

Students' awareness of and attitudes towards eating disorders: preliminary study

Kamila Czepczor, Katarzyna Kościcka, Anna Brytek-Matera

Summary

Aims: The aim was twofold: to evaluate eating attitudes, behaviours and knowledge about eating disorders in young women and men, and to assess the relationship between measurable variables in both groups.

Method: The research sample consisted of 34 females and 32 males aged 19–21. The Eating Disorders Examination Questionnaire and the Eating Disorders Awareness Test were distributed to all participants.

Results: Female undergraduate students were more concerned about their weight and body shape than male undergraduate students. Their knowledge of issues relevant to eating disorders was higher than in males, and the difference between the two groups was significant. Of all participants, 52.9% of females and 18.75% of males declared an interest in eating disorders. Both women (72.2%) and men (50%) most often derived their knowledge about anorexia and bulimia nervosa from science press books and publications. Moderate positive correlations between food avoidance and body shape and weight concerns were found in both groups. In addition, in females restraint was related to eating concern.

Conclusions: Since weight and body shape concerns are considered integral to the psychopathology of eating disorders, prevention of eating-related attitudes and behaviours in young adults particularly females, is important.

eating attitude/eating behaviours/eating disorders awareness

INTRODUCTION

The prevalence of eating disorders has increased over the past decades. Eating disorders occur in approximately 9% of the general population (males and females of all ages) [1]. The incidence of anorexia nervosa in the Western populations ranges from 0.3 to 2.2% in females [2–4] and from 0.16 to 0.3% in males [5,6]. The ra-

tio of men to women is approximately 1:9 or 1:10 [7,8]. In Poland, anorexia nervosa among adolescents ranged between 0.8 and 1.8% [9]. Regarding bulimia, this serious mental illness is diagnosed in approximately 0.34–1.5% of women and in 0–0.7% of men [5,10]. In both anorexia and bulimia nervosa men account for 10% of all clinical cases [1].

Following a rise in the number of patients suffering from an eating disorder there has been an increase in the interest in population awareness about these disorders [11], and this has been shown to be unsatisfactory [12]. The participants in our study recognized anorexia and bulimia nervosa, and the majority (83%) referred

Kamila Czepczor¹, Katarzyna Kościcka¹, Anna Brytek-Matera²:
¹Psychology student, University of Social Sciences and Humanities, Katowice, Poland; ²University of Social Sciences and Humanities, Katowice, Poland

Correspondence address: abrytek-matera@swps.edu.pl

to the former as a dangerous and even terminal illness, but problems appeared when they were asked to identify risk factors for eating disorders. Only 11% of respondents agreed with the statement that weight loss was indeed a risk factor, and only 9% 'strongly agreed' that people suffering from an eating disorder had a distorted perception of their own body.

Research has shown that there are significant gender differences not only in terms of awareness about eating disorders, but also in the level of interest in eating disorders, body shape concerns and weight concerns [12-15].

Polish adolescents learn about eating disorders mainly from the media, and less so from school and parents [14]. The same study showed that adolescents know that these disorders occur more frequently in the female population and recognize the role that environment plays in the formation of disease predisposition. They also possessed extensive knowledge about the symptoms, complications and treatment of anorexia nervosa [14].

American research [16] indicated that students have more general (e.g. dominant behaviour patterns) than specific (e.g. concrete physiological consequences) information about the symptoms, consequences, causes, duration and treatment of anorexia and bulimia and that their knowledge is not as structured as that of their younger peers. On the other hand, research involving a group of 99 girls of middle school age showed that a significant number are aware of anorexia, but argue that it does not affect them [17].

For years, the cult of youth and thinness promoted by the media equalled these external characteristics with well-being and self-esteem. Fischler [18] believes that our society is becoming "lipophobic": women desire to have a young and slim body deprived of the excess of adipose tissue. Sociologists call this phenomenon the cult of the body, where a slim figure becomes an unusually desirable object. The media plays a significant part in promoting this body image and thus it significantly affects the consciousness of contemporary youth. Poland has approximately 15 million users of online networks [19]. With the Internet being the main source of information for adolescents, the fact that there are over 4 million pages of pro-ana (pro-anorexia) websites is alarming [19].

The National Eating Disorders Association [20] reports that people, especially students, need programmes and websites that would educate about eating disorders. It shows that it is relationship between knowledge of it and behaviour connected with. And also their knowledge is increased about eating disorders and body image, as well.

As there is scant research about the knowledge on eating disorders among adolescents, we focused on an examination of the differences between female and male students in terms of awareness of and interest in eating disorders, as well as behaviours associated with eating disorder pathology. Our aim was first to evaluate eating disorder attitudes and behaviours as well as knowledge about eating disorders in young adult women and men, and second, to assess the relationship between measurable variables in both groups. The following hypotheses were proposed:

H1: female students present more attitudinal and behavioural features of eating disorder psychopathology in comparison with male students

H2: female students' knowledge of issues relevant to eating disorders will be greater than male students'

H3: knowledge about eating disorder psychopathology is negatively associated with attitudes and behaviours related to eating disorders

METHOD

Participants

In the first phase, participants were randomly selected from among undergraduate psychology students (from Silesia, Poland) ($N = 124$). Students enrolled in the first study cycle were recruited via a 10-minute oral presentation regarding the study delivered at break time in different locations of the university campus. The second phase was based on intentional selection. In total, 124 undergraduate students were screened for the absence of eating disorders (individuals suffering from anorexia nervosa and bulimia nervosa, according to the DSM-5 criteria [21], were excluded) and weight status – students with a body mass index (BMI) $> 25 \text{ kg/m}^2$ were considered overweight (accord-

ing to the World Health Organization's classification) [22] and excluded from the study. We identified 5 young women with eating disorders (anorexia or bulimia nervosa) diagnosed through psychiatric assessment, 8 young women and men with BMI > 25 kg/m², 4 students aged 18 and 41 aged more than 21, and these were all excluded.

The final sample who met the inclusion criteria comprised 34 females and 32 males aged 19–21. The average age of females was 20.15 years (*SD* = 1.72) and of males 20.92 years (*SD* = 2.38), and the average BMI of females was 21.27 kg/m² (*SD* = 2.54) and of males 24.32 kg/m² (*SD* = 3.17).

Participation in the study was voluntary and informed consent was obtained. The study was approved by the local ethics committee.

Materials

The Eating Disorders Examination Questionnaire [23] and the Eating Disorders Awareness Test [24] were distributed to all participants.

The Eating Disorder Examination Questionnaire (EDE-Q)

The EDE-Q [23] is a 28-item self-report version of the Eating Disorder Examination (EDE) [25]. The EDE-Q is a widely used self-report instrument to assess core attitudinal features of eating disorders psychopathology. It assesses four eating-disorder related aspects over the previous 28 days: (a) dietary restraint (e.g. 'On how many of the past 28 days have you tried to exclude from your diet any foods that you like in order to influence your shape or weight (whether or not you have succeeded)?'); (b) shape concerns ('Over the past 28 days has your shape influenced how you think about (judge) yourself as a person?'); (c) weight concerns ('Over the past 28 days how dissatisfied were you with your weight?'); and (d) eating concerns (e.g. 'On how many of the past 28 days have you had a definite fear of losing control over eating?').

EDE-Q subscale items are rated on a 7-point Likert scale, with higher scores indicating greater severity of eating disorder psychopathology. The EDE-Q is used in community and clinical

populations. It also contains three questions: 'What is your weight at present?', 'How tall are you?' and, in females, 'Over the past 3–4 months have you missed any periods?'

The Cronbach's alpha obtained for the current study was 0.963 for the global EDE-Q, 0.776 for dietary restraint, 0.898 for eating concern, 0.924 for shape concern and 0.926 for weight concern.

The Eating Disorders Awareness Test (EDAT)

The EDAT [24] assesses awareness of the risks and maintaining factors of eating disorders. It consists of 51 statements (e.g. 'Bulimia only affects women', 'For the average person weight loss slows down when dieting because the body gets used to less food') with three possible answers: 'true', 'false' and 'unsure'. Each item is given a score of 1 point for the correct answer, and both incorrect and 'unsure' answers score 0 points.

Statistical analysis

The statistical analysis, which focused on eating disorder attitudes and behaviours and knowledge about eating disorders, was performed by SPSS version 19.0 for Windows. The Student's *t*-test for independent samples was used to determine whether female adolescents and male adolescents had significantly different scores on the measured variables. The Pearson's correlation coefficient was used to investigate the relationship between measurable variables in both groups.

RESULTS

Descriptive statistics

There was a significant effect for weight concern ($t(44) = 2.27, p < 0.05$) and shape concern ($t(44) = 2.32, p < 0.05$), with women scoring higher than men. Results were also significant for eating disorders awareness ($t(44) = 4.17, p < 0.001$), and indicated that young females' knowledge of issues relevant to eating disorders was higher than young males' (Table 1).

Table 1. Means and standard deviations for measured variables in females and males

Measure	Female students	Male students	p
	M ± SD	M ± SD	
EDE-Q			
Restrain	.85 ± 1.17	.52 ± .66	.337
Eating concern	.68 ± 1.34	.28 ± .58	.291
Weight concern	2.07 ± 1.73	.94 ± .99	.025
Shape concern	1.73 ± 1.66	.65 ± .75	.028
EDAT	31.92 ± 5.44	24.71 ± 6.57	.000

Note: EDE-Q – the Eating Disorder Examination Questionnaire, EDAT – the Eating Disorders Awareness Test. Significances are shown in bold.

Overall, 52.9% of female participants and 18.75% of male participants declared an interest in eating disorders. Most women (72.2%) and 50% of men derived their knowledge about anorexia and bulimia nervosa from science press books and publications, and 27.3% of women and 50% of men additionally used

the media, particularly the Internet and television.

Correlation coefficients

Correlations between the study variables are presented in Table 2 and Table 3.

Table 2. Correlations between the study variables among female students

	Eating concern	Shape concern	Weight concern	Knowledge about eating disorders
Restraint	0.668***	0.592***	0.658***	0.095
Eating concern		0.740***	0.766***	0.141
Shape concern			0.951***	0.240
Weight concern				0.062

*** p < 0.001

Positive correlations between restraint, shape concern and weight concern as well as between shape concern and weight concern

were found in both groups. In addition, in female students restraint was related to eating concern (Table 2).

Table 3. Correlations between the study variables among male students

	Eating concern	Shape concern	Weight concern	Knowledge about eating disorders
Restraint	0.528	0.601*	0.752**	0.254
Eating concern		0.093	0.214	0.073
Shape concern			0.939***	-0.046
Weight concern				-0.049

* p < 0.05 ** p < 0.01 *** p < 0.001

DISCUSSION

Our results partially confirmed the first hypothesis that young females presented more at-

titudinal and behavioural features of eating disorder psychopathology than young males. Females showed greater dissatisfaction with their current weight and greater need to achieve dif-

ferent body weight (particularly, lose weight) than males. They also showed greater dissatisfaction with their body shape and body exposure in public than males. Our results are consistent with a study by Sepulveda et al. [26], reporting that female students more often focused on unhealthy weight-control behaviours such as dieting, use of laxatives or self-induced vomiting to lose weight in comparison with male students. The authors found a high prevalence of university students at high risk of developing an eating disorder. Chwałczyńska & Bembenek [17] reported that females also spent more time focusing on their appearance (50% of women spent 4-5 hours on this every day) than males. Comparing men and women with a low or high level of shape and weight concern showed that, overall, women had a higher level of responsiveness of body control than men and bore more negative costs, in the form of mood deterioration and reduced self-esteem and body satisfaction, to their body exposure in the mirror [27].

In addition, research conducted among athletes [28] showed that women scored higher on the EDE-Q questionnaire regardless of the degree of involvement in their sporting career and the performed sport. An important factor contributing to the emergence of eating disorders symptoms is being a career athlete. This is particularly important in sports where the balance must be maintained at a constant predetermined level, such as boxing, judo, wrestling, gymnastics [29,30].

Another study looking at body shape and weight concerns, by Nergiz-Unal et al. [31], compared students of social sciences, physical education and nutrition. Physical education students achieved the highest scores in the test measuring posture habits (the Eating Attitudes Test – EAT-40), regardless of gender, and on the questionnaire measuring body focus (the Body Shape Questionnaire – BSQ-34).

Regarding the main source of information on eating disorders, in our study both participant groups pointed to science press books and publications (72.2% of females and 50% of males). However, most studies indicated that the respondents mainly obtained their knowledge from the Internet and the mass media [14,15]. Unfortunately, the reliability of this information is uncertain, because the credibility of websites is often unsatisfactory. This may have a negative

influence on the formation of stereotypes associated with eating disorders [13]. In a study by Godala et al. [12] women more often pointed to the media and the information gained during the study as the source of their knowledge about eating disorders, whereas men relied on the opinion of doctors, friends, family and professional literature. In our study, 27.3% of women and 50% of men used the Internet and television as secondary sources of information on eating disorders.

The second hypothesis of our study was confirmed: female students were more knowledgeable about issues relevant to eating disorder pathology, and this was also a topic that interested them more than male students (52.9% of female students vs. 18.75% of male students). Previous research [12,17,32] showed that women tended to be better acquainted with the subject of eating disorders, they could define the illnesses more often, precisely mark their risk factors, and they were better able to conceptualize the clinical picture of eating disorders than were men. Moreover, women more often than men were aware of the changing perception of body shape and weight in persons suffering from eating disorders. Women were also more aware of mortality associated with anorexia nervosa.

However, the level of awareness about eating disorders is not enough. In the study by Godala et al. [12] 90% of interviewees declared they knew the concept of anorexia nervosa, but verification in later research showed that only 17% of them had appropriate knowledge of this disorder. In addition, participants were more aware of anorexia nervosa than bulimia nervosa and other eating diseases. This was also confirmed in another study [13], in which 99% of females and 99% of males had heard about anorexia nervosa, but only 70% of women and 16% of men had heard about bulimia nervosa.

In a Brazilian study [33] conducted in a clinical group (17 men: 10 with bulimia nervosa and 7 with anorexia nervosa and 50 women: 20 with bulimia and 30 with anorexia) that compared the accuracy of nutritional knowledge, eating attitudes and chronic dietary restraint, there were no significant differences in nutritional knowledge. However, men showed better posture habits than women regardless of the diagnosis.

Our third hypothesis was not confirmed – we did not find any significant correlation between

knowledge about eating disorder psychopathology and attitudes and behaviours related with eating disorders. However, our results indicated that in both female and male students behaviours related to the avoidance of food and the rules followed in diets and feeding were more likely to focus on shape and weight concerns. In addition, we found a relationship between shape concern and weight concern in both groups. We may assume that female and male students who presented more restrained eating behaviours exhibited more eating disorders features related to shape and weight concerns. Some studies [12,14,15] showed that eating restriction was associated with an eating concern in both sexes but men were more likely than women to admit to dieting, calculating the calories of meals and trying to lose weight, whereas another study [26] indicated that women were more likely than men to show concern about weight and to slim by using low-calorie diets, laxatives or emetics.

As Sepulveda et al. [26] emphasize, there are several studies of college populations that estimate the at-risk prevalence for eating disorders to be between 7.3 and 18% in females and 0.9 and 3% in males (however, the overall average is around 11%). Eating disorders are dangerous mental illnesses that occur in both female and male populations. Since weight and shape concerns are considered to be integral to the psychopathology of eating disorders, it is definitely worth paying attention to the prevention of high-risk eating-related attitudes and behaviours as well as health promotion initiatives addressing weight – and appearance-related issues in young people and also in children¹. A study shows that eating disorders are increasingly being diagnosed in children [34] – anorexia ner-

vosa occurs already in 7-year-olds [35]. Moreover, it should also be considered whether knowledge about eating disorders appreciably reduces dieting (and other measures restricting food intake) or whether it has no influence on eating attitudes and behaviours.

REFERENCES

1. Weltzin TE, Weisensel N, Franczyk D, Burnett K, Klitz C, Bean P. Eating disorders in men. Update. *J Mens Health Gen.* 2005; 2(2): 186–193.
2. Hoek HW, van Hoeken D. Review of the prevalence and incidence of eating disorders. *Int J Eat Disord.* 2003; 34(4): 383–396.
3. Favaro A, Ferrara S, Santonastaso P. The spectrum of eating disorders in young women: a prevalence study in a general population sample. *Psychosom Med.* 2004; 65(4): 701–708.
4. Keski-Rahkonen A, Hoek HW, Susser ES, Linna MS, Sihvola E, Raevuori A, et al. Epidemiology and course of anorexia nervosa in the community. *Am J Psychiatry.* 2007; 164(8): 1259–1265.
5. Ricciardelli L, McCabe M. A biopsychosocial model of disordered eating and the pursuit of muscularity in adolescent boys. *Psychol Bull.* 2004; 130(2): 179–205.
6. Hudson JI, Hiripi E, Pope HGJ, Kessler RC. The prevalence and correlates of eating disorders in the National Comorbidity Survey Replication. *Biol Psychiatry* 2007; 61(3): 348–358.
7. Williamson DA, Martin CK, Stewart T. Psychological aspects of eating disorders. *Best Pract Res Clin Gastroenterol.* 2004; 18(6): 1073–1088.
8. Keel PK, McCormick L. Diagnosis, assessment, and treatment planning for anorexia nervosa. In: Grilo CM, Mitchell JE, editors. *The Treatment of Eating Disorders: A Clinical Handbook.* New York: The Guildford Press; 2010. Pp. 3–27.
9. Namysłowska I. Gdy cierpi ciało i choruje dusza. *Charaktery* 1997; 10: 12-17.
10. Bąk D. Eating disorders in men. *Psychiatr Pol.* 2008; 42(2): 167–178.
11. White S, Reynolds-Malear J, Cordero E. Disordered eating and the use of unhealthy weight control methods in college students: 1995, 2002 and 2008. *Eating Disord.* 2011; 19(4): 323–34.
12. Godala M, Karasińska E, Trafalska E, Kolmaga A, Szatko F. Knowledge of nutrition disorders among students of the Medical University of Lodz. *Probl Hig Epidemiol.* 2012; 93(1): 80–85.
13. Murray S, Touyz S, Beumont P. Knowledge about eating disorders in the community. *Int J Eat Disord.* 1998; 9(1): 87–93.
14. Ziara K, Pilarz Ł, Sztylc J, Oświęcimska J. Assessment of knowledge on anorexia nervosa in adolescents. *Endokrynol Otył Zab Przem Mat.* 2009; 5(1): 12–18.

¹ According to the National Eating Disorders Collaboration [20], prevention of eating disorders (particularly in the range of reducing risk and enhancing protective factors) is achievable. The primary prevention strategies should aim at the whole community, groups known to be at higher risk or those at very high risk who may be showing early signs of mental ill health. Secondary prevention strategies should be used to lower the severity and duration of illness through early intervention, including early detection and early treatment. Tertiary intervention strategies should be used to reduce the impact of mental ill health on a person's life through approaches such as rehabilitation and relapse prevention.

15. Myszkowska-Rygiak J, Leśniak W, Harton A, Gajewska D, Bawa S. The level of knowledge of the specific eating disorders in selected population groups. *Bromatol Chem Toksyk.* 2012; 45(3): 827–832.
16. Hunt JS, Rothman AJ. College students' mental models for recognizing anorexia and bulimia nervosa. *Appetite.* 2007; 48(3): 289–300.
17. Chwałczyńska A, Bemberek A. Staff awareness among younger girls on anorexia nervosa. *Endokrynol Otyl Zab Przem Mat.* 2010; 6(3): 118–123.
18. Fischler C, L'Honnivore: Le goût, la cuisine et le corps. Paris: Odile Jacob; 1990.
19. Stochel M, Janas-Kozik M. Friends of virtual Ana – the phenomenon of pro-anorexia in the Internet. *Psychiatr Pol.* 2010; 44(5): 693–702.
20. National Eating Disorders Collaboration (2012) An Integrated Response to Complexity. National Eating Disorders Framework. Available from: <http://www.nedc.com.au/resource/144/an-integrated-response-to-complexity-national-eating-disorders-framework-2012?page=17>.
21. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders (5th ed.). Arlington, VA: American Psychiatric Publishing; 2013.
22. World Health Organization. Obesity: Preventing and Managing the Global Epidemic [report of a WHO Consultation on Obesity]. Geneva: WHO; 1997.
23. Fairburn CG, Beglin SJ. The assessment of eating disorders: interview or self-report questionnaire? *Int J Eat Disord.* 1994; 16(4): 363–370.
24. Schmidt U, Ali S, Slone G, Tiller J, Treasure J. The Eating Disorders Awareness Test: a new instrument for the assessment of the effectiveness of psychoeducational approaches to the treatment of eating disorders. *Eur Eat Disord Rev.* 1995; 3(2): 103–110.
25. Fairburn CG, Cooper Z. The Eating Disorder Examination (twelfth edition). In: Fairburn CG, Wilson GT, editors. *Binge Eating: Nature, Assessment and Treatment*. New York: Guilford Press, 1993. Pp. 317–360.
26. Sepulveda AR, Carrobbles JA, Gandarillas AM. Gender, school and academic year differences among Spanish university students at high-risk for developing an eating disorder: An epidemiologic study. *BMC Public Health.* 2008; 8: 102.
27. Walker DC. An experimental manipulation of body checking and mirror exposure over time in men and women with high shape or weight concern. Dissertation. State University of New York At Albany; 2013.
28. Darcy AM, Hardy KK, Lock J, Hill KB, Peebles R. The Eating Disorder Examination Questionnaire (EDE-Q) among university men and women at different levels of athleticism. *Eat Behav.* 2013; 14(3): 378–381.
29. Byrne S, McLean N. Elite athletes: effects of the pressure to be thin. *J Sports Sci & Med.* 2002; 5: 80–94.
30. Johnson C, Powers PS, Dick R. Athletes and eating disorders: the National Collegiate Athletic Association study. *Int J Eat Disord.* 1999; 26(2): 179–188.
31. Nergiz-Unal R, Bilgic P, Yabanci N. High tendency to the substantial concern on body shape and eating disorders risk of the students majoring Nutrition or Sport Sciences. *Nutr Reser Pract* 2014; 8(6): 713–718.
32. Ziara K, Oświęcimska J, Kwiecień J, Franciszek W, Gorczyca P, Dyduch A. Anorexia nervosa in males – an underestimated clinical problem. *Ped Pol.* 2006; 81(4): 287–292.
33. Scagliusi FB, Nakagawa KA, Campos RA, Kotait M, Fabbri A, Sato P, et al. Nutritional knowledge, eating attitudes and chronic dietary restraint among men with eating disorders. *Appetite.* 2009; 53(3): 446–449.
34. Nicholls DE, Lynn R, Viner RM. Childhood eating disorders: British national surveillance study. *Br J Psychiatry.* 2011; 198(4): 295–301.
35. Nicholls DE, Bryant-Waugh R. Eating disorders of infancy and childhood definition, symptomatology, epidemiology, and comorbidity. *Child Adolesc Psychiatr Clin N Am.* 2009; 18(1): 17–30.