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Association Between Body Image Dissatisfaction and Body Mass Index, Eating Habits and Weight Control Practices among Mauritian Adolescents

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ABSTRACT

Introduction: Adolescence is a nutritionally vulnerable period owing to rapid physical and psychological changes. The objective of the study was to determine the prevalence of body image dissatisfaction and its association with body mass index (BMI), eating habits and weight control practices among Mauritian adolescents. **Methods:** A total of 200 adolescents aged 14-17 years who fulfilled the inclusion criteria were conveniently recruited from public places. Height and weight measurements were taken to determine BMI. The respondents completed a self-administered questionnaire on demographics, eating behaviour, Figure Rating (Stunkard Scale with silhouettes 1 to 9 indicating from the most lean to the most heavy figure), and attempts to manage weight. **Results:** Overall, 73.5% of respondents had normal BMI, with more males being overweight (12.5%) and obese (3.1%) than females. Body image dissatisfaction (BID) was higher among the males (76.0%) while BMI showed a significant influence on the body image of both genders. Males perceived silhouette 4 as an ideal body figure while females desired silhouette 3. Previous dieting was reported by all categories of body weight. Adolescents with satisfied body image tended to eat more fruits and vegetable. Adolescents with BID showed a higher likelihood of skipping breakfast (41.6%) and dinner (20.8%) and had a higher snacking frequency (72.0%). Almost all (96.1%) consumed fast food. **Conclusion:** BID appears to be a matter of concern among Mauritian adolescents. The findings emphasise the need for nutrition education programs promoting healthy weight management among adolescents.

Key words: Adolescents, body image, BMI, eating habits, weight control

INTRODUCTION

Physical attractiveness and beauty are unmistakably powerful and pervasive agents which are assumed to be synonymous with success, happiness, intelligence, social competence and sometimes as indicators of social worth (Griffin & Langlois, 2006; Honigman & Castle, 2006). In fact, various influences in today's modern societies place a premium on physical attractiveness resulting in a search for the ideal body, with the aesthetic ideal being extremely thin for women and muscular for men. In this context, it is no wonder adolescents who are at a delicate stage in life in which their minds, bodies and social life are changing

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dramatically are particularly susceptible to the messages transmitted by these unrealistic societal and cultural ideals (Anamika & Singh, 2012; Peternel & Sujoldzic, 2014).

Adolescents generally prefer to eat among their peers. Some common eating habits of adolescents include fasting, meal skipping, unhealthy snacking and frequent fast food consumption. Such eating habits area associated with eating disorders (Anamika & Singh, 2012). Moore (1993) found that girls dissatisfied with their bodies were likely to engage in unhealthy weight control behaviours such as dieting, fasting, self-induced vomiting, use of laxatives and diet pills, behaviours which were, however, not so common among boys.

Due to rapid development in nutrition transition, Mauritians' dietary patterns and nutritional status have undergone a sequence of major shifts from the traditional way of life to a more modern and western lifestyle. Evidence from the National Plan of Action for Nutrition (2009-2010) revealed that the prevalence of overweight and obesity among adolescents aged 12-19 years is 8.4% and 7.3 % respectively. Currently, data on the link between body image and eating patterns of Mauritian adolescents is scant. Such data are needed for the proper design and monitoring of health education programs so as to bring about an improvement in nutrition counselling and weight management strategies among Mauritian adolescents. Given the critical role of body image in shaping adolescents' eating behaviours, it is of utmost importance to thoroughly investigate and understand its role in this developmental group (Holmqvist, 2013). The current study therefore aims to determine the relationships between body image and eating patterns of adolescents.

METHODS

The study is a population-based cross-sectional nutritional survey carried out from September 2014 to March 2015 in the region of Plaine Wilhems in the Island of Mauritius.The inclusion criteria were Mauritian students aged 14 to 17 years of age while the exclusion criteria were students known to be suffering from chronic diseases and who were pregnant. The objective of this study was primarily to determine the prevalence of body image dissatisfaction among Mauritian adolescents.

A sample size of 200 subjects was found appropriate, using a conservative expected proportion of 0.5 and intention to construct a 95% confidence interval with a margin of error not wider than 7%. Students were recruited from public places including several tuition places, a private school and shopping malls. Written consent was obtained from their parents. For private schools and tuition places, permission was sought prior to the interview with the potential subjects through parent consent forms, while for the shopping malls, the parents that accompanied the adolescents were asked to fill the consent form on the spot. The consent forms contained questions related to the key inclusion and exclusion criteria to ensure that recruited subjects satisfied the entry requirements. A series of common chronic diseases among adolescents (such as asthma, eczema and cystic fibrosis but excluding obesity) was cited in the consent form. Questionnaires were distributed in such a way that male and female respondents were equally represented in the sample to reflect the actual sex distribution in the target population. The test population surveyed was thus selected on purpose from a representative group of adolescents attending a private fee paying secondary school, tuition places and public places, which are potential sources of various ethnic groups and socio-economic status (SES). In all, the final number of respondents were 104 females and 96 males.

The survey questionnaire was pilot-tested on a small group of adolescents (n=5), following which minor modifications were made to the questionnaire. The

questionnaire consisted of four sections: (1) SES and demographic data; (2) anthropometric measurements; (3) body image assessment and weight control practices; and (4) dietary assessment. The final version of the questionnaire was then administered to the sample of participants.

Demographic variables

Demographic variables included items related to gender, age and socio-economic status. Several indicators of socio-economic status were used in the survey, to obtain more reliable data from the adolescents. An adapted version of the Currie *et al*. (1997) Family Affluence Scale (FAS) Questionnaire used by Fokeena & Jeewon (2012) was used to measure economic status. The FAS includes close-ended questions on home ownership, adolescent's own bedroom occupancy and family car ownership. The FAS scale ranged from 0-5 and was grouped into 2 levels: a higher score (3-5) on the scale indicates a higher level of family affluence (High SES) and lower scores (0-2) is indicative of a low SES.

Anthropometric measurements

A portable scale was used to measure the weight of the respondents. The latter's pockets were emptied and shoes were removed to ensure they did not have any heavy things in their possession. Height was measured barefoot with a measuring tape. Anthropometric measurements of height to the nearest 0.1cm and weight to the nearest 0.1kg were taken to calculate body mass index (BMI). Body mass index-for-age percentiles growth charts (Centre for Disease Control and Prevention, 2010) were then used to classify adolescents into four weight groups.

1) Underweight; BMI <5th percentile;
2) Normal body weight; BMI ≥5th percentile and <85th percentile;
3) Overweight; BMI ≥85th percentile and <95th percentile;
4) Obesity; the BMI ≥95 percentile

Body image perception

Participants were required to select the figure that most represented their actual and ideal body shape from the 9-figure body size Figure Rating Scale (FRS) of Stunkard, Sorensen and Schulsinger (1983). The FRS has acceptable reliability. According to Thompson & Altabe (1991), a 2-week test-retest reliability for the 'ideal' variable is .71 for males and .82 for females. A discrepancy score between the perceived body image and wished body image was used as a measure of body dissatisfaction with values other than zero representing dissatisfaction with perceived body image. A negative value was indicative of the respondent's wish to gain weight/ become thicker while a positive value reflected the subject's desire to lose weight/become thinner (Bibiloni *et al*., 2013; Sukariyah & Sidani, 2014).

Behaviours toward body weight self-control

The adolescents were asked whether they had tried to lose or gain weight during the past 12 months. They were also asked to identify the various weight reducing methods they had resorted to.

Dietary assessment

Dietary intake was assessed using a short, semi-quantitative FFQ (food frequency questionnaire) developed and adapted from Pollard, Steptoe & Wardle (1998). The FFQ contained 54 food items which consisted of many food items, characteristic of the Mauritian foods, classified into 14 food groups. The subjects were asked to state how often they had consumed each type of food on average within the last year and a weight was assigned to each frequency to calculate the number of servings. By assigning a weight to each frequency of consumption category, the following were obtained: never: 0.0; 1 – 3 per month: 0.07; once a week: 0.14; 2 – 4 per week: 0.43; 5 – 6 per week: 0.80; once a day: 1.00; two–three times a day: 2.50 and four times a day or more: 4.50.

Statistical analysis

SPSS for Windows version 21.0 (SPSS, Inc. Chicago, IL, USA) was used for the analysis of the data collected. Chi-square test for independence, Independent Sample T tests and One Way Analysis of Variance (ANOVA) were used to analyse the data. P-value <0.05 was considered as significant.

RESULTS

The final sample comprised 200 adolescent respondents aged 14-17 years, with more females (52.0%) than males (48.0%). The overall average age was 15.5 ± 1.1 years. The majority (61.5%) were from a high socio-economic background, and more than half (55.0%) resided in rural areas. However, no significant differences with respect to socio-economic status and demographic location relating to body image were found.

Body image according to gender and body composition (BMI)

Prevalence of body image dissatisfaction was found to be 74.5%, with no major differences in terms of gender (males = 76.0%, females = 73.1%; p = 0.63). The findings suggest that both males and females equally suffer from body image dissatisfaction. Based on the figure rating scale of Stunkard *et al*.(1983), the majority of the male subjects considered silhouette 3 as their actual body shape while females considered figure 4 as their current body shape. The choice of ideal silhouettes tended to be a slimmer body shape in girls (silhouette 3) and larger size in boys (silhouette 4) than their actual body shape (Table 1). Based on BMI classification (Table 2), most of the adolescents were in the normal weight category (72.9% boys and 74.0% girls), 11.5 % were categorised as overweight (12.5% males and 10.6 % females) and the remaining 1.5 % who were obese were all boys. Moreover, no significant difference in BMI categories between males and females (p=0.263) was noted. Table 2 also illustrates the desire for body weight change according to body weight index (BMI), which showed that a majority of underweight subjects (63.6% males and 62.5 % females) wished to have a thicker body. In contrast, the majority of overweight adolescents (91.3%) and all obese subjects wished to lose weight.

Weight control practices

Of the surveyed population, 52.5% were engaged in weight control practices, that is attempted weight loss, weight maintenance or weight gain; 39.5% reported trying to lose weight; and 13.0% reported that they were engaged in weight gain activities. More female participants (43.3%) were involved in weight loss practices as compared to boys (35.4%). BMI and body image perception were found to be strong determinants of weight control practices (p<0.05, based on Pearson's Chi Square Test of independence). Attempting weight loss was less common among normal weight than overweight or obese whilst it was common among adolescents with BID. Additionally, $\chi 2$ test revealed no gender differences concerning weight control practices. Six different dieting practices were assessed to determine weight loss practices. The top three specific strategies for weight loss for both male and female subjects were exercising (26.5%), reducing the amount of food eaten at meal times (17.5 0%); reducing fat consumption (15.5%). Fasting, use of laxatives and recourse to vomiting were of low frequency, that is, 3.0%, 0.5% and 1.0% respectively. $\chi 2$ test also revealed that resorting to exercise and smaller meals were influenced by body image perception of the adolescents.

Influence of BMI and BID on eating patterns

Chi-square tests were used to assess the relationship between BMI, BID and eating patterns. A substantial proportion of ado-

Table 1. Prevalence of actual and ideal body image figure of respondents (n=200)

		Body image figures									*P value*
Actual		*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	
Male	n (%)	5 (5.2)	14 (14.6)	26 (27.1)	14 (14.6)	22 (22.9)	6 (6.3)	7 (7.3)	1 (1)	1 (1)	<0.001
Female	n (%)	2 (1.9)	27 (26.0)	23 (22.1)	39 (37.5)	8 (7.7)	4 (3.8)	0 (0.0)	1 (1.0)	0 (0.0)	
Ideal		1	2	3	4	5	6	7	8	9	
Male	n (%)	1(1.0)	12 (12.5)	26 (27.1)	40 (41.7)	16 (16.7)	1(1.0)	-	-	-	<0.001
Female	n (%)	-	25 (24.0)	56 (53.8)	22 (21.2)	0 (0.0)	-	-	1(1.0)	-	

Percentages add to 100 for each assessment (actual or ideal) for each sex
The numbers 1-9 represent the 9-figure body size Figure Rating Scale (FRS) of Stunkard, Sorensen & Schulsinger (1983), with 1 being the leanest and 9 the heaviest.
P-values obtained from Pearson's Chi-square test for independence reveal that male and female respondents perceive actual body image and ideal body image differently (p-value<0.001 for both actual and ideal)

Table 2. Desire for weight change according to BMI categories (%)

BMI Categories	*Boys (n=96)*	*Girls (n=104)*	*Total(n=200)*
Underweight	11.5	15.4	13.5
Prefer thinner body	18.2	25.0	22.2
Remain the same body	18.2	12.5	14.8
Preferthicker body	63.6	62.5	63.0
Normal weight	72.9	74.0	73.5
Wants thinner body	37.1	50.6	44.2
Remain the same body	28.6	32.5	30.6
Wants thicker body	34.3	16.9	25.2
Overweight	12.5	10.6	11.5
Wants thinner body	91.7	90.9	91.3
Remain the same body	8.3	9.1	8.7
Wants thicker body	-	-	-
Obese	3.1	0.0	1.50
Wants thinner body	100.0	-	100.0
Remain the same body	-	-	
Wants thicker body?	-	-	

For each sex category (male and female), the percentage of respondents within each BMI category (Underweight + Normal weight + overweight + obese) adds up to 100%. Within each BMI category, the percentages for each 'desire for weight change' add up to 100% (for e.g. 18.2+18.2+63.6)

lescents who were not satisfied with their body image skipped breakfast and dinner as compared to those who were satisfied. However, a higher proportion of adolescents with BID ate fast food as compared to those satisfied with their body image. Also, overweight adolescents skipped breakfast and dinner more often while obese adolescents missed their lunch more often. Surprisingly, all the obese reported eating fast foods; while 72.0% of the participants reported snacking with those with BID having a higher prevalence (72.5%). Additionally the prevalence of snacking was highest in the underweight category followed by the normal weight, obese and lastly, with the overweight category. Furthermore, overweight adolescents (87.0%) and underweight adolescents (74.1%) were more likely to have ≤3 eating occasions per day (Table 3).

Food consumption according to body image perception and BMI

Consumption of dairy products, soy and soy products, meat and egg, cereals, fish and seafood, legumes, nuts, tubers, fruits, vegetables, fats and oil products and sweets was higher in those having a satisfied body image (Table 4) while those dissatisfied with their body image consumed more processed foods. Fruit intake was found to be more prominent among those satisfied with their body image. The comparison of fourteen food groups belonging to the four BMI categories using a one way ANOVA showed a statistically significant difference in the consumption of processed food ($p=0.016$) and fat and oil products ($p=0.045$), with overweight adolescents consuming twice as much processed food than the other three BMI groups. Furthermore, dairy products, soy and soy prod-

Table 3. Eating patterns by nutritional status and by perceived body image satisfactionamong Mauritian adolescents(n=200)

	BMI %				*P value*	*Body image %*		*P value*
	Underweight	*Normal*	*Overweight*	*Obese*		*Satisfied*	*Dissatisfied*	
Skipping meals habit								
Skipped breakfast	22.3	42.2	47.8	33.3	0.489	35.3	41.6	0.865
Skipped lunch	25.9	27.2	30.4	33.3	0.767	27.5	27.5	0.997
Skipped dinner	22.2	14.3	37.5	33.3	0.041	9.8	20.8	0.093
Snacking habits	85.2	72.1	56.5	66.7	0.164	70.6	72.0	0.857
Fast food consumption	92.6	92.5	91.3	100.0	0.945	96.1	91.3	0.631
No. of meals								
<3	74.1	66.0	87.0	66.7		70.6	69.1	
4	22.0	25.2	8.7	33.3		21.6	23.5	
>5	3.8	8.8	4.3	0.0	0.587	7.8	7.40	0.372

Among those who were underweight, 22.3% skipped breakfast (the rest not); among normal respondents, 42.2% skipped breakfast… P-value obtained when meal skipping patterns were cross tabulated with BMI category

Table 4. Food consumption by nutritional status and by body image among Mauritian adolescents (n=200)

Food groups	*BMI mean scores*				*P value*	*Body image mean score*		*P value*
	Underweight	*Normal*	*Overweight*	*Obese*		*Satisfied*	*Dissatisfied*	
Dairy products	2.67 ± 1.19	2.67 ± 1.69	2.84 ± 1.75	1.48 ± 1.57	0.607	3.03 ± 1.79	2.55 ± 1.57	0.069
Soy and soy products	0.105 ± 0.258	0.121 ± 0.198	0.826 ± 0.116	0.237 ± 0.251	0.598	0.163 ± 0.250	0.100 ± 0.178	0.052
Meat and egg	0.600 ± 0.431	0.740 ± 0.624	0.617 ± 0.409	0.353 ± 0.285	0.384	0.803 ± 0.707	0.67 ± 0.525	0.145
Fish and seafood	0.151 ± 0.117	0.348 ± 0.740	0.331 ± 0.304	0.427 ± 0.248	0.534	0.346 ± 0.467	0.312 ± 0.525	0.745
Cereals, grain and products	2.90 ± 1.04	3.00 ± 1.74	2.90 ± 1.32	2.70 ± 0.816	0.971	3.09 ± 1.49	2.93 ± 1.64	0.543
Fruits	2.29 ± 1.82	2.15 ± 1.84	2.25 ± 2.26	3.23 ± 0.75	0.781	2.70 ± 2.33	2.02 ± 1.66	0.026
Vegetables	2.37 ± 1.53	2.41 ± 1.76	2.40 ± 1.82	3.68 ± 1.39	0.660	2.70 ± 1.78	2.33 ± 1.70	0.196
Processed food	0.511 ± 0.438	0.65 ± 0.854	1.23 ± 1.23	0.62 ± 0.22	0.016	0.648 ± 0.803	0.715 ± 0.901	0.636
Legumes	0.81 ± 0.96	0.71 ± 0.76	0.81 ± 0.89	0.68 ± 0.21	0.883	0.795 ± 0.641	0.709 ± 0.840	0.510
Tubers	0.56 ± 0.48	0.53 ± 0.68	0.59 ± 0.52	0.74 ± 0.29	0.924	0.647 ± 0.667	0.511 ± 0.625	0.190
Nuts	1.42 ± 4.83	0.38 ± 0.82	0.45 ± 0.70	0.19 ± 0.22	0.079	0.556 ± 0.921	0.514 ± 2.17	0.892
Fats and oil products	3.06 ± 1.38	2.73 ± 1.70	2.48 ± 1.22	5.18 ± 2.97	0.045	3.07 ± 1.62	2.68 ± 1.65	0.141
Beverage	1.95 ± 1.41	1.93 ± 1.51	2.07 ± 1.92	2.90 ± 1.83	0.733	1.96 ± 1.46	1.96 ± 1.58	0.980
Sweets	0.284 ± 0.306	0.308 ± 0.676	0.273 ± 0.56	0.53 ± 0.62	0.920	0.314 ± 0.525	0.301 ± 0.652	0.903

ucts and legumes were mostly consumed by overweight adolescents, while the consumption of meat and egg and cereals and grain products was higher in adolescents with normal BMI. Underweight adolescents tend to eat and nuts more often than the others while obese adolescents had a higher intake of fish and seafood, fruits, vegetables, tubers, fats and oil products, beverage and sweets (Table 4).

DISCUSSION

Prevalence of body image dissatisfaction

Dissatisfaction with one's body is an epidemic problem of modern societies and results from this study suggest that there is a substantial proportion of Mauritian adolescents (74.5 %) who reported BID (As-Sa'edi *et al*., 2013). This finding is consistent with other studies, which have also found a high prevalence of adolescents who are concerned and preoccupied with their body image (Hatami *et al*., 2015). Male adolescents demonstrated a higher percentage of BID than their female counterparts (73.1%), a finding which is is in contrast to that of Mäkinen *et al.* (2012) who found that girls are more likely to exhibit body dissatisfaction.

Furthermore, body image was found to be related in a significant manner with BMI ($P < 0.05$), indicative of feelings of dissatisfaction with body weight spanning the four BMI groups. In addition, it was revealed that the ideal of thinness is in fact very prominent among these teenagers, as evidenced by 47.5% who admitted that they want to become thinner. Male and female participants in the higher BMI range further reported an increased desire to reduce their weight. Therefore, for Mauritian adolescents, a higher body weight may be perceived as a stigma of ugliness, instigating individuals with a higher BMI to feel uncomfortable and concerned with their body image (Ferrari, Petroski & Silva, 2013). In general, these findings suggest that the wish for a thinner body is not justified by obesity but seemed to depend on the perception of being overweight (Waaddegaard & Petersen, 2002).

In terms of body figure preference the situation is different for girls and boys.In the current study, it is observed that adolescent boys had a preference for a heavier body shape (silhouette 4) than their perceived own body shape (silhouette 3). In comparison, the females desired a slimmer figure (silhouette 3) than their current ideal body shape. It is however important to note that due to various influences, especially societal pressures, many adolescents may find themselves pursuing an unattainable, almost unreal body type which may result in eating disturbances.

Weight control practices

Previous studies reported an emerging trend of weight control methods being adopted by a substantial percentage of adolescents (Yahia *et al*., 2011). Interestingly, a study by Boutelle *et al.* (2002) acknowledged that on the whole teenagers were more likely to try losing weight. The outcome of the current survey showed a similar trend with exercising being the predominant method of weight loss. Among the students who were involved in weight control, 39.5% of students reported trying to lose weight while only 13.0% tried to gain weight and 25.5% wanted to remain at the same weight. A recent study by Bhurtun & Jeewon (2013) reported that weight loss behaviours are more pronounced among Mauritian female adolescents. The current findings support this pattern. The prevalence of weight-loss practices was in fact higher among girls (43.3% girls versus 35.4% boys). There were fewer girls who were overweight but they were more likely to lose weight rather than gain weight.

The use of laxatives/slimming pills, fasting and vomiting were of low frequency, indicating that unhealthy dieting practices were not common among the adolescents, which is in line with the study

conducted by Yahia *et al.* (2011). His study showed that young adults in the higher BMI range engaged in dieting more often than underweight adolescents. It is however, alarming to see 36.7% of subjects with normal weight and 18.5% of underweight attempting to lose weight. Therefore, it is clear that the perception of being overweight is a factor in a teenager's decision to attempt weight loss, regardless of whether they are actually overweight (Findley, 2004). Additionally, there may be other motivating factors such as peer pressure, mass media and family which can be of considerable importance.

Food consumption

According to the present study, adolescents satisfied with their body image reported higher consumption of several food groups while adolescents with BID ate more servings of processed food only as compared to those with a positive body image. Beverage consumption however, was the same in both groups with a statistically significant association found between body image and fruit intake ($p<0.05$), demonstrating the strong influence body image can have on consumption of fruits. This is of particular concern as adolescents with negative body image had less servings of healthy food choices (vegetables, fruits, dairy product, cereals etc.). Despite lack of statistical significance for other healthy food groups in the present study, existing literature indicates that adolescents' concern about their body image is an important contributing factor to choosing food (Bargiota *et al.*, 2013).

Furthermore, findings from the current study also demonstrates that obese adolescents adopting weight control practices did not decrease their consumption of typical western-diet foods as significant association swere found between BMI and processed food and fat and oil products respectively. Contrary to a study conducted among Balearic Islands adolescent who found that obese adolescents tend to avoid sweets as a measure to counteract the obesity, the present study found sweets consumption to be higher among obese adolescents (Biblioni et al., 2013). Nevertheless they did increase consumption of fruits and vegetables, which may be a strategy to lose weight as many studies have demonstrated that increased consumption of dietary fibre is useful to stem the tide of obesity.

Meal skipping

The most frequently missed meal was found to be breakfast (40.0%), followed by lunch (27.5%) and dinner (18.0%). However, compared to a recent study by Ranjana, Mahomoodally & Ramasawmy (2013) which reported that 68.0% adolescents skipped breakfast, the present study found breakfast skipping among Mauritian adolescents to be less common. Furthermore, lunch skipping and dinner skipping have not been found to be a major problem amongst the respondents. The apprehension of becoming obese can act as a potential stimulus to skip meals (Othman & Sedek, 2014). This is exemplified in our study whereby in addition to obese and overweight subjects, even normal weight and underweight subjects skipped meals. The present study found that adolescents with BID had a higher breakfast and dinner skipping rate than those satisfied with their body image. Skipping meals, especially breakfast can be problematic as it may lead to malnutrition which can affect cognitive development, thereby interfering with the academic performance and learning capabilities of adolescents.

Fast food consumption and snacking practices

Fast foods have poor nutritional quality, excessive consumption of which may not only affect the diet quality of the individuals but also their health. Therefore, fast food consumption should be limited as eliminating fast food may not be realistic in contemporary society. Similar to a pre-

vious Mauritian study, the consumption of fast food among Mauritian adolescents is found to be declining. Trends in fast food consumption, however, did not mirror an international cross-sectional study conducted by Braithwaite *et al.* (2014) who demonstrated that lower BMIs were significantly associated with greater fast-food consumption. In fact, the current study found that all the obese adolescents who were dieting in fact affirmed eating fast foods. The present study found no association between BMI and frequency of fast-food consumption. Consideration needs to be given to the likelihood that, owing to the fact that adolescents who are overweight or obese and who indulge in weight reducing practices, are more likely to eat fast foods as a way to compensate for their energy intake, as seen in the present study. In contrast to the study Ranjana *et al.* (2013) which found 84% of the adolescents snacking, the present study found that only 72% of the subjects snacked. Unexpectedly, the prevalence of snacking was roughly the same in both satisfied and dissatisfied adolescents.

Limitation of the study

The results are not representative of the general population due to the convenient sampling approach used which included those participants who volunteered to be part of the study. As the FFQ was self-administered, the accuracy of the responses would depend on the memory, recall and honesty of the adolescents.The influence of media, peers, and the family, which can significantly affect body image,was not assessed.

CONCLUSION

The present study reported a substantial proportion (74.5%) of Mauritian adolescents showing characteristics of body image dissatisfaction, with male subjects being more dissatisfied with their body than females. The desire to change weight, especially to reduce their body figure is widespread among the four BMI categories, with those having a higher BMI having an increased desire to reduce their weight. Similarly, weight-control behaviours, more particularly attempts to lose weight, are reported by a large proportion of the population including subjects with lower BMIs . These results emphasise the importance of evaluating the weight perception/body image of the adolescents, since the problem is not only obesity, but also in the self-representation of a weight greater than the ideal as seen in the present study (De Sousa, 2008). It was also found that meal skipping, fast food consumption and snacking practices despite being on the decline are still widely prevalent in Mauritian adolescents with BID as well as those satisfied with their body image.

Overall, this study adds to the growing literature that demonstrates the importance of being aware of the association between body image, BMI, and eating patterns (Nur Syuhada Zofiran *et al*., 2011). Having a positive body image and a healthy weight can substantially contribute to higher self-esteem in adolescents. Establishment of support groups and informed education programs are approaches for early identification of body image disorders.

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