Published in final edited form as:

Psychosis. 2012 January 1; 4(1): 52–62. doi:10.1080/17522439.2011.639901.

Antisocial Personality Disorder in People with Co-Occurring Severe Mental Illness and Substance Use Disorders: Clinical, Functional, and Family Relationship Correlates

Kim T. Mueser^{1,2}, Jennifer D. Gottlieb^{1,2}, Corrine Cather^{3,4}, Shirley M. Glynn^{5,6}, Roberto Zarate^{6,7}, Lindy F. Smith^{8,9}, Robin E. Clark¹⁰, and Rosemarie Wolfe^{8,9}

¹Center for Psychiatric Rehabilitation, Boston University

²Department of Occupational Therapy, Boston University

³Dartmouth Psychiatric Research Center, Concord, NH

⁴Schizophrenia Program of the Massachusetts General Hospital, Boston, MA

⁵Department of Psychiatry, Harvard Medical School, Boston, MA

⁶VAGreater Los Angeles Healthcare System at West Los Angeles, CA

⁷Department of Psychiatry and Biobehavioral Sciences, University of California, Los Angeles, CA

⁸Pacific Clinics, Los Angeles, CA

⁹Department of Psychiatry, Dartmouth Medical School, Hanover, NH

¹⁰Dartmouth Psychiatric Research Center, Concord, NH

¹¹Center for Health Policy and Research, University of Massachusetts Medical School

Abstract

Antisocial personality disorder (ASPD) is an important correlate of substance abuse severity in the addiction population and in people with co-occurring serious mental illness and addiction. Because family members often provide vital supports to relatives with co-occurring disorders, this study explored the correlates of ASPD in 103 people with co-occurring disorders (79% schizophrenia-schizoaffective, 21% bipolar disorder) in high contact with relatives participating in a family intervention study. Clients with ASPD were more likely to have bipolar disorder and to have been married, but less likely to have graduated from high school. ASPD was associated with more severe drug abuse and depression, worse functioning, and less planning-based social problem solving. The relatives of clients with ASPD also reported less planning-based problem solving, worse attitudes towards the client, and worse mental health functioning. Client ASPD was associated with less long-term exposure to family intervention. The findings suggest that clients with ASPD in addition to co-occurring disorders are a particularly disadvantaged group with greater illness severity, more impaired functioning, and more strained family relationships. These difficulties may pose special challenges to delivering family intervention for this group.

People with serious mental illness (SMI) have an increased prevalence of substance use disorders (Kessler, Chiu, Demler, & Walters, 2005). Comorbid substance abuse in SMI is related to more severe symptoms and frequent relapses, more impaired psychosocial functioning, health problems, homelessness, and legal problems (Drake & Brunette, 1998;

Schmidt, Hesse, & Lykke, 2011). Identifying the correlates of substance use in people with SMI can lead to more effective treatment of these disorders. One such correlate is antisocial personality disorder (ASPD), a pattern of adult behavior characterized by disregard for the rights of others, lack of empathy, and impulsivity that is preceded before age 16 by a similar behavior pattern, conduct disorder.

In the general population, conduct disorder and ASPD are strongly associated with substance use disorder (Kessler et al., 2005). Among people with an addiction, ASPD is also related to a more severe presentation and course of the disorder, such as an earlier age at onset and more rapid progression to dependence (Ford et al., 2009; Hesselbrock, 1986). People with co-occurring ASPD and SMI also have higher rates of substance abuse than those without ASPD (Mueser et al., 1999; Tengström, Hodgins, Grann, Långström, & Kullgren, 2004). Furthermore, among clients with co-occurring disorders, ASPD is associated with more severe addiction and worse functioning (Crocker et al., 2005; Mueser et al., 2006).

Some research supports the validity of ASPD as a subgroup of co-occurring disorders, but little is known about the correlates of ASPD in people with regular family contact. Most clients with co-occurring disorders have contact with their family, who provide a range of emotional and tangible supports (Clark, 1996). Although family conflict can worsen the course of SMI (Hooley, 2007), family involvement in clients with co-occurring disorders contributes to improved outcomes (Clark, 2001). Family members and other people with close relationships are potential allies in the treatment of co-occurring disorders (Mueser & Fox, 2002), with research documenting the effectiveness of family intervention for both SMI (Pharoah, Mari, Rathbone, & Wong, 2010) and substance abuse (Stanton & Shadish, 1997). However, substance abuse can lead to conflict and tension in families of people with SMI (Dixon, McNary, & Lehman, 1995), suggesting that the additional presence of ASPD could further strain family relationships. Alternatively or in addition, conduct disorder and ASPD could emerge in the context of child maltreatment, childhood trauma, and parental substance abuse (Rutter, 1997), and thus reflect dysfunctional family relationships.

Understanding whether ASPD is related to the severity of dual disorders, family burden, or involvement in family treatment could have important implications for this population. We addressed these questions by conducting a secondary analysis of a study comparing the effectiveness of two family programs for co-occurring disorders. We hypothesized that ASPD would be related to more severe substance abuse and impaired functioning, more strained family relationships, and poorer engagement in family treatment.

Method

The parent study was a randomized controlled trial conducted at two sites in Boston and one site in Los Angeles. All study procedures were approved by appropriate Institutional Review Boards (Mueser et al., 2009).

Participants

Inclusion criteria for the study were: a) minimum age 18; b) psychiatric diagnosis of schizophrenia, schizoaffective disorder, or bipolar disorder, based on Structured Clinical Interview for DSM-IV(SCID) (First, Spitzer, Gibbon, & Williams, 1996); c) diagnosis of active substance use disorder within the past 6 months, based on SCID; d) at least 4 hours per week contact with a relative, conjugal partner, or friend; e) client currently receiving services at one of the participating sites; and f) client and relative willing to provide written informed consent for the study. 108 clients and key relatives participated, of whom 103 had complete data on ASPD and were included in this report. Key relatives of clients included

53 parents, 16 spouses/partners, 7 children, 2 grandparents, 1 aunt, 1 other relative, and 8 friends.

Measures

All assessments (unless otherwise specified) were conducted with clients and their key family member by trained interviewers at baseline. Prior to assessing study participants, interviewers were trained on the instruments using live and taped interviews. Monthly calls were conducted with the interviewers to review ratings and discuss assessment questions. Over the course of the study interviews were randomly selected and rated by a third interviewer to check on reliability.

ASPD—ASPD diagnoses were evaluated using the SCID-II (First, Spitzer, Gibbon, Williams, & Benjamin, 1994). ASPD requires the diagnosis of childhood conduct disorder (a behavior pattern before age 16 characterized by aggressiveness, cruelty to animals, property destruction, and serious violation of rules) and the presence in adulthood of a similar pattern (characterized by lack of remorse, impulsiveness, irresponsibility, deceitfulness, aggressiveness, and failure to conform to social norms).

Substance abuse—Days of excessive alcohol use and days of drug use over the past 6 months were assessed with the Time-line Follow-back Calendar (Sobell & Sobell, 1992), adapted for people with SMI (Mueser, Noordsy, Drake, & Fox, 2003). Ratings of alcohol and drug use severity over the past 6 months were made by either the case manager or another clinician using all available clinic information on the revised versions of the Alcohol Use Scale (AUS) and Drug Use Scale (DUS) (Mueser et al., 2003). These measures summarize severity of substance abuse during the worst one-month period over the past 6 months in a 5-point scale: 1 = no use, 2 = use without impairment, 3 = abuse, 4 = dependence, and 5 = severe dependence resulting in hospitalizations or incarcerations. Progress towards treatment involvement and remission from substance use disorder was evaluated by the case manager or another clinician with the Revised Substance Abuse Treatment Scale (SATS) (McHugo et al., 1995; Mueser et al., 2003). Low scores (1, 2) reflect initial engagement with a clinician, followed by regular contact with a clinician and reduction in substance use (3, 4), followed by more sustained reduction in substance use (5, 6), with the highest scores reflecting sustained remission (7, 8).

Psychiatric symptoms and overall functioning—Symptoms were assessed with the expanded Brief Psychiatric Rating Scale (BPRS) (Lukoff, Nuechterlein, & Ventura, 1986). The four-factor solution for the BPRS (Velligan et al., 2005) was used for statistical analyses: psychosis, depression, activation, and retardation. Overall functioning was assessed with the Global Assessment Scale (GAS; Endicott, Spitzer, Fleiss, & Cohen, 1976), with ratings from 1–100.

Knowledge, problem solving, and relationship distress—Client and key relative knowledge about co-occurring disorders were evaluated with three parallel versions of the Knowledge Test, depending on the client's primary psychiatric diagnosis, adapted from McGill and colleagues (1983). Percent correct was the outcome measure.

Client and key relative problem solving abilities were evaluated with the Social Problem Solving Inventory (SPSI), in which respondents indicate on a 5-point scale their perceptions of different statements about their approach to solving interpersonal problems (D'Zurilla & Nezu, 1990). This measure yields an overall score with higher numbers indicating more planning-based approach to solving problems.

Relationship satisfaction between the key relative and the client was assessed with the Family Attitude Scale (FAS) (Kavanagh et al., 1997), completed separately by the relative and client. The FAS includes 30 5-point items pertaining to how the individual feels about his/her relative, with high scores reflecting more negative feelings.

Key relative mental and physical functioning—Functioning was assessed with the Medical Outcomes Study Short Form-12 (SF-12), which contains 12 self-report items pertaining to physical and mental health functioning (Ware, Kosinski, & Keller, 1998). Separate composite scores ranging between 0 (poor) and 100 (excellent) are computed.

Family caregiving—Selected subscales from the Family Experiences Interview Schedule (FEIS) (Tessler & Gamache, 1996) were employed to evaluate the effects on the relative of having a close relationship with someone with a co-occurring disorder. High scores correspond to a worse experience. We report on FEIS subscales for which there were a sufficient number of completed answers and that had coefficient alphas above .60: benefits of the relationship, gratification, financial contributions, and stigma about mental illness.

Treatment Programs

The two family treatments were the Family Intervention for Dual Disorders (FIDD) program and the Family Psychoeducation (FPE) program (Mueser et al., 2009). FPE is a brief program (6–8 sessions over 2–6 months) that focuses on teaching family members information about co-occurring disorders in order to help them make informed treatment decisions and to access desired services. FIDD is a longer program (20–30 sessions over 9–18 months), based on behavioral family therapy (Falloon, Boyd, & McGill, 1984; Mueser & Glynn, 1999) that includes teaching the family information about co-occurring disorders and teaching communication and problem solving skills. The client, key relative, and any other involved family members were included in sessions.

Engagement in either FIDD or FPE was conceptualized as sufficiently minimal exposure to each program for the family and therapist to begin developing a therapeutic relationship, defined as the client and relative completing at least two sessions (Mueser et al., 2009). Extended exposure to the FIDD program was defined as completing at least three problem solving sessions and for FPE completing at least six educational sessions.

Statistical Analysis

Preliminary analyses explored site differences in rates of ASPD. None were found, and thus data from the three sites were pooled. We first examined the relationship between ASPD diagnosis and client or key relative demographic characteristics by computing χ^2 analyses for categorical variables and *t*-tests for continuous variables. Next, the associations between ASPD diagnosis and client and key relative functioning were evaluated by using the same approaches described above. Last, χ^2 analyses were conducted to evaluate whether there were significant differences between clients with ASPD and those without it in their family's engagement in, or prolonged exposure to, their assigned family program.

Results

Among the 103 study clients, 64 (62%) did not meet criteria for either childhood conduct disorder or adult ASPD, 7 (7%) met criteria for conduct disorder but not adult ASPD, 11 (11%) met symptom criteria for adult ASPD but not conduct disorder, and 21 (20%) met full diagnostic criteria for ASPD (including conduct disorder). Statistical analyses compared clients meeting full ASPD criteria with the other three groups combined (no ASPD).

Table 1 summarizes the comparisons of the ASPD groups on demographic characteristics. Clients with ASPD were less likely to have finished high school and more likely to be currently married. There were trends for the relatives of clients with ASPD to be less likely to be the client's parent and to be younger.

Table 2 summarizes the comparisons of the ASPD groups on client psychiatric and substance use diagnoses, symptoms, functioning, knowledge, problem solving, and family attitude. Clients with ASPD were more likely to have bipolar disorder, drug dependence, amphetamine use disorder, and had worse depression on the BPRS, more severe drug use on the DUS, more days of drug use over the past 6 months, and worse overall functioning on the GAS than those without ASPD. There were also trends for clients with ASPD to be more likely to have an opiate use disorder, to be lower in their engagement in substance abuse treatment on the SATS, and to have worse social problem solving.

Table 3 summarizes differences in key relative outcomes based on client ASPD. Relatives of clients with ASPD reported significantly worse attitudes towards the client on the FAS, worse social problem solving scores, and worse mental health functioning on the SF-12. There was also a trend for relatives of clients with ASPD to report lower levels of gratitude about their relationship with the client.

Among the 21 families with a client with ASPD, 16 (76%) were engaged in at least two family treatment sessions, compared to 73 of the 89 (89%) families with a client who did not have ASPD, a non-significant difference. However, only 8 (38%) of the families with a client with ASPD had extended exposure to the family program to which they were assigned, compared to 53 (65%) of the families with a client who did not have ASPD, a significant difference, $\chi^2 = 4.88$, $df = 1$, $p = .03$. Rates of engagement or extended exposure did not differ between the FIDD and FPE programs.

Discussion

Overall, the results indicated that ASPD in people with co-occurring SMI and substance abuse was associated with greater severity of both disorders, more functional impairment, and increased strain on relationships with relatives. These findings are consistent with prior research on ASPD in co-occurring disorders. They also shed new light on the associations between ASPD and close family relationships, and the challenges of implementing family treatment in this group.

ASPD was associated with a more severe substance abuse, especially drug abuse. The increased severity of substance abuse in clients with ASPD is consistent with research in primary addiction (Hesselbrock, 1986). It is also consistent with studies showing that in people with SMI, ASPD is associated with higher rates of substance abuse, and more severe abuse in people with co-occurring disorders (Crocker et al., 2005; Mueser et al., 2006; Mueser et al., 1997; Mueser et al., 1999; Swann et al., 2011).

Clients with ASPD also had more severe depression than those without ASPD, but did not differ in other symptoms. Other research has found that ASPD in SMI contributes to relapses (Dingemans, Lenior, & Linszen, 1998), and more severe symptoms in some studies of co-occurring disorders (Crocker et al., 2005; Mueser et al., 1997), but not others (Mueser et al., 2006). The association between ASPD and depression in this sample is consistent with one study that found Cluster B personality disorders increased suicidality in people with bipolar disorder (Garno et al., 2005), and findings in the general population that ASPD is associated with higher rates of dysphoria (Weiss et al., 1983) and suicidality (Verona, Patrick, & Joiner, 2001).

ASPD was also associated with lower levels of education, as has been found in the general population (Robins, Tip, & Przybeck, 1991) and in people with co-occurring disorders (Mueser et al., 1996). Childhood conduct disorder, the precursor to adult ASPD, may be a behavior pattern that contributes to impaired premorbid adjustment in areas such as academic and social functioning, which subsequently impacts on symptom severity (Macbeth & Gumley, 2008). This suggests that clients with ASPD and co-occurring disorders are an especially disadvantaged group due to the toxic conjunction of substance use problems, SMI, and illness severity. The challenges experienced by this group are also reflected in the worse overall functioning of clients with ASPD in this study, as previously reported in other studies of co-occurring disorders (Mueser et al., 1997) and in bipolar disorder (Morris et al., 2007).

Clients with ASPD tended to endorse a less planning-based approach to solving interpersonal problems than those without ASPD, and among key relatives this difference was significant. The relatives of clients with ASPD also expressed more negative feelings and less gratitude towards the client, and reported lower levels of mental health functioning. These associations may reflect family systemic problems related to ASPD. Increased severity of client substance abuse (Dixon et al., 1995), combined with the effects of impulsivity and aggression associated with ASPD, could contribute to strain in relationships with key relatives, including worse mental health functioning. In addition, the relatives of clients with ASPD themselves could be more prone to impulsivity and other ASPD-related traits due to factors such as selection (e.g., assortive mating; Odegaard, 1946) or genetics (Bezdjian, Baker, & Tuvblad, 2011). The correlates of ASPD in this population may broadly reflect the impact of a range of psychodevelopmental factors (e.g., trauma exposure, family support, premorbid functioning) on subsequent client and family functioning.

While the families of clients with ASPD had the greatest need for intervention, ASPD also appeared to interfere with involvement in family treatment. Families of clients with ASPD were less likely to have extended exposure to FIDD or FPE suggesting that client ASPD, potentially in combination with additional problems in the key relative, contributed to premature termination from treatment. Family clinicians may also have had difficulty establishing a therapeutic alliance with clients with ASPD, as reported in the general population (Gerstley et al., 1989).

There are several limitations of this study, including the modest sample size and multiple statistical tests, which could inflate the possibility of spurious findings. Differences in the relationships of the key relatives to clients with ASPD vs. without ASPD may have influenced some of the results, but the sample size was too small to explore such differences. More historical information, including childhood exposure to trauma, and open-ended qualitative questions, could have shed further light on the family difficulties associated with client ASPD. Additionally, treating ASPD as a discrete diagnostic entity may have obscured important relationships between childhood conduct disorder and adult ASPD behaviors and client and relative functioning.

Clinical Implications

ASPD is associated with more severe co-occurring disorders, more problematic family relationships, and greater difficulty delivering family treatment. Family work with this population needs to investigate the possible presence of client ASPD, be flexible in working with families in which neglect, abuse, or incest may have occurred, and acknowledge that some clients may be reluctant to include family members because of such traumatic experiences. Effective family work has the potential to marshal the supports of caring relatives, thereby contributing to an improved course of co-occurring disorders, and reduced strain on the overall family.

Acknowledgments

This research was supported by grant #MH62629 from the National Institute of Mental Health and the National Institute on Drug Abuse.

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Table 1

Demographic characteristics of clients with Antisocial Personality Disorder (ASPD) vs. without ASPD, and their key relatives

Categorical Variables		N	%	N	%	χ^2	df	p
Client								
Gender								
Male		58	71	14	67	0.13	1	NS
Female		24	29	7	23			
Race Ethnicity								
Non-Latino White		38	47	5	24	3.65	2	NS
Latino		32	39	12	57			
Other		11	14	4	29			
Marital Status								
Never Married		56	68	7	33	10.28	2	0.006
Married		12	15	9	43			
Divorced/Separated		14	17	5	24			
Education								
< High School Graduate		25	30	13	62	7.10	1	0.008
High School Graduate		57	70	8	38			
Living Situation								
Independent		32	39	6	29	0.78	1	NS
With Relative		50	61	15	71			
Key Relative								
Gender								
Male		23	28	3	14	1.68	1	NS
Female		59	72	18	86			
Marital Status								

Categorical Variables	N	%	N	%	χ^2	df	p		
Never Married	10	12	3	14	0.04	1	NS		
Married/Divorced/Separated	70	88	18	86					
Relationship to Client									
Parent	46	56	7	33	4.78	2	0.09		
Spouse	10	12	6	29					
Other	26	32	8	38					
Education									
< High School Graduate	21	26	5	24	0.39	1	NS		
High School Graduate	60	74	16	76					
Continuous Variables									
Client Age	82	34.21	11.66	21	34.52	10.04	101	NS	
Key Relative Age	80	49.77	14.81	21	43.28	16.26	1.75	99	0.08

Table 2

Differences in outcomes for clients with Antisocial Personality Disorder (ASPD) vs. without ASPD

Categorical Variables	No ASPD			ASPD			Statistical Test		
	N	%		N	%		χ^2	df	p
Psychiatric Diagnosis									
Schizophrenia-Schizoaffective	65	79		10	48		8.46	1	0.004
Bipolar	17	21		11	52				
Alcohol Use Diagnosis									
No	24	29		8	38				
Abuse	17	21		1	5		3.02	2	NS
Dependence	41	50		12	57				
Drug Use Diagnosis									
No	16	19		1	5				
Abuse	12	15		0	0		7.29	2	0.03
Dependence	54	66		20	95				
Amphetamine Use Disorder									
	18	22		10	48		5.56	1	0.02
Cannabis Use Disorder									
	33	40		9	43		0.05	1	NS
Cocaine Use Disorder									
	19	23		7	33		0.91	1	NS
Opiate Use Disorder									
	8	10		5	24		2.99	1	0.08
Continuous Variables	No ASPD			ASPD			Statistical Test		
	N	Mean	SD	N	Mean	SD	T	df	p
Global Assessment Scale	82	43.88	9.5	21	39.62	7.15	1.92	101	0.05
Brief Psychiatric Rating Scale									
Total	82	1.99	0.53	21	2.21	0.54	0.04	101	NS
Depression	82	2.6	0.97	21	3.24	1.05	2.66	101	0.009
Activation	82	1.62	0.67	21	1.71	0.66	0.55	101	NS

Categorical Variables	No ASPD		ASPD		Statistical Test		
	N	%	N	%	χ^2	df	p
Retardation	82	1.66	21	1.51	0.52	0.69	101 NS
Psychosis	82	2.09	21	2.19	1.05	0.4	101 NS
Alcohol Use Scale	82	3.28	21	2.81	1.47	1.59	101 NS
Drug Use Scale	82	3.43	21	3.95	0.74	2.43	101 0.02
Substance Abuse Treatment Scale	82	3.20	21	2.62	1.24	1.81	101 0.07
Time Line Followback							
Days Alcohol Use	82	34.21	21	26.81	34.93	0.74	101 NS
Days Drug Use	82	33.62	21	69.62	55.12	3.09	101 0.003
Knowledge Test	90	25.09	14.01	27.63	14.01	0.70	87 NS
Family Attitude Scale	82	3.99	0.69	21	3.88	0.92	0.62 101 NS
Social Problem Solving Scale	79	139.90	39.39	18	121.72	34.96	1.80 95 0.07

Table 3
Differences in Key Relative Outcomes Between Clients with Antisocial Personality Disorder (ASPD) vs. without ASPD

Domains	No ASPD			ASPD			Statistical Test		
	N	Mean	SD	N	Mean	SD	T	df	p
Knowledge Test									
	77	30.03	18.53	18	28.47	15.64	0.33	93	NS
Family Attitude Scale									
	82	3.88	0.63	21	3.56	0.84	1.97	101	0.05
Social Problem Solving Scale									
	81	179.32	38.20	21	153.86	40.76	2.68	100	0.008
Family Experiences Interview Schedule									
Benefits	82	1.40	0.93	21	1.65	0.88	1.10	101	NS
Gratification	82	4.18	0.81	21	3.79	1.11	1.82	101	0.07
Financial Expenditures	81	3.13	2.42	21	3.52	3.01	0.62	100	NS
Dollars spent past 30 days	81	264.07	318.55	21	343.95	348.09	0.13	100	NS
Stigma	82	0.20	0.24	21	0.30	0.31	1.52	101	NS
SF-12									
Physical Component	82	48.82	10.35	21	49.03	10.45	0.84	101	NS
Mental Component	82	10.83	10.83	21	40.65	13.45	2.14	101	0.04