Religion orientations and eating disorders

Orientamento religioso e disturbi del comportamento alimentare

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SUMMARY. Background. The aim of the present case-control study was to evaluate the relationships between eating disorder (ED) psychopathology and two different religious orientations: intrinsic and extrinsic. **Methods.** Twenty-three anorexia nervosa, 10 bulimia nervosa and 39 binge eating disorder patients were compared with 72 healthy control subjects, using the Religious Orientation Scale (ROS). **Results.** ED patients showed higher scores on the extrinsic subscale and lower intrinsic religiousness subscale compared to healthy controls. No significant differences were observed between ED groups in terms of ROS scores. **Conclusions.** Higher extrinsic religiousness was associated with the presence of ED, whereas intrinsic religiousness may represent a protective factor.

KEY WORDS: eating disorders, extrinsic religion orientation, intrinsic religion orientation.

RIASSUNTO. Introduzione. L'obiettivo principale del presente studio caso-controllo è stato quello di valutare le relazioni intercorrenti tra la psicopatologia dei disturbi del comportamento alimentare (DCA) con il differente orientamento religioso: intrinseco ed estrinseco. **Metodi.** Sono stati confrontati un gruppo di pazienti affetti da DCA (23 con anoressia nervosa, 10 con bulimia nervosa e 39 con disturbo d'alimentazione incontrollata) con un gruppo di controllo di soggetti sani, utilizzando la Religious Orientation Scale (ROS). **Risultati.** I pazienti affetti da DCA hanno mostrato punteggi più alti nella sottoscala della religiosità estrinseca e minori punteggi nella sottoscala riguardante la religiosità intrinseca rispetto ai controlli sani. Nessuna differenza significativa è stata osservata tra i gruppi di DCA in termini di punteggi ROS. **Conclusioni.** Punteggi più elevati riscontrati in pazienti con orientamento religioso estrinseco sembrano essere associati con la presenza di DCA, mentre un orientamento religioso di tipo intrinseco sembra rappresentare un fattore protettivo.

PAROLE CHIAVE: disturbi del comportamento alimentare, orientamento religioso estrinseco, orientamento religioso intrinseco.

INTRODUCTION

Eating disorders (EDs) are complex diseases characterized by abnormal eating behavior and distorted attitudes towards body weight and shape[1-3]. Risk factors involved in their pathogenesis include gender, race, ethnicity, childhood eating and gastrointestinal problems, negative self-esteem, sexual and physical abuse[4]. Moreover, it has been suggested that religiousness can play a significant role in the onset and maintenance of EDs[5,6].

Historically, the relationships between religiousness and EDs have been based upon the descriptions of fasting saints, who expressed their spirituality also by means of abstinence from food, in order to exert a high control on their bodies[7]. Bruch[8] defined patients with "atypical anorexia nervosa" as subjects without "relentless pursuing thinness, but preoccupied with mortal sins".

Recent studies attempted to investigate the effects of spirituality and religiousness on the lifestyle and eating behaviors of ED patients, with conflicting results[5,6,9-12]. Considering the effects of religiousness on EDs, the similarities between specific eating disordered behaviors and religious asceticism have been already emphasized[7,13-15]. It has been speculated that anorectic patients would use cultural symbols such as notion of asceticism about food and body to give meaning to their personal concerns with growth and sexuality. In particular, starvation would serve as a tool to identify themselves and to keep a self-control[16-18]. In order to detect some relationships between EDs and religiousness, it appears crucial to distinguish between different characteristics of religion orientation. The first is focused on how people live their own religion in a deep and personal way (intrinsic religion orientation); the second concerns the social significance of religiousness (extrinsic religion orientation), which is aimed at the protection that can be achieved through this behavior, and it makes feel the subject as a part of a group as a way to obtain and defend a social position[19].

The aim of the present study was to evaluate the relationships between religious orientation and ED psychopathology in an ED sample, including patients affected by anorexia nervosa (AN), bulimia nervosa (BN) and binge eating disorder (BED), and in a healthy control group.

METHODS

Study population

The study was conducted at the Outpatient Clinic for Eating Disorders of the University of Florence Psychiatric Unit (Italy). Patients were enrolled through consecutive referrals by family doctors and other clinicians. During the first routine visit, the procedures of the study were explained to the participants and only the patients that provided their written informed consent were enrolled in the study. The study protocol was approved by the Ethics Committee of the Institution. All the patients attending the Clinic for Eating Disorders between October 2008 and February 2009 were enrolled in the study.

The inclusion criteria were a diagnosis of current ED according to the DSM-IV criteria[2], defined by means of a face-to-face interview.

Healthy controls, matched with the clinical sample for age, gender and education, were recruited among the general population provided that they met the following inclusion criteria: (i) absence of Axis I mental disorders, evaluated by means of a structured interview[20]; (ii) body mass index (BMI) between 18.5 and 25 kg/m^2.

Of the 75 consecutive ED patients recruited, 3 subjects refused to give their informed consent, so the final sample group consisted of 72 female patients affected by EDs (23 patients with AN, 10 with BN, 39 with BED), and 72 female healthy controls. All the selected subjects were Catholic.

Assessment

Socio-demographic, psychopathological and clinical data were collected through a face-to-face interview on the first day of admission at the Outpatients Clinic for Eating Disorders of Florence. ED features were specifically investigated by means of the Eating Disorder Examination Questionnaire (EDE-Q)[21]. This questionnaire consists of 38 items that evaluate the core psychopathological features of EDs and are assembled in 4 subscales: dietary restraint, eating concern, weight concern, and shape concern.

For the evaluation of the religiousness the Religious Orientation Scale (ROS) was applied[19]. This questionnaire, based on the Allport's model, includes intrinsic and extrinsic religiousness. The intrinsic religiousness consists on how individuals "live" their own faith; persons with this orientation find their master motive in religion, and they "live" the religion having embraced a creed the individual endeavors to internalize it and follow it fully. The extrinsic religiousness designate an interest that is held because it serves other more ultimate interests: persons with this orientation may find religion useful in a variety of ways – to provide security and solace, sociability and distraction, status and self-justification; it can be referred to the person who "uses" the religion, for example in occasional ceremonies, for family convenience or personal comfort. Extrinsic individuals view their religion as a way of achieving status or acceptance[22]. This questionnaire consists of 20 items, 9 of which analyze the intrinsic religiousness and 11 the extrinsic religiousness, further divided into three subgroups: extrinsic personal, extrinsic social and extrinsic residual. The participants answer every item relating to own personal experience about how they live the religion and the spirituality.

Finally, patients were evaluated by means of the following questionnaires:

- the Beck Depression Inventory (BDI), which is a widely used and well established measure to assess current depression level and symptoms[23];
- the State-Trait Anxiety Inventory (STAI Form Y-1), to measure trait levels of anxiety[24];
- the Symptom Checklist (SCL 90-R), which evaluates psychopathological distress[25];
- the Yale-Brown Obsessive Compulsive Scale (Y-BOCS)[26], to assess dimensionally obsessive-compulsive symptoms.

Statistical analysis

Analyses were performed according to two different categorizations: (i) comparing patients vs healthy controls (Mann-Whitney U-test); b) comparing AN, BN and BED groups between them using Kruskal-Wallis test. Chi-square test was used for categorical data, and Spearman test was used for correlations between ROS scores and psychopathological variables. Given that multiple statistical tests were performed, the significance level was set at $p<0.01$. Logistic regression analysis was applied to test differences between patients and healthy controls (coded as ED: 1; healthy controls: 0), adjusting for age and general psychopathology (SCL-90 global score). All analyses were performed using SPSS for Windows 14.0 (SPSS Inc., Chicago, Illinois, USA).

RESULTS

Patients and healthy controls did not differ for age and education, whereas ED subjects showed higher scores for all psychopathological variables (Table 1). In addition, the ED group showed higher extrinsic and lower intrinsic religiousness compared to healthy controls (Table 1), with higher scores on the extrinsic social religiousness subscale. Logistic regression analysis confirmed the differences between ED and healthy controls in terms of intrinsic religiousness ($p<0.01$; OR 0.84; 95% CI 0.77-0.91), and extrinsic religiousness ($p=0.03$; OR 1.10; 95% CI 1.07-1.20).

Extrinsic and intrinsic religiousness were inversely correlated both in ED patients ($r=-0.35$; $p<0.01$) and healthy controls ($r=-0.60$; $p<0.01$). No significant correlation was found between general and eating specific psychopathology, and ROS subscales. No significant differences were observed between AN, BN and BED in terms of ROS scores (Table 2).

AN patients showed higher Y-BOCS obsessions and compulsions compared to the other diagnostic groups.

DISCUSSION

This is the first study that evaluates the intrinsic and extrinsic religiousness in subjects suffering from EDs. The main finding of the present study was the detection of an opposite pattern of religion orientation in ED patients and healthy controls, when considering intrinsic and extrinsic religion orientation separately.

ED patients showed higher extrinsic religiousness scores than healthy controls, according to previous stud-

Table 1. Comparison between patients and healthy controls

	Patients (n=72)	Controls (n=72)	p
Age (years)	38.7 ± 15.5	32.3 ± 3.1	NS
Education (years)	13.7 ± 2.1	14.0 ± 2.0	NS
BDI	14 ± 6.91	5.46 ± 5.56	<0.001
STAIS	49.33 ± 12.94	43.06 ± 3.74	<0.001
STAIT	51.85 ± 9.73	43.20 ± 3.54	<0.001
Total EDE-Q	2.74 ± 1.24	0.96 ± 0.77	<0.001
EDE-Q Restraint	2.36 ± 1.49	1.10 ± 1.14	<0.001
EDE-Q Eating Concern	2.48 ± 1.33	0.41 ± 0.56	<0.001
EDE-Q Weight Concern	2.83 ± 1.27	1.08 ± 0.94	<0.001
EDE-Q Shape Concern	3.29 ± 1.52	1.27 ± 1.06	<0.001
Y-BOCS Obsessions	6.06 ± 4.46	1.71 ± 2.52	<0.001
Y-BOCS Compulsion	4.45 ± 4.61	0.86 ± 1.70	<0.001
Y-BOCS Total	10.51 ± 8.40	2.57 ± 3.69	<0.001
Y-BOCS Insight	1.13 ± 1.25	0.30 ± 0.59	<0.001
ROS Extrinsic social	2.59 ± 2.01	1.50 ± 1.74	<0.01
ROS Extrinsic personal	5.25 ± 2.57	4.50 ± 2.59	NS
ROS Extrinsic residual	6.25 ± 2.06	5.96 ± 1.70	NS
ROS Extrinsic Total	14.10 ± 4.51	11.96 ± 4.78	<0.01
ROS Intrinsic	41.13 ± 5.16	45.39 ± 5.03	<0.001

BDI: Beck Depression Inventory, STAI: State-Trait Anxiety Inventory; EDE-Q: Eating Disorder Examination Questionnaire; Y-BOCS: Yale Brown Obsessive Compulsive Scale; ROS: Religion Orientation Scale.

Statistics: Mann-Whitney U-test for between-groups comparison.

ies[17,27], which found an association between extrinsically oriented religiousness and abnormal eating attitudes among a subclinical college population and a clinical population of individuals receiving inpatient treatment for EDs. Smith et al.[27] found that women involved in religion for extrinsic reasons (for personal and social gains) tend to have more eating disordered symptoms, and subjects with more concerns about external social aspects of religious involvement tend to be more susceptible to BN. According to these findings, it can be hypothesized that ED patients represent a vulnerable group of subjects, who use religion for different reasons such as the need for security, status, and self-esteem. Previous studies demonstrated that subjects who consider religion as a mean to an immediate goal, often resulted to be more prejudiced, anxious and religiously dogmatic[28-32]. From this point of view, religion appears to be a source of comfort against distress; in fact, it has been suggested that ED patients use their extrinsic religiousness as a way to obtain specific purposes, such as to increase their confidence or to normalize their own lifestyle[17]. Specifically, the higher social religiousness scores of the ED group found in our study seem to demonstrate that extrinsic religiousness can be characterized by self-serving motivation to obtain status, social support, and/or a felt sense of security[15]. However, this way of living religion does not seem to be a protective factor toward EDs, suggesting that such an extrinsic orientation could heighten vulnerability to familial risk for disordered eating, due to the health-compromising effects of anxiety and insecurity[15,17,22]. Finally, an alternative explanation for the higher extrinsic religiousness in the ED group can be related to a possible pathogenic effect of some strains of religion such as excessive fear, superstition, built-in hostility to science, or palliative defensiveness[19].

When compared with ED patients, healthy controls showed higher levels of intrinsic religiousness, confirming previous findings[15]. According to the reverse pattern of association found for intrinsic/extrinsic religiousness in patients and healthy controls, it can be hypothesized that the religion of the extrinsic variety may hinder mental health, while religion of the intrinsic variety could help. Mental health seems to vary according to the degree to which adherents of any faith are intrinsic in their interpretation and living of their faith: subjects who live religion in a more intrinsic manner, in spite of neurotic fragments in their own lives, manage somehow to maintain control of their sanity – apparently because of a generic and embracing and guiding religious motive[19]. Several authors stressed the health promoting attributes of internalization of religious beliefs[15,19], as individuals with higher intrinsic religiousness have been found to have a greater sense of self-control, responsibility, empathy and tolerance[30,32-34]. Religiousness could buffer the effect of a stressor by promoting healthy coping responses, after negative life events[15]. Forthun et al.[15] study on religiousness as mediator of family risk for ED, found that when intrinsic religiousness was higher, there was no relationship between family risk and ED, while lower intrinsic religiousness was associated with a significant positive relationship between family risk and ED. In a review on mental and physical health benefits of religiousness and spirituality, George et al.[35], concluded that the majority of the evidence linking religiousness to healthy outcomes was primarily due to protection against the onset of illness. Such protection can occur when religiousness moderates the relationship between an environmental or biological risk and the unhealthy outcome[36]. According to this observation, we did not find a direct link between religiousness and measures of ED psychopathology. However, the cross-sectional nature of the study and the lack of several information about social and familial risk factors do not allow to give a conclusive explanation of our data. Furthermore, this conception of intrinsic religion has nothing to do with formal religious structure, as there are intrinsic Catholics and extrinsic Catholics, intrinsic Protestants and extrinsic Protestants, intrinsic and extrinsic Jews, Muslims, and Hindus[22].

Finally, we did not find any significant difference in religious orientations between ED groups, unlike previous findings[17], and we did not find any significant association between ED specific measures and ROS scores. Therefore, it is possible that the differences obtained are associated with the presence of a psychiatric disorder, and not with a specific diagnosis. This finding might confirm that, despite the differ-

Table 2. Comparison among diagnoses

	AN (n=23)	BN (n=10)	BED (n=39)	p
Age (years)	26.0 ± 10.2	29.8 ± 3.2	44.8 ± 2.3	<0.001
Education (years)	15.8 ± 0.6	13.9 ± 0.6	11.6 ± 0.4	0.9
BMI (kg/m^2)	21.05 ± 8.75	23.08 ± 1.84	44.20 ± 13.52	<0.001
BDI	15.1 ± 9.2	14.2 ± 4.7	13.5 ± 6.6	0.90
STAI-S	53.55 ± 13.67	46 ± 21.2	46.57 ± 12.79	0.83
STAI-T	55.36 ± 9.80	58 ± 5.65	48.43 ± 9.76	0.68
Total EDE-Q	2.84 ± 1.33	2.93 ± 1.03	2.97 ± 1.08	0.92
EDE-Q Restraint	2.55 ± 1.71	2.66 ± 2.07	2.37 ± 1.21	0.95
EDE-Q Eating Concern	2.48 ± 1.48	2.17 ± 1.09	2.72 ± 1.25	0.59
EDE-Q Weight Concern	2.95 ± 1.38	3.17 ± 1.44	3.15 ± 1.25	0.88
EDE-Q Shape Concern	3.37 ± 1.40	3.73 ± 1.58	3.64 ± 1.53	0.80
Y-BOCS Obsessions	40.74 ± 5.33	42.40 ± 4.90	41.03 ± 5.21	0.04
Y-BOCS Compulsion	6.41 ± 4.93	3.56 ± 4.06	3.53 ± 4.29	0.07
Y-BOCS Total score	14.59 ± 7.57	9.56 ± 7.21	8.37 ± 8.42	0.01
Y-BOCS Insight	1.55 ± 1.14	0.89 ± 1.26	0.95 ± 1.29	0.08
Extrinsic social	2.35 ± 1.96	2.00 ± 1.56	2.89 ± 2.14	0.39
Extrinsic personal	4.91 ± 2.55	5.00 ± 2.49	5.53 ± 2.64	0.68
Extrinsic residual	6.04 ± 2.03	6.90 ± 2.23	6.21 ± 2.05	0.42
Extrinsic Total	13.30 ± 4.64	13.90 ± 3.84	14.63 ± 4.62	0.45
Intrinsic	40.74 ± 5.33	42.40 ± 4.90	41.03 ± 5.21	0.70

AN: anorexia nervosa; BN: bulimia nervosa; BED: binge eating disorder; BMI: body mass index; BDI: Beck Depression Inventory, STAI: State-Trait Anxiety Inventory; EDE-Q: Eating Disorder Examination Questionnaire; Y-BOCS: Yale Brown Obsessive Compulsive Scale; ROS: Religion Orientation Scale.

Statistics: Kruskal-Walllis test for between-groups comparison; significant for p<0.01.

ences in demographics, clinical course, and treatment of the different EDs, they all share a common "core psychopathology"[37]. Moreover, it is likely that some of the present results might be explained by the effect of different psychopathological dimensions, considering that, as expected, ED patients showed higher levels of general psychopathology compared to healthy controls[38-41]. However, it is of note that the differences between patients and healthy controls in terms of ROS scores were significant even when adjusting for general psychopathology.

This study presents some further limitations: (i) the limited sample size; (ii) different self-reported measures were applied; (iii) the clinical sample considered in the study cannot be considered representative of the general population.

The present findings should be considered as preliminary, given the limited sample size and the cross-sectional design of the study. Further prospective investigations are warranted to provide information regarding the implications of the present results for clinical practice.

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