Evaluation of the relationship between death anxiety and clinical features of the disease and functionality in patients with schizophrenia

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ABSTRACT

Aim: This study aimed to examine the relationship between death anxiety in schizophrenia patients and the clinical characteristics of the disease and its functionality.

Method: The study included 52 patients diagnosed with schizophrenia according to the DSM-5 diagnostic criteria and 52 healthy volunteers. Death anxiety scores were compared between the two groups using the Abdel-Khalek Death Anxiety Scale (ADAS). The functionality of the schizophrenia patients was evaluated with the Functional Remission of General Schizophrenia (FROGS) scale.

Results: The mean ADAS total scores were statistically significantly higher in the schizophrenia patient group than in the control group. A low-level negative correlation was determined between the ADAS total points and the FROGS total points, the FROGS subscales of daily life skills and health.

Conclusion: The results of this study showed higher death anxiety in schizophrenia patients than in the healthy control group. Patients with a higher level of functionality were determined to have a lower level of death anxiety. These results support our idea that interventions and therapeutic approaches to increase functionality in patients with schizophrenia can reduce their death anxiety. In order to reach more evident conclusions on this subject, prospective studies that deal with the causal relationship between death anxiety and functionality are needed.

1. Introduction

Schizophrenia is a clinical syndrome characterised by hallucinations and delusions. It is defined by symptoms in many central nervous system functions such as language use, motor activity, disorganised behaviour, and affective disorders (Atbasoğlu, 2018). Nowadays, it is emphasised that schizophrenia does not consist of only psychotic symptoms and findings but is a neurodevelopmental disorder manifesting in other parts of the body, primarily as a brain function disorder. However, current diagnostic scales give importance to psychotic symptoms in particular when diagnosing schizophrenia, and there is little room for the other psychopathological characteristics of schizophrenia. This approach may cause other problem areas of the disease to be overlooked.

Functionality can be said to be considered an existential defence against death anxiety. When speaking of the relationship between functionality and death anxiety, it is necessary to mention the Terror Management Theory. This theory explains people’s behaviour to protect their self-integrity and worth and the efforts to avoid the feelings of terror created by the awareness of death (Greenberg et al., 1992; Arndt et al., 2005). When the relationship between self-respect and functionality is examined, many studies have revealed a positive relationship (Strout et al., 2001; Schooler, 2006; Ensari et al., 2013). On this basis, functionality can be considered one of the components of increasing self-respect against death anxiety.

Comorbidities in schizophrenia may prevent clinicians and researchers from being able to examine and sufficiently determine the core symptoms of schizophrenia because of problems in the hierarchy of diagnosis, and sometimes because of incorrect evaluations, and these may become a factor affecting the arrangement of appropriate treatment and hospitalisation (Ciapparelli, 2007).

Death anxiety and attitudes to death have rarely been examined in patients with severe mental health disorder such as schizophrenia (Mavrogiorgou et al., 2020). It is hoped that research about death anxiety in schizophrenia will contribute to the examination of both the symptoms seen in schizophrenia and the factors affecting functionality, thereby enriching the knowledge related to death anxiety and human existence.
This study aimed to determine the relationship between death anxiety in schizophrenia patients and the clinical characteristics of the disease and its functionality.

2. Methods

2.1. Participants and procedures

The study was conducted in the psychiatry outpatient clinic of Samsun Ondokuz Mayis University Medical Faculty Hospital and included 52 patients followed up for a diagnosis of schizophrenia according to the DSM-5 criteria and a control group of 52 healthy subjects. Written consent was obtained from all participants for the study, and at the same time, approval for the study was granted by the Clinical Research Ethics Committee of Samsun Ondokuz Mayis University (decision no: 2019/416). All the participants in both the schizophrenia and control groups were aged >18 years, were literate, had sufficient cognitive and mental ability to complete the scales to be applied in the study, and voluntarily agreed to participate in the research. The study exclusion criteria were defined as the presence of additional psychiatric disease, being under the effects of alcohol or psychoactive substance when the tests were applied, the presence of terminal stages chronic disease such as cancer or severe organ failure, having experienced acute loss or having a complicated grief reaction, the presence of a primary neurological disorder, cognitive mental disorder (dementia, delirium), or mental retardation.

2.2. Clinical evaluation

The sociodemographic data of the participants were evaluated on a form including the information regarding age, gender, marital status, educational level, occupational status, psychiatric history, treatments, smoking status, alcohol consumption, substance use, and history of suicide attempts. This form was completed by the researcher in a face-to-face interview.

2.3. Scales

To measure the level of death anxiety in both the schizophrenia group and the control group Abdel-Khalak Death Anxiety Scale (ADAS) was used. This scale was developed in Arabic and English by Abdel-Khalak in 2004. It consists of 20 items, with responses scored on a 5-point Likert-type scale (1 = never, 5 = very much). The scale was completed by the participants.

As a result of factor analysis of the structure validity of ADAS by Aydogan et al. (2015) 5 factors were obtained:

Factor 1: Fear stimulated by visual stimulations related to death: Item 2: I am frightened of facing death. Item 8: I am frightened of seeing a corpse. Item 11: Witnessing a burial terrifies me. Item 16: Witnessing a funeral upset me. Item 17: The appearance of a dying person frightens me.

Factor 2: Fear related to death’s physical and mental aspects: Item 5: I am frightened of having a heart attack. Item 6: I worry that death will deprive me of someone I love. Item 10: I am frightened of contracting a severe disease. Item 15: The pain of death frightens me very much. Item 19: I am frightened of getting cancer.

Factor 3: Fear related to other situations reminiscent of death. Item 3: I am frightened of visiting a cemetery. Item 12: Walking in a cemetery terrifies me. Item 14: I am frightened of sleeping and not waking up. Item 18: Talking about death upsets me.

Factor 4: Fear of the afterlife: Item 7: I am worried about the unknown after death. Item 9: I am frightened about the torment of the grave. Item 13: I am always thinking about what will happen after death.

Factor 5: Fear of the death process: Item 1: Whenever I am ill, I am frightened of dying. Item 4: The possibility of an operation terrifies me. Item 20: I am frightened of death.

The Hamilton Anxiety Scale (HAM-A) (Hamilton, 1959) was used to measure the level of anxiety in both the schizophrenia group and the control group. The HAM-A was completed by the researcher. In evaluating positive and negative symptoms in the schizophrenia group, the Positive and Negative Symptom Scale (PANSS) was used (Kay et al., 1987). The PANSS is a semi-structured scale of 30 items which measure positive, negative, and general schizophrenia symptoms and is applied by the researcher. In evaluating functionality, the Functional Remission of General Schizophrenia (FROGS) scale was used (Llorca et al., 2009). The FROGS is a semi-structured scale applied by the researcher, and the evaluation is based on information obtained from the patient and their family.

2.4. Statistical analysis

Data obtained in the study were analysed statistically using SPSS v. 21 software. Conformity of the data obtained from the scales was assessed with the Kolmogorov-Smirnov test. In the comparisons of sociodemographic data of the two groups, the Chi-square test was applied to nominal variables, data obtained from the scales that conformed to normal distribution were applied with the Student’s t-test, and data not showing normal distribution were compared with the Mann Whitney U-test. In the comparisons of the ADAS and HAM-A points of the schizophrenia group and the control group, the Student’s t-test was used. The relationship between the ADAS points of the schizophrenia group and the relationship between the HAM-A and ADAS points to examine the relationship between the anxiety levels and fear of death of both groups were examined with the Pearson’s Product-Moment Correlation Analysis test. In the interpretation of effect size for correlation coefficients (r), the effect size values were interpreted as recommended by Hinkle et al. as 0.00–0.30: very low, 0.30–0.50: low, 0.50–0.70: moderate, 0.70–0.90: high, and 0.90–1.00: very high (Hinkle et al., 1979). Mean values were shown as mean ± standard deviation (SD) values. A value of p < 0.05 was accepted as statistically significant.

3. Results

No significant difference was determined between the groups regarding age, gender, educational level, and social support (Table 1).

The familial history of psychotic disorder, number of hospitalisations, time without treatment, history of self-harming behaviour, suicide attempts, medical disease, and the mean ± SD PANSS and FROGS points of the schizophrenia group are shown in Table 2.

The schizophrenia and control groups were compared with total HAM-A points. The mean total points were determined to be statistically significantly higher in the schizophrenia group (8.85 ± 5.78) than in the control group (4.67 ± 2.22) (t = 4.86, p = 0.00) (Table 3).

The death anxiety points of the schizophrenia group and the control group were compared according to the factor structures of the ADAS. The ADAS points of the schizophrenia group were determined to be statistically significantly higher than those of the control group in respect of all the factors (Factor 1: t = 2.55; p = 0.01, Factor 2: t = 2.29; p = 0.02, Factor 3: t = 3.65; p = 0.00, Factor 4: t = 4.21; p = 0.00, Factor 5: t = 4.56; p = 0.00) (Table 4).

The relationship was examined between death anxiety and the sociodemographic characteristics and clinical characteristics of the disease in the schizophrenia group. The results of the Mann Whitney U-test showed no significant difference between the death anxiety scores and the sociodemographic and clinical characteristics such as gender, marital status (married/single), having or not having children, living alone or with others, sufficiency or not of social support, perception of economic status (weak/good), presence or not of a medical disease, history of self-harming, history of suicide attempts, and familial history of psychotic disorder.

All of the participants were followed up with at least one antipsychotic drug. In addition to patients followed up with only antipsychotics
(n = 28), there were also patients using mood stabilizers (n = 5), anti-depressants (n = 14), anxiolytics (n = 1) and their combinations (n = 4).

The relationships of the FROGS, PANSS, and HAM-A points with the ADAS total points of the schizophrenia group and the control group (r = −0.17; p = 0.03). A very low negative correlation was determined between the HAM-A total points and the ADAS total points of the schizophrenia group (r = −0.44; p = 0.01), FROGS subscaleoccupation points (r = −0.28; p = 0.05) (Table 5).

A very low positive correlation was determined but not at a level of statistical significance between the HAM-A total points and the ADAS total points in the schizophrenia group (r = 0.19; p = 0.17). A low-level of positive, statistically significant correlation was determined between the HAM-A total points and the ADAS total points of the control group (r = 0.36; p = 0.01).

4. Discussion

This study examined the relationship between death anxiety and sociodemographic data and some clinical characteristics in a group of individuals with schizophrenia. The results of the Mann Whitney U-test showed no significant difference between the death anxiety scores and the sociodemographic and clinical characteristics such as gender, marital status (married/single), having or not having children, living alone or with others, sufficiency or not of social support, perception of economic status (weak/good), presence or not of a medical disease, history of self-harming, history of suicide attempts, and familial history of psychotic disorder.
When the ADAS total scores were compared between the two groups, the death anxiety of the schizophrenia group was found to be statistically significantly higher than that of the control group. In addition, when the death anxiety points were compared according to the factor structures of the ADAS, a statistically significant difference was determined, with the schizophrenia group being higher in all five factor structures. These results are consistent with the results of studies by Planansky and Johnston (1977), Lonetto and Templer (1986), Khanna et al. (1988) and Mavrogiorgou et al. (2020).

In a study by Abdel-Khalek of 765 subjects in Egypt using the DOS (Death Obsession Scale) and ASDA, differences were examined between patients with anxiety disorder, schizophrenia, alcohol and substance dependence, and a healthy control group, and the highest mean death anxiety points were determined in females diagnosed with schizophrenia, followed by males and females with anxiety disorder, and in contrast to the literature, the lowest death anxiety scores of all the groups were determined in males diagnosed with schizophrenia (2005). Abdel-Khalek reported this difference between male and female schizophrenia patients and emphasised that this result could have been determined between male and female schizophrenia patients by Abdel-Khalek (Mavrogiorgou et al., 2020). In the current study, the mean total ADAS points of the female schizophrenia patients were determined to be higher than those of the males, but the significance of the p values were highly close (p = 0.06). Although it is difficult to understand such a significant difference between the genders in the Abdel-Khalek study, gender difference may affect death anxiety in schizophrenia. There is a need for further large-scale studies to evaluate this.

When the views of several theories that have been suggested are evaluated together, such as the Development Theory, Personal Structure Theory, Denial and Positive Illusion Theory, and Multiple Self and Self Conflict Theory, the individual who has a mental structure that can realise potential from birth, an individual with developed self-respect, the self with the external world, and being able to protect their self-respect. From this, it can be understood that schizophrenia patients have greater difficulty coping with death anxiety than the individuals who constitute the general population.

According to existential approaches, there can be mental enrichment of an individual and self-realisation by accepting the reality of death and making efforts to make life more meaningful rather than daily distractions. When schizophrenia patients are considered, it is to be expected to experience difficulties in creating meaning and accepting the reality of death. If considered in respect of Searching for Meaning Theories, it is necessary first to examine the concept of “meaning”. Some thinkers in analytical philosophy have said that the term “meaning” belongs not only to the existence, but also to language (Çiçen, 2017). Lacan stated that transition to reality is possible with the symbolic construction. According to Lacan, the psychotic subject cannot transition to the cultural system and the meaning of the world created by this system, and to the language system. In other words, it is a state of absence of meaning. It is as if symbols of the external world remain only in that form, and the shift is not made by being accepted as a meaning (Keser, 2018). Therefore, it should be understood that schizophrenia patients will have difficulties coping with death anxiety by searching for a purpose and meaning in life.

Cognitive Theory advocates that interventional and therapeutic approaches can reduce death anxiety in a holistic form with positive and appropriate structures of thoughts of death and cognitive components related to these. However, cognitive function disorders are known to be one of the basic characteristics seen in schizophrenia. Therefore, when conditions and stimulants that could trigger death anxiety are present, it can be understood that schizophrenia patients have difficulty showing cognitive flexibility to cope with the threat of death.

To cope with reality, schizophrenia patients often use denial as a form of defence. However, this denial is different from that of neurotic individuals. Freud stated that “neurosis does not deny reality, but simply ignores it, whereas psychosis denies reality and tries to replace it” (Keser, 2018). Psychotic denial allows patients sometimes to be able to deny the reality of death. However, it is insufficient to sustain the adaptation skills of patients in many situations imposed by external reality. Both these insufficiencies and the negativities associated with the disease being a neurodevelopmental disorder create significant difficulties for schizophrenia patients to realise their potential. For reasons such as incorrect prejudices related to the disease, and insufficient policies supporting schizophrenia patients in community life and the workplace, stigmatisation forms a severe barrier to schizophrenia patients being able to realise their potential being able to feel a part of the culture in which they live, and being able to protect their self-respect. From this, it can be understood that schizophrenia patients have greater difficulty coping with death anxiety than the individuals who constitute the general population.

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If it is accepted that death is one of the most basic external realities, it may be helpful to think more deeply about death anxiety in schizophrenia according to these approaches to attempt to understand the efforts of the psychotic subject to cope with external reality. Fenichel emphasised that delusions are “an intervention to replace lost parts of reality with something”. Freud viewed delusions as “a healing inter-vention such as making a patch for the gap exposed in the relationship of the self with the external world”. As stated in the views of Rosenfeld and Klein, when oppressive fears (or destructive fears) are extreme, and when the self cannot deepen the depressive capacity and is forced to regress to a paranoid-schizoid position, the psychotic subject maintains the depressive capacity of the self, and in other words, it has difficulty grasping reality. Even if delusions at this point probably allow the psych-otic subject to experience a pure, pain-free period, this defence is generally fragile and unstable (Bronstein, 2019). Thus schizophrenia patients who are already making an effort to grasp reality continuously experience difficulties. For an individual in this situation, “death” directly triggers destructive fears and recalls situations that may be traumatic, such as separation, for the psychotic subject who already has a fragile self.

In the current study, when the relationship was examined between the FROGS points and the ADAS points, there was a low negative correlation between the ADAS total points and the FROGS total points,
FROGS subscale points of daily life skills and FROGS subscale points of health. Although the number of studies in the literature on this subject is extremely limited, a significant relationship was determined between psychosocial functionality and three dimensions of the BOFRETTA scale (attitude, anxiety, total points) in a study by Mavrogiorgou et al. (2020). Thus, however insufficient were the psychosocial functions and however high the death anxiety, so the attitude to death was negative to that extent. In this sense, the significant negative relationship between functionality and death anxiety in schizophrenia determined in the current study was consistent with the information to date in the literature. In contrast, the very low positive correlation between the PANSS total and each subscale points and the ADAS total points were not significant. Of the two studies conducted in this field to date, Planansky and Johnston (1977) determined clear thoughts of death in patients with negative symptoms in particular, and Mavrogiorgou et al. (2020) reported a negative attitude to death in patients with evident negative symptoms associated with the PANSS composite score. However, no significant relationship was determined between the PANSS negative points and the BOFRETTA death anxiety subscale. In the current study, although a very low positive correlation was determined between PANSS subscale points and the ADAS total points, with the greatest determined between negative symptoms and death anxiety, this relationship was not statistically significant. In addition to the larger sample size of the Planansky and Johnston study (1977) than in the current study, the methodology was different as it was a systematic review of military veterans. However, no direct correlation was established between negative symptoms and death anxiety in either study. However, a relationship was found between negative symptoms and concepts such as thoughts of death and attitude towards death.

In the current study, the HAM-A total points of the schizophrenia group were positively correlated with the ADAS total points at a very low. However, this correlation was not determined to be statistically significant. In contrast, in the control group, a low positive correlation between the HAM-A total points and the ADAS total points was statistically significant. The schizophrenia group and the control group in the current study were compared with the HAM-A total points. The mean HAM-A total points of the schizophrenia group were determined to be statistically significantly higher than those of the control group. Despite the determination of significantly high HAM-A total points in the schizophrenia group compared to the control group, the correlation between the total points of the HAM-A and ADAS was more significant in the control group. That factors increasing death anxiety in schizophrenia patients may be independent of the general anxiety seen in these patients. However, to be able to make more definitive judgements related to this, there is a need for more comprehensive studies related to the components of anxiety experienced by both schizophrenia patients and control group subjects and how general anxiety in both groups is affected by death anxiety.

In addition to the quantitative results obtained from the scales in this study, some qualitative findings were also obtained from clinical interviews, which do not reflect the scale data but may be valuable. During the interviews of schizophrenia patients with well-formed active delusions, death anxiety was determined to be extremely low in two patients. The common characteristic of these two patients was that the content of the delusions was wholly engaged with an ultimate saviour or divine. The common characteristic of these two patients was that the content of delusions, death anxiety was determined to be extremely low in two patients. The effect on death anxiety of the types of delusions experienced by the patients in this study was not sufficiently examined. It has been stated above that delusions in schizophrenia are seen as a type of repair effort for patients to be able to cope with reality. If this is the case, it can be said to be a limitation of the study that there was no examination of to what extent the types of delusions were protective against death anxiety when faced with reality such as death.

5. Conclusion
In conclusion, the results of this study showed that death anxiety was higher in schizophrenia patients than in the normal population. In addition, although the results suggest that this elevation may be partly related to the higher prevalence of death anxiety in schizophrenia patients associated with general anxiety, they also suggest that death anxiety is present in schizophrenia patients as a condition independent of general anxiety. The levels of death anxiety were determined to be lower in patients with higher levels of functionality. It demonstrates that the death anxiety of schizophrenia patients could be reduced with interventions and therapeutic approaches that will increase functionality.

Declarations

Author contribution statement

Kerem Laçiner: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Aytül Karakebiorgulu, Ahmet Rifat Sahin, Hatice Ozyildiz Güz, Ömer Böke, Gökhan Sarsoy, Selçuk Özdin: Conceived and designed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data.

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Data included in article/supp. material/referenced in article.

Declaration of interest’s statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

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