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BRIEF REPORT

Risk Factors for Suicide in Older Inpatient Veterans with Schizophrenia

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Abstract
Patients with schizophrenia have an elevated risk of suicidal behavior. We explored whether there were age differences in inpatients with schizophrenia admitted for suicidal behavior. We compared demographic/clinical characteristics of 76 inpatients aged > 59 to those < 60. All patients had a score greater > 0 on items 4 (active suicidality) and/or 5 (passive suicidality) on the Beck Scale for Suicidal Ideation for inclusion. There were no significant group differences with respect to race, education, depressive symptoms or negative symptoms. There was evidence suggesting that hallucinations appear to be less prominent in the older group. Future studies will determine whether these age related differences are stable over time and could account for potential age differences in suicidal behavior in individuals with schizophrenia.

Keywords Suicide · Risk factors · Schizophrenia · Geriatric

Introduction

Suicide is a major public health concern among people with schizophrenia. The lifetime risk for suicide in patients with schizophrenia is estimated to be 4.9%. Compared to the general population, patients with schizophrenia have premature mortality rates and up to 40% of this appears to be due to suicide. Risk factors for suicide in this population include being young, male gender, and a high level of education. Other predictors include past number of prior suicide attempts, depressive symptoms, active hallucinations/delusions and insight as reported in a review by Hor and Taylor (2010). With regards to insight, the majority of studies suggested that high levels of insight is a predictor.

There are few studies which have examined suicidal behavior in older patients with schizophrenia. Thus, very little is known. Although suicide risk is considered to be highest among younger patients with schizophrenia, there is evidence that risk is still significantly elevated among those who are older. For instance, a case series of psychologic autopsies in 92 individuals with schizophrenia who committed suicide (Heila et al. 1997) revealed that 30 of 92 individuals were age 45 or greater. Another study in Denmark determined that there was increased mortality from suicide in adults with schizophrenia who were older than age 50 compared to the general population (Erlangsen et al. 2012). In samples of outpatients 55 years and older, Cohen et al. (2010) determined that having a diagnosis of schizophrenia is associated with an elevated risk of suicidal thoughts and attempts compared to an age matched community sample. Cohen et al. (2010) also determined that depressive symptoms and past traumatic events were more likely to be associated with patients who attempted suicide.

Even less is known about the nature of suicidal behavior and suicide risk in older inpatients with schizophrenia. One case series of older inpatients in Israel with schizophrenia sought to identify risk factors (Barak et al. 2004). These authors examined admissions of patients 60 years or older suffering from schizophrenia and admitted for a suicide attempt. The sample included 392 women and 300 men, with a mean age of 67.4 years. Forty-nine suicide attempts were noted and those with suicide attempts comprised 4.6% of the admissions. The authors reported that there was a nearly significant difference on gender composition with more males in the suicidal group. However, no other variables tested were positively associated with suicidality. These variables

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included age, physical co-morbidity and psychiatric diagnosis, cumulative stay or season of admission.

In this study, we sought to further determine potential predictors for suicide risk in older inpatients with schizophrenia who were admitted to an inpatient unit for escalating suicidal ideation and/or a recent attempt. We carried out an exploratory analysis to determine whether certain demographic and clinical factors were associated with two groups of these inpatients dichotomized as those < 60 versus those 60 and older.

Methods

This was a secondary analysis of data from two trials examining the feasibility of telehealth in monitoring Veterans with schizophrenia who are at high risk for suicidal behavior which has been described previously in Kasckow et al. (2015, 2016). All procedures were approved by the Institutional Review Board of the VA Pittsburgh Health Care System. The research team assessed recently admitted inpatients > 18 years old for a diagnosis of schizophrenia/schizoaffective disorder and recent suicidal ideation. Following consent, patients were further screened for the following: a score > 0 on item 4 and/or 5 of the Beck Scale for Suicidal Ideation (Beck et al. 1979) which respectively assesses active suicidal ideation and passive suicidal ideation and the lack of a medical disorder which could influence diagnostic decisions, safety, and/or anticipated adherence. At baseline, we also obtained demographic and other clinical data using the Calgary Scale for Depressive Symptoms (Addington et al. 1996), Mini Mental Status exam score, the Scale for Assessment of Positive Symptoms (SAPS) and Scale for the Assessment of Negative Symptoms (SANS; Andreasen et al. 1995).

Continuous measures were expressed as means and standard deviations. Categorical measures were expressed by frequency and percentage distributions. We compared baseline demographic and clinical values between the group of patients greater than 60 versus those less than 60 years of age. Tests of association for continuous measures involved students t test or Mann–Whitney tests if the distributions were non-normal; tests of association for categorical measures included Chi square or the Fisher's exact test if cell frequencies were small.

Results

There were a total of 76 participants. Demographics values at baseline are depicted in the Table 1. To summarize, as expected, there were significant age differences between groups. There were no group differences with respect to education, gender, race nor marital status. Clinical characteristics at baseline are also depicted in the Table 1. There were no group differences with respect to Beck Scale for Suicidal Ideation scores, Mini Mental Status exam scores, Calgary Depression Rating Scale scores and Scale for Assessment of Negative Symptoms (SANS) Global Ratings. There were also no group differences in subscale measures of the SANS which included affective flattening, alogia, avolition-apathy, anhedonia-asociality and attention.

We then determined that there were marginally significant group differences in Scale for Assessment of Positive Symptom (SAPS) scores. These data are also presented in the Table 1. Given these marginally significant differences we then examined whether there were differences in any of the subscale scores. We found that the older groups had significantly lower scores on hallucinations. No other SAPS subscales exhibited group differences.

Conclusions

This report examined potential demographic and clinical factors associated with two age groups of inpatients with schizophrenia at risk for suicide. Our goals were to perform an exploratory analysis to determine whether there were any factors exhibited any group differences. Our findings suggest that hallucinations may be less prominent in the older age group. There is evidence from a recent systematic review that suggests that hallucinations are a risk factor for suicidal behavior (Hor and Taylor 2010) although the authors also point out that this finding has not been consistently verified by others. Given the lower scores on hallucinations in the older group, the findings are consistent with the literature which suggests there is a decline of positive symptoms in general with age in individuals with schizophrenia as well as a decline in hallucinations with age (Cohen et al. 2014).

The older subgroup we examined is a unique sample of patients in which very little is known. Previous analyses examining a series of inpatients with schizophrenia 60 and older who had made an attempt was not able to identify any specific risks. However, the study detected a potential trend which suggested there may be a higher risk in males than females (Barak et al. 2004). The current study focused on a broader group of inpatients, i.e., those who either had a recent attempt or those who exhibited only suicidal ideation at the time of admission.

Another study by Erlangsen et al. (2012) determined in a Danish sample that the suicide rate ratios of individuals in a sample of middle aged and elderly individuals (i.e., age 50–69 years) with a diagnosis of schizophrenia was higher compared to those without schizophrenia. Furthermore, their studies suggested that there were gender differences but with women exhibiting higher rates in both

Table 1 Sociodemographic and Clinical Measures by Age

Measure	Total (N = 76)	< 60 (N = 61)	≥ 60 (N = 15)	p value
Age (years)	51.5 (11.7)	48.0 ± 9.72	65.8 ± 7.4	< 0.001
Race				NS**
Black	25	22	3	
White	50	38	12	
Gender (number, number of females and percentage)	10 (13.2%)	8 (13.1%)	2 (13.3%)	NS
Education (in years)	12.7 (1.83) N = 71	12.5 (1.69) N = 57	13.4 (2.24)	NS*
Marital status (married or living with partner; N, %)	14 (18.4)	10 (16.4)	4 (26.7)	NS***
Beck scale for suicidal ideation (SSI) Score	9.59 (6.62)	10.1 (7.01)	7.60 (4.36)	NS****
Mini mental status exam	27.0 (2.04)	26.9 (2.12)	27.2 (1.74)	NS*
Scale for assessment of negative symptoms (global)	2.18 (0.43) N = 75	2.20 (0.45) N = 60	2.09 (0.37)	NS*
Calgary depression rating scale	11.8 ± 5.10 N = 74	12.1 (5.35) N = 59	10.7 (3.89)	NS****
Scale for assessment of positive symptoms (global)	1.41 (0.92) N = 74	5.00 (3.37)	1.52 (0.92) N = 59	0.0626
Bizarre behaviors	0.17 (0.35) N = 74	0.12 (0.28) N = 59	0.18 (0.36)	NS*
Hallucinations	0.81 (0.81) N = 74	0.94 (0.81) N = 59	0.30 (0.62) N = 59	0.0035*
Delusions	0.57 (0.53) N = 74	0.62 (0.55) N = 59	0.38 (0.39)	NS*
Positive formal thought disorder	0.13 (0.37) N = 74	0.13 (0.36) N = 59	0.16 (0.44)	NS*

Chi-squared test; ***Fisher's exact; Mann Whitney test*; students t test **. Values represent means (standard deviations) for continuous variables or N for categorical measures

younger and older individuals. The rate ratios of men and women were respectively 7.0 [95% CI 5.8–8.4] and 13.7 [95% CI 11.3–16.6], respectively, compared to those without a diagnosis of schizophrenia. With increasing age a lower rate ratio was found; for men and women aged 70 and older it was 2.1 [95% CI 1.1–3.9] and 3.4 [95% CI 2.0–5.8], respectively. In our study, gender differences were also examined in our group. However, no group differences were noted although representation of women was low in our sample given that this was a sample of veterans.

Limitations of the current study are as follows: The sample included only veterans from a single urban eastern US site. Furthermore, our analyses were univariate and exploratory. However, the findings have generated important hypotheses which warrant further inquiry in a larger sample. For instance, it would be important to ask whether age differences in hallucinations are stable over time? Furthermore, could these group differences contribute to age related differences in suicidal behavior in individuals with schizophrenia? Future studies will be directed towards answering these questions.

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References

Addington, D., Addington, J., Malticka-Tyndale, E., & Joyce, J. (1996). A psychometric comparison of the Calgary Depression Scale for Schizophrenia and the Hamilton Depression Rating Scale. *Schizophrenia Research, 19*, 205.

Andreasen, N. C., Arndt, S., Miller, D., Flaum, M., & Nopoulos, P. (1995). Correlational studies of the Scale for the assessment of negative symptoms and the Scale for the assessment of positive symptoms: An overview and update. *Psychopathology, 28*, 7–17.

Barak, Y., Knobler, C. Y., & Aizenberg, D. (2004). Suicide attempts amongst elderly schizophrenia patients: A 10-year case-control study. *Schizophrenia Research, 71*, 77–81.

Beck, A. T., Kovacs, M., & Weissman, A. (1979). Assessment of suicidal intention: The Scale for Suicide Ideation. *Journal of Consulting and Clinical Psychology, 47*, 343–352.

Cohen, C., Abdallah, C. G., & Diwan, S. (2010). Suicide attempts and associated factors in older adults with schizophrenia. *Schizophrenia Research, 119*, 253–257.

Cohen, C., Izediuno, I., Yadack, A. M., Ghish, B., & Garrett, M. (2014). Characteristics of auditory hallucinations and associated factors in older adults with schizophrenia. *The American Journal of Geriatric Psychiatry, 22*, 442–449.

Erlangsen, A., Eaton, W. W., Mortensen, P. B., & Conwell, Y. (2012). Schizophrenia-a predictor of suicide during the second half of life? *Schizophrenia Research, 134*(2–3), 111–117.

Heila, H., Isometsa, E. T., Henriksson, M. M., Heikkinen, M. E., Marttunen, M. J., & Lonnqvist, J. K. (1997). Suicide and schizophrenia: A nationwide psychological autopsy study on age- and sex-specific clinical characteristics of 92 suicide victims with schizophrenia. *The American Journal of Psychiatry, 154*, 1235–1242.

Hor, K., & Taylor, M. (2010). Suicide and schizophrenia: A systematic review of rates and risk factors. *Journal of Psychopharmacology, 24*(4 Suppl), 81–90.

Kasckow, J., Gao, S., Hanusa, B., Rotondi, A., Chinman, M., Zickmund, S., Gurklis, J., Fox, L., Cornelius, J., Richmond, I., & Haas, G. L. (2015). Telehealth monitoring of patients with schizophrenia and suicidal ideation. *Suicide and Life-Threatening Behavior, 45*(5), 600–611.

Kasckow, J., Zickmund, S., Gurklis, J., Luther, J., Fox, L., Taylor, M., Richmond, I., & Haas, G. L. (2016). Using telehealth to augment an intensive case monitoring program in veterans with schizophrenia and suicidal ideation: A pilot trial. *Psychiatry Research, 239*, 111–116.