

Parents' Perceptions of Their Children Body Fat Percentage and Weight

KIM GEOK SOH^{1 2 *}, ROSNA ABDUL RAMAN³, KIM LAM SOH³, SALIMAH JAPAR³, SWEE LEONG ONG⁴, ZEINAB GHIAMI¹

¹Department of Sports Studies, Faculty of Educational Studies, Universiti Putra Malaysia, Selangor, Malaysia.

²Sports Academy, Universiti Putra Malaysia, Selangor, Malaysia.

³Department of Medicine, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Selangor, Malaysia.

⁴Nursing Department, Faculty of Medicine and Health Sciences, Universiti Sultan Zainal Abidin, Terengganu, Malaysia.

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ABSTRACT

Parents' perception of their children's weight and fat percentage may play an important role in developing and maintaining healthy lifestyle. This study was conducted to determine the perceptions of parents of first-grade students in a Malaysian urban school setting regarding their children's weight and body fat percent. A descriptive statistic was used in the study. A number of 197 first-grade students participated in this study. The students' anthropometric data, such as weight, body mass index (BMI) and body fat were measured using TANITA TBF-410 GS Body Composition Analyzer. Also The questionnaire for parents used in the study included parents' perception of their child body shape, body weight and eating habit. Results showed a statistically significant correlation between the parents perception and children's real fat percentage with ($r = -.46, p < .05$) for girls, and ($r = .50, p < .05$) for boys while the correlation between girls' weight and their parents perception of weight ($r = -.12, p > .05$) was not significant. Results of the current study show that girls' parents have misperceive of their children weight. In contrast to the focus of the previous studies on prevalence of overweight among children, most of the underweight children in this study were perceived as normal.

Key words: Perception, body weight, fat percentage, primary school children

INTRODUCTION

Weight and nutritious status in childhood are expansive predictors of wellbeing that are influenced by various variables, including parents' perception of their children's body weight, eating habits and physical activity behavior, environmental, and sociocultural situation. Parental perceptions of the weight and diet is an important indicator of their children's healthy lifestyles [1, 2]. Obesity and overweight have becoming more prevalent in the developed countries in the past 30 years. It is estimated that 15% of 6-11 year-old children are overweight (i.e., they fall at or above the 95th percentile of BMI for their age and sex [3, 4]. Prevalence of overweight and obesity among Malaysian show an increasing trend since past decades. The prevalence of overweight increased from 26.7% in 2003 to 29.4% in 2011; obesity prevalence increased from 12.2% in 2003 to 15.1% in 2011 [5]. The high prevalence of obesity is not only increasing among adults but also in children. Generally, it is known that children who are obese will stay obese when they grow older [6]. Overweight and obesity show significant health burden due to diseases such as cardiovascular, diabetes mellitus, metabolic disorders and some cancers. Furthermore, overweight and obesity in childhood can lead to diabetes mellitus and cardiovascular diseases at younger age and expose them to these diseases as

twice as those with normal weight [7]. Many factors are strongly associated with overweight and obesity such as gender, practising inactive life style, taking unhealthy nutrition with high fat consumption, living in urban areas, and genetic and cultural factors [8]. Parents play a very important role in maintaining their children in normal weight and they are able to control some of the factors and improve healthier lifestyle changes [9]. In the meantime, the opposite can occur and parents can postpone the child's prosperity with respect to weight reduction [10]. Do parents recognise overweight in their child? Past studies revealed that many parents have a misconception about the children body weight [11], which this leads to failure in the detection of the problem in the earlier phase. Studies have found that parents' ability to control the problem is depend on their knowledge, attitude and perception on overweight and obesity [12, 13]. This study aims to determine the children real body fat and parents perception of their child body fat and weight. Besides, the study also aims to investigate the relationship between body weight of primary school students and parents' perception of their body weight. This study will provide more information about parents' perception of their child body fat and weight. Finding of this study also will inform health care providers to help parents become more aware about their child's weight status.

Table 1: Anthropometric data

Gender		N	Minimum	Maximum	Mean	SD
Girls (46.7%)	FAT %	115	.00	38.20	11.98	6.75
	Height	115	109.00	134.90	122.01	5.06
	Weight	115	14.20	926.70	30.12	84.54
	BMI	115	11.9	27.9	14.97	2.84
Boys (53.3%)	FAT %	97	.00	34.40	8.05	7.63
	Height	97	111.80	135.50	122.15	5.35
	Weight	97	1.89	37.30	21.92	5.19
	BMI	97	11.7	22.4	14.76	2.28

Table 2: Descriptive Profile of Student based on Height, Weight and BMI

Variables	Underweight		Normal weight		Overweight	
	Boys n = 92 (94.8%)	Girls n = 91 (91%)	Boys n = 5 (5.2%)	Girls n = 6 (6%)	Boys n = 0 (0%)	Girls n = 3 (3%)
Height	121.68 5.06	122.76 4.80	130.64 2.91	127.38 4.35	-	131.46 .83
Weight	21.20 4.28	20.75 3.44	35.02 1.79	32.97 3.33	-	44.40 3.65
BMI	14.44 1.854	14.25 1.65	20.66 0.99	20.32 1.22	-	25.66 1.95

Table 3: Children Body Fat Percentage

Gender	Under fat	Healthy	Over fat	Obese
Boys	79 %	10%	6.7%	3.3%
Girls	73%	18%	2.2%	2.9%
% Fat (Boys)	5.07 (3.71)	15.68 (1.97)	22.87 (1.66)	30.92 (3.77)
% Fat (Girls)	9.4 (2.62)	19.48 (2.9)	27.8 (0.72)	32.8 (3.84)

Table 4: Parents perception

	Girls (n= 108)		Boys (n= 89)	
	Frequency	%	Frequency	%
Body type				
Less weight	35	32.4	30	33.7
Normal	62	57.4	52	58.4
Heavy	11	10.2	7	7.9
Body Weight				
Thin	27	25	20	22.5
Normal	70	64.8	60	67.4
Overweight	11	10.2	9	10.1
Obese	-	-	-	-
Eating Habit				
Very little	2	1.9	1	1.1
Little	19	17.6	23	25.8
Moderate	78	72.2	57	64
Very much	9	8.3	8	9

Material and methods

This is a descriptive study using a self-administered questionnaire to measure the parents' perceptions regarding their child body fat, weight, eating habit, and tries to investigate their correlations. Meanwhile, the children real body fat was measure using Tanita tbf-410gs body composition analyser. the study was approved by the Selangor district education

department.

Setting and Sample

Data were collected in a national high prestige primary school located in Selangor state, West Malaysia. A total of 300 first grade students enrolled in 2014. All first grade students (age=7 years old) and their parents were invited to participate in the

study (n = 300). Written consent and participant information sheet were given to the parents of each child prior to the study to obtain their permission to allow their child to participate in this study.

Instrument

The students' anthropometric data such as weight, body mass index (BMI) and body fat were measured using TANITA TBF-410GS Body Composition Analyzer. The instrument was reported to be very reliable in measuring body fat ($r = .8$) and have been widely used by researchers in their study such as Jebb, Cole [14]. Descriptive profile of the first grade students such as fat percentage, height, weight, and Body Mass Index (BMI) categories were calculated using Cole et al.'s cut-off [15]. The questionnaire for parents used in this study was adapted from a study by Hirschler, Gonzalez [16]) which was conducted among Argentinean preschool children. This questionnaire contains two major parts: a. Personal and demographic data of the parents and b. parents' perception of their children's body shape, body weight and eating habits. The parents were requested to select the best choice reflecting their child Body Shape (1. underweight, 2. normal, 3. overweight, 4, obese), Body Weight (1. skinny, 2. normal, 3. heavy, 4, very heavy), Eating Habit (1. very little, 2. little, 3, moderate, 4. a lot).

Procedures

Data collection procedure was divided into two phases. The first phase involved gathering anthropometric data from the students such as weight, height, body mass index (BMI), and body fat. Stations were set at the school hall to measure the anthropometric data during their schooling day. The students were leads by the researchers to complete all test at the stations. The second phase was a survey for the parents. The parents were approached by the researchers to participate in the study during a teacher-parents meeting day. Written consent and participant information sheet were given to the parents who agreed to participate in the study. The completed questionnaires were collected on the same day.

Data Analysis

This study used a descriptive statistics using SPSS version 22.0. Frequencies and percentage were reported for the survey and the students' anthropometrics data. P values less than .05 were considered statistically significant. Correlation test was also used to measure the relationship between the student real body fat with their parents perceptions.

Table 5: Correlation

Category	Height		Weight		Fat		BMI	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
Parents perception of Fat	.329**	.287	-.104	.469**	.477**	.432**	.551**	.348**
	.001	.009	.322	.000	.000	.000	.000	.004
Parents perception of Weight	.390**	.281*	-.121	.503**	.449**	.517**	.534**	.525**
	.000	.010	.249	.000	.000	.000	.000	.000
Parents perception of Eating Habits	.137	.132	-.152	.273*	.192*	.281**	.119	.308*
	.175	.235	.146	.025	.047	.008	.254	.011

* Significant .05 ** significant .01

Results And Discussion

All students and their parents were invited to participate in the study. However, only 270 (90%) of the students had their parents' consents to involve in the study. While, only 100 (33%) of the parents have consented to participate in the survey. The main reason for not participating was having inadequate time to complete the questionnaires or feeling uncomfortable answering questions regarding their child's weight. Anthropometric features of participants are shown in Table 1. Both girls and boys in this study had similar height and BMI mean, while girl showed higher fat percentage and weight (Table 1). Descriptive data for students' height weight and BMI are shown in Table 2. Based on BMI classifications, 91% of the girls were in the underweight designation; 6%, normal; and 3%, overweight. Approximately, 94.8% of the boys were in the underweight designation; 5.2%, normal; and 0%, overweight. Results indicated that 3/4 of the first grade students were reported to be

underweight. Descriptive data for students' body fat percentage are shown in Table 3. Based on fat percentage classification, 73% of the girls were in the under fat designation; 10%, healthy. 2.2% over weight and 2.9%, obese. This classification for boys included 79.2% underweight designation; 10%, healthy; and 6.7%, over weight and 3.3 obese.

Parents' Perceptions

Parent-reported body type classifications for the girls included 32.4% underweight, 57.4% normal-weight, and 10.2% heavy. This classification for boys included 33.7% underweight, 58.4% normal and 7.9% heavy (Table 4). Parent-reported body weight classifications for the girls included 25% thin, 64.8% normal-weight, and 10.2% fat. This classification for boys included 22.5% thin, 67.4% Normal, and 10.1% fat. Parent-reported eating habit classifications for the girls included 1.9% very little, 17.6% little, and 72.2% moderate and 8.3% very much. This classification for boys included 1.1% very little, 25.8% little, and 64% moderate

and 9% very much. Table 5 provides a summary of the parental participant perceptions for the children's body fat percentage with the child's actual fat percentage category. There was a statistically significant correlation between the parental perception and children real fat percentage ($r = -.46$, $p < .05$) for female, and ($r = .50$, $p < .05$) among boys while the correlation between the girls' parents perception and their real body fat percentage ($r = -.1$, $p > .05$) and weight ($r = -.12$, $p > .05$) was not significant. Based on the results, a large proportion of parents overestimated the weight of their underweight children. Results also indicates that parents considered their under fat children as normal and over fat. A variety of reasons for such high rates of parental misclassification of their children's weight have been set. For example, it is possible that parents may not be willing to perceive their children as underweight; because doing so would make them responsible to change the dietary patterns of their children. Misperception may not be so purposeful, as the current studies show, parents basically consider their children's weight as normal if they are not overweight or obese, and they are unaware or unconcerned about their weight status. Furthermore, they have the perception that being underweight has no obviously threatening health problems. These data suggest that parents are simply inaccurate in their perceptions of children's weight. Parental underestimation or overestimation is a common phenomenon among parents of overweight or underweight children, regardless of the child's gender or ethnicity or the parent's age or own weight status. The findings of this study is in contrast with a study by Polfuss and Frenn [17] who showed that parents could accurately distinguish their child's weight status. Although similarly to many published studies, the parents in the current study were not able to identify the weight status of their children [2, 18-20]. This misperception for both girls and boys sample groups was in line with previous findings that showed African American parents did not have accurate perception of child's weight [21]. Findings of this study is in contrast with previous studies in that the ability to identify the child's weight was not influenced by the gender [2, 18, 20, 22]. Interestingly, parents in prior studies underestimated their child's weight, while in this study most of the parents overestimated their underweight children as normal weight.

Conclusion

Results of the study show that parents have a misperception of their children weight. In contrast to the focus of the recent studies on overweight in children, most of the underweight children in this

study were perceived as normal. The findings of this study have imperative implication for health care professionals to make them aware of this frequent parental misperception. They can improve the parents' knowledge about the standard weight of children and the consequences of the underweight of their child so that treatment options can be considered.

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