Published in final edited form as:

Eur Arch Psychiatry Clin Neurosci. 2014 February ; 264(1): 29–34. doi:10.1007/s00406-013-0410-7.

The schizoaffective disorder diagnosis: A conundrum in the clinical setting

Jo Ellen Wilson¹, Hui Nian², and Stephan Heckers¹

¹Department of Psychiatry, Vanderbilt University, Nashville, Tennessee, USA

²Department of Biostatistics, Vanderbilt University, Nashville, Tennessee, USA

Abstract

The term *schizoaffective* was introduced to describe the co-occurrence of both psychotic and affective symptoms. Over time, as the diagnosis *schizoaffective disorder* was added to diagnostic manuals, significant concerns were raised as to the reliability and clinical utility of the diagnosis. We recruited 134 psychiatrically hospitalized subjects who had received a diagnosis of schizophrenia, schizoaffective disorder or bipolar disorder with psychotic features by their treating clinician. The subjects were also diagnosed by trained research personnel with the Structured Clinical Interview of the DSM-IV-TR, employing an explicit time threshold for criterion C of the schizoaffective disorder diagnosis. We found significant differences between the clinical and research diagnoses. Clinicians diagnosed 48 patients (36%) with schizophrenia, 50 patients (37%) with schizoaffective disorder and 36 patients (27%) with psychotic bipolar disorder. In contrast, researchers diagnosed 64 patients (48%) with schizophrenia, 38 patients (28%) with schizoaffective disorder and 32 patients (24%) with psychotic bipolar disorder. This was a statistically significant disagreement between the research and clinical diagnoses ($p = 0.003$) and indicates that clinicians choose the less severe diagnosis for psychotic patients. We conclude that a more stringent criterion C for the schizoaffective disorder diagnosis will address an implicit bias in clinical practice and will affect the prevalence of the psychotic disorder diagnoses.

Keywords

schizoaffective disorder; diagnosis; DSM-IV; DSM-5; reliability

Jacob Kasanin introduced the term *schizoaffective psychosis* to capture the co-occurrence of both schizophrenia and affective symptoms [13]. He associated the diagnosis with better premorbid functioning, less severe symptomatology, overall shorter duration of illness and improved recovery as compared to patients with schizophrenia. In the DSM (Diagnostic and Statistical Manual of Mental Disorders) I and II, published in 1952 and 1968 respectively, the term schizoaffective was used to define a subtype of schizophrenia. In the DSM III, the term schizoaffective was separated from schizophrenia and retained without specific diagnostic criteria under the category of “psychotic disorder not otherwise classified.” [1].

Corresponding author: Jo Ellen Wilson, Vanderbilt Psychiatric Hospital, 1601 23rd Ave. South, Nashville, TN 37212, jo.e.wilson@vanderbilt.edu, 615-936-3555.

The authors declare that they have no conflict of interest.

In the Research Diagnostic Criteria (RDC, Spitzer 1973), schizoaffective disorder was distinguished from other psychotic and mood disorders and defined by the co-occurrence of a major mood episode (major depression or mania) and psychotic symptoms, “suggestive of schizophrenia”, which persist for at least 1 week in the absence of major mood symptomatology [23]. The DSM III-R (1987) introduced the first operationalized diagnostic criteria for schizoaffective disorder, which required the persistence of psychotic symptoms in the absence of significant affective illness for at least 2 weeks [2]. In subsequent editions of the DSM, schizoaffective disorder has been retained as a separate diagnostic entity, but its reliability, clinical utility and reliability has been questioned [10, 15, 16, 22].

DSM-IV-TR lists four diagnostic criteria for Schizoaffective Disorder (A-D). Criterion A requires that the patient experience psychotic symptoms consistent with criterion A for schizophrenia and that they co-occur with a major mood episode (major depression, mania or a mixed state.) Criterion B requires that the patient also experience psychotic symptoms in the absence of major mood symptoms, for a period of at least 2 weeks. Criterion C states that manic or major depressive symptoms must be present for a “substantial portion of the total duration” of the illness. Finally, Criterion D excludes cases with psychotic and mood symptoms that can be attributed to substance use or another medical condition [3].

Criterion C has limited clinical utility and low reliability. Maj et al studied the DSM-IV schizoaffective disorder criteria and found the lowest inter-rater reliability measures for criterion C (Cohen’s Kappa = 0.29) and criterion A (Cohen’s kappa = 0.31), with an overall kappa value for all criteria (A-D) of 0.22 [16]. This reliability measure was significantly lower than those for mania and major depressive episode (kappa= 0.71 and 0.82, respectively), which the authors attributed to the ambiguity of the duration requirement [16]. The duration threshold used in the study by Maj et al. was 10% of the present episode, as suggested by Frances et al [7]. Because of the low diagnostic reliability of schizoaffective disorder (kappa between 0.08 and 0.54 [12]), it has been suggested that criterion C include “a quantitative threshold (e.g., 30% as is now implemented in the revised Diagnostic Interview for Genetic Studies criteria)” [10].

In the present study we compared the schizoaffective disorder diagnoses between 2 groups of raters, clinicians and researchers, to estimate the effect of a change of criterion C on the prevalence of the schizoaffective disorder diagnosis.

Methods

Subjects

We recruited 134 patients who had received a diagnosis of schizophrenia, schizoaffective disorder or bipolar disorder with psychotic features by their treating clinician at Vanderbilt Psychiatric Hospital. All participants completed written informed consent after approval of the study protocol by the Vanderbilt University Institutional Review Board. All subjects were paid for their participation in the study. All participants were also diagnosed via the Structural Clinical Interview of the DSM-IV-TR (SCID) [6], which was administered by trained research personnel, supplemented with review of available clinical records, and final review by an experienced psychiatrist (S.H.). All subjects were also assessed with three

symptom rating scales (Positive and Negative Syndrome Scale [14], Young Mania Scale [27], and Hamilton Rating Scale for Depression [8]). Inclusion criteria included an age between 18 and 65 and confirmation of a diagnosis of schizophrenia, schizoaffective disorder or bipolar disorder with psychotic features on the SCID. Exclusion criteria for all participants included: serious head injury, serious medical condition (e.g., HIV, cancer), neurologic disease (e.g., dementia, neuromuscular condition), mental retardation, history of substance dependence, or substance abuse within the past 3 months of study enrollment.

In an effort to standardize the diagnosis of schizoaffective disorder, subjects were only assigned a SCID diagnosis of schizoaffective disorder if their mood symptoms met criteria for a major mood episode (major depression, mania or mixed) that occupied at least 30% of the total duration of their illness, in line with the recommendations by the revised Diagnostic Interview for Genetic Studies criteria [19].

Statistical Analysis

Demographics and clinical characteristics of the subjects were presented as frequencies or Mean $\pm$ SD. We compared the three different disease groups using chi-square test for categorical variables and Kruskal-Wallis (trend) test for continuous variables. We used Maxwell's test to examine the overall diagnostic agreement between the clinicians and researchers, and Bowker's test to evaluate the asymmetry in the distribution of patients about which these two rater groups disagree [4, 18, 26]. We classified diagnoses into three categories: bias by clinicians toward less severe diagnosis, agreement of diagnoses amongst research team and clinician, and bias by clinician toward more severe diagnosis, and estimated the probability of each category. 95% confidence intervals of probability estimates were obtained using bootstrap.

Results

Demographic and Clinical Characteristics

Demographic and clinical characteristics are listed in table 1. The three groups did not differ in duration of illness (all $p > 0.05$). All but 15 subjects were medicated at the time of testing with similar mean chlorpromazine (CPZ) equivalent dosages between schizoaffective disorder and schizophrenia patients ($p = 0.233$), however bipolar patients were treated with significantly lower mean doses ($p < 0.005$) than schizophrenia or schizoaffective patients.

Schizophrenia patients had lower estimated IQ, as measured by the Wechsler Test of Adult Reading (WTAR), than bipolar patients ($p=0.056$) and but did not differ from schizoaffective disorder patients ($p = 0.386$). Schizoaffective disorder patients reported more depressive symptoms compared to the bipolar disorder subjects ($p < 0.005$). Both schizophrenia and schizoaffective disorder patients displayed significantly more positive ($p < 0.001$ and 0.01), negative ($p < 0.001$ and 0.006) and general psychotic symptoms ($p < 0.001$ for both groups) than the bipolar disorder subjects. The schizophrenia and schizoaffective disorder patients did not differ in positive or general psychotic symptoms ($p = 0.5$ and 0.7 respectively), but the schizophrenia subjects did report more negative symptoms than the schizoaffective disorder subjects ($p = 0.013$). The schizoaffective disorder patients were

treated with higher doses of antipsychotic drugs than the bipolar disorder patients ($p = 0.001$) but there was no difference between schizoaffective disorder and schizophrenia patients ($p = 0.233$).

Diagnostic assessments

We found significant differences between the clinical and research diagnoses in our sample of 134 psychotic disorder patients (Table 2). Clinicians diagnosed 48 patients (36%) with schizophrenia, 50 patients (37%) with schizoaffective disorder and 36 patients (27%) with psychotic bipolar disorder. In contrast, researchers diagnosed 64 patients (48%) with schizophrenia, 38 patients (28%) with schizoaffective disorder and 32 patients (24%) with psychotic bipolar disorder. This was a statistically significant disagreement between the research and clinical diagnoses (Maxwell's Test, $p = 0.003$). Additionally, Bowker's test indicated that there was significant ($p = 0.009$) asymmetry between the research and clinical diagnoses amongst the three diagnostic categories. This is displayed visually in table 2, where 25 cases are above, but only 9 cases below the symmetry line that indicates diagnostic concordance.

To further quantify the bias of clinicians favoring a less severe diagnosis, we classified the 134 diagnoses into agreement by clinicians and researchers ($n=100$), clinicians choosing a less severe diagnosis ($n=25$) and clinicians choosing a more severe diagnosis ($n=9$). The probabilities of the diagnosis falling into each of the three categories were 74.6% (95% CI, 57.2% to 82.1%), 18.7% (95% CI, 11.9% to 25.4%) and 6.7% (95% CI, 3% to 11.2%) respectively. The likelihood of clinicians choosing a less severe diagnosis was significantly higher (18.7%) than choosing a more severe diagnosis (6.7%).

If the SCID diagnosis is chosen as the gold standard, then clinicians were correct in making the diagnosis psychotic bipolar disorder in 28 out of 32 cases (88%), schizoaffective disorder in 30 out of 38 cases (79%) and schizophrenia in 42 out of 64 cases (66%). This was primarily due to the tendency of clinicians to favor the schizoaffective disorder diagnosis in patients who met DSM-IV-TR criteria for schizophrenia.

Discussion

Schizoaffective disorder occupies an intermediate position on the continuum of disease severity, between schizophrenia and mood disorders, in particular bipolar disorder [5, 24]. In short-term and long-term outcome studies, schizoaffective disorder patients had a significantly better prognosis than schizophrenia patients [9, 16]. Long-term outcome for patients diagnosed with schizoaffective disorder paralleled that of affective disorder patients [11].

Cheniaux et al concluded that the DSM-IV schizoaffective disorder diagnosis "essentially represents a provisional diagnosis, employed when a schizophrenia or mood disorder diagnosis typical course is not yet clearly defined" [5]. Because of the ambiguity in diagnostic criteria, clinicians tend to prefer assigning a more favorable diagnosis, when both affective and psychotic symptoms co-exist. This is in line with our results, where clinicians

tended to prefer a less severe diagnosis 18.7% of the time and a more severe diagnosis only 6.7% of the time.

In a follow-up study of 500 first episode psychosis patients, Salvatore et al. assessed the stability of initial psychotic disorder diagnoses [21]. Schizoaffective disorder was considered to be the least stable diagnosis. Although only one patient was given an initial diagnosis of schizoaffective disorder, at 2-year follow-up 53.6% of the 112 revised diagnoses were to schizoaffective disorder, which they attributed to “later-appearing affective features in previously non-affective conditions” [21]. Schwartz et al. assessed the congruence of initial psychotic disorder diagnoses with 6 month and 24 month follow up [22]. They found that the most temporally consistent categories were schizophrenia (92%), bipolar disorder (83%) and major depression (74%), with schizoaffective disorder only showing a 36% temporal congruency amongst initial and 6-month follow-up diagnoses [22]. Because of findings such as these, Vollmer-Larsen et al, in a recent comparison of ICD-10 and DSM IV criteria for schizoaffective disorder, noted that clinicians “nearly always use the diagnosis of schizoaffective disorder incorrectly” and called for a moratorium on its use [25].

Schizoaffective disorder is one of the least stable DSM-IV-TR diagnoses, mainly due to the uncertainty in how to apply criterion C, which has allowed for greater flexibility but less reliability in diagnosing this condition, as compared to other affective and non-affective psychotic disorders. This was shown in our study population, with clinicians and researchers agreeing on the diagnosis of schizoaffective disorder slightly more than half of the time, as compared to a much higher agreement for the other psychotic disorders studied. In our study, the researchers assigned the diagnosis of schizoaffective disorder only if mood symptoms, meeting criteria for a major mood episode (major depression, mania or mixed), occurred for at least 30% of the total duration of their illness. This was in contrast to the clinicians, who employed a less clearly defined threshold, as captured in DSM-IV-TR with the phrase “substantial portion”. Furthermore, clinicians assess mood symptoms primarily in relationship to a current episode, not the lifetime duration of psychotic symptoms. The vague definition of criterion C leaves it to the clinician when to choose the diagnosis schizoaffective disorder for patients who meet criteria for schizophrenia and also present with prominent mood symptoms for at least some time. When given no further guidance to quantify the relative weight of mood versus psychotic symptoms, clinicians tend to prefer schizoaffective disorder to schizophrenia.

Several authors have made recommendations for a revision of schizoaffective disorder diagnostic criteria [12, 17]. Some have asked for a removal of the category, but it would leave clinicians with no option to capture prominent mood symptoms in the schizophrenia spectrum and would discontinue ongoing research efforts that have embraced the schizoaffective disorder diagnosis [15, 20]. Our results suggest that two changes of criterion C, i.e., a more explicit duration threshold and lifetime rather than episode-based assessment of mood symptoms, will change the prevalence of the schizoaffective disorder diagnosis. Future research needs to establish whether such changes will improve the reliability, clinical utility and ultimately the validity of the schizoaffective disorder diagnosis.

Acknowledgments

This study is supported by NIMH grant R01-MH70560 (SH), the Vanderbilt Psychiatric Genotype/Phenotype Project, and the Vanderbilt Institute for Clinical and Translational Research (through grant 1-UL1-RR024975 from the National Center for Research Resources/NIH).

References

1. Association AP. Diagnostic and statistical manual of mental disorders. American Psychiatric Association; Washington DC: 1980.
2. Association AP. Diagnostic and statistical manual of mental disorders. American Psychiatric Association; Washington DC: 1987.
3. Association AP. Diagnostic and statistical manual of mental disorders. American Psychiatric Association; 2000.
4. Bowker AH. A test for symmetry in contingency tables. *J Am Stat Assoc.* 1948; 43:572–574. [PubMed: 18123073]
5. Cheniaux E, Landeira-Fernandez J, Lessa Telles L, Lessa JL, Dias A, Duncan T, Versiani M. Does schizoaffective disorder really exist? A systematic review of the studies that compared schizoaffective disorder with schizophrenia or mood disorders. *J Affect Disord.* 2008; 106:209–217. [PubMed: 17719092]
6. First, MB.; Gibbon, M.; Spitzer, RL.; Williams, JBW. User's guide for the scid-i: Structured clinical interview for dsm-iv axis i disorders. Biometrics Research Department, New York State Psychiatric Institute; 1995.
7. Francis, A.; First, MB.; Pincus, HA. Dsm-iv guidebook. American Psychiatric Press; Washington DC: 1995.
8. Hamilton M. A rating scale for depression. *J Neurol Neurosurg Psychiatry.* 1960; 23:56–62. [PubMed: 14399272]
9. Harrow M, Grossman LS, Herbener ES, Davies EW. Ten-year outcome: Patients with schizoaffective disorders, schizophrenia, affective disorders and mood-incongruent psychotic symptoms. *Br J Psychiatry.* 2000; 177:421–426. [PubMed: 11059995]
10. Heckers S. Diagnostic criteria for schizoaffective disorder. *Expert Rev Neurother.* 2012; 12:1–3. [PubMed: 22243039]
11. Jager M, Bottlender R, Strauss A, Moller HJ. Fifteen-year follow-up of icd-10 schizoaffective disorders compared with schizophrenia and affective disorders. *Acta Psychiatr Scand.* 2004; 109:30–37. [PubMed: 14674956]
12. Jager M, Haack S, Becker T, Frasch K. Schizoaffective disorder--an ongoing challenge for psychiatric nosology. *Eur Psychiatry.* 2011; 26:159–165. [PubMed: 20646917]
13. Kasanin J. The acute schizoaffective psychoses. *Am J Psychiatry.* 1933; 90:97–127.
14. Kay SR, Fiszbein A, Opler LA. The positive and negative syndrome scale (panss) for schizophrenia. *Schizophr Bull.* 1987; 13:261–276. [PubMed: 3616518]
15. Maier W. Do schizoaffective disorders exist at all? *Acta Psychiatr Scand.* 2006; 113:369–371. [PubMed: 16603028]
16. Maj M, Pirozzi R, Formicola AM, Bartoli L, Bucci P. Reliability and validity of the dsm-iv diagnostic category of schizoaffective disorder: Preliminary data. *J Affect Disord.* 2000; 57:95–98. [PubMed: 10708820]
17. Malhi GS, Green M, Fagioli A, Peselow ED, Kumari V. Schizoaffective disorder: Diagnostic issues and future recommendations. *Bipolar Disord.* 2008; 10:215–230. [PubMed: 18199238]
18. Maxwell AE. Comparing the classification of subjects by two independent judges. *Br J Psychiatry.* 1970; 116:651–655. [PubMed: 5452368]
19. Nurnberger JI Jr, Blehar MC, Kaufmann CA, York-Cooler C, Simpson SG, Harkavy-Friedman J, Severe JB, Malaspina D, Reich T. Diagnostic interview for genetic studies. Rationale, unique features, and training. Nih genetics initiative. *Arch Gen Psychiatry.* 1994; 51:849–859. discussion 863–844. [PubMed: 7944874]

20. Owen MJ, Craddock N, Jablensky A. The genetic deconstruction of psychosis. *Schizophr Bull.* 2007; 33:905–911. [PubMed: 17551090]
21. Salvatore P, Baldessarini RJ, Tohen M, Khalsa HM, Sanchez-Toledo JP, Zarate CA Jr, Vieta E, Maggini C. Mclean-harvard international first-episode project: Two-year stability of dsm-iv diagnoses in 500 first-episode psychotic disorder patients. *J Clin Psychiatry.* 2009; 70:458–466. [PubMed: 19200422]
22. Schwartz JE, Fennig S, Tanenberg-Karant M, Carlson G, Craig T, Galambos N, Lavelle J, Bromet EJ. Congruence of diagnoses 2 years after a first-admission diagnosis of psychosis. *Arch Gen Psychiatry.* 2000; 57:593–600. [PubMed: 10839338]
23. Spitzer, RL.; Endicott, J.; Robbins, E. Research diagnostic criteria for a selected group of functional disorders. Biometrics Research; New York, NY: 1978.
24. Strakowski SM, Keck PE Jr, Sax KW, McElroy SL, Hawkins JM. Twelve-month outcome of patients with dsm-iii-r schizoaffective disorder: Comparisons to matched patients with bipolar disorder. *Schizophr Res.* 1999; 35:167–174. [PubMed: 9988853]
25. Vollmer-Larsen A, Jacobsen TB, Hemmingsen R, Paas J. Schizoaffective disorder -- the reliability of its clinical diagnostic use. *Acta Psychiatr Scand.* 2006; 113:402–7. [PubMed: 16603031]
26. Walker, GA. Common statistical methods for clinical research with sas examples. SAS Institute Inc; Cary, North Carolina: 2002.
27. Young RC, Biggs JT, Ziegler VE, Meyer DA. A rating scale for mania: Reliability, validity and sensitivity. *Br J Psychiatry.* 1978; 133:429–435. [PubMed: 728692]

Table 1

Demographics and Clinical Characteristics

	Schizophrenia (n = 64) Mean ± SD	Schizoaffective Disorder (n = 38) Mean ± SD	Bipolar Disorder with psychotic features (n = 32) Mean ± SD
Demographics			
Age	35.00 ± 11.98	36.84 ± 11.78	33.41 ± 12.7
Gender	18 F/37 M	18 F/20 M	19 F/12 M
WTAR IQ	93.27 ± 16.99	94.31 ± 17.05	99.16 ± 16.2
Education	12.33 ± 2.44	13.08 ± 2.23	13.24 ± 2.73
Clinical Characteristics			
Age of onset	19.95 ± 6.42	20.16 ± 5.97	20.94 ± 9.43
Duration of illness	15.00 ± 13	17.06 ± 10.31	12.47 ± 12.25
HAM-D	12.97 ± 10.54	15.84 ± 8.46	10.66 ± 7.63
YMRS	8.83 ± 7.14	10.87 ± 9.89	8.71 ± 10.01
PANSS-positive	21.61 ± 6.49	20.70 ± 6.33	17.03 ± 5.33
PANSS-negative	17.02 ± 7.37	13.84 ± 5.12	10.87 ± 3.51
PANSS-general	33.57 ± 9	34.32 ± 8.29	27.55 ± 5.28
PANSS-total	72.76 ± 17.13	68.89 ± 15.09	55.35 ± 10.24
Chlorpromazine equivalent	495.71 ± 288.12	589.64 ± 397.88	292.33 ± 314.65

Note: WTAR, Wechsler Test of Adult Reading; HAM-D, Hamilton Rating Scale for Depression; PANSS, Positive and Negative Syndrome Scale; YMRS, Young Mania Rating Scale; AIMS, Abnormal Involuntary Movement Scale.

Table 2

		Clinical diagnoses			Total	
		SZ	SZA	BP+		
SCID Diagnoses	SZ	42	17	5	64	48%
	SZA	5	30	3	38	28%
	BP+	1	3	28	32	24%
Total		48	50	36	134	
		36%	37%	27%		