ORIGINAL ARTICLE

Body Builders Profiling about Muscle Dysmorphic Traits, Orthorexia Nervosa and Social Anxiety

Mishal Fatima*, Eiman Binte Sarfraz

ABSTRACT

Objective: To assess the muscle dysmorphic traits, orthorexia nervosa and social anxiety among male body builders.

Study Design: A cross-sectional study.

Place and Duration of Study: The Study was carried out at Department of Clinical Psychology of Shifa Tameer-e-Millat University, Islamabad from May 2020 to December, 2020.

Materials and Methods: A sample of 320 male bodybuilders within age range of 15 to 25 years were included in the study from gym centers of Islamabad and Rawalpindi. A web- based questionnaire comprising of closed ended questions was used to obtain data about demographics, muscle dysmorphia, orthorexia nervosa and social anxiety. Data was analyzed on SPSS software 23 version.

Results: Our study found a significant relationship between muscle dysmorphia, orthorexia nervosa and social anxiety among male body builders. We found muscle dysmorphic predicts 1.9% in orthorexia nervosa and 0.6% variance in social anxiety.

Conclusion: Society sets the standards of beauty for male population and when these 't are not met, individuals start to perceive imagined or slight flaws in their physical appearance, body shape, muscularity and size. The present study examined muscle dysmorphia, orthorexia nervosa and social anxiety among male body-builders. This study found male body builders with the muscle dysmorphic traits engage in orthorexia nervosa and experience social anxiety.

Keywords: *Muscle Dysmorphia, Male Body-Builder, Orthorexia Nervosa, Social Anxiety.*

How to cite this: *Fatima M, Sarfraz EB. Body Builders Profiling about Muscle Dysmorphic Traits, Orthorexia Nervosa and Social Anxiety. Life and Science. 2022; 3(3): 115-119. doi: http://doi.org/10.37185/LnS.1.1.225*

Introduction

Society sets standards of beauty that have put men and women at war with their bodies. Nowadays the appearance of a skinny body for women and a considerably large muscular body for men is considered the norm. A large population of men and women are feeling the pressures to look a certain way and to achieve the perfect body.[1] People trying to meet these ideals of the perfect body by any means like starving their bodies and following strict nutrition regimens.[1] Males strive in developing muscle strength through the combination of strenuous exercises and restricted intake of food.[2] Social environment and lifestyles lead to conditions of orthorexia nervosa and muscle dysmorphia in males and has become a matter of concern for clinicians and researchers in recent decades.[3]

Muscle dysmorphia is a condition that in which men believe that they lack muscularity, body size, and shape.[4,5] Excessive concerns about muscularity and leanness inmales makes them vulnerable to develop muscle dysmorphic traits.[6] It is a sub-type of body dysmorphia and is also known as bigorexia, megarexia, or reverse anorexia. It is more prevalent in the male population as compared to female. Males with muscle dysmorphia traits are pre-occupied with beliefs that their body is too small, skinny, lack muscularity despite having a normal body.[7] They get involved in excessive repetitive behaviour in response to body concern that is rigid pattern of diet and rigorous exercise to enhance muscularity that is called orthorexia nervosa.[8,9]

Bratman introduced the term orthorexia nervosa to

Department of Clinical Psychology
Shifa Tameer-e-Millat University, Islamabad

Correspondence:
Ms. Mishal Fatima
Department of Clinical Psychology
Shifa Tameer-e-Millat University, Islamabad
E-mail: treasury.fatima@gmail.com

Funding Source: NIL; Conflict of Interest: NIL
Received: Aug 9, 2021; Revised: Mar 16, 2022
Accepted: Mar 25, 2022

define the restricted fixation on healthy eating that result in life-threatening medical conditions like malnutrition, disrupted social life and social isolation.[10] Muscle dysmorphic males with orthorexia nervosa are preoccupied about quality of food rather than on food quantity.[11] Dissatisfaction with the muscularity and anxiety about body shape and size may be associated with high levels of stress that may contribute to eating concerns and irregular eating.[12] Along with this concern young male adults with muscle dysmorphic traits experience social anxiety. Male body builders with this condition avoid the social interaction due to irrational concern about the about physical appearance and fear of rejection or negative evaluation[13] A recent study indicates that persistent fear of negative evaluation due to body appearance leads to the use of escape strategy to cope with this fear along with restricted pattern of diet.[14]

Rationale of Study

On literature review, firstly it was evident that there is a huge amount of work has been done on muscle dysmorphia, orthorexia nervosa and social anxiety separately or with other factors. But it was found that these three variables (muscle dysmorphia, orthorexia nervosa, and social anxiety) have been rarely studied together. Secondly, it was also evident that these variables were more studied on adult population and in students. In Pakistan, the study on adolescent's population and in combination of muscle dysmorphia, orthorexia nervosa and social anxiety has been overlooked. The rationale of the current study is to study the prevalence of muscle dysmorphia, orthorexia nervosa and social anxiety among male body builders in Pakistan.

Materials and Methods

The cross-sectional study was conducted from the May 2020 to December, 2020. A total of 320 young adult males, aged between 15-25 years, from gym centers of Rawalpindi and Islamabad were included in the study after the informed consent. The sample size was calculated with the help of Rao software. The margin of error was 5.06% and confidence interval was 95%. The study was conducted in the Department of Clinical Psychology at Shifa Tameer-e-Millat University, Islamabad. The purposive sampling technique was used to get the data from male young adults who were visiting the gym for at least three months. Permission was received from the authors of questionnaires which were used in the study. After getting approval from the Institutional Review Board, a demographics proforma and three self-rated questionnaires: Muscle Mass Obtainment Inventory (MMOI), ORTO-15 questionnaire and Social Anxiety Questionnaire-30 (SAQ-30) were administered to the participants. The demographic sheet provided the background information about gender, age, education, and duration of gym joining. MMOI was used to measure the muscle dysmorphic traits among male body builders. It consists of 85 items with 0.91 Cronbach alpha reliability. The ORTO-15 Questionnaire was used to measure the orthorexia nervosa tendency among male body builders (Donini, 2005). It consists of 15 items and 4-point Likert scale. SAQ-30 was used to assess social anxiety trait among male body builders (Caballo, Salazar, Irurtia & Arias, 2010). It consists of 30 items and a 5-point Likert scale. The gym authorities were approached for approval to obtain data from the members of gym. The participants were debriefed and confidentiality was ensured. Informed consent was taken from each participant.

Statistical Analysis

SPSS version 23.0 was used for purpose of data analysis. The descriptive statistics were calculated for demographic characteristics. Correlation statistical analysis was used to assess the relationship between the major variables of the study. Regression analysis was used to check the variance of muscle dysmorphia (MD) in orthorexia nervosa and social anxiety. For all the calculations, $p < 0.05$ was considered statistically significant.

Results

The current study aimed at identifying male body builders profiling about muscle dysmorphic traits, orthorexia nervosa and social anxiety. A total of 320 young adults male within age range of 15 to 24 years participated in the study. The frequency and percentage of participants between 15 to 20 years were 108, 33.8% and between 21 to 24 years were 212, 66.3%. The frequency and percentages of Intermediate level qualification were 92, 28.7%, for Bachelor 65, 20.3%, Masters 163, 50.9%. Table 1.

Pearson product correlation in Table 2 showed that muscle dysmorphia had a significant relation with orthorexia nervosa and social anxiety. Young male

Table 1: Socio-demographic characteristics of study participants (N = 320)

Demographic Variables	N	%
Gender		
Male	320	100
Qualification		
Intermediate	92	28.7
Bachelors	163	50.9
Masters	65	20.3
Age		
15-20	108	33.8
21-24	212	66.3

adults with excessive concerns about muscularity had a restricted pattern of healthy diet and experience the social anxiety. A significant positive relationship (p=.44) was found between muscle dysmorphia and orthorexia nervosa. A significant relationship was seen between muscle dysmorphia and social anxiety but correlation coefficient value suggested weak association.

Table 2: Pearson Product correlation of muscle dysmorphia, orthorexia nervosa and social anxiety

Variables	N	M	SD	1	2	3
1.MMOI	320	250.0	41.89	-		
2.ORTHO-15	320	39.02	5.056	.44**	-	
3.SAQ	320	76.49	21.20	.24**	.11*	-

Further we found that muscle dysmorphia played 1.9% variance (p=.000) in orthorexia nervosa and 0.6% variance (p=.000) in social anxiety. The findings in table 3 suggested that muscle dysmorphia predicts orthorexia nervosa among male body builders than social anxiety.

Table 3: Hierarchical Regression for muscle dysmorphia on orthorexia nervosa and social anxiety

Variables	B	S. E	T	P	CI (95%) [UL, LL]
Step 1					
Constant	25.68	1.53	16.69	.000	(22.65, 28.70)
ORTHO-15	.053	.006	8.79	.000	(.041, .065)
Step 2					
Constant	45.20	6.97	6.484	.000	(31.84, 58.91)
SAQ	.125	.028	4.551	.000	(.071, .179)

Note = B = unstandardized beta; S.E = standard error; p = Significance level; CI = confidence interval; UL = upper limit; LL = lower limit; SAQ = Social anxiety questionnaire

Muscle dysmorphia traits, orthorexia nervosa and social anxiety was higher among those less than 20 years old as compared to those above 20 years old. T-test was used to compare the means of two groups that includes the age category. On MMOI and ORTHO-15 the male participants who were above age 20 years have slightly higher score ratio (MMOI: M = 256.5, SD = 44.42 & ORTHO-15: M = 39.48, SD = 4.861) as compared to those male participants who were below age 20 years. On social anxiety questionnaire the male participants who were below 20 years have slightly higher score ratio (M = 77.30, SD = 19.52) as compared to those male participants who were above 20 years (M = 76.08, SD = 22.04). Table 4.

Table 4: Mean Differences for manifestation of muscle dysmorphia, orthorexia nervosa and social anxiety among male bodybuilders (N = 320)

	Below age 20years (n = 108)		Above age 20years (n = 212)				
Variables	M	SD	M	SD	P	t	Cohen's d
MMOI	237.1	32.99	256.5	44.42	.000	4.02	0.49
ORTHO-15	38.12	5.326	39.48	4.861	.023	2.28	0.266
SAQ	77.30	19.52	76.08	22.04	.626	.488	0.021

Note: *n = Total Number of Participants; M = Mean; SD = Standard deviation; p = Significance level i.e. <0.05; CI = Confidence interval; UL = Upper limit; LL = Lower limit; MMOI = Muscle mass obtainment inventory; SAQ = Social anxiety questionnaire*

One-way ANOVA was used to compare the means of male participants across the age groups. The result indicated that muscle dysmorphic and orthorexia nervosa traits are significantly higher among male bodybuilders who have age above 20 years (p<0.005).

Discussion

The study helped to identify muscle dysmorphic traits, orthorexia nervosa and social anxiety among male bodybuilders. The age was split into two different categories 15-20 and 21-24 years of male bodybuilders. Demographic details of participants showed higher frequency of males within the age range of 21-24 (66.3%). Across qualification, participants with bachelor degree have high percentage (50.9%) our findings suggest significant positive relationship between muscle dysmorphia, orthorexia nervosa and social anxiety in male population which explains that male young adults with muscle dysmorphia traits are vulnerable to engage in orthorexia nervosa and also experience

social anxiety. It correlates with existing literature that if a person experiences muscle dysmorphia, then there are chances to engage in restricted pattern of diet for development of muscular body.[15]

Further findings proved muscle dysmorphia as a predictor of social anxiety in muscle dysmorphic male body builders. These findings suggest that excessive concern or fear about real or imagined defects in physical appearance, lack of a muscular body hinder the male body builders to move into social situations because they imagine it would predispose them to social rejection or negative evaluation. Previous studies support the findings that muscle dysmorphia predicts anxiety in male body builders when they attend social gatherings.[15]

In this study muscle dysmorphia and orthorexia nervosa were found at a greater frequency in male body builders above 20 years of age whereas social anxiety is higher among male bodybuilders with less than 20 years of age. This is most likely as male body builders above 20 years of age step into young adulthood which is a period of immaturity and they are unable to cope with muscle dysmorphic traits.[16,17] But male below 20 years express their fear by avoiding social situations.[18]

The limitation of the study is the BMI wasn't calculated because the participants were uncomfortable and unwilling. Secondly, the criteria hadn't set to include the body builders in study because participants were not professional body builders we include those body builders who were building muscles to improve the size of body and muscularity. The data was collected online due to pandemic of COVID-19. Thirdly, this study was total about male so it couldn't explain the manifestation of the variable of this study in female community.

Male body builders were recruited from the private and Government gym, due to convenience of collecting data and limited time frame of the research study. If the participants were taken from community, then it would increase the generalizability of the research study. Future researchers should focus on other factors that may play role in development of muscle dysmorphic in male young adults as literature suggested that society standards about beauty can cause irrational concerns about the physical appearance, muscularity and body shape in young adult males.[19]

The questionnaire was in English language that might affect the significance of results so, in future Urdu version of questionnaire should be used. Longitudinal study can be conducted for the deep understanding of studied phenomenon.

The findings of the study revealed the manifestation of muscle dysmorphic that make male bodybuilders vulnerable to orthorexia nervosa and social anxiety. So mental health policy makers should also consider the need of awareness programs at community level for male young adults. In clinical practices, mental health practitioners should consider orthorexia nervosa and muscle dysmorphic while dealing male young adults with social anxiety.

Conclusion

The present study showed that young body builders with muscle dysmorphia traits experience the desire to engage in restrict healthy diet for maintenance of muscularity and avoid the social gatherings due to the fear of rejection or evaluation due to irrational body concerns. The research study shows that muscle dysmorphia predisposes young adults to engage in orthorexia nervosa and experience social anxiety. The findings depicted that prevalence of muscle dysmorphia and orthorexia nervosa is greater in males above 20 years.

REFERENCES

1. Cash TF, Smolak L. Understanding Body Images: Historical and Contemporary Perspectives. In: Cash TF, Smolak L, editors. Guilford Press, New York. 2011. p. 3–11.
2. Oh TW, Okubo S, Tanaka S, Naka T. Patterns of nutrient intake among male and female high school-aged cross-country skiers and speed skaters. Food Nutr Sci. 2018; 9: 119–35.
3. Bégin C, Turcotte O, Rodrigue C. Psychosocial factors underlying symptoms of muscle dysmorphia in a non-clinical sample of men. Psychiatry Res. 2019; 272: 319–25.
4. Tod D, Edwards C, Cranswick I. Muscle dysmorphia: current insights. Psychol Res Behav Manag. 2016; 9: 179–88.
5. Tod D, Lavallee D. Towards a conceptual understanding of muscle dysmorphia development and sustainment. Int Rev Sport Exerc Psychol. 2010; 3: 111–31.
6. Dunn TM, Bratman S. On orthorexia nervosa: A review of the literature and proposed diagnostic criteria. Eat Behav. 2016; 21: 11–7.
7. Varga M, Thege BK, Dukay-Szabó S, Túry F, van Furth EF. When eating healthy is not healthy: orthorexia nervosa and its measurement with the ORTO-15 in Hungary. BMC Psychiatry [Internet]. 2014; 14: 1-1.
8. Harris DL, Carr AT. Prevalence of concern about physical appearance in the general population. Br J Plast Surg. 2001;

54: 223–6.
9. R KM, D JDZ. Fear of Negative Evaluation and Social Anxiety in the Context of the Revised Reinforcement Sensitivity Theory. School of Psychological and Clinical Sciences. 2017; 616: 441.
10. Cerea S, Bottesi G, Pacelli QF, Paoli A, Ghisi M. Muscle dysmorphia and its associated psychological features in three groups of recreational athletes. Sci Rep [Internet]. 2018.
11. Gorrasi ISR, Bonetta S, Roppolo M, Abbate Daga G, Bo S, Tagliabue A, et al. Traits of orthorexia nervosa and muscle dysmorphia in Italian university students: a multicentre study. Eat Weight Disord. 2020; 25: 1413–23.
12. Bo S, Musso G, Beccuti G, Fadda M, Fedele D, Gambino R, et al. Consuming more of daily caloric intake at dinner predisposes to obesity. A 6-year population-based prospective cohort study. PLoS One. 2014; 9: e108467.
13. Fredrikson M, Annas P, Fischer H, Wik G. Gender and age differences in the prevalence of specific fears and phobias. Behav Res Ther. 1996; 34: 33–9.
14. Kristina MR, Jelena DZ. Fear of Negative Evaluation and Social Anxiety in the Context of the Revised Reinforcement Sensitivity Theory. School of Psychological and Clinical Sciences, Australia. 2017; 616: 239-259.
15. Bo S, Musso G, Beccuti G, Fadda M, Fedele D, Gambino R, et al. Consuming more of daily caloric intake at dinner predisposes to obesity. A 6-year population-based prospective cohort study. PloS One. 201; 9: e108467.
16. Cerea S, Bottesi G, Pacelli QF, Paoli A, Ghisi M. Muscle dysmorphia and its associated psychological features in three groups of recreational athletes. Scientific Reports. 2018; 8: 1-8.
17. Fredrikson M, Annas P, Fischer H, Wik G. Gender and age differences in the prevalence of specific fears and phobias. Behaviour Research and Therapy. 1996; 34: 33–9.
18. Gorrasi ISR, Bonetta S, Roppolo M, Abbate Daga G, Bo S, Tagliabue A, et al. Traits of orthorexia nervosa and muscle dysmorphia in Italian university students: a multicentre study. Eating and Weight Disorders: EWD. 2020; 25: 1413–23.
19. Downing R, Cooper M. Cala M, Gin E, Brownell E. Fear of Negative Evaluation and Social Anxiety in the Context of the Revised Reinforcement Sensitivity Theory. Life Sciences Education. 2020.