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Individual Factors Affecting Self-esteem, and Relationships Among Selfesteem, Body Mass Index, and Body Image in Patients With Schizophrenia

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ABSTRACT

The purposes of this study were to identify correlations between body mass index, body image, and self-esteem in patients with schizophrenia and to analyse the specific factors affecting self-esteem. This study had a descriptive design, utilising a cross-sectional survey. Participants were patients with schizophrenia who were admitted to a mental health facility in South Korea. A total of 180 questionnaires were distributed, and an appropriate total sample size of 167 valid questionnaires was analysed. Self-esteem was significantly correlated with body image, the subscale of appearance orientation, and body areas satisfaction. However, body mass index exhibited no significant correlation with any variable. The variables found to have a significant explanatory power of 21.4% were appearance orientation and body areas satisfaction. The explanatory power of all factors was 33.6%. The self-esteem of patients with schizophrenia can be controlled by medication, whereas negative symptoms can be improved through education and nursing care with medication. Thus, psychiatric nurses should develop education and care programs that contribute to the positive body image and self-esteem of patients with schizophrenia.

Introduction

Antipsychotic medication is the most important method for treating schizophrenia. In particular, atypical antipsychotic drugs are preferred for reasons of safety and having a low rate of medication being stopped (Lieberman et al., 2003; McCloughen & Foster, 2011). Continuous use of schizophrenia medication increases discharge rates, and reduces readmission, which demonstrates the importance of medication compliance. However, atypical drugs have side effects, such as cardiovascular disease, weight gain, and type 2 diabetes mellitus (Lan & Chen, 2012; Strassnig, Brar, & Ganguli, 2005), and these drugs are purportedly the primary cause of obesity seen in patients with schizophrenia (Liu et al., 2010; Ventriglio et al., 2014). Typical drugs block only the dopamine pathway, whereas atypical drugs block not only dopamine but also serotonin. Serotonin has a greater association with obesity than dopamine (Reinholz et al., 2008; Watanabe et al., 2016). As such, serotonin may be a key factor with regard to glucose and lipid metabolism, fat accumulation, and obesity, which involves circulating insulin (Liu et al., 2010; Watanabe et al., 2016). Therefore, patients with schizophrenia commonly gain excess weight (Werneke,

Taylor, & Sanders, 2002); this obesity side effect may affect noncompliance or interruption of medication (Weiden, Mackell, & McDonnell, 2004).

In fact, some studies have shown that if patients with schizophrenia believe that the antipsychotic drugs that they are taking affect weight gain, they are more likely to want to stop, or actually stop, taking their medication (Tham, Jones, Chamberlain, & Castle, 2007). The risk of obesity and increased body mass index (BMI) in patients with schizophrenia is significantly higher than that found in the general population (Liu et al., 2010; Sugawara et al., 2013). Additionally, the prevalence of metabolic syndrome has been found to be between 20% and 60%; metabolic syndrome leads to cardiovascular diseases and may be related to an increased risk of mortality in this population (Meyer et al., 2008). Thus, obesity that is comorbid with schizophrenia is an important risk factor of cardiovascular disease, and has a high association with BMI (Chorin et al., 2015). Therefore, the need for obesity management and regular screening of BMI is essential for patients taking atypical antipsychotics. The implementation of this level of screening should be relatively easy as BMI screening is much less complicated than fasting blood glucose level or cholesterol screening.

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Obesity poses not only a physical risk but also affects psychological factors in patients with schizophrenia. Weight gain may lead to dissatisfaction, maladjustment, and negative body image (Arbour-Nicitopoulos, Faulkner, & Cohn, 2010). Body image is defined as the perceptions, thoughts, and feelings associated with the body and bodily experience (Cash & Pruzinsky, 1990). Since the positive and negative symptoms of schizophrenia correlate with body image (Koide, Iizuka, Fujihara, & Morita, 2002), they may have an impact on negative body image if patients experience severe delusions and hallucinations. Negative body image has been shown to decrease quality of life and self-esteem (De Hert et al., 2006; Malhotra, Kulhara, Chakrabati, & Grover, 2016). Additionally, both obesity and schizophrenia have a high level of stigma (Durso, Latner, & Ciao, 2016), and these have been shown to negatively affect self-image and self-esteem (Xu et al., 2013).

Regular physical activity may also contribute to self-esteem (Vancampfort et al., 2011). However, patients with schizophrenia who are admitted to mental health facilities live in a closed environment, with a sedentary lifestyle and insufficient exercise, eventually leading to severe weight gain (Janney et al., 2013; Martin, Jean, Matcheri, & Rohan, 2007). Therefore, the care of individuals with schizophrenia must include intervention and management for the obesity side effects found with taking atypical antipsychotic medications. Furthermore, obesity lowers self-esteem, and low self-esteem can affect suicide ideation (Fulginiti & Brekke, 2015). Additionally, low selfesteem may increase hallucinations and delusions, leading to anxiety and depression (Hall & Tarrier, 2003; Jones & Fernyhough, 2007). Since self-esteem is strongly and closely related to the symptoms of schizophrenia and the lives of patients with schizophrenia, the results of this study can be used to facilitate the development of social support programs to address issues of self-esteem. Therefore, the purposes of this study were to identify correlations among BMI, body image, and selfesteem and to examine individual factors related to self-esteem in individuals with schizophrenia.

Methods

Design

This study had a descriptive design, using a cross-sectional survey to assess the BMI, body image, and self-esteem of patients with schizophrenia. The patients completed a self-report questionnaire. This study investigated various general factors affecting self-esteem among individuals with schizophrenia that have been admitted to a mental health facility.

Participants

Participants were patients with schizophrenia who were admitted to a 600-bed mental healthcare facility located in South Korea. Those who satisfied the criteria to participate in the study were chosen at random. The researchers received permission and cooperation from the director of the facility, the doctors of the patients, the nurse director, and the ward nurses. The inclusion and exclusion criteria for participants were as follows:

- 1. Patients who understood and agreed with the purpose of the study.
- 2. Patients with schizophrenia diagnosed using the DSM-IV-TR criteria and who were hospitalised for over 3 months.
- 3. Aged between 18 and 60 years.
- 4. A minimum schizophrenia diagnosis duration of 2 years.
- 5. Patients with any comorbid condition, and physical or cognitive complications, were excluded.

The minimum sample size was determined using G*Power v. 3.1 (Heinrich Heine University, Dusseldorf, Germany). The minimum sample size required for a hierarchical stepwise regression was 131,

with the following parameters: 13 independent variables, a power of 0.85, an alpha of 0.05, and an effect size of 0.15. Taking dropouts into account, a total of 180 questionnaires were distributed. An appropriate final sample size of 167 participants was analysed.

Ethical considerations

This study was approved by the institutional review board of the mental health facility (approval no.: JPMH-IRB-2016-01). The purpose of this study was explained to the patients who met the inclusion criteria, and they were informed that participation was voluntary and they could withdraw at any time. The informed consent of all participants was obtained. The participants responded to all of the questionnaires themselves.

Measurements

BMI

BMI was calculated as weight in kilograms, divided by the square height in metres. The height and weight of participants were measured with their shoes off and only wearing light clothing.

Body image

The Multidimensional Body-Self Relations Questionnaire (MBSRQ; Cash, 2000) was used to assess body image satisfaction. The MBSRQ is a 69-item self-report inventory that assesses aspects of negative attitudes towards body image (Brown, Cash, & Mikulka, 1990). For the purposes of the present study, the appearance orientation subscale (AOS; 12 items) and the body areas satisfaction subscale (BASS; 9 items) were used. The AOS assesses extent of investment in one's appearance and extensive grooming behaviour. The BASS assesses positive viewpoints related to certain body areas. All items were answered on a 5-point scale. High composite scores of the two subscales indicate general contentment with appearance and most areas of the body. In a previous study, the Cronbach's α of the AOS was 0.80, and of the BASS was 0.81 (Falconer & Neville, 2000). In this study, the Cronbach's α of the AOS was 0.88.

Self-esteem

The Rosenberg Self-Esteem Scale is a self-report measure of global self-esteem (Rosenberg, 1965). It consists of 10 items related to overall feelings of self-worth or self-acceptance. The items are answered on a 4-point scale, ranging from *strongly agree* to *strongly disagree*. Scores range from 10 to 40, with higher scores indicating higher self-esteem. The Cronbach's α of this measure was 0.87 in a previous study (Świtaj, Grygiel, Anczewska, & Wciórka, 2015) and 0.65 in this study.

Data collection

The data collection period was from March to April 2016. We provided sufficient time for questionnaire completion (approximately 20–30 min). Thirteen surveys of the 180 distributed were excluded due to insufficient answers, resulting in 167 questionnaires analysed. All screening of BMI was performed by the researchers, which took approximately 5–10 min.

Data analysis

All data were analysed using IBM SPSS Statistics for Windows v. 21.0 (IBM Corporation, Armonk, NY, USA). The procedure of the analyses was as follows:

- 1. The general characteristics of the participants were calculated as real numbers and percentages.
- 2. Differences in the general characteristics of BMI, body image, and self-esteem were examined using the independent *t*-test and one-

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