

Level of enjoyment during physical activity among children

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ABSTRACT

Introduction: Physical activity (PA) brings a lot of benefits to children physically, cognitively and emotionally. Through PA, children will be healthier and children's physical performance will also improve from time to time. In addition, children's emotional management, academic performance and social skills will become better. Fun is needed to motivate children to keep involve in PA actively. Therefore, factors that influence level of fun during PA should be determined for further action.

Aim: The purpose of this study was to determine children's level of fun and socio-demographic factors that influence children's level of fun during PA.

Methods: This quantitative study involved 167 students aged 10–12 years from five SRJK(C) schools in zon Simpang, Perak. The questionnaire used was adapted from Physical Activity Enjoyment Scale (PACES).

Results: The findings show that children's level of fun during PA is low. The findings also indicate that there is a significant difference in children's gender ($t(165) = -2.16, p = 0.033$), age ($F(2, 164) = 9.18, p < 0.001$) and body mass index ($F(2, 164) = 7.06, p = 0.001$) on children's level of fun during PA.

Conclusion: The study found that children that have higher levels of enjoyment during physical activity have lower body mass index. This shows that children's level of fun plays an important role to motivate and encourage involvement of them in PA actively.

Key Words: Children, factors, fun, physical activity, socio-demographics

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Submitted: 06-Aug-2021 Accepted in Revised Form: 03-Sep-2021 Published: 28-Dec-2021

INTRODUCTION

Enjoyment while participating in physical activity (PA) is associated with children's PA behaviour (Gao et al. 2012; Hagberg et al. 2009). Enjoyment can be viewed as a positive psychological experience and can be influenced by various factors, such as PA intensity level, a child's achievements and/or failures while participating in PA and the child's emotional state before participating in PA (Briggs 1994; Gao et al. 2012; Smith & Pierre 2009; Wankel 1993). Enjoyment has also been found to play an important role in increasing the participation of children in PA

(Office for the Minister of Children and Youth Affairs 2007). Previous studies have also found that children are more likely to participate in PA when they find enjoyment in it (Gao et al. 2012, 2013; Wankel 1993). Other studies have found that enjoyment is one of the main factors and closely associated with motivating children in participating in PA (Scanlan et al. 1993; Cairney et al. 2012; Gao et al. 2012, 2013; Prochaska et al. 2003).

PA is defined as any bodily movement that is produced by skeletal muscles that requires energy expenditure. PA refers to

Access this article online	
Quick Response Code: 	Website: https://www.mohejournal.org
	DOI: 10.4103/mohe.mohe_20_21

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How to cite this article: Heng W. S., Koh D. (2021). Level of enjoyment during physical activity among children. *Malaysian Journal of Movement, Health & Exercise*, 10(2), 112-6.

all movements including during leisure time, for transportation and/or part of work. Moderate- and vigorous-intensity PA can contribute to our health. Regular participation in PA has been shown to have beneficial physical, cognitive and emotional impact in children. PA is associated with better mental health among children (Ekeland et al. 2005; Parfitt & Eston 2005; Ortega et al. 2008), better social relations (Fraser-Thomas et al. 2005), and is also associated with better academic performance (Sibley & Etnier 2003; Ortega et al. 2008).

PA was also found to be associated with better body composition, higher cardiovascular endurance and better cognitive function among children (Boddy et al. 2014; Trudeau & Shephard 2008). Strong et al. (2005) also found that regular participation in PA has positive effect on children's health, namely cardiovascular and muscular health. Apart from that, Austin et al. (1993) reported that lack of PA is one of the main factors in the increasing prevalence of obesity. In Malaysia, the 2006 National Health and Morbidity (NHMS) report found that the obesity prevalence in Malaysia has a fivefold increase since 1996. The latest 2015 NHMS report (NHMS 2016) found that approximately 11.8% of children below the age of 18 are obese. Therefore, it is important to promote PA among children to reduce the risk of overweight and obesity among children.

Therefore, children should always be encouraged to participate in PA, and we should explore the factors associated with PA participation among children. One factor is enjoyment. We know that children will participate in activities that they enjoy. However, most studies in Malaysia include mostly Malay ethnic group and not many studies focuses on the minority groups in Malaysia. Studies that look at minority groups would focus on Bumiputra ethnic groups and not the Chinese or Indian ethnic minority. Therefore, this study aims to explore the enjoyment level of Chinese ethnic minority children during their participation in PA.

METHODOLOGY

This is a quantitative survey. Children aged between 10 and 12 years from five SRJK(c) schools in zon Simpang, Perak, were recruited for this study. Respondents from each school were randomly selected. PA enjoyment was measured via the Physical Activity Enjoyment Scale (PACES; Kendzierski & DeCarlo 1991) that was modified by Motl et al. (2001). Motl et al. (2001) removed two items and rephrased the other items so that it is easily understood by children. The questionnaire has 16 items with each response using a 5-point Likert scale (from 1 = strongly disagree to 5 = strongly agree). Seven items from the questionnaire are negative statements; therefore, the scores for these items will be flipped before calculating the composite score for PA enjoyment. A higher mean composite score reflects higher enjoyment level. Motl et al. (2001) and Moore et al. (2009) have found that the PACES questionnaire for children is valid and reliable to measure the level of PA enjoyment among children. Children's height and weight were also measured via self-reported questionnaire. Socio-demographic factors such as gender, age, ethnicity, parent's

Table 1: Distribution (percentage) of responses

Item	Likert scale percentage distribution				
	1	2	3	4	5
Q1	28.14	20.36	5.99	21.56	23.95
Q2	18.56	26.95	2.99	28.14	23.35
Q3	21.56	24.55	2.40	22.16	29.34
Q4	25.15	31.14	8.38	14.97	20.36
Q5	24.55	23.95	4.79	18.56	28.14
Q6	23.35	18.56	16.77	21.56	19.76
Q7	23.35	23.35	10.18	22.75	20.36
Q8	25.75	24.55	9.58	23.35	16.77
Q9	23.95	19.16	14.97	23.35	18.56
Q10	17.96	21.56	16.77	24.55	19.16
Q11	26.95	23.95	3.59	26.35	19.16
Q12	14.97	28.14	8.98	27.54	20.36
Q13	20.96	28.74	0.60	32.34	17.37
Q14	25.75	19.76	12.57	19.76	22.16
Q15	18.56	25.15	11.98	27.54	16.77
Q16	24.55	19.16	6.59	26.35	23.35

Table 2: Physical Activity Enjoyment Scale questionnaire

No.	Item
Item 1	I enjoy it
Item 2	I feel bored
Item 3	I dislike it
Item 4	I find it pleasurable
Item 5	It is not fun at all
Item 6	It gives me energy
Item 7	It makes me depressed
Item 8	It is very pleasant
Item 9	My body feels good
Item 10	I get something out of it
Item 11	It's very exciting
Item 12	It frustrates me
Item 13	It is not at all interesting
Item 14	It gives me a strong feeling of success
Item 15	It feels good
Item 16	I feel as though I would rather be doing something else

Motl et al. (2001)

level of education and family income were also measured via questionnaire.

To facilitate the children completing the questionnaire independently, it was translated into Bahasa Melayu. The translation method involved the items being first translated into Bahasa Melayu by a content expert who is also fluent in both languages. The Bahasa Melayu version is then back translated into English by a different content expert. Then, both the original English version and the back-translated version were compared. No significant meaning changes were found between the two versions, and therefore, the Bahasa Melayu version was adopted to use in this research.

Data were analysed via Statistical Package for Social Sciences (SPS, IBM Corp, 2017, Version 25.0). Descriptive statistics were conducted to describe the level of enjoyment during PA among children and also to describe the socio-demographic factors about the respondents in this study. Inferential statistics, such

Table 3: Difference in enjoyment level during physical activity according to socio-demographic factors

Socio-demographic factors	n	Mean±SD	Statistics	p
Gender				
Boys	87	2.71±1.383	-2.16	0.033*
Girls	80	3.17±1.376		
Age				
10	49	2.63±1.501	9.18	<0.001*
11	54	2.54±1.476		
12	64	3.49±1.030		
Ethnicity				
Malay	3	3.38±1.191	0.72	0.490
Chinese	155	2.90±1.412		
Indian	9	3.40±1.122		
Level of education (father)				
UPSR and PMR	26	3.32±1.282	1.57	0.118
SPM and above	141	2.86±1.407		
Level of education (mother)				
UPSR and PMR	29	3.20±1.266	1.15	0.250
SPM and above	138	2.87±1.418		
Family income				
<RM3000	46	2.89±1.333	2.46	0.064
RM3001-RM4000	62	2.63±1.385		
RM4001-RM5000	34	3.41±1.445		
>RM5000	25	3.10±1.341		
BMI				
Underweight	29	3.59±1.279	7.06	0.001*
Normal weight	108	2.94±1.414		
Overweight/obese	30	2.27±1.136		

*p<0.05. BMI: Body mass index, SD: Standard deviation, UPSR: Primary School Achievement Test, PMR: Lower Secondary Assessment, SPM: Malaysian Certificate of Education

as independent *t* test, Levene's test, one-way ANOVA and *post hoc* LSD test were conducted to test if there were significant differences in PA enjoyment among children between different socio-demographic factors.

RESULTS

A total of 167 children aged between 10 and 12 years agreed to participate in this study. Overall, this study found that children aged 10 and 12 years have a low level of enjoyment when they participate in PA (mean = 2.93 ± 1.395). Table 1 shows the distribution of the responses by items in the PACES questionnaire.

Take note that items 1, 4, 6, 8, 9, 10, 11, 14 and 15 are items with positive statements, which means that responses with a higher scale rating contribute a higher overall PA enjoyment score. Items 2, 3, 5, 7, 12, 13 and 16 are items with negative statements, which means that responses with a lower scale rating contribute to a higher overall PA enjoyment score [Table 2].

Looking at the distributions for each item, please note that the middle option (3 = slightly agree) was the least chosen for all items. This shows that most children have a clear response to the items. It is also interesting to note that based on the distribution of responses, most of the items have an equal number of responses in the lower and higher scale, regardless of if the items were positive or negative statements. What is interesting is that more children responded strongly disagree/disagree for items 4 and 8. These negative responses showed that they do not feel pleasurable or pleasant when being physically active [Table 1].

The study also found that there were significant differences between boys and girls in the level of enjoyment during PA among children, $t(165) = -2.16, p = 0.033$ (95% confidence interval = -0.882 to -0.039), with the Levene's test showing that the assumption of homogeneity of variances between groups was met ($p = 0.83$). The study found that girls (mean = 3.17) reported higher level of enjoyment during participation of PA compared to boys (mean = 2.71).

PA enjoyment was also found to be significantly different between the different ages, $F(2, 164) = 9.18, p < 0.001$ [Table 3]. A *post hoc* LSD test found that 12-year-old children (mean = 3.49) have higher enjoyment level compared with those 10 (mean = 2.63) and 11 years old (mean = 2.54). There is no significant difference in enjoyment level during PA between the 10- and 11-year-old children.

This study also found an association between level of PA enjoyment and body mass index (BMI) of the children $F(2, 164) = 7.06, p = 0.001$. The *post hoc* LSD test found that children with low body weight (mean = 3.59) reported higher enjoyment level during PA compared to those with ideal body weight (mean = 2.94) and those who were overweight/obese (mean = 2.27). Children in the ideal weight also have higher enjoyment during PA compared with children who were overweight/obese.

DISCUSSION

This study was conducted to explore the factors associated with enjoyment level during PA among children aged 10–12 years.

This study found that the level of enjoyment during PA among Malaysian children aged 10–12 years in the rural ethnic Chinese community is low and that gender, age and BMI were associated with the level of enjoyment. This is the first study in Malaysia reporting on level of enjoyment during PA in a rural Chinese ethnic community.

The findings that girls were found to have higher level of enjoyment when participating in PA compared to boys were against widely believed notion that boys enjoy PA more than girls. These findings were not supported by previous studies that have reported a significant difference in enjoyment and participation in PA, especially outdoor games such as jumping, running and climbing, between boys and girls, with boys having the higher enjoyment score (Telford et al. 2016; Hallal 2012; Baquet et al. 2014; Carroll & Loumidis 2001). Previous studies also found that enjoyment is one of the major factors in motivating children to participate in PA (Bengoechea et al. 2010; Verschuren et al. 2012), boys have higher participation in PA, and this would make us expect that girls have less enjoyment during PA. However, the findings in this study showed that girls have higher enjoyment during PA. This may be the actual perception of the girls that they do enjoy participating in PA, but social expectations and the lack of social support have resulted in girls having less participation in PA compared to boys (Vella et al. 2014). Hence, if rural Chinese ethnic girls were given enough support, they will increase their participation in PA.

Children's play often involves both fine and gross motor skills. Fine motor skills are needed for some sports and are defined as specific movements using fine motors (Dehghan et al. 2017). Gross motor skills are general movements performed by major muscle groups to produce force (Hashim & Baharom 2014). Gross motor skills involved crawling, running, jumping and climbing, and the more the children move, the better their motor development (Santos et al. 2016). The age difference in enjoyment level found in this study was interesting. Children aged 12 years were reporting higher level of enjoyment compared with 10 and 11-year-old children. This may be due to 12-year-olds in Malaysia have higher stress level due to them having a major examination, the *Ujian Pencapaian Sekolah Rendah* near the end of the school year. PA may be one of the allowed outlets for them to play and reduce stress. Therefore, they get more enjoyment during PA. Further, as physical performance and motor skills improve with age (Wazir et al. 2015; Vameghi et al. 2013), these developments may allow children to enjoy their play time better.

This study found that children with normal weight and underweight have higher enjoyment during PA compared with children who are overweight or obese. This is supported by previous studies reporting that children who are overweight or obese were less likely to participate in PA because it is uncomfortable to do so (D'Hondt et al. 2009; Okely et al. 2004). Their larger frames and heavy stature may cause moving being uncomfortable and

difficult. However, it is interesting to note that all three groups (underweight, normal weight and overweight/obese) have significantly different levels of enjoyment, with the underweight group reported the highest enjoyment level, followed by normal weight and, at last, overweight/obese group. It must be noted that although the underweight group may report the highest enjoyment during participation in PA, it does not translate into their performance during PA.

CONCLUSION

The low level of enjoyment during PA reported in this study among rural Chinese ethnic children is of concern. However, the higher enjoyment level reported by girls as compared to boys warrant further investigation.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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