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# Nexus of Delusions and Overvalued Ideas: A Case of Comorbid Schizophrenia and Anorexia in the View of the New ICD-11 Classification System

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Study Design A  
Data Collection B  
Statistical Analysis C  
Data Interpretation D  
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**Patient:** Female, 44-year-old  
**Final Diagnosis:** Schizophrenia and anorexia nervosa  
**Symptoms:** Overweight belief • restriction in food intake • auditory hallucinations • insomnia • delusions  
**Medication:** —  
**Clinical Procedure:** —  
**Specialty:** Psychiatry

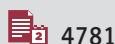
**Objective:** Rare coexistence of disease or pathology  
**Background:** Schizophrenia and anorexia nervosa are challenging mental disorders. In cases in which the cognitive-affective drivers eliciting abnormal eating behaviors strongly influence diagnostic accuracy and treatment planning, it is important to be extremely thorough in differentiating between the phenomenology of delusions, obsessions, and overvalued ideas.

**Case Report:** Here we present an unusual relationship between anorexia nervosa and schizophrenia and also an update on diagnosing them according to the new ICD-11 classification system. The case illustrates a 44-year-old Romanian woman who had met the criteria for eating disorder from the age of 15 to 22 years, subsequently developed a psychotic break, and ultimately had schizophrenia from the age of 22 to 44 years (present time). This case report focuses on the dual diagnosis of a psychotic disorder and an eating disorder, with discussions based on the literature available on the topic.

**Conclusions:** Schizophrenia can be considered a disabling mental disorder, but in association with a diagnosis of anorexia nervosa, the patient usually requires immediate admission and medical care in a coordinated and sustained manner. Symptoms of anorexia nervosa might manifest in the active phase of psychosis, precede psychosis, or, less commonly, manifest during the residual phase of the illness. Nevertheless, when these 2 disorders are combined, we can assume that the treatment plan is even more difficult to handle, requiring a multi-disciplinary team. Therefore, to provide adequate clinical care, a proper diagnosis must be made. The complex nature of the interrelationship between psychotic disorders and eating disorders requires further research.

**Keywords:** Anorexia Nervosa • Diagnosis • International Classification of Diseases • Schizophrenia, Paranoid

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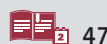
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## Background

We report a case of a patient with 2 separate disorders, anorexia nervosa and schizophrenia, which occurred over a span of many years. The psychopathology of the refusal to eat is unclear, and the question regarding the existence of a biological or a psychodynamic underlying mechanism remains unanswered. Although schizophrenia and anorexia nervosa are clinical entities frequently encountered in psychiatric services across different cultures, their comorbidity is relatively rare, with only a few individual case reports published in the literature [1-3]. In 3% to 10% of cases, anorexia nervosa develops before the onset of schizophrenia and can be regarded as a prodromal phase of the psychotic illness [4]. Moreover, on one hand, studies suggested epidemiological differences between anorexia nervosa and schizophrenia, as the first is considered to be a learned or shared behavior and the other is considered as a multiple psychotic episode which occurs at a rate of around 1% to 3% in all cultures. On the other hand, recent research pointed out that psychotic and eating disorders can be comorbid entities that share genetic liability. An interesting study showed that eating disorders were nonexistent in some developing countries until influences of Western culture presented cultural ideals through television that applied the pressure of modernity. From another perspective, there is also evidence that eating disorders can be prevented, but there is no preventive intervention for schizophrenia at this time [4,5].

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM)-5 criteria, schizophrenia consists of positive symptoms (delusions, hallucinations), negative symptoms (avolition, diminished emotional expression), disorganized speech, and disorganized behavior occurring during most of a 6-month period. The manual also specifies that individuals with schizophrenia can exhibit odd eating behavior and occasionally experience significant weight loss, but they rarely show fear of gaining weight or body image disturbance [6,7]. Establishing a whole picture regarding an accurate diagnosis requires adding the view of the newest International Classification of Diseases (ICD)-11 criteria. The name of the former chapter referring to psychotic disorders was changed to "Schizophrenia or other primary psychotic disorders". Other changes were also made, which we will describe later.

Anorexia nervosa is defined in the DSM-5 as "a persistent restriction of energy intake relative to one's needs, leading to significantly low body weight in the context of an individual's age, sex, developmental trajectory, and physical health". This is associated with an intense fear of gaining weight or with persistent behavior that interferes with weight gain, as well as disturbances in the way in which one's body weight or shape is perceived, or persistent lack of insight into the seriousness of the current low body weight [8]. The belief of a patient with anorexia that they are overweight is held with

an extraordinary degree of conviction, and it does not yield when faced with evidence to the contrary. Although the belief is preoccupying, and the patient acts on it unquestioningly, leading to sustained patterns of abnormal eating behavior, it is never considered to be delusional [9,10].

In cases where the cognitive-affective drivers eliciting abnormal eating behaviors strongly influence diagnostic accuracy and treatment planning, it is important to be extremely thorough in differentiating between the phenomenology of delusions, obsessions, and overvalued ideas.

Current definitions in the DSM-5 pose a challenging problem for differentiating delusion from rigidly held, nondelusional, culturally shared beliefs. To create even more confusion, while several British texts classify certain disorders, including anorexia nervosa, as conditions characterized by overvalued ideas [11,12], in some US texts, the same disorders are considered to be the product of delusional thinking [13].

A delusion is a false idea or belief that the patient holds with an extraordinarily high degree of conviction, and that is clearly out of keeping with the patient's social, cultural, and educational background. Some delusions appear spontaneously, while others are brought on by a perception, a memory, or an atmosphere. Contrary to the incomprehensibility characterizing primary delusions, secondary delusions are thought to be understandable in the context of other abnormal phenomena, such as abnormal mood, abnormal perception, or a primary abnormal belief [14].

The concept of the overvalued idea was proposed by Wernicke more than 100 years ago and was defined as a solitary belief that can be considered justified in the context of a person's life history and personality, but which goes on to determine an individual's actions to a morbid degree [15]. The disturbance in functioning and the subjective suffering caused to the patient or others give this type of idea the qualifier of being overvalued.

As opposed to delusions, which are false ideas unique to their possessor, overvalued ideas develop from assumptions and beliefs, which are shared by other members of the same culture. Compared to the phenomenology of secondary delusions, no prior abnormal phenomenon explains the presence of an overvalued idea [14].

When attempting to differentiate between an overvalued idea and an obsession, it is useful to note that although both types of phenomena dominate mental activity, the patient does not try to fight an overvalued idea, but instead relishes, amplifies, and defends it, resulting in the idea becoming more resistant to challenge [16].

The complex nature of the interrelationship between psychotic disorders and eating disorders warrants further examination. This case report focuses on the dual diagnosis of anorexia nervosa and schizophrenia in a 44-year-old Romanian woman, with a discussion based on the literature available on the topic. The patient gave written consent at the time she was admitted and agreed to the publishing of her case.

## Case Report

This case illustrates a 44-year-old Romanian woman who had met the criteria for eating disorder from the age of 15 to 22 years, subsequently developed a psychotic break, and ultimately had schizophrenia from the age of 22 to 44 years (present time).

C.S., a woman with a known psychiatric history, was brought to our hospital for evaluation because her brother was concerned about her severe restriction in food intake, imperative auditory hallucinations, and insomnia, symptoms that got even worse in the last couple of months and were having a negative impact, especially on his sister's professional life.

C.S. was born in Romania and is the youngest of 2 siblings. She described a tense atmosphere at home, as her father was an alcoholic, and her mother did not want to get a divorce because "she didn't want us, my brother and I, to grow up without a paternal figure." She also described her father as an overly controlling, strict, and aggressive parent, who would often call both her and her brother "mediocre" when they would receive academic grades that were below his expectations. She admitted that she had difficulty communicating with every member of her family except her grandmother, saying that "I felt like no one else could understand me." She had never had many friends, nor did she have a romantic partner. She described herself as a perfectionist who struggles with adapting to big changes (like starting high school and, later on, university).

The patient's dietary restriction began at the age of 15 years when she started skipping eating with her family after overhearing her father saying to her mother that "she (the patient) grew a bit fat." She said that she was simply avoiding food that was high in fat and used to exercise excessively (currently stopped because of severe lumbar pain); she denied inducing vomiting or purging. She also admitted, "Within the same period I also started high school and my grandmother passed away, so it was really difficult for me."

Nevertheless, C.S. was academically above average as a student. At the age of 22, C.S. graduated from university with a degree in physics and moved to France to start her master's degree in physics. She describes the period as being particularly stressful, "as I wasn't comfortable with changes, and I

think my departure might have had an impact." She admitted, "It was then when I first started hearing voices and they were disturbing. They were commenting on my grades and how I performed at school." After being in a car accident and having an open tibia fracture, she returned home, where she saw a psychiatrist and started a 2-month treatment with haloperidol oral solution. She reported, "As soon as I returned home, I couldn't hear the voices any longer." Therefore, she decided to stop the treatment after 2 months, without any further medical advice or consultation. The patient could not provide the medical documents; therefore, we cannot know the exact diagnosis she had at the time. Nevertheless, she started hearing voices again soon after interrupting the treatment, reporting that "the voices never really stopped after that."

Once she had finished her master's degree in physics, she started her doctoral studies and moved to Germany for almost 2 years. During this time, the patient continued her restrictive dieting and subsequently added excessive exercising, reporting that "I walked for 10 to 15 km per day, and I was also going out for a run." After her return from Germany, she went to see a psychotherapist for 10 sessions and denies receiving any other treatment for her auditory hallucinations.

For our patient, we did not identify any family member with a diagnosis of an eating disorder or psychotic disorder. Her body weight was 39.4 kg, height was 1.61 m, and she had a body mass index (BMI) of 15.1 kg/m<sup>2</sup>. On physical examination, the following were observed: dry skin, lanugo, brittle hair and nails, muscle wasting and weakness, paraspinous muscle contracture, lumbar spine pain, tender epigastrium, constipation, secondary amenorrhea (for almost 9 months), and a slowed, painful walk.

Blood investigations, which included a renal profile, liver function test, thyroid profile, and serum follicle-stimulating hormone (FSH), luteinizing hormone (LH), and parathormone (PTH) tests, were within normal limits. Prolactin and serum cortisol (8 AM) values were high. The 25-hydroxy vitamin D test showed low values. A lumbar nuclear magnetic resonance examination showed diffuse demineralization of the bone marrow with subsidence of the upper plateaus of the vertebral bodies, with their reduction in height by up to 20%, and sacral edema. The patient's case was managed with help of other disciplines, including Internal Medicine, Endocrinology, Neurology, and Neurosurgery.

The psychometric evaluation revealed a score of 77/181 points on the Positive and Negative Syndrome scale, with 21 points in the positive subscale, 21 points in the negative subscale, and 35 points in the general psychopathology subscale. The screening SCOFF questionnaire, which explores the possibility of whether someone might be experiencing an eating disorder, revealed 4 positive answers of 5.

At the time of hospitalization, the patient was slightly restless and admitted, “I hear voices telling me what to do and it bothers me terribly. I always argue with them. Yes, I speak alone in the house and I broke all my glasses and plates just to silence the voices.” During the psychiatric interview, the patient showed a certain degree of suspicion, stating, “I am still not convinced that it’s just me who can hear the voices. For example, if I receive the order to go for a run in the park and I see more people running, I am thinking that they also received the same order from the same voices. Somehow the same information was transmitted to all of us through television or radio. [...] Or for example, the last time they told me not to eat bread, so I haven’t eaten bread for 2 months now. I am still thinking that maybe they did some kind of experiment on us while I was studying in France, but I have to read some more because I am not sure.” The auditory hallucinations were voices of unknown males and females, and the patient affirms that the voices never said that the food is poisoned, nor does C.S. have any beliefs of that sort.

The patient was prescribed olanzapine 15 mg daily, aripiprazole 10 mg daily (only for a couple of months), and zolpidem 10 mg daily and was referred for psychotherapy. She refused to go to psychotherapy justifying that “I have been before and the therapist kept asking me different things about my childhood, and especially about my father, and I didn’t like that.” Even though C.S. was talking a lot about her past, she started being suspicious when asked to provide more information about her relationship with her father. In addition to the psychiatric treatment, an endocrinologist prescribed calcium 1 g daily, vitamin D3 1000 UI daily, alpha D3 0.5 µg twice a day, and fosavance 1 tablet/week.

At her last visit, C.S. said that she is still hearing voices “but not so often. They don’t tell me what to eat anymore; it is just job-related stuff and I still think that I can hear things that everybody can hear.” She has put on some weight (around 2 kg) and admits, “Now I think of myself as being fat.” Her psychiatrist decided to reduce the olanzapine to 10 mg daily and add risperidone 2 mg daily to the treatment plan. The patient admitted that she now eats only a little bit more than she did before starting treatment and that she cannot exercise anymore because of the pain in the lumbar spine.

## Discussion

### A Perspective on the Cause

The 2 disorders, anorexia nervosa and schizophrenia, despite their differences in etiology, pathogenesis, symptoms, course, and prognosis, can manifest in the same patient, either in a sequential or comorbid manner. The incidence of anorexia nervosa in the general population is estimated at 0.3% to

1%, with a predominance in young women, as in the patient from our case [17,18].

Some studies identified a genetic predisposition for anorexia nervosa, which was not the case for our patient, who denies having eating or psychotic disorders in the family [19]. Other research described these patients’ families as perfectionist, highly-critical, sensitive, and controlling [20]. Regarding our patient, the relationship with her father was described following the studies we mentioned earlier; moreover, the onset of the anorexia started as a result of a number of general triggers, such as puberty, conflicts with a family member, and being criticized about her weight, in such a way that anorexic behavior became a mechanism manifested to deal with a situation of discomfort rather than confronting it. Another study reported that the evolution of eating disorders could be determined by different environmental factors that can also be involved in the onset of schizophrenia [21].

### Two Serious Diagnoses in 1 Patient

In our patient’s case, anorexia preceded the psychotic symptoms by almost 7 years, when firstly, the patient’s behavior started at the age of 14. Therefore, we can easily highlight the criteria that sustained the diagnosis of anorexia nervosa: she was skipping meals, restricting food intake, walking or running to lose weight, and was preoccupied with the fact that she might gain weight. Furthermore, she had a low BMI and experienced secondary amenorrhea 2 times (at the ages of 35 and 43 years). When describing a patient with anorexia nervosa, the overvalued ideas of gaining weight are highlighted by a specific behavior, like the restriction of calorie intake (such as a restrictive diet), thorough calculations of the amount of calorie intake, and exhausting physical exercises. There are instances in which the content of these beliefs is so bizarre that they appear psychotic to individuals outside the group that endorses them. Regarding the aspect of eating behaviors, although many people in Western cultures have a strong belief that being thin is a healthy and desirable outcome, for some individuals, these ideas become overvalued to the point where they can develop a diagnosable eating disorder, such as anorexia nervosa [13]. Jaspers emphasized that overvalued ideas are isolated notions that develop comprehensibly out of a given personality and situation [13], and more recent studies proved that the presence of overvalued ideas is usually associated with an abnormal personality structure. Regarding anorexia nervosa, Kay and Leigh found pathological personality in 75% of cases [9]. From a dimensional standpoint, traits most often associated with the disorder are immaturity, dependency, and hypochondriasis [25].

Compulsive exercising is represented by any form of physical activity, which the patient cannot stop despite adverse

consequences on health status [26,27]. Generally speaking, for the average person, these activities are unplanned and usually come spontaneously, giving feelings of happiness and joy, but for patients with anorexia, these exercises are carefully planned. An explanation for this behavior could have its origin in ancient times, like an evolutionary adaptation, when even though the body lost weight, people were still able to search for food but in wider areas [28]. Studies that focused on the over-exercising behavior in patients with anorexia found an important emotional involvement attached to it; over the long course, longitudinal research identified over-exercising behavior to be the last symptom to resolve and also found that it is often associated with a continual evolution, prolonged hospital admissions, and earlier relapse rates [29,30]. Regarding our patient, she was getting off public transport and walking for long distances and after that, would go running. Other activities that these patients usually adopt are swimming, cycling, standing for longer periods than is required, pacing all the time, even when they are working or discussing, and going up and down the stairs more times than is needed [31,32]. Many hours of this physical routine could lead to joint problems, osteopenia, and osteoporosis caused by malnutrition and endocrine abnormalities, all of which were present in our patient, and we could have expected her to have bone fractures if we did not intervene [33,34].

Studies have described other behaviors used by these patients to lose weight, such as smoking, chewing gum, and drinking water to reduce food intake, avoiding any kind of treatment that can lead to weight gain, using excessive doses of laxatives, inducing vomiting, and exposing their bodies to cold temperatures to start shivering, consume energy, and burn more calories [33].

As we described, our patient fulfilled the criteria for an eating disorder from the age of 15 to 22 years, and then she developed a psychotic break followed by a diagnosis of schizophrenia from age 22 to 44. We can assume there was a time in which anorexia preceded the psychotic symptoms, but also a time in which it coexisted with the prodromal period, and eventually the patient was diagnosed with anorexia nervosa and schizophrenia by examining the cognitive driver of her behavior. A total of 1% to 4% of patients diagnosed with schizophrenia experience symptoms of anorexia nervosa throughout their illness, and the rate of psychotic symptoms occurring in the context of primary eating disorders varies across studies, estimated at 0% to 13% [22,23]. From a temporal standpoint, symptoms of anorexia can precede psychosis, manifest in the active phase of psychosis, or, less commonly, manifest during the residual phase of the illness [24]. In other cases, psychotic symptoms arise in the context of a documented primary eating disorder.

As a particular aspect of our case, we must mention the influence of the patient's schizophrenic symptoms on her anorexic

behavior, such as voices that ordered what exercises were needed to be done and what food should be avoided, but our patient never had the delusions of food being poisoned. Furthermore, the diagnosis of schizophrenia can be sustained by the symptoms of imperative auditory hallucinations, paranoid beliefs, and odd behavior. Also, it is important to mention that our patient denied ever seeing any parts of her body as different or fat and she did not have any other specific behaviors for losing weight beside over-exercising and restrictive eating. All of these aspects are indicative of a diagnosis of schizophrenia. The challenge of this case remains in the difficulty of differentiating the extreme preoccupation with weight from the extreme overvalued beliefs and food restriction from the odd behavior as a result of command hallucinations.

Unfortunately, to date, there is no approved pharmacological treatment for anorexia nervosa. Olanzapine has been linked to important body weight gain, and Bissada et al showed in their study that this drug could be used in anorexia nervosa. Moreover, the same study also observed that the obsessive symptoms in anorexia decreased with olanzapine, making this drug an even better option for patients with this mental disorder [35]. As we stated in our case report, our patient received 15 mg of olanzapine for the auditory hallucinations as well as for weight restoration. Considering her high prolactin level, she also received 10 mg of aripiprazole for a couple of months. However, Attya et al showed that the effect of olanzapine on weight gain and other effects (such as the metabolic effect or sedation) were modest compared with the placebo group. Furthermore, unlike Bissada et al, Attya et al concluded that the benefits of olanzapine on the psychological aspects of anorexia nervosa, such as the overvalued ideas of gaining weight, were also lacking [36]. In 2 different studies, second-generation antipsychotics showed no efficacy for BMI or related outcomes in patients with anorexia nervosa [37,38]. Considering the result of these studies and the atypical weight-inducing effects of antipsychotics, an important question has been raised: Can patients with anorexia nervosa physiologically or behaviorally "resist" this effect of antipsychotics?

Schizophrenia remains the most challenging mental disorder of the psychotic spectrum, and anorexia nervosa is a serious, life-threatening illness that can require immediate admission and medical care.

An initial assessment of somatic risk should also consider the patient's wishes, with treatment in a secondary care outpatient facility or in a day or inpatient service setting, applying nutritional interventions and psychological therapy; however, there is no global consensus in terms of the type of approach of psychotherapy. There are major differences relating to an agreement regarding the intensity or extent of how long the therapy should be. Pharmacological treatment in anorexia



nervosa has the effect of supporting all the psychological interventions rather than being the first-line treatment, but this is not the case when treating schizophrenia. Also, many patients with a diagnosis of schizophrenia lose the ability to make decisions related to their own health or safety, and in this worst-case scenario, involuntary admission could be required. When these 2 are combined, we can assume that the treatment management plan is even more difficult to handle. Referring to the clinical management of schizophrenia, this implies using different drug classes, which are associated with treatment-related adverse events. Some of the most common adverse effects induced by antipsychotics are represented by extrapyramidal symptoms, such as acute dystonia, akathisia, QTC prolongation, orthostatic hypotension, and hyperprolactinemia, and some studies suggest even cognitive impairment can be related to the long-term administration of antipsychotics. All of these adverse effects were also described as medical consequences of anorexia nervosa, and some research pointed out brain volume deficits as an irreversible complication in adolescents with anorexia nervosa. Putting all of this information together, it is clear that the treatment management plan for our patient needed to be carefully planned and conducted.

### **Making a Diagnostic According to the New ICD-11 Classification**

The new version of ICD-11 reorganized the chapter “Feeding and eating disorders”, paying more attention to a higher clinical utility, despite the cultural region. To attribute the disorders to this chapter, there is a need to exclude developmental conditions, different cultural beliefs, and other health problems that could better explain the present symptoms. Thus, syndromes consisting of abnormal eating patterns in association with fear of gaining weight, body image, and uncommon feeding behaviors that combine restricted food intake, eating non-edible substances, or voluntary regurgitation of what has been eaten, have been encompassed within 1 diagnostic block, “Feeding and eating disorders”. [39]. In this chapter, a new diagnosis called “avoidant-restrictive food intake disorder” appears, defined by deficiencies regarding both the quantity and the variety of the food ingested, which leads to weight loss caused by an inadequate energy supply. However, this syndrome is not characterized by persistent preoccupations with body weight [40]. In our case, the patient had a severe restriction in food intake, but this would not be the right diagnosis because she also had an associated fear of gaining weight. A more proper diagnosis would be anorexia nervosa, characterized by its major features, which maintain their status as diagnostic criteria in the new ICD-11. Since there are cases in which anorexia nervosa should be diagnosed in patients with a BMI higher than the 18.5 kg/m<sup>2</sup> threshold used to define low body weight, it is advisable for this measurement to be regarded as a general reference as opposed to a strict

exclusion criterion. The new diagnostic criteria also allow coding for a severity specifier, suggesting that the amount of deviation from the normal body weight correlates with a higher mortality risk or a poorer outcome. In our case, the specifier would classify the patient in the significantly low body weight group, in correlation with a BMI between 18.5 and 14.0 kg/m<sup>2</sup>, and not in the dangerously low body weight group defined by a BMI under 14.0 kg/m<sup>2</sup>. Furthermore, ICD-11 underlines the importance of the behavioral aspects of the disease, such as restrictive eating or elimination patterns (our patient presented the restricting pattern), that are related to weight loss, unlike the DSM-5. Although physical symptoms such as dysregulation of the menstrual cycle with secondary amenorrhea and loss of bone density are obvious consequences of the eating behavior, neither diagnostic system requires their presence as main diagnostic criteria for anorexia nervosa. For both classification systems, the need for a modified normal behavior pertaining to food intake is mandatory, but the subjective fear of weight gain is not considered a required criterion. Also, neither system requires the mandatory presence of a reported fear of gaining weight, but there is the need for a modified normal behavior [41].

In the field of psychotic disorders in the new version ICD-11, the name of the previous section entitled “Schizophrenia, schizotypal and delusional disorders” was changed to “Schizophrenia or other primary psychotic disorders”. The word “primary” in the new title is meant to indicate that psychotic elements need to be considered as core features for these disorders, in contrast to other mental disorders that may have associated psychotic symptoms but occur as a result of different psychopathological mechanisms [42]. For diagnosing schizophrenia according to the ICD-11, the importance given to the first-rank Schneider symptoms is abandoned, although they remain unchanged and are considered of the same importance as the rest of the positive symptoms [43]. An innovation brought by ICD-11 is the introduction in the description of the disorder of cognitive deficits as characteristic symptoms of schizophrenia [44]. Our patient presented at least 1 core symptom of delusions, hallucinations, and experiences of influence, according to ICD-11. Also, as an alternative to subtypes, the course qualifiers classified our patient as a multiple-episode case and currently symptomatic. She had symptom qualifiers of positive symptoms that were rated as severe. Similar for both classification systems, ICD-11 and DSM-5, the schizophrenia subtypes were omitted because of their longitudinal instability and lack of prognostic validity [45].

Although several theories have been proposed, the body of knowledge accumulated so far does not offer a clear answer regarding a probable relationship between anorexia nervosa and schizophrenia. In a recent article, Seeman discusses 7 hypotheses that explain certain aspects of the comorbidity

between the 2 disorders but fails to shed light on others, which points to the complexity of the problem [46]. Other authors have argued that anorexia nervosa could be viewed as a psychotic disorder. The level of insight preserved in patients with anorexia nervosa determines the severity of the disturbances in thought content, ideas related to weight and body image, which range from obsessions to overvalued ideas to delusions. Thus, axial symptoms of anorexia nervosa could be linked to psychosis through the body image distortions that arise as a result of delusional thinking [47].

## Conclusions

The newest version of the ICD-11 is intended as a substantial improvement of the previous ICD-10, making it easier to establish a diagnosis by providing descriptors for severity or

course evolution and by amplifying the role of different factors that can influence the mental state, as a step forward for global medicine. In our case, the most challenging aspect was to understand and determine the form and content of the patient's beliefs and not necessarily to establish an adequate diagnosis because of the comorbid disease process that included similar content, such as the refusal to eat. Clinicians should be aware that the form and content of beliefs are critical to analyze with the proper definitions to separate delusional beliefs from passionately held beliefs with an intense emotional commitment, such as overvalued ideas.

## Department and Institution Where Work Was Done

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## References:

- Cheung P, Wilder-Smith E. Anorexia nervosa and schizophrenia in a male Chinese. *Int J Eat Disord*. 1995;18(1):103-6
- Cinemere B, Kulaksizoglu B. Case report: Comorbid anorexia nervosa and schizophrenia in a male patient. *Turk Psikiyatri Derg*. 2017;18(1):87-91
- Ebrahimi Daryani N, TabaTabaVakili S, Abdollahzade S. An association between anorexia nervosa and schizophrenia: A case report. *Govaresh*. 2011;16(2):139-43
- Hsu LKG, Meltzer ES, Crisp AH. Schizophrenia and anorexia nervosa. *J Nerv Ment Dis*. 1981;169:273-76
- Hsu LKG, Meltzer ES, Crisp AH. Follow up studies of anorexia nervosa: A review. *Psychol Med*. 1983;13:231-39
- Buckley PF, Miller BJ, Lehrer DS, Castle DJ. Psychiatric comorbidities and schizophrenia. *Schizophr Bull*. 2009;35(2):383-402
- American Psychiatric Association: Diagnostic and statistical manual of mental disorders, Fifth Edition. Washington, DC: American Psychiatric Press; 2013
- Smink FR, van Hoeken D, Hoek HW. Epidemiology, course, and outcome of eating disorders. *Curr Opin Psychiatry*. 2013;26(6):543-48
- Kay DWK, Leigh D, Schapira K. Editor: Reichsman F. Psychiatric observations on anorexia. In *Advances in Psychosomatic Medicine 7*. Basel: Karger; 1972
- Crisp AH. Anorexia nervosa: Let me be. London: Academic Press; 1980
- Oxford Textbook of Psychiatry, Third Edition. Editors: Gelder M, Gath D, Mayou R, Cowan P. New York: Oxford University Press; 1996
- Veale D. Over-valued ideas: A conceptual analysis. *Behav Res Ther*. 2002;40:383-400
- Rahman T, Meloy JR, Bauer R. Extreme overvalued belief and the legacy of Carl Wernicke. *J Am Acad Psychiatry Law*. 2019;47:180-87
- Oyebode F. *Sims' symptoms in the mind: An introduction to descriptive psychopathology*, Fourth Edition. Philadelphia: Elsevier Health Sciences; 2008
- McKenna PJ. Disorders with overvalued ideas. *Br J Pharmacol*. 1984;145:579-85
- Winokur G, Clayton P. *The medical basis of psychiatry*. Philadelphia: Saunders; 1986
- Hoek HW. Incidence, prevalence and mortality of anorexia nervosa and other eating disorders. *Curr Opin Psychiatry*. 2006;19(4):389-94
- Smink FRE, van Hoeken D, Hoek HW. Epidemiology of eating disorders: Incidence, prevalence and mortality rates. *Curr Psychiatry Rep*. 2012;14(4):406-14
- Whitney J, Murray J, Gavan K, et al. Experience of caring for someone with anorexia nervosa: Qualitative study. *Br J Psychiatry*. 2005;187:444-49
- Collier DA, Treasure JL. The aetiology of eating disorders. *Br J Psychiatry*. 2004;185(5):363-65
- Stice E, Marti CN, Durant S. Risk factors for onset of eating disorders: Evidence of multiple risk pathways from an 8-year prospective study. *Behav Res Ther*. 2011;49(10):622-27
- Hudson JI, Pope HGJ, Jonas JM. Psychosis in anorexia nervosa and bulimia. *Br J Psychiatry*. 1984;145:420-23
- Kouidrat Y, Amad A, Lalau J-D, Loas G. Eating disorders in schizophrenia: Implications for research and management. *Schizophr Res Treatment*. 2014;2014:791573
- Ferguson JM, Damluji NF. Anorexia nervosa and schizophrenia. *International Journal of Eating Disorders*. 1988;7(3):343-52
- Smart DE, Beumont PJV, George OCW. Some personality characteristics of patients with anorexia nervosa. *Br J Psychiatry*. 1976;128:57-60
- Beumont PJ, Arthur B, Russell JD, Touyz SW. Excessive physical activity in dieting disorder patients: Proposals for a supervised exercise program. *Int J Eat Disord*. 1994;15(1):21-36
- Davis C, Katzman DK, Kaptein S, et al. The prevalence of high-level exercise in the eating disorders: etiological implications. *Compr Psychiatry*. 1997;38(6):321-26
- Epling WF, Pierce WD. *Activity anorexia: Theory, research, and treatment*. Mahwah, N.J.: Lawrence Erlbaum Associates; 1996
- Solenberger SE. Exercise and eating disorders: A 3-year inpatient hospital record analysis. *Eat Behav*. 2001;2(2):151-68
- Strober M, Freeman R, Morrell W. The long-term course of severe anorexia nervosa in adolescents: Survival analysis of recovery, relapse, and outcome predictors over 10-15 years in a prospective study. *Int J Eat Disord*. 1997;22(4):339-60
- Kron L, Katz JL, Gorzynski G, Weiner H. Hyperactivity in anorexia nervosa: A fundamental clinical feature. *Compr Psychiatry*. 1978;19(5):433-40
- Steffen JJ, Brehm BJ. The dimensions of obligatory exercise. *The Journal of Treatment & Prevention*. 1999;7(3):219-26
- Arcelus J, Witcomb GL, Mitchell A. Prevalence of eating disorders amongst dancers: A systemic review and meta-analysis. *Eur Eat Disord Rev*. 2014;22(2):92-101
- Miller KK, Grinspoon SK, Ciampa J, et al. Medical findings in outpatients with anorexia nervosa. *Arch Intern Med*. 2005;165(5):561-66
- Bissada H, Tasca GA, Barber AM, et al. Olanzapine in the treatment of low body weight and obsessive thinking in women with anorexia nervosa: A randomized, double-blind, placebo-controlled trial. *Am J Psychiatry*. 2008;165:1281-88
- Attia E, Kaplan AS, Walsh BT, et al. Olanzapine versus placebo for outpatients with anorexia nervosa. *Psychol Med*. 2011;41(10):2177-82

37. Lebow J, Sim LA, Erwin PJ, Murad MH. The effect of atypical antipsychotic medications in individuals with anorexia nervosa: A systematic review and meta-analysis. *Int J Eat Disord.* 2013;46(4):332-39
38. Kishi T, Kafantaris V, Sunday S, et al. Are antipsychotics effective for the treatment of anorexia nervosa? Results from a systematic review and meta-analysis. *J Clin Psychiatry* 2012;73(6):e757-66
39. International Advisory Group for the Revision of ICD-10 Mental and Behavioural Disorders. A conceptual framework for the revision of the ICD-10 classification of mental and behavioural disorders. *World Psychiatry.* 2011;10(2):86-92
40. Keeley JW, Reed GM, Roberts MC, et al. Developing a science of clinical utility in diagnostic classification systems: Field study strategies for ICD-11 mental and behavioral disorders. *Am Psychol.* 2016;71(1):3-16
41. First MB, Reed GM, Hyman SE, Saxena S. The development of the ICD-11 clinical descriptions and diagnostic guidelines for mental and behavioural disorders. *World Psychiatry.* 2015;14(1):82-90
42. Gaebel W, Zielasek J. Schizophrenia in 2020: Trends in diagnosis and therapy. *Psychiatry Clin Neurosci.* 2015;69(11):661-73
43. Gaebel W, Riesbeck M, Larach VW, et al. Trends in schizophrenia diagnosis and treatment. In: Javed A, Fountoulakis KN, editors. *Advances in psychiatry* [Internet]. Cham: Springer International Publishing; 2019;603-19. Available from: [https://doi.org/10.1007/978-3-319-70554-5\\_35](https://doi.org/10.1007/978-3-319-70554-5_35)
44. Gaebel W, Kerst A, Cyranka K. ICD-11 Mental, behavioural or neurodevelopmental disorders: Innovations and managing implementation. *Arch Psychiatry Psychother.* 2019;21:7-12
45. Tandon R. The nosology of schizophrenia: Toward DSM-5 and ICD-11. *Psychiatry Clin North Am.* 2012;35(3):557-69
46. Seeman MV. Eating disorders and psychosis: Seven hypotheses. *World J Psychiatry.* 2014;4(4):112-19
47. Powers PS, Simpson H, McCormick T. Anorexia nervosa and psychosis. *Prim Psychiatry.* 200;12: 39-45