

## Disordered Eating in Elderly Female Patients Diagnosed with Chronic Schizophrenia

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**Abstract:** *Background:* Data about the association between disordered eating and schizophrenia is limited and inconclusive. The aim of the present study was to evaluate disordered eating in elderly female patients diagnosed with chronic schizophrenia. *Methods:* The Eating Attitudes Test-26 (EAT-26) was completed by 30 female inpatients diagnosed with chronic schizophrenia (mean age 70±6.5 years), and the Geriatric Depression Scale (GDS) and Positive and Negative Symptom Scale (PANSS) were completed by their treating psychiatrists. The height and weight of the patients were also recorded. *Results:* Four patients (13.3%) had pathological scores on the EAT. These patients had lower body mass index scores and longer duration of hospitalization compared with the other patients. Their eating-related disturbance was anorectic-like in nature. There were no between group differences in the GDS, whereas the schizophrenic illness of the four patients with pathological EAT, as rated with the PANSS, appeared somewhat more active. *Conclusions:* Disordered eating of an anorectic-restrictive nature — not related to depression or negative schizophrenic symptomatology — may be found in a relatively high percentage of elderly female inpatients diagnosed with chronic schizophrenia.

### Introduction

The interrelationships of anorexia nervosa (AN) and schizophrenia have intrigued researchers and clinicians since the early days of modern psychiatry. Based on clinical features and dynamic theories, earlier views regarded AN as a form of schizophrenia (1, 2). In contrast, most current researchers would not include in their studies patients with eating disorders (EDs) who show in addition schizophrenic symptoms, as these symptoms may affect the presentation of eating preoccupations and behaviors, as well as their description (3).

Studies that specifically address the relationship between schizophrenia and EDs have found conflicting results. Older studies have suggested that the two conditions may coexist more often than expected (4, 5). The findings of more recent studies are less consistent. Whereas some studies (6-9) have found that schizophrenia is almost nonexistent in ED patients, others have shown that between 3-12% (10, 11) of

patients with AN may be eventually diagnosed with schizophrenia. Most recently, in a critical analysis of 119 long-term outcome studies of AN, covering altogether 5,590 patients, Steinhausen (12) reported that a mean of 4.6±5.7% of AN patients were diagnosed with schizophrenia in the long run (range 1-28%). These considerable discrepancies reflect different patient inclusion criteria and differences in the diagnostic criteria, assessment procedures, and outcome measures of the EDs and schizophrenia (10, 12, 13).

Several models of interaction between AN and schizophrenia have been proposed. The ED may represent a defense against psychotic breakdown (10, 13-15). In such cases, it usually predates the onset of schizophrenia. Improvement of the disturbed eating following treatment may precipitate or exacerbate the schizophrenic illness of such patients (10). The content of eating-related preoccupations in such patients has often a psychotic quality, and is usually different from the typical anorectic concern (10, 13-15).

In other instances, transient psychotic breakdowns may occur during intensive treatment of AN, particularly in those patients who additionally have a severe comorbid personality disorder (10, 16, 17). These breakdowns may occur in response to the psychological stress related to improvement of the disordered eating (13). Alternatively, the psychosis may be resolved if the specific treatment of the ED is suspended (13), and/or the appearance of psychosis may reduce or even eliminate the eating problems (15).

A third model proposes that the schizophrenic illness and ED may coexist as independent clinical syndromes, that is the two illnesses run separate and independent courses (10, 18). In these instances, ED symptoms may be present both when the psychotic illness is active and when it is resolved.

To date, only a few studies assessed the characteristics of maladaptive eating in patients diagnosed with chronic schizophrenia. Munoz and Ryan (19) and Deckelman et al. (14) described the development of late onset AN and bulimia nervosa (BN), respectively, in patients with chronic schizophrenia. Lyketsos et al. (20) studied the occurrence of EDs in 79 female patients with chronic schizophrenia, 17 female patients with a chronic affective disorder, and 36 female controls (males were also analyzed in that study, but their findings are not included in the present analysis). Three women with chronic schizophrenia (3.8%), but no controls or females with an affective disorder, had pathological eating attitudes as scored on the Eating Attitude Test (EAT) (21). One of these patients fulfilled clinical criteria for AN, being the only patient in the entire sample diagnosed with a full-blown ED. Females diagnosed with schizophrenia had a greater rate of AN and/or BN symptomatology as assessed with a structured questionnaire compared to females with an affective disorder and control females. The eating-related ideation reported by these patients was highly delusional in nature.

From a different perspective, the progression of negative symptoms, combined with prolonged neuroleptic use, and the unsatisfactory living conditions associated with prolonged hospitalization, including consumption of high-calorie food and decrease in physical exercise, may all lead to weight gain that can potentially predispose to disordered

eating (14, 20). However, eating-related concerns in schizophrenia are usually different from the ideation encountered in typical EDs. Although female patients with schizophrenia may have a fear of becoming fat and disturbed body image, they are seldom concerned with the caloric content of food, nor do they exhibit the obsessional eating preoccupations and behaviors characteristic of AN or BN (20).

The aim of the present study was to assess the characteristics of disordered eating in elderly female patients hospitalized because of chronic schizophrenia. Nicholson and Ballard (22) found that AN may arise *de novo* in older age, with some first AN episodes occurring in postmenopausal women. The elderly are prone to nutritional deterioration, which is frequently described as "anorexia tarda" and is considered to be associated with loneliness and cognitive decline (23, 24). In the present study, we hypothesized that disturbed eating would occur only infrequently in elderly female patients diagnosed with chronic schizophrenia, and that these disturbances would differ markedly from the typical eating-related manifestations found in AN or BN.

## Methods

### Subjects

The present study was conducted at the Abarbanel Mental Health Center, Israel, a large, university-affiliated hospital providing services to an urban catchment area encompassing 850,000 inhabitants. The psychogeriatric division is composed of three inpatient departments, an outpatient service and a consultation service to old-age homes.

Inclusion criteria for the present study were: (a) female gender, (b) age of 60 years or older, (c) diagnosis of chronic schizophrenia according to the criteria of the DSM-IV (25) by means of a structured interview, the Structured Clinical Interview for DSM-IV Axis I Disorders — Patient Edition (SCID-I/P Version 2.0) (26), (d) patients diagnosed with either active or residual schizophrenia at the time of evaluation, (e) intact cognitive functioning as indicated by a Mini Mental State Examination (MMSE) (27) score of 25 points or higher and (f) no lifetime or current medical or neurological disorder (e.g., Parkinson's disease, or CNS space occupying le-

sions), and no lifetime or current DSM-IV affective disorder.

A written Informed Consent was obtained from the patients or their legal guardians in the case of patients unable to understand the aim of the study. The study was approved by the Human Subjects Review Committee of the Abarbanel Mental Health Center. All female patients diagnosed with schizophrenia who were hospitalized in our psychogeriatric division at the time of evaluation who fulfilled all inclusion criteria and agreed to participate in the study were included in the analysis.

### Instruments

At the time of evaluation, patients' height and weight were measured, from which we calculated their body mass index (BMI) (weight [kg]/height<sup>2</sup> [m]) (28). All measurements were taken during the morning hours by a single investigator (a nurse trained in weight and height measurements), using a standardized procedure (29). Body weight was obtained to the nearest 0.1 kg, with the patient wearing a hospital gown and no footwear. In our psychogeriatric division, the patients are routinely weighed each month, and the BMI of all patients included in the study was stable within the range of  $\pm 2$ kg for at least three months.

Patients were interviewed with the SCID-I/P Version 2.0 by their treating psychiatrists prior to their inclusion in the study. All data were reviewed, and final consensus diagnoses were achieved in team meetings of the psychogeriatric division.

All patients were assessed using the following rating scales:

**The short version of the Eating Attitude Test-26 (EAT-26)** (30), which covers three main topics: (a) dieting, refraining from fatty food and physical appearance; (b) bulimic symptomatology and preoccupation with food; (c) personal control over eating habits. The EAT-26 is an accepted tool for the identification of pathological eating preoccupations and behaviors in all age groups except for children (30). A score of 20 or above is considered pathological, regardless of the age of the patient, that is also in the case of elderly patients (20, 30). We have used the Hebrew translation of the EAT-26 (31), which has shown good psychometric properties in Israeli ED patients (32). Trained master's level clinical psychol-

ogists delivered the questionnaire individually to each patient, read each question out loud, and assisted each patient whenever necessary. It should be further noted that although hospitalized for prolonged periods of time, our patients are encouraged to purchase food outside of their department, either from the hospital's cafeteria or from a grocery in the vicinity. Thus they become familiar with different kinds of foods, and with tasty or untasty food.

**The Geriatric Depression Scale (GDS)** (33), a 15-item brief semistructured interview designed specifically to assess the probability of depressive symptoms in the elderly. Each item is scored as either existing (1) or not existing (0) for a total possible score of 15. A score of 9 or higher indicates a high probability that the subject is suffering from significant depressive symptomatology. The GDS has been previously used in the study of elderly patients with chronic schizophrenia (34).

**The Positive and Negative Symptom Scale (PANSS)** (35), a semistructured interview designed to evaluate the severity of positive and negative schizophrenic symptomatology as well as general psychopathology (i.e., depression, anxiety and social dysfunction).

**The Mini Mental State Examination (MMSE)** (27), a 10-item structured clinical interview designed to evaluate the severity of cognitive impairment that has been extensively used in elderly patients with schizophrenia, including in Israeli samples (36).

The treating psychiatrists, who were blind to the findings on the EAT-26, completed the GDS and the PANSS and delivered the MMSE individually to each patient.

Due to the small number of patients included, we present the data in descriptive terms only.

### Results

Of the 36 female chronic schizophrenia patients hospitalized at the time of evaluation, 30 were eligible for participation in the study, and all agreed to participate. Mean age of the group was  $70 \pm 6.5$  years (range 66-88 years), and mean duration of current hospitalization was  $12 \pm 10.7$  years (range 2-28 years).

Around two-thirds of the patients were born in Eastern European countries, another 20% in North African countries, and the rest were Israeli born. All patients born outside of Israel immigrated to Israel in their teens or during early adulthood. Mean years of education was  $9.1 \pm 5.5$  years. All patients were treated with antipsychotic medications for prolonged periods of time, their dosages being stable for at least four weeks prior to inclusion in the study.

Four patients (13.3%) scored above 20 on the EAT questionnaire (the "EAT+ group"). These patients were not different in mean age from the rest of the group ("EAT- group") ( $73.5 \pm 5.3$  vs.  $70.2 \pm 6.6$  years, respectively). However, they were hospitalized for a considerably longer period of time ( $20.3 \pm 12.7$  years) compared with the EAT- group ( $10.4 \pm 9.9$  years), and their mean BMI was considerably lower ( $18.8 \pm 1.4$  vs.  $29.2 \pm 6.2$ , respectively).

#### **EAT-26 scale**

Considerably higher total EAT-26 scores were found in the EAT+ ( $35.8 \pm 13.1$ ) compared with the EAT- group ( $6.2 \pm 5.9$ ). The EAT+ group showed elevated scores on all three EAT-26 subscales, namely control over eating ( $12.3 \pm 5.2$  vs.  $1.3 \pm 1.9$ ), dieting ( $19.0 \pm 8.1$  vs.  $3.8 \pm 4.3$ ), and bulimia ( $4.5 \pm 2.6$  vs.  $1.0 \pm 1.8$ ). None of the patients with normal BMI (i.e.,  $BMI \geq 20$ ) (28) scored higher than 19 on the EAT-26, whereas all patients with low BMI (i.e.,  $BMI < 20$ ) had pathological EAT scores.

#### **Geriatric Depression Scale**

The GDS scores in the EAT+ and EAT- groups were  $2.5 \pm 1.3$  and  $3.8 \pm 3.2$  respectively, indicating no overt depression in either group.

#### **Positive and Negative Syndrome Scale**

The schizophrenic illness of the EAT+ patients appeared somewhat more "active," in that the difference between the positive and negative subscales was greater in the EAT+ compared with EAT- group ( $14.8 \pm 10.0$  vs.  $7.7 \pm 9.3$ ). The total PANSS score of the EAT+ group ( $83.8 \pm 14.4$ ) was also somewhat higher than that of the EAT- group ( $71.1 \pm 16.7$ ).

#### **Case Descriptions**

The case descriptions of the four EAT+ patients according to their medical files are brought to depict

their illness histories and eating-related ideation. These descriptions were summarized by the patients' psychiatrists who were blind to their scores on the EAT.

**Case 1:** This 79-year-old woman suffering from residual schizophrenia has been hospitalized for the past 30 years. Most days she would sit confined to her wheelchair, looking fragile, shriveled and older than her actual age. Over the years she constantly complained that she was too fat, and she refused to eat regularly in order to be "thinner, younger and more attractive looking." This woman has not lost a significant amount of weight since admission. Her BMI at the time of evaluation was 20.1 (weight=52 kg, height=1.61 m).

**Case 2:** A 67-year-old woman suffering from residual schizophrenia has been hospitalized for the past 21 years. During young adulthood she was thin to the point of cachexia. She was often observed by the nursing staff to be playing with her food during meals and giving it to others. On questioning, she expressed a persisting belief that she was too fat. Her BMI at the time of evaluation was 18.4 (weight=37 kg, height=1.42 m), that is less than the ideal weight for her age (which would be around 40 kg, or  $BMI=20$ ) (28), but not in the range of full-blown AN (25).

**Case 3:** This 68-year-old woman suffering from paranoid schizophrenia has been intermittently hospitalized for the past 40 years. Coming from an Orthodox-Jewish background, she reported hearing voices of a man telling her how she should behave in everyday life, including admonitions to restrict her eating in order to appear thinner and thus purer. Her BMI at the time of evaluation was 19.2 (weight=51 kg, height=1.63 m).

**Case 4:** A 70-year-old woman hospitalized because of residual schizophrenia for the past 30 years has intentionally lost 26 kg over the past two years (from 68 to 47 kg). She wore many layers of clothes even during hot weather to conceal her body, and often refused to be weighed. She confessed her desire to lose weight in order to have a beautiful figure to look as young and attractive as a nurse working in the ward. Her BMI at the time of evaluation was 18.8 (weight=47 kg, height=1.58 m).

It should be further noted that the first three cases were never diagnosed with formal ED, whereas

the fourth patient might have developed a late-onset subclinical restrictive-type ED (25) at some time during the two years preceding the evaluation.

## Discussion

The present study is, to the best of our knowledge, the first report of disordered eating in elderly patients with chronic schizophrenia. Disturbed eating behavior is usually defined with accepted standardized rating scales, particularly the EAT (37). In the present study we found, contrary to our hypothesis, that in our sample of 30 elderly female patients with chronic schizophrenia, a relatively high percentage (four patients, that is 13.3%) had pathological scores on the EAT-26, particularly AN-like ideation and restriction of food intake, resulting in a somewhat lower than expected BMI in three of these patients. In particular, one patient (case 4) might have developed a late-onset subclinical restricting-type AN. The elevated percentage (13.3%) of disordered eating in our sample is considerably higher than the 3.8% reported by Lyketsos and associates (20), who used a similar design.

The description of disturbed eating in the four patients with elevated EAT-26 scores shows several AN-like characteristics, including the wish to lose weight and become thin (cases 1 and 4), evidence of body image disturbance (case 2), AN-like eating behaviors (case 2), covering up of one's actual appearance, and refusal to be weighed (case 4). Except for case 3, the thematic ideation reported by the EAT+ patients was not actively delusional by nature, perhaps because of the very long duration of the schizophrenic illness and the old age of the patients. Similar themes, although more delusional by nature, were reported by Hsu et al. (10). In contrast, the eating-related disturbance in the study of Lyketsos and associates (20) was highly psychotic in nature. More than 40% of the women diagnosed with schizophrenia in this study had eating-related delusions, such as fears of poisoning, fasting to expiate, or not deserving food, and/or a host of eating-related hallucinations, for example hearing voices that criticize their eating behaviors and preferences, or experiencing gustatory hallucinations associated with disgust.

Several models of interaction between EDs and schizophrenia have been proposed, but the present

findings do not support most of them. The disturbed eating behavior in our patients with chronic schizophrenia does not represent a defense against psychosis (13), nor is it attributed to depression, as no between-group differences have been found for the GDS. The eating disturbance in our patients does not represent a direct outcome of a long-standing schizophrenic disorder (14), as with the exception of case 4, both eating and psychotic disturbances have coexisted for prolonged periods of time.

The eating disturbance in our sample is further not a consequence of elevated PANSS-negative symptomatology, or of a particularly high BMI. As has been shown also in previous studies (20, 38), the mean BMI of our patients with normal EAT scores ( $29.2 \pm 6.2$ ) represents overweight but not frank obesity (28), and the patients with the pathological EAT scores actually display the lowest BMI. Additionally, although the EAT+ patients have probably a more active schizophrenic illness, evidenced in the somewhat greater difference between the positive and negative PANSS subscales compared with the EAT-group and in the longer duration of hospitalization, the content and description of the eating-related symptoms has been predominantly not actively psychotic. Altogether, the analysis of the present findings suggests that in our patients, the disturbed eating and schizophrenia may coexist as two independent entities.

Several factors may explain the differences between our findings and those of Lyketsos et al. (20), the only previous study that specifically investigated disturbed eating in a large cohort of patients with chronic schizophrenia, using a similar design. The median age of the patients evaluated by Lyketsos and associates was 49.6 years (range 21-65 years), whereas all our patients were older than 60 years of age. This may account in part for the more delusional character of the eating-related preoccupation in the study of Lyketsos et al. (20). Additionally, these authors used specific questionnaires for the assessment of the content of the eating-related preoccupations, whereas we have relied on descriptions taken from the patients' medical files. The lower rate of AN in the population investigated by Lyketsos et al. (20) may be accounted for in part by the differences in the diagnostic criteria of AN, namely the more rigorous DSM-III criteria in their study, which require weight

loss to at least 25% below average body weight, compared to the 15% required by the DSM-IV criteria used by us.

Our study has several limitations. It uses a cross-sectional design, the sample is relatively small, we have not utilized structured standardized interviews for the diagnosis of an ED, nor have we included a control group with no schizophrenic illness. Additionally, as our patients have been hospitalized for prolonged periods of time, this may potentially affect their eating habits. Thus, our results cannot be generalized to less severe forms of schizophrenia.

The EAT-26 scale has been extensively used for the identification of pathological eating-related behaviors and preoccupations in many different populations other than typical ED patients (37). Nevertheless, it should be used with caution in elderly patients diagnosed with schizophrenia, as these patients may not fully comprehend the meaning of the questions introduced. In our study, trained master's level psychologists delivered the questionnaire independently to each patient. According to their impression, supported also by previous findings (20), our patients — who did not display gross cognitive impairment on the MMSE — did understand correctly the meaning of the different EAT-26 items. Furthermore, the score of our EAT+ group ( $35.8 \pm 13.1$ ) is in the range of that reported by younger patients with EDs ( $36.1 \pm 17.0$ ), whereas the range of our EAT- group ( $6.2 \pm 5.9$ ) is similar to that of other control groups ( $9.9 \pm 9.2$ ) (39).

Our study also has several advantages. Our patient population is homogenous, and the results are supported by the similarity shown between the findings of the EAT and the description of the eating-related symptomatology in the patients' medical files.

**Clinical and research implications:** Our study suggests that disordered eating of an AN-like quality may exist in a relatively high percentage of elderly women diagnosed with chronic schizophrenia. The focus on eating attitudes in this context may have relevant clinical implications. We do not recommend intensive treatment of the eating disturbance in patients with chronic schizophrenia, although these patients are in need of supervised dietetic counseling, close monitoring, and stabilization of their nutritional status. Future longitudinal studies that

include a larger sample of ambulatory patients of all age groups diagnosed with schizophrenia, and that use standardized interviews for the diagnosis of an ED, are recommended to verify our preliminary findings

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