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Eating habits and physical activity in dieter and non-dieter youth: A gender analysis of English and Spanish adolescents

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Abstract

A high prevalence of youth is overweight or obese, and a frequent lack of monitoring of their weight control strategies is observed. Consequently, this paper compares the eating habits and physical activities of male and female dieters and non-dieters. Data are obtained from the large cross-national WHO collaborative study “Health Behavior in School-aged Children 2010”. The current sample consists of 9,444 students aged 11, 13 and 15 years from England and Spain. Participants are asked about dieting, vigorous and moderate-to-vigorous physical activity, breakfast frequency and fruit, vegetable, sweet and soft drink consumption. A logistic regression is used to examine the differences between dieters and non-dieters with regard to the aforementioned eating and physical activity habits. Differences between genders, countries, and those associated with BMI (body mass index) are also considered. The results suggest that the reality of weight control differs from the major health promotion recommendations during adolescence.

Keywords: weight control, eating habits, physical activity, body mass index, adolescence, England, Spain

1. Introduction

The increasing prevalence of youths who are overweight or obese (Currie et al., 2008; World Health Organization, 2009) is a global issue that has further increased societal concerns regarding youth nutrition. International public health guidelines in response to obesity suggest that youths improve their nutrition by reducing their intake of high caloric foods and salt, as well as increasing their physical activity levels and consumption of fruits, vegetables, and fish (World Health Organization, 2006).

Several studies also indicate that eating fruits and vegetables during adolescence is a health-promoting habit that reduces the risk of cancer and other chronic diseases in later life (Maynard et al., 2003). Despite such protective benefits of a healthy diet during adolescence, numerous studies report low rates of fruit and vegetable intake in adolescent populations (Lorson, Melgar-Quinonez, & Taylor, 2009). On the contrary, the intake of high caloric food, such as sweets and sugar rich soft drinks, is increasing among youths at a vertiginous pace, especially among the adolescent population in Europe and North America (Kassem & Lee, 2004).

In addition, the relationship between physical activity and weight is extensively studied, and the results suggest that the increasing rate of obesity among Western societies is related to the global reduction in physical activity (Janssen et al., 2005). Short-term intervention trials also indicate that physical activity is the most effective weight control strategy (McGuire et al., 1999).

Adolescence marks a time of increased independence and self-determination with regard to food choices and consumption. Among those adolescents who are dissatisfied with their body image, some will undertake weight control methods. However, the weight-reduction behaviors that adolescents undertake are not always appropriate. A common strategy among youth to control weight is skipping breakfast (Timlin et al., 2008). This meal is more frequently missed than lunch or dinner (Woodruff et al., 2008). In fact, skipping or having an inappropriate

or insufficient breakfast is a relatively frequent habit among adolescents (Alexy, Wicher, & Kersting, 2010).

Thus, dieting usually involves reducing one's daily caloric intake more than is recommended. Furthermore, medical monitoring is generally absent during dieting, which can increase the potential for serious health risks caused by uncontrolled extreme dieting (Eisenberg et al., 2005; Larson, Neumark-Sztainer, & Story, 2009).

Consequently, comparing the eating and physical activity habits of adolescents who diet with those who do not allows us to explore types of dieting and weight control that might be distinctive during adolescence, as well as to understand youth's relationship with food consumption and nutrition. Lastly, this study might add insight to our knowledge of youth conceptions of health and well-being.

This paper compares dieting adolescents between two European countries: England and Spain. A cross-cultural comparison is valuable because both England and Spain have made efforts to promote healthy eating and weight control behaviors in schoolchildren. The prevalence data from both countries indicates that their youth obesity rates are comparable; in 2009, the Health Survey of England found obesity rates of 19.7% for boys and 15.4% for girls among 11- to 15-year-olds (Coleman, Brooks, & Treadgold, 2011). In Spain, data from the 2010 Health Behavior in School-aged Children (HBSC) indicate that rates of obese and overweight adolescents are 20.6% for boys and 13.5% for girls (Moreno, Ramos, Rivera, Jiménez-Iglesias, & García-Moya, 2012).

In both England and Spain, one of the priority health promotion interventions and education strategies within schools is the achievement of healthy physical activities and eating habits. Strategies to achieve these goals include the promotion of healthy eating behaviors, the inclusion of physical activity as an everyday life activity both inside and outside the schools, and the reduction of overweight and obese children, as well as their unhealthy eating behaviors (Salvador, & Suelves, 2009). In Spain, national and regional strategies primarily target schools. In England, the areas that influence healthy weight are targeted, such as the recommended levels of physical activity, as well as the adequate intake of fruits and vegetables (Department of

Health, 2010). In both countries, similar school-based interventions are developed to encourage healthy eating behaviors and physical activity, including advice for schools to provide nutritionally appropriate menus for school dining rooms and ensure that only healthy food is available in the school cafeterias and vending machines, thereby reducing access to food with poor nutritional value (Department of Health, Department for Children, Schools and Families, 2005; Spanish Ministry of Health and Consumption, 2005).

However, England and Spain have different cultural contexts with regard to patterns of food consumption. For example, England has a longer history with and higher consumption rates of processed and convenience foods, and fewer English youths eat with their families on a daily basis compared with Spanish youths. Consequently, given the similar policy approaches regarding the promotion of healthy eating habits among youths between these countries, exploring the potential differences in eating habits and physical activities among young dieters and non-dieters in both countries is useful because the influence of the macro-level determinants on health behaviors, such as cultural norms and differences within physical and social environments, offers ways to refine the policies to ensure effective health promotion strategies (Hawks et al., 2002; Orleans, 2000).

This study explores the differences between dieters and non-dieters from England and Spain with regard to breakfast frequency; the consumption of fruits, vegetables, sweets, and soft drinks; and physical activity. In addition, important gender differences exist with regard to weight control and body image (Larson et al., 2009; Neumark-Sztainer, Story, Falkner, Beuhring, & Resnick, 1999; Ramos, Rivera, & Moreno, 2012); therefore, it is necessary to examine and account for gender differences in eating habits and physical activity among young dieters. This paper also aims to achieve a deeper understanding of the key gender issues related to patterns of eating and physical activities among young dieters from both countries.

Finally, it is important to consider the high proportion of young dieters who are not overweight; in other words, a portion of average-weight or even low-weight adolescents also diet, especially girls (Bun, Schwiebbe, Schütz, Bijlsma-Schlösser, & Hirasing, 2012; Ursoniu, Putnoky, & Vlaicu, 2011). Accordingly, this study also analyzes whether significant differences

in eating habits and physical activity exist among average-weight or low-weight dieters, as well as overweight and obese dieters. This analysis will also account for the potential influence of the adolescents' genders and countries of residence.

2. Methods

2.1. Participants

Data for this study is from the 2010 edition of the large cross-national WHO collaboration, "Health Behavior in School-aged Children" (HBSC) from England and Spain. Thus, the current sample consists of 9,444 schoolchildren aged 11, 13 and 15 years – 46% males and 54% females – from England and Spain with a mean age of 13.72 years. The sampling procedure of the HBSC is similar between all participating countries. Specifically, cluster sampling in which the primary sampling unit is the school is used to obtain national representative samples. Additional information regarding the sampling procedure and other aspects of data collection can be found in Roberts et al. (2009).

2.2. Measures

The HBSC is a broad survey that investigates adolescent health behaviors from a multidisciplinary perspective. The relevant University Research Ethics Committees in England and Spain approve the use of this self-report questionnaire. The HBSC collects information from adolescents with regard to various lifestyles topics including their well-being and the contexts in which they were reared, such as their families, peers, and schools. This study includes a large bank of questions throughout its 30-year history, and the vast majority of them are reliable and valid. The following paragraphs describe the instruments used in this work. The independent variable is dieting as measured by the item "At present, are you on a diet or doing something else to lose weight?" The dependent variables are participants' eating and physical

activity habits. The following eating habits are examined: days per week that the adolescents report having more than a glass of milk or a piece of fruit for breakfast from 0 to 7 days a week; and the times per week that the adolescents report consuming the following: fruits, vegetables, sweets, and soft drinks: (never/less than once a week/once a week/2-4 days a week/5-6 days a week/once a day, every day/every day more than once). To analyze these variables, they are categorized into three groups based on consumption frequency. The three breakfast consumption categories are daily (*7 days a week*), irregular (*1-6 days a week*), and never (*0 days a week*). The three food or drinks consumption groups are daily (*at least once a day*), medium (*more than once a week*), and low (*once a week or less*).

The physical activity instruments are based on the recommendations regarding moderate-to-vigorous physical activity (MVPA) and vigorous physical activity (VPA) from the "Young and Active?" international meeting held in 1997 (Biddle, Sallis, & Cavill, 1998). The frequency of MVPA is measured using the question, "Over the past 7 days, on how many days were you physically active for a total of at least 60 minutes per day?" The response categories range from *0 to 7 days*. VPA is measured using the question, "How often do you usually engage in vigorous physical activity so much that you get out of breath or sweat?" The seven possible answers include *every day, 4 to 6 times a week, 2 to 3 times a week, once a week, once a month, less than once a month, and never*. These variables are classified as *appropriate* for data analyses when the reported frequency complies with the experts' recommendations for youths: (a) at least 60 minutes, 5 days a week for MVPA or (b) at least 2 times a week for VPA (Pate et al., 2002). Otherwise, they are classified as *inappropriate*.

Finally, the following variables are also included: country of residence, gender, and body mass index (BMI). BMI is the ratio between self-reported weight and height (kg/m^2). Overweight and obese categories are distinguished from average or low weight categories using the cut-off points proposed by Cole et al. (2000).

2.3. Procedure

The study's international organization, HBSC, dictates that three data collection procedure conditions must be fulfilled: the students must answer the questionnaire themselves; the anonymity of the answers must be strictly guaranteed; and the questionnaires must be administered at their school.

2.4. Data Analyses

The data analyses are performed using IBM SPSS Statistics 19. Specifically, we employ logistic regression models that control for the effects of country and gender. Furthermore, we examine the potential interaction effects involving those variables. Models are interpreted using odds ratios and 95% CIs. The significance threshold is a p-value lower than .05.

3. Results

3.1. Dieting, eating habits and physical activity in male and female adolescents from Spain and England

Table 1 displays the percentages of adolescents by country, gender, and the interaction of country by gender with regard to dieting, eating habits, and physical activity. Patterns of fruit consumption are similar among Spanish and English adolescents ($p > .005$). In contrast, differences are found between adolescents from Spain and England with regard to the regularity of breakfast eating ($p < .001$, OR = 0.513, 95% CIs = 0.365-0.721), vegetable consumption ($p < .001$, OR = 1.931, 95% CIs = 1.770-2.106), sweets consumption ($p < .001$, OR = 2.280, 95% CIs = 1.944-2.674), and soft drink consumptions ($p < .001$, OR = 2.759, 95% CIs = 2.394-3.180). Specifically, the latter show a higher likelihood of consuming vegetables, sweets, and soft drinks daily and a lower likelihood of having breakfast everyday.

The results also show that girls are more likely to be on a diet than boys ($p < .001$, OR = 2.232, 95% CIs = 1.862-2.676). This gender difference is stronger in England than Spain ($p =$

.009, OR = 0.22, 95% CIs = 0.566-0.922). In addition, although eating habits do not differ by gender ($p > .005$), boys are more likely to report appropriate levels of MVPA ($p < .001$, OR = 2.187, 95% CIs = 1.896-2.522) and VPA ($p < .001$, OR = 2.127, 95% CIs = 1.875-2.412) compared with girls.

-Table 1-

3.2. Comparisons of eating habits and physical activity between male and female adolescent dieters and non-dieters from Spain and England

The comparisons of eating and physical activity habits between adolescent dieters and non-dieters are shown in Table 2. The comparison of adolescent dieters and non-dieters in both countries reveals significant differences in breakfast regularity ($p < .001$, OR = 3.259, 95% CIs = 2.282-4.655), sweets consumption ($p < .001$, OR = 0.493, 95% CIs = 0.396-0.613), and VPA ($p < .001$, OR = 1.915, 95% CIs = 1.553-2.361). Specifically, adolescent dieters are more likely to have irregular or nonexistent breakfasts and to show a low consumption of sweets compared with non-dieters. With regard to physical activity, dieters are more likely to report appropriate levels of VPA, especially in England ($p = .011$, OR = 0.700, 95% CI = 0.533-0.921).

The interaction of diet by country reveals that the proportion of dieters who practice appropriate levels of MVPA is lower in Spain than England ($p = .037$, OR = 0.776, 95% CIs = 0.612-0.98). Finally, the diet by gender interaction reveals that only male dieters are more likely to consume fruits ($p = .030$, OR = 0.584, 95% CIs = 0.359-0.949), and VPA is more frequent in dieting females ($p = .038$, OR = 0.765, 95% CIs = 0.567-0.961).

-Table 2-

3.3. BMI status, eating habits, and physical activity among male and female dieters from Spain and England

According to the BMI results, the percentages of overweight and obese adolescents are similar in both countries: 16.9% in Spain and 13% in England. Gender differences only appear

in Spain ($p < .001$, OR = 1.292, 95% CI = 1.182-1.412), where boys are more likely to be overweight or obese (20.3%) than girls (11.9%).

The analyses for adolescents on a diet depend on whether they are overweight – obese or overweight – or non-overweight. The results reveal that a smaller proportion of overweight and obese adolescents are on a diet compared with non-overweight adolescents (34.6% vs. 65.4%; $p < .001$, OR = 0.341, 95% CIs = 0.296-0.393). These differences are larger in England because the percentage of adolescent dieters who are not overweight or obese is 70.6% compared with 62.7% in Spain ($p < .001$, OR = 1.253, 95% CIs = 1.082-1.450). Nevertheless, stronger between-gender differences appear: Only 54.9% of boys are on a diet despite not being obese or overweight, whereas this percentage is 70.7% among girls ($p < .001$, OR = 1.956, 95% CIs = 1.693-2.260).

Table 3 displays the differences in eating habits and physical activity among dieters depending on whether they are overweight – obese or overweight, or non-overweight. Again, the effects of country and gender are taken into account. Overall, the results reveal a lower daily or medium consumption of sweets among overweight or obese dieters ($p = .009$, OR = 0.545, 95% CIs = 0.345-0.861). In contrast, non-overweight dieters more frequently show appropriate levels of MVPA ($p = .049$, OR = 1.267, 95% CIs = 1.065-1.665).

The BMI status by country interaction indicates a significant difference in daily vegetable consumption between Spain and England that is greater among overweight and obese dieters in Spain compared with England ($p = .031$, OR = 3.926, 95% CIs = 1.136-13.569). The BMI status by gender interaction provides additional findings. Specifically, male dieters who are overweight or obese are more likely to skip breakfast than those with lower BMIs ($p = .041$, OR = 1.378, 95% CI = 1.081-2.156). In contrast, female dieters are more likely to skip breakfast (irregular or never) than males, regardless of their BMI status. In addition, only overweight and obese girls are more likely to consume fruit daily. Conversely, overweight and obese boys are more likely to consume vegetables daily ($p = .026$, OR = 2.076, 95% CIs = 1.237-4.769). Finally, non-overweight dieters are more likely to show appropriate levels of MVPA, but this relationship is stronger among boys ($p = .003$, OR = 1.991, 95% CIs = 1.266-3.130).

4. Discussion

The present study explores diverse lifestyles among adolescents who report dieting to lose weight from two European cultures. This approach allows us to know whether the decision to diet affects adolescent eating and physical activity habits. This study also analyzes whether these habits differ by the dieters' BMIs; in other words, we examine whether overweight and non-overweight adolescent dieters report different eating and physical activity habits.

Furthermore, a strength of this research is that it analyzes this topic using representative samples of adolescents from two European countries with distinct culinary cultures. Spain predominately follows a Mediterranean diet, whereas England's diet is more influenced by Northern Europe. Following Neumark-Sztainer's (2009) recommendations to prevent obesity and eating disorders in adolescence, this work analyzes the key issues known to support the development of healthy diets among youths: stimulating and supporting the acquisition of healthy and enduring eating and physical activity habits. These behaviors are likely to prevent obesity in adulthood. Thus, we analyze information concerning various eating habits, such as breakfast regularity, the consumption of fruits, vegetables, sweets, and soft drinks, and the frequency of MVPA and VPA.

American researchers focus their attention on weight control behaviors in adolescents and their relationship to eating disorders and body weight increases (Neumark-Sztainer, Wall, Story, & Perry, 2003). However, this research is not conducted in Europe. Although most health promotion programs directed at adolescents occur within schools where students with high BMIs are likely to coexist, little information is known concerning the weight control strategies that European adolescents employ. Therefore, in addition to the basic research about youths with extremely low weights or those who are overweight or obese, it is also important to conduct applied research to improve our understanding of the strategies used by all youths to develop strategies to avoid unhealthy food choices.

The data from this study suggest that the adoption of weight loss strategies do not readily translate into a general increased adoption of positive health-related behaviors, such as increasing levels of fruit consumption and physical activity, among adolescent dieters in England and Spain. Moreover, adolescents might perceive behaviors such as skipping or "ditching" food as key weight loss strategies, regardless of their respective food cultures. The evidence presented in this paper suggests that the reality of weight control during adolescence differs from the health promotion recommendations concerning long-term body weight control and maintaining healthy weight by increasing healthy food consumption and the frequency of MVPA (Centers for Disease Control and Prevention, 1997; European Commission for Health and Consumer Protection, 2003). Despite extensive scientific knowledge regarding this topic from public health research, the recommendations for healthy diets or the maintenance of a healthy weight are not well-adopted by English or Spanish adolescents. Consequently, the limitations of inappropriate weight control behaviors, such as poor nutrition, not increasing energy consumption, and excluding meals, such as breakfast, should be incorporated into school health promotion programs.

Although male adolescents tend to have higher BMIs than their female peers, numerous studies find higher rates of body image dissatisfaction and weight control behaviors in the latter (Kanaan, & Afifi, 2010; Larson et al., 2009; Ramos et al., 2012). Likewise, the present study finds that the percentage of female adolescents who report dieting is higher than among males, especially in the case of England where 10.1% of boys report being dieters versus 20% of girls. Furthermore, although 54.9% of males diet despite not being overweight or obese, that percentage is 70.7% in girls. As Harter (2006) summarizes, many girls worship the ideal of thinness, overestimate the preferences that boys have for slender female bodies, judge themselves as fatter than other girls, and negatively compare themselves with female models in the media.

In addition, we find gender differences with regard to the eating habits of adolescent dieters in both countries. First, only male dieters increase their fruit consumption. Skipping breakfast is more frequent among females, regardless of their BMI, whereas this behavior is

only present in dieting, overweight, or obese males. These results support earlier research indicating that not eating breakfast is higher among females (Larson et al., 2009; Woodruff et al., 2008). This result suggests that food denial is perceived as an acceptable or normal weight control strategy among young women.

Finally, another difference between adolescents' lifestyles with regard to dieting concerns the frequency of physical activity. A stronger increase of VPA is found among females, especially those from England. This result is not surprising, given that significant gender differences exist with regard to this type of physical activity. In fact, the percentage of non-dieting males who practice VPA at an appropriate frequency is higher than that of dieting females (75% and 66.5%, respectively). Gender differences are also observed with regard to MVPA, which is more frequent among males than females in both Spain and England. Given the importance of personal values and attitudes concerning healthy lifestyles, gender inequalities with regard to physical activity can be understood in light of the different attitudes toward physical activities. Specifically, boys are encouraged to consider sports as consistent with their masculinity, and these activities can reinforce their popularity and status via competition. On the contrary, sports are rarely perceived as enhancing femininity (Coakley, & White, 1992). Moreover, in a qualitative study of adolescent females, the participants provide the following reasons for the low participation of females in sports and physical activities: sports are masculine and not cool for girls; female adolescents prefer other social activities, such as shopping or having coffee with friends; girls show a stronger and earlier awareness of the importance of school work; a wider variety of sports are offered for males; and concern about becoming too burly or being dissatisfied with their appearance when wearing sport uniforms (Slater, & Tiggerman, 2010). Moreover, less socially restrictive rules exist for boys, and male adolescents might be allowed to spend more time in unsupervised activities than girls in many contexts (Inchley, & Currie, 2004). Consequently, not only do females miss the opportunity to obtain the short-term positive effects of physical activity with regard to weight control, as well as the psychosocial well-being associated with physical activity practice, but they also become

more likely to gain weight, which has important long-term effects on their current and future well-being.

Programs to prevent unhealthy weight control behaviors within schools tend to be devoted to primary interventions and include males and females in the same group. However, given the clear, existing gender differences related to weight and body image among youth, detailed consideration of these gender differences in intervention programs appears to be warranted.

Finally, this study provides interesting results regarding the differential eating and physical activity habits of adolescent dieters who are overweight, obese, or healthy. On one hand, overweight dieters from Spain and England are more likely to reduce their intake of sweets, and boys tend to reduce their breakfast consumption. On the other hand, non-overweight dieters tend to practice higher levels of MVPA. This behavior is also more frequent among non-dieter adolescents in general. These findings support previous studies indicating that physical activity might protect adolescents from being overweight or obese (Jahn, Adair, Mroz, & Popkin, 2012); furthermore, it reduces the risk of adopting unhealthy weight control behaviors (Wang et al., 2013).

It is important to be aware of the limitations of the present study, including its cross-sectional design, the measurement of constructs using single-item indicators, and the lack of measures concerning such extreme weight control habits associated as laxative use and purging. In addition, including participants' families in future research is of paramount interest to adopt a systemic view, given the role of the family in the prevention of unhealthy dieting, which is emphasized by previous research (Neumark-Sztainer, Bauer, Friend, Hannan, Story, & Berge, 2010; Sato et al., 2011).

Overall, the findings presented in this paper demonstrate that adolescent dieters from diverse European cultures adopt relatively poor nutritional and physical activity habits despite their different dominant patterns of food consumption. Moreover, the adoption of weight control strategies is not related to the adoption of more healthy lifestyles. Food denial may be a common weight control or regulation strategy among girls in particular.

This study also provides gender-specific practical implications for both countries.

Young women should gain an enhanced awareness of the positive associations among breakfast consumption, a healthy weight, and overall well-being; furthermore, promoting physical activity and body image satisfaction are key aspects of weight control. The findings that demonstrate the clearly unfavorable effects on girls compared with boys are consistent with past research demonstrating that the former are more concerned with body image than the latter.

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Table 1. Percentage of adolescents with regard to dieting, eating habits and physical activity indicators by country, gender and gender by country

		<i>Country</i>		<i>Gender</i>		<i>Gender by Country</i>			
		Spain	England	Boy	Girl	Spain		England	
						Boy	Girl	Boy	Girl
On a diet	No	86.1%	84.2%	89.4%	81.6%	88.9%	83.3%	89.9%	80.0%
	Yes	13.9%	15.8%	10.6%	18.4%	11.1%	16.7%	10.1%	20.0%
Breakfast	Daily	56.2%	49.9%	57.9%	49.5%	59.8%	52.7%	55.3%	46.0%
	Irregular	41.6%	46.4%	39.4%	47.5%	38.0%	45.0%	41.4%	50.1%
Fruits	Never	2.2%	3.6%	2.7%	3.0%	2.2%	2.3%	3.4%	3.8%
	Daily	48.0%	49.2%	45.5%	51.1%	46.2%	49.7%	44.6%	52.5%
	Medium	41.6%	41.8%	43.8%	39.9%	43.4%	39.9%	44.2%	40.0%
Vegetables	Low	10.4%	9.1%	10.7%	9.0%	10.4%	10.4%	11.2%	7.5%
	Daily	33.6%	47.5%	37.1%	42.6%	31.6%	35.6%	44.4%	49.8%
	Medium	59.0%	42.8%	52.9%	50.4%	59.5%	58.5%	43.9%	42.0%
Sweets	Low	7.4%	9.7%	10.1%	7.0%	8.9%	5.9%	11.7%	8.2%
	Low	40.7%	26.1%	35.7%	32.5%	42.4%	39.1%	26.6%	25.8%
	Medium	44.0%	48.6%	44.7%	47.3%	43.3%	44.8%	46.7%	49.9%
Soft drinks	Daily	15.2%	25.3%	19.6%	20.2%	14.3%	16.1%	26.7%	24.3%
	Low	41.0%	25.7%	29.5%	37.6%	35.5%	46.3%	21.6%	28.7%
	Medium	36.9%	37.0%	39.9%	34.4%	40.9%	33.0%	38.5%	35.9%
VPA	Daily	22.1%	37.3%	30.6%	28.0%	23.6%	20.7%	39.9%	35.4%
	Appropriate	63.7%	67.6%	75.4%	57.1%	74.1%	53.5%	77.2%	60.7%
	Inappropriate	36.3%	32.4%	24.6%	42.9%	25.9%	46.5%	22.8%	39.3%
MVPA	Appropriate	45.4%	48.3%	57.4%	37.6%	56.3%	34.9%	59.0%	40.4%
	Inappropriate	54.6%	51.7%	42.6%	62.4%	43.7%	65.1%	41.0%	59.6%

Note. Significant differences (in bold) according to OR from logistic regression analyses.

Table 2. Adolescent dieter and non-dieter comparisons of eating habits and physical activity

		<i>On a diet</i>		<i>Country</i>				<i>Gender</i>			
		No	Yes	Spain		England		Boy		Girl	
				Non-dieters	Dieters	Non-dieters	Dieters	Non-dieters	Dieters	Non-dieters	Dieters
Breakfast	Daily	55.3%	42.1%	57.9%	46.2%	52.0%	37.8%	58.8%	50.3%	52.1%	38.1%
	Irregular	42.3%	52.5%	40.3%	49.1%	44.8%	56.2%	38.8%	45.1%	45.5%	56.2%
	Never	2.4%	5.4%	1.8%	4.8%	3.2%	6.0%	2.4%	4.6%	2.4%	5.8%
Fruits	Daily	48.2%	51.5%	47.6%	50.9%	48.9%	52.1%	45.4%	47.8%	50.7%	53.2%
	Medium	41.7%	40.9%	41.9%	39.8%	41.5%	42.0%	43.4%	45.8%	40.2%	38.5%
	Low	10.1%	7.6%	10.6%	9.3%	9.6%	5.9%	11.1%	6.4%	9.2%	8.2%
Vegetables	Daily	39.8%	41.9%	33.3%	35.7%	47.6%	48.4%	37.1%	36.4%	42.3%	44.6%
	Medium	51.6%	51.1%	59.3%	57.4%	42.4%	44.5%	52.7%	55.6%	50.6%	48.9%
	Low	8.6%	7.0%	7.4%	6.9%	10.0%	7.1%	10.2%	7.9%	7.2%	6.5%
Sweets	Low	32.5%	42.1%	39.1%	50.4%	24.4%	33.5%	34.3%	45.8%	30.8%	40.3%
	Medium	46.6%	43.9%	44.8%	39.7%	48.8%	48.2%	45.5%	40.0%	47.6%	45.7%
	Daily	20.9%	14.0%	16.1%	9.9%	26.8%	18.3%	20.2%	14.2%	21.6%	14.0%
Soft drinks	Low	33.4%	36.4%	40.2%	45.4%	25.3%	27.2%	29.1%	33.4%	37.5%	37.9%
	Medium	37.3%	35.2%	37.5%	33.7%	37.1%	36.8%	40.4%	37.6%	34.5%	34.0%
	Daily	29.2%	28.4%	22.3%	20.9%	37.6%	36.0%	30.5%	29.0%	28.1%	28.1%
VPA	Appropriate	64.5%	70.5%	63.2%	66.0%	66.0%	75.1%	75.0%	78.9%	54.9%	66.5%
	Inappropriate	35.5%	29.5%	36.8%	34.0%	34.0%	24.9%	25.0%	21.1%	45.1%	33.5%
VMPA	Appropriate	47.2%	44.0%	46.2%	40.7%	48.4%	47.5%	57.6%	55.8%	37.4%	38.2%
	Inappropriate	52.8%	56.0%	53.8%	59.3%	51.6%	52.5%	42.4%	44.2%	62.6%	61.8%

Note. Significant differences (in bold) according to OR from logistic regression analyses.

Table 3. Overweight/obese and non-overweight dieter comparisons with regard to eating habits and physical activity

		<i>Overweight or obese</i>		<i>Country</i>				<i>Gender</i>			
		Yes	No	Spain		England		Boy		Girl	
				Yes	No	Yes	No	Yes	No	Yes	No
Breakfast	Daily	43.7%	43.0%	46.5%	46.8%	38.6%	33.7%	55.9%	47.9%	38.9%	39.2%
	Irregular	50.2%	51.4%	48.1%	48.5%	54.0%	58.7%	38.8%	47.9%	54.6%	54.1%
	Never	6.1%	5.6%	5.4%	4.8%	7.4%	7.6%	5.3%	4.2%	6.5%	6.6%
Fruits	Daily	51.5%	53.5%	50.8%	53.8%	52.7%	52.7%	52.3%	49.0%	51.1%	57.1%
	Medium	41.4%	39.4%	41.4%	38.5%	41.5%	41.9%	42.0%	46.2%	41.2%	34.2%
	Low	7.1%	7.0%	7.9%	7.7%	5.8%	5.4%	5.7%	4.9%	7.7%	8.7%
Vegetables	Daily	39.0%	41.3%	32.5%	39.7%	50.4%	45.2%	29.9%	39.2%	42.6%	42.9%
	Medium	55.2%	52.0%	60.7%	54.7%	45.5%	45.2%	60.9%	53.8%	52.9%	50.5%
	Low	5.8%	6.7%	6.9%	5.6%	4.0%	9.7%	9.2%	7.0%	4.5%	6.5%
Sweets	Low	40.9%	50.8%	46.4%	56.8%	31.3%	35.5%	43.7%	51.7%	39.9%	50.0%
	Medium	44.0%	39.8%	42.1%	36.3%	47.3%	48.4%	39.7%	40.6%	45.7%	39.1%
	Daily	15.0%	9.5%	11.4%	6.8%	21.4%	16.1%	16.7%	7.7%	14.4%	10.9%
Soft drinks	Low	40.9%	39.8%	45.2%	44.9%	33.5%	26.9%	33.3%	36.4%	43.9%	42.4%
	Medium	35.0%	32.4%	35.5%	32.1%	33.9%	33.3%	40.2%	39.2%	32.9%	27.2%
	Daily	24.1%	27.8%	19.3%	23.1%	32.6%	39.8%	26.4%	24.5%	23.2%	30.4%
VPA	Appropriate	68.7%	69.4%	65.9%	65.9%	73.5%	77.9%	79.9%	75.6%	64.2%	64.9%
	Inappropriate	31.3%	30.6%	34.1%	34.1%	26.5%	22.1%	20.1%	24.4%	35.8%	35.1%
VMPPA	Appropriate	46.2%	40.4%	44.1%	39.7%	50.0%	42.2%	65.3%	48.6%	38.7%	33.9%
	Inappropriate	53.8%	59.6%	55.9%	60.3%	50.0%	57.8%	34.7%	51.4%	61.3%	66.1%

Note. Significant differences (in bold) according to OR from logistic regression analyses. Yes = overweight or obese, No = non-overweight.