teams
- B 1 team
- C 2 teams
- D 3 teams or more

**END OF SURVEY, THANK YOU**





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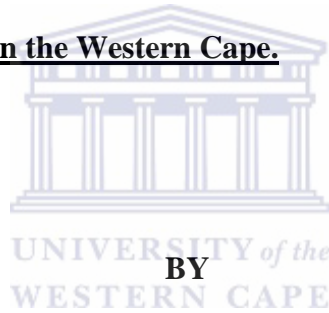
Tel: +27 21-959 2350, Fax: 27 21-959 3688

E-mail: colleencozettconsulting@hotmail.com

### CHILDREN'S PHYSICAL ACTIVITY CORRELATES :

#### PHASE B: CPACQ

**An investigation of factors influencing participation in physical activity in 11-13 year old primary school children in the Western Cape.**



**STUDENT:**

**COLLEEN COZETT**

**9192285**

**INSTRUCTIONS: CIRCLE THE APPROPRIATE RESPONSE**

**I. PREDISPOSING FACTORS**

**a) Attraction to physical activity items:**

1. I like to exercise, play sports, or play physical games or activities.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

2. My body feels bad when I exercise, play sports, or play physical games or activities.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

3. I don't enjoy exercising, playing sports, or playing physical games or activities very much.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

4. I think it is important to exercise, play sports, or play physical games or activities.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

5. I am popular with other kids when I exercise, play sports, or play physical games or activities.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

**b) Physical activity self- efficacy items:**

1. I think I can ask my parent(s) or other adult to sign me up for a sport, dance, or other physical activity.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

2. I think I can ask my parent(s) or other adult to take me to a physical activity or sport practice.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

3. I think I can ask my best friend to be physically active with me.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

4. I think I can ask my parent(s) or other adult to do physically active things with me.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

5. I think I can ask my parent(s) or other adult to get me the equipment I need to be physically active

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

6. I think I have the skills I need to be physically active.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

7. I think I can be physically active most days after school.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

8. I think I can be physically active no matter how busy my day is.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

9. I think I can be physically active no matter how tired I may feel.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

10. I think I can be physically active even if it is hot or cold outside.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

11. I think I can be physically active even if I have a lot of homework.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

12. I think I can be physically active after school even if I could watch TV or play video games instead.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

13. I think I can be physically active even if I have to stay at home.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄



14. I think I can be physically active even when I'd rather be doing something else.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😊

15. I think I can be physically active even if my friends don't want me to.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😊

16. I think I can be physically active after school even if my friends want me to do something else.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😊

17. I think I can be physically active at least three times a week for the next 2 weeks.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😊

**c) Perceived physical activity competence items:**

1. I do very well at all kinds of physical games or sports.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😊

2. I feel that I am better than other kids my age at physical games or sports.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😊

3. I am pretty sure I am a good athlete

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😊

4. I don't do well at new physical games or sports.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😊

5. I am good at most physical games or sports.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😊

## II. REINFORCING FACTORS

### a) Parent role- modelling items:

1. My parents are in really good shape physically.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

2. My parents like to exercise, play sports, or play physical games or activities.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

3. My parents don't like to do much physical activity.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

4. My parents would rather walk places, if possible.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄



### b) Parental influence items

1. My parents let me play on community or school sports teams

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

2. My parents buy me a lot of sports, physical games, or physical activity equipment.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

3. My parents tell me I am not good at physical games or sports.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

4. My parents encourage me to try hard at physical games or sports

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

### c) Peer influence items

1. My friends like to exercise, play sports, or play physical games or activities.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

2. My friends think it is important to exercise, play sports, or play physical games or activities.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

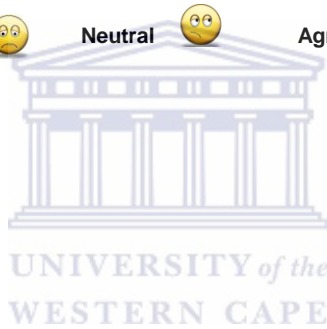
3. My friends are popular with other kids when they exercise, play sports, or play physical games or activities.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

4. My friends say that their bodies feel bad when they exercise, play sports, or play physical games or activities.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

### III. ENABLING FACTORS



#### a) Environmental items

1. At home there are enough supplies and pieces of sports equipment (like balls, bicycles, and skates) to use for physical activity.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

2. There are playgrounds, parks, or gyms close to my home, which I can get to easily.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

3. It is safe to walk or jog alone in my neighbourhood during the day.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄

4. It is difficult to walk or jog in my neighbourhood, because of things like traffic, no sidewalks, dogs, gangs, and so on.

Strongly Disagree 😞 Disagree 😞 Neutral 😐 Agree 😊 Strongly Agree 😄