

# BODY IMAGE PERCEPTION, BODY SHAPE CONCERN AND BODY SHAPE DISSATISFACTION AMONG UNDERGRADUATES STUDENTS

## Article history

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## Graphical abstract

BSD	Male n (%)	Female n (%)	P value
Desire thinner	11(32.4)	100(48.1)	0.151
Satisfactory	8(23.5)	48(23.1)	
Desire heavier	15(44.1)	60(28.8)	

## Abstract

There are significant surge on body image concern among young adults globally. The negative body image eventually leads to body shape dissatisfaction (BSD) and consequently would cause unfavorable outcomes such as anxiety, depression, low-self-esteem and poor quality of life. The self-reported body mass index (BMI), Self-rating Body Silhouette and Body Shape Questionnaire (BSQ-16A) were used to identify relationship of body image perception, body shape concern with body shape dissatisfaction (BSD) among undergraduates' students at Health Science Faculty UiTM, Malaysia. Majority of males and females were in normal category on body image perception with 64.7 % and 61 % respectively. About 79.4 % of male and 82.7 % female perceived their body weight as ideal body weight. On body shape concern, 67.6 % of male and 45.7 % of female were not concerned of their shape. Approximately 48.1 % of females were dissatisfied with their body shape and desire to become thinner contrary 44.1 % of male desire to become heavier. In addition increase in body shape concern lead decrease BSD. In view of their ignorance to achieve the desired body image and body shape concern may raise fear of unhealthy eating practices especially among female's students. Thus, health awareness programs, health promotion, and health screening are to be necessitated among female university students to alleviate the potential risk of unhealthy eating behaviors.

Keywords: Body mass index, body image perception, body shape dissatisfaction, young adults

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## 1.0 INTRODUCTION

Lifestyle pattern has changed tremendously since last decade's in both Western and Asian countries including Malaysia. The Malaysian people has

become more westernised in their eating habits as well as their outlooks especially the young generations. Thinness and slender body was introduced as ideal female Figure [1, 2], conversely, male are more concern on masculinity and

mesomorphic male physique [3]. This concern on body image had become a major issue as young adults are easily influenced by the mass media on ideal body image. [3, 4, 5]. The intense concern of body image would cause unfavorable outcomes such as anxiety, depression, low-self-esteem, and low-level of self-confidence. Thus, as more individual focuses on body image, the higher the chances to develop negative body image which eventually lead to body shape dissatisfaction (BSD).

Body image is a person's perception, attitude, and feeling about his or her body and how it is viewed by others [6, 7]. The perception of body image can either be positive or negative. Positive body image is manifested by realistic perception and acceptance toward person's size and shape [6]. Contrary, a person having negative body image is not having a realistic interpretation of their body size and shape. They are portrayed by shame, embarrassment, disappointment, or anxiety about their appearance [8].

The occurrence of BSD may either be affected by perceptual component which cause a person to overestimate their body parts or misperception in actual and ideal body image that lead to extreme concern on one's image [4]. Hence, a continuous desire among young adults for ideal body shape irrespective of their actual body size would eventually cause body shape dissatisfaction (BSD) [3].

The increment in body image concern leads to eating concern. This causes individuals to practice extreme and dangerous weight control behaviors such as fasting, taking laxatives or diet pills, skipping breakfast and meals, practicing restrictive diet, exercise abuse and smoking [4, 9]. Poor dieting cause individuals tend to become fatigue, less active and finally they are less sociable which lead to depression and poor quality of life [12]. These poor habits would eventually affect an individual physically, psychologically, socially and economically [10, 11].

Young populations in Malaysia are currently striving for ideal body image as reported by several studies [6, 7]. However, to our knowledge, there are still limited studies focusing on body image perception especially among young adults in Malaysian population in relation to BSD. Therefore, this study aims to explore relationship of BSD with body shape concern and body image perception among young adults who are studying in a university.

## 2.0 METHODOLOGY

### 2.1 Study Design

This study was a quantitative, cross-sectional study and it was conducted between September until November 2014 among undergraduate student at faculty of Health Sciences, UiTM Puncak Alam Campus, Selangor. The Faculty comprises of eight programs which includes Physiotherapy,

Occupational Therapy, Environmental Health and Safety, Medical Imaging, Nutrition and Dietetic Optometry, Medical Laboratory Technology, and Nursing.

### 2.2 Sampling Procedure

The study used convenience sampling method. The sample size was calculated based on Krejcie & Morgan (1970) table. A total of two hundred and forty two students were calculated based on the calculation which was a representative samples for a population of 650 students from 2<sup>nd</sup> and 3<sup>rd</sup> year. The study commenced upon approval by the faculty research ethic committee. Students were selected based on inclusion criteria set which includes young adults aged between 18 – 25 years old, full time registered degree male or female students, and who consented to participate the study. Students who are having chronic diseases and pregnant were excluded. Once the student agreed, he / she were provided with subject's information sheet and consent form which needs to be signed prior to participation in the study in the study. A set of self-administered questionnaires in a form of booklet were distributed to the students of respective program and the questionnaires were collected after a week. This procedure was continued until the target sample was recruited and enrolled (N =242).

### 2.3 Instrumentation

The questionnaires consisted of three parts which comprises section A, section B and section C. Section A consists of subjects' demographic data which includes age, gender, race, marital status ,self-reported body weight, height and body mass index (BMI).

Section B assessed the body image body image perception using the self-rating body silhouette by Stunkard *et al.*, [13]. In this study, the authors used an Asian version of self-rating body silhouette adapted from Nagasaki *et al.*, [14]. Based on the silhouette provided, the subjects were required to choose any pictures that represented their current and ideal body shape. Meanwhile, body dissatisfaction index was assessed by calculating the absolute difference between the ideal body image and current body image[7]. The magnitude of index of body dissatisfaction was valued from 0 to 6. Zero indicates satisfaction with current body shape, meanwhile negative indicates the desire to become thinner and finally positive indicates the desire to become heavier. The rating scale was valid with good test-retest reliability [3,13].The internal consistency is acceptable for the different sub-scales with Cronbach's alpha ranged from 0.68-0.85 [6]. The validity of the Asian version is supported by the good correlations between silhouette ratings and the BMI [14].

Section C is questionnaire on body shape (BSQ-16A). The original BSQ by Cooper *et al.* [15]

contained 34 items with excellent internal consistency of alpha Cronbach's coefficient values ranged from 0.93-0.97 [ 2, 15]. However, this study used a 16 item shortened forms of BSQ adopted from Cooper *et al.* [15], Evans & Dolan[16] and Kuan *et al.*[2]. Responses to the items were ranked using a 6-point Likert scale with each item is-scored "Never"= 1 and "Always"= 6. The response's score was generated by summation of all the 16 items. Thus, the overall score is the total across 16 items ranged from 16-96. Subjects who were more concerned about their weight and shape were expected to have higher BSQ scores [15].

## 2.4 Data Analysis

The data was analyzed using Statistical Program Package for Social Sciences (SPSS) software version 22.0. The subjects' demographic data were summarized using descriptive statistics and the data were reported as frequencies (n), percentages (%), mean (M), and standard deviation (SD). For hypothesis testing, cross tabulation tests were used. The significant level was set at  $p < 0.05$ .

## 3.0 RESULTS

### 3.1 Demographic Data

A total of 242 students participated in the study which comprised of 14 % (34) male and 86 % (208) female. The students were from 8 different programs. The mean age of the students were  $21.31 \pm 0.09$  years old. The majority of the students were Malay (97.1%) and the remains 2.9 % were from others ethnic group.

### 3.2 Anthropometric Measurement Between Genders

Anthropometric measurements of the students are shown in Table 1. The mean body weight of the male and female students were  $62.7 \pm 10.99$  kg and  $54.2 \pm 11.84$  kg, respectively, meanwhile the mean height of male and female students were  $1.7 \pm 0.05$  m and  $1.6 \pm 0.06$  m, respectively. Mean BMI of male was  $2.2 \pm 0.54$  kg/m<sup>2</sup> and female was  $2.1 \pm 0.71$  kg/m<sup>2</sup>. There was significant difference between male and female students with body weight and height ( $p < 0.05$ ).

**Table 1** Anthropometric characteristics between male and female students

Variables	Male (n=34)	Female (n=208)	P value
	Mean $\pm$ SD	Mean $\pm$ SD	
Body weight(kg)	62.7 $\pm$ 10.99	54.2 $\pm$ 11.84	0.000*
Height (m)	1.7 $\pm$ 0.05	1.6 $\pm$ 0.06	0.000*
BMI (kg/m <sup>2</sup> )	2.2 $\pm$ 0.54	2.1 $\pm$ 0.71	0.509

\*There are significant differences between male and females students ( $p < 0.05$ )

### 3.3 Body Weight Perception Among Gender

The relationship between body weight perception among gender are shown in Table 2. Majority were in normal category with 64.7% males and 61.1 % females. Meanwhile, within gender, 20.6 % males perceived greater body weight however 21.6 % females perceived themselves to be in thin category. No significant differences were found between genders on weight perception ( $p > 0.05$ ).

**Table 2** The relationship between body weight perception among gender

Body weight perception category	Male n (%)	Female n (%)	P value
Thin	5(14.7)	45(21.6)	0.632
Normal	22(64.7)	127(61.1)	
Fat	7(20.6)	36(17.3)	

### 3.4 Body Shape Perception Among Gender

Table 3 summarizes the relationship between body shape perception among gender. Both male and female perceived their body shape as ideal with 79.4% and 82.7% respectively. No significant association was found between genders on shape perception ( $p > 0.05$ ).

**Table 3** The relationship between body shape perception among gender

Body shape perception category	Male n (%)	Female n (%)	P value
Ideal	27(79.4)	172(82.7)	0.643
Non ideal	7(20.6)	36(17.3)	

### 3.5 Body Shape Concern Among Gender

The results of body shape concern among gender are tabulated in Table 4. Majority of the students pertained to no concern category with 67.6 % male and 45.7% females. However no significant association was found between gender on body shape concern ( $p > 0.05$ ).

**Table 4** The relationship between body shape concern among gender

Body shape concern	Male n (%)	Female n (%)	P value
No concern	23(67.6)	95(45.7)	0.082
Mild concern	7(20.6)	51(24.5)	
Moderate concern	3(8.8)	38(18.3)	
Marked concern	1(2.9)	24(11.5)	

### 3.6 Body Shape Dissatisfaction Index By Gender

The result showed in Table 5 showed BSD index between genders was not significant ( $p=0.151$ ). However, about 48.1 % female students showed desire to become thinner, meanwhile 44.1 % wish to become heavier.

**Table 5** The relationship Body Shape Dissatisfaction index by gender

BSD	Male n (%)	Female n (%)	P value
Desire thinner	11(32.4)	100(48.1)	0.151
Satisfactory	8(23.5)	48(23.1)	
Desire heavier	15(44.1)	60(28.8)	

### 3.7 Relationship between BSD and Body Shape Concern

The relationship between BSD and body shape concern showed there was a significant difference ( $p < 0.001$ ). This signifies that when the students were concerned about their body shape they were more dissatisfied with their figures.

## 4.0 DISCUSSION

The objective of this study was to examine the prevalence of body weight, height, BMI, weight perception, body shape perception, shape concern and BSD development between gender among undergraduates' students. This preliminary data obtained from this study reflect how the students perceived about their weight perception, body shape perception, shape concern and BSD development.

According to the BMI classification, most of the students (73.5% males and 58.7% females) were in the normal category followed by 17.6% males and 20.2% females as overweight. Meanwhile in the underweight category, 5.9% of them were males and 17.8% were females. In addition, for the obese categories 2.9% of them were males and 3.4% of them were females. The result for normal category was in line with the previous study findings by Kuan, Shuhaili, Siti & Gudum [2], Wong & Say [6] and Khairil Anuar Md & Masuri [10]. Meanwhile, there were a greater percentage of females (17.8%) in underweight category compared to males (5.9%) and similar result were reported by Kuan, Shuhaili, Siti & Gudum [2] and Wong & Say [6]. However, this study showed a higher number of females were recorded in the overweight and obese categories. This finding was contrary to earlier Malaysian study in which higher percentage of males in overweight and obese categories among undergraduates compared to females [2]. Hence, difference in the results obtained may be related to

the small sample size of male compared to female students.

On body weight perception within genders, majority perceived themselves as having normal weight category with 61.6 % (127) females and 64.7% (22) males. On further observation it was found that males were likely to perceive greater body weight (fat) with 20.6 % compared to females whom perceived themselves as thin with 21.6 %. This result can be related to the increasing idea on mesomorphic body type as ideal for males thus, causing them to idealize a lean and muscular body shape [17]. Conversely, females are commonly exposed to the traditional belief of slimness as sexually attractive. Thus, more women than men are under great pressure to lose weight [18]. There is a definite difference of body weight perception between males and females and this variation was well documented [19, 20]. However in this present study, there was no significant relation between weight perceptions with genders. This may be due to unevenly distributed number of genders in this study population.

Based on this study, there was no significant relationship between shape perception and genders. More females than males perceived their shape as ideal body shape with 82.7% and 79.4% respectively. Greater numbers of male were shown in the non-ideal category compared to female (20.6% males and 17.3% females). Meanwhile, within the genders, both males and females had greater concern on body image as they are keen to choose ideal body image as their ideal type. Several literatures suggest that body image perceptions and concerns are important for university students most probably because of the increasing popularity among peers in attaining or continuing a healthy weight and appearance. Thus, in order to be accepted in the popular groups, young male and female become highly concerned about maintaining an attractive and culturally acceptable body image [5, 21]. Males perceived themselves in relation to muscular firmness whereas females associate with thinness [6, 22, 23, 24].

There was no significant relationship between genders and body shape concern. Nevertheless females were more concern on body shape compared to males. The results shown that 11.5% of female students have marked concern with shape compared to males (2.9%) followed by moderate concern with shape (18.3% females and 8.8% males). In addition, 24.5% females and 20.6% males were categorized in mild concern with shape. The obtained result was similar with previous studies whereby males were less worried about their body shape concern compared to female [2,5,6]. Majority of females were extremely concern about their body shape and desire for a thinner body shape while males prefer larger, muscular, and leaner built appearance. Conclusively both male and females were concerned with their body shape but with different reasons such as to be healthy, to have good and variety physical appearance [6, 22, 25].

This study revealed no association between gender and BSD score. Female students were more dissatisfied with their body as 48.1% of them desired to become thinner compared to 32.4% of males. However 23.5% of males and 23.1% females were satisfied with their current body shape. The result showed that mostly males have desire to gain weight whereas females wish to lose weight. The occurrence of BSD may either be affected by perceptual component which cause a person to overestimate their body parts or misperception in actual and ideal body image that lead to extreme concern on one's image [4]. Hence, a continuous desire among young adults for ideal body shape irrespective of their actual body size would eventually cause body shape dissatisfaction (BSD) [3].

The body shape concern showed significant associations with BSD. There was increase in body shape concern and they express dissatisfaction with their figures. Body shape is closely related to body weight. Thus overweight and obese subjects were reported to have higher levels of negative body image than the normal and underweight subjects [22, 26, 27]. This was likely due to increase in level of concern towards body shape which causes fear of plumpness and pursuing slimness especially among females [28]. On the contrary, males are influenced by muscular culture that promoting bigger body built as ideal male body shape [26].

A greater number of female engaged in unhealthy weight control behaviors and currently there has been increase in number of male associated in such behaviors [22]. Males tend to perform excessive exercises with steroid and dietary supplements to build up their muscular body shape [29,30]. These problems arise mostly because of dysmorphia culture seen nowadays with perception of need for muscularity among males [31]. Nevertheless, poor dieting among females may cause a variety of symptoms including anxiety, constipation, irregular menses, and easily tired. On the other hand, the individuals tend to become less active which leads to poor health status. This finally could lead to low self-esteem and poor quality of life [12]. In this context, younger populations with overweight problems are at risks of getting diseases such as insulin resistance, metabolic syndrome, dyslipidemia, and type 2 diabetes mellitus [11].

## 5.0 CONCLUSION

The result of this study gives some insight of body image perception, body image concern with body shape dissatisfaction among a sample of young adults. It was found that male and female young adults were concerned with their body shape and perceived their body weight and shape differently. It is an area of concern whereby more female than male were dissatisfied with owns' body shape. Therefore, healthy body image and proper weight management

program should be highlighted especially among young females in order to alleviate the potential public health problem arises in relation to body shape dissatisfaction.

This study was limited to selected population , but, the finding could be utilize to explore further study on cultural influence on body image perception among different ethnic groups of Malaysian young adults. Finally, effort must be made to create awareness and promote understanding the right concept of body image among young adults in order to promote good quality of life for.

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## References

- [1] Costa, L. d. C. F., & Vasconcelos, F. d. A. G. d. 2010. Influence of Socioeconomic, Behavioral and Nutritional Factors in Body Image Dissatisfaction among Female University Students in Florianopolis, SC. *Revista Brasileira de Epidemiologia*. 13(4): 1-12.
- [2] Kuan, P. X., Ho, H. L., Shuhaili, M. S., Siti, A. A., & Gudum, H. R. 2011. Gender Differences in Body Mass Index, Body Weight Perception and Weight Loss Strategies among Undergraduates in Universiti Malaysia Sarawak. *Malaysian Journal of Nutrition*. 17(1): 67-75.
- [3] Cheung, Y. T., Lee, A. M., Ho, S. Y., Li, E. T., Lam, T. H., Fan, S. Y., & Yip, P. S. 2011. Who Wants A Slimmer Body? The Relationship between Body Weight Status, Education Level and Body Shape Dissatisfaction among Young Adults in Hong Kong. *BMC Public Health*. 11: 835. doi: 10.1186/1471-2458-11-835.
- [4] Schneider, S., Weiß, M., Thiel, A., Werner, A., Mayer, J., Hoffmann, H., Diehl, K. 2012. Body Dissatisfaction in Female Adolescents: Extent and Correlates. *European Journal of Pediatric*. 172: 373-384.
- [5] Yahia, N., El-Ghazale, H., Achkar, A., & Rizk, S. 2011. Dieting Practices and Body Image Perception among Lebanese University Students. *Asia Pacific Journal of Clinical Nutrition*. 20(1): 21-28.
- [6] Wong, L.-M., & Say, Y.-H. 2013. Gender Differences in Body Image Perception among Northern Malaysian Tertiary Students. *British Journal of Medicine & Medical Research*. 3(3): 727-747.
- [7] Yeng, P. P., & Sedek, R. 2012. The Body Weight Perception and Weight Control Behaviors among Undergraduate Students in National University of Malaysia (UKM). *Pakistan Journal of Nutrition* 11(12): 1131-1138.
- [8] Reynaga-Abiko, G. 2011. Body image in MZ stange In CK Oyster, & JE Sloan (eds). *Encyclopedia of women in today's world*. 1<sup>st</sup> edition. Thousand Oaks, CA: SAGE Publications, Inc. 171-5. Viewed 30 May 2015. doi: <http://dx.doi.org/10.4135/9781412995962.n91>.
- [9] Rash, P. 2004. Male Body Satisfaction, Physical Self-Concept and the Use of Nutritional Supplements, Anabolic Steroids, and Compulsive Exercise. *Dissertation Abstracts International: Section B: The Sciences and Engineering*. 65: 3139.
- [10] Khairil Anuar Md, I., & Masuri, M. G. 2011. The Association of Breakfast Consumption Habit, Snacking Behavior and Body Mass Index among University Students. *American Journal of Food and Nutrition*. 1(2): 55-60. doi: 10.5251/ajfn.2011.1.2.55.60.

- [11] Olaoye, O. R., & Oyetunde, O. O. 2012. Perception of Weight and Weight Management Practices among Students of a Tertiary Institution in South West Nigeria. *Journal of Applied Pharmaceutical Science*. 2(1): 81-84.
- [12] El Ansari, W., Labeeb, S., Moseley, L., Kotb, S., El-Houfy, A. 2013. Physical and Psychological Well-Being of University Students: Survey of Eleven Faculties in Egypt. *International Journal of Preventive Medicine*. Mar. 4(3): 293-310.
- [13] Stunkard, A. J., Sørensen, T., Schulsinger, F. 1983. Use of the Danish Adoption Register for the Study of Obesity and Thinness. *Research Publication Association Research in Nervous and Mental Disease*. 60: 115-20.
- [14] Nagasaki, K., Tamakoshi, K., Matsushita, K., Toyoshima, H., & Yatsuya, H. 2008. Development and Validity of the Japanese Version of Body Shape Silhouette: Relationship between Self-Rating Silhouette and Measured Body Mass Index. Nagoya. *Journal Medical Science*. 70: 89-96.
- [15] Cooper, P. J., Taylor, M. J., Cooper, Z., & Fairburn, C. G. 1987. The Development and Validation of the Body Shape Questionnaire. *International Journal of Eating Disorders*. 6: 485-494.
- [16] Evans, C. & Dolan, B. 1993. Body Shape Questionnaire: Derivation of Shortened Alternate Forms. *The International Journal of Eating Disorders*. Apr. 13(3): 315-21.
- [17] McCabe, M. P., & Ricciardelli, L. A. 2004. Body Image Dissatisfaction among Males across the Lifespan: A Review of Past Literature. *Journal of Psychosomatic Research*. 56: 675-685. doi: 10.1016/S0022-3999(03)00129-6.
- [18] Nichols, S. D., Dookeran, S. S., Ragbir, K. K., & Dalrymple, N. 2009. Body Image Perception and the Risk of Unhealthy Behaviors among University Students. *West Indian Medical Journal*. 58(5): 465-471.
- [19] Veggli, A. S., Lopes, C. S., Faerstein, E., & Sichieri, R. 2004. Body Mass Index, Body Weight Perception and Common Mental Disorders among University Employees in Rio de Janeiro. *Revista Brasileira de Psiquiatria*. 26(4): 242-247.
- [20] Yan, A. Y., Zhang, G., Wang, M. Q., & Stoesen, C. A., Harris B. M. 2009. Weight Perception and Weight Control Practice in a Multiethnic Sample of US Adolescents. *Southern Medical Journal*. 102(4): 354-360. doi:10.1097/SMJ.0b013e318198720b.
- [21] Hesse-Biber S, Marino M. 1991. From High School To College: Changes In Women's Self-Concept And Its Relationship To Eating Problems. *Journal of Phycology*. Mar. 125(2): 199-216.
- [22] Calzo, J. P., Sonnevile, K. R., Haines, J., Blood, E. A., Field, A. E., & Austin, S. B. 2012. The Development of Associations Among Body Mass Index, Body Dissatisfaction, and Weight and Shape Concern in Adolescent Boys and Girls. *Journal of Adolescent Health*. 51: 517-523. doi: 10.1016/j.jadohealth.2012.02.021.
- [23] Khor, G. L. Jr, Noor Safiza, M. N., Jamalludin, A. B., Jamaiyah, H., Geeta, A., Kee, C. C., Rahmah, R., Alan Wong, N. F., Suzana, S., Ahmad, A. Z., Ruzita, A. T & Ahmad, F. Y. 2009. Nutritional Status of Children below Five Years in Malaysia: Anthropometric Analyses from the Third National Health and Morbidity Survey III (NHMS, 2006). *Malaysian Journal of Nutrition*. Sep. 15(2): 121-36.
- [24] Zalilah. M. S., Anida, H. A., Merlin, A. 2003. Parental Perception of Children's Body Shapes. *Medical Journal Malaysia*. 58: 743-51.
- [25] Gillen, M. M., Lefkowitz, E. S. 2012. Gender and Racial Differences in Body Image Development among College Students. *Body Image*. 9: 126-30.
- [26] Watkins, J. A., Christie, C., & Chally, P. 2008. Relationship between Body Image and Body Mass Index in College Men. *Journal of American College Health*. 57(1): 95-99
- [27] Wardle, J., Waller, J., & Fox, E. 2002. Age of Onset and Body Dissatisfaction in Obesity. *Addictive Behaviors*. 27: 561-573.
- [28] Hayaki, J., Friedman, M. A., Brownell, K. D. 2002. Emotional Expression and Body Dissatisfaction. *The International Journal of Eating Disorders*. Jan. 31(1): 57-62.
- [29] Cain, A. S., Epler, A. J., Steinley, D., & Sher, K. J. 2012. Concerns Related to Eating, Weight, and Shape: Typologies and Transitions in Men during the College Years. *International Journal Eating Disorders*. 45: 768-775. doi: 10.1002/eat.20945.
- [30] Olivardia, R., Pope, H. G., Borowiecki, J. J., III, & Cohane, G. H. 2004. Biceps and body image: The Relationship between Muscularity and Self-Esteem, Depression, And Eating Disorder Symptoms. *Psychology of Men and Masculinity*. 5: 112-120.
- [31] Nowell, C., & Ricciardelli, L. A. 2008. Appearance-Based Comments, Body Dissatisfaction and Drive For Muscularity In Males. *Body Image*. 5: 337-345. doi: 10.1016/j.bodyim.2008.06.002.