



RESEARCH ARTICLE

Predictors of social functioning in people with antisocial personality disorder

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ABSTRACT

Objective: Although much research has been performed in defining and diagnosing the antisocial personality disorder (ASPD) and its etiology, very few data about the predictors of social functioning (SF) in ASPD are available. Acceptance and commitment therapy is a third-wave psychotherapy which puts the psychological inflexibility model at the heart of its psychopathology model. According to this model, experiential avoidance, cognitive fusion, and attachment to conceptualized self are three processes that are related to psychological inflexibility.

Method: In this study, we included 220 people with ASPD. We investigated possible predictive effects of experiential avoidance (measured with Acceptance and Action Questionnaire-II), cognitive fusion (measured with Cognitive Fusion Questionnaire), attachment to conceptualized self (measured with Self-as-Context Scale), symptom severity (measured with Structured Clinical Interview for DSM-II), and perspective taking (measured with Interpersonal Reactivity Index) on SF (measured with Social Functioning Scale) in people with ASPD. We conducted regression analyses to determine possible predictive effects.

Results: Our model explained 14% of the cases. ASPD severity, lower attachment to conceptualized self, and cognitive fusion were found to predict SF but perspective taking and experiential avoidance did not.

Conclusion: Other than symptom severity, self-as-context and cognitive fusion were found to predict SF in people with ASPD. Results were compared with the literature data.

Keywords: Acceptance and commitment therapy, antisocial personality disorder, social functioning, empathy

INTRODUCTION

Antisocial personality disorder (ASPD) is characterized by a pervasive pattern of disregard for and violation of the rights of others along with failure to conform to social norms, deceitfulness, irritability and aggressiveness, impulsivity, recklessness, irresponsibility, and lack of remorse (1). Although much research has been performed in defining and diagnosing the

antisocial personality disorder (ASPD) and its etiology, very few data about the predictors of social functioning (SF) in ASPD are available (2).

The concept of “social functioning” defines peoples’ interaction and ability to fulfill their role within the environment (3). Although many psychiatric disorders have been shown to impair it, there are also many studies illustrating that SF is not always correlated with symptoms (4). Among other factors, “antisocial” behaviors such as

How to cite this article: Sahin O, Nalbant A, Yavuz KF. Predictors of social functioning in people with antisocial personality disorder. Dusunen Adam J Psychiatr Neurol Sci 2022;35:93-100.

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Received: February 12, 2022; **Revised:** March 29, 2022; **Accepted:** April 09, 2022

deceitfulness, recklessness, and aggressiveness are found to show less empathy to others (5).

Prosocial behavior, a related construct of SF, is a type of voluntary social behavior that is intended to benefit other people or society and includes behaviors such as sharing, helping, and comforting. Although various motivational factors are related to prosocial behavior (e.g., desire for reciprocity and social approval), as a subtype, altruistic behavior often describes other oriented behaviors (6). In a review, which focuses on the relationship between empathy and prosocial behavior, the authors reported that empathy was found to be a precursor for altruistic behavior although a high level of personal distress (PD) is associated with less altruistic behavior (7).

Empathy can be defined as the ability to understand and experience the feelings and emotions of others who are worthy of compassion and respect (8,9). Despite being one of the most popular concepts in the field of psychology, there has not been a clear consensus about the definition, measurement, and application of empathy (10). As one of the leading researchers in this field, Davis defined empathy as a multidimensional skill and developed the widely used Interpersonal Reactivity Index (IRI). According to this approach, empathy consists of four subdimensions: empathic concern (EC), perspective taking (PT), fantasizing, and PD (11). A recent study used IRI to assess empathy in a sample consisting of people with ASPD in Turkey and found that people with ASPD had similar levels of empathy compared with healthy controls (12). The study also found that people with ASPD were worse than healthy controls in perspective taking abilities. This study can be an example of the need for a more detailed investigation of the idea that people with ASPD lack empathy.

Contextual behavioral science (CBS) is a branch of behavioral psychology and is the applied form of functional contextualism, which is a philosophy of science approach (13). According to functional contextualism, being right or wrong about behaviors depends on their context, rather than on their forms and frequencies. In this regard, being right is defined as “what works in a given context” (14). According to this point of view, for a better understanding of prosocial and antisocial behaviors, one needs to define their context and functions. Recently, CBS researchers investigated healthy social connections under the principles of CBS and emphasized the contexts that reinforce prosocial behavior (15) and functional units (16).

Relational frame theory (RFT) is a behavioral account of human language and cognition, which is based on functional contextualist philosophy of science (17). In recent years, RFT researchers have studied complex behaviors such as PT. In this field, researchers have investigated the healthy and unhealthy development of PT abilities. According to RFT, PT is a learned behavior, and it is learned through the interaction of a child with his or her environment (18). From this point of view, healthy PT ability necessitates a healthy developmental social context, which, for a child, is caring parenting.

Acceptance and commitment therapy (ACT), one of the clinical applications of functional contextualism and RFT, is a third-wave psychotherapy model, which is shown to be efficacious for various problems such as anxiety, depression, and psychosis (17). ACT defines the concept of “psychological inflexibility” as its psychopathology model and describes its core processes. As a transdiagnostic approach, ACT defines experiential avoidance as a basic process in human suffering. Experiential avoidance refers to one’s behavior of rigidly avoiding, suppressing, or controlling internal experiences (19). To give an example in a social context, we can see experiential avoidance when a person avoids social interaction to suppress feelings of inadequacy.

Another main process of the ACT model is cognitive fusion, which refers to dominant control of thoughts on one’s actions. Simply put, cognitive fusion means seeing thoughts as the ultimate truth rather than just thoughts (17). According to the ACT psychological flexibility model, another process that has been shown to yield psychopathology is a weakened sense of self. ACT aims to improve a particular sense of self called “self-as-context,” which can be defined as the ability to see oneself as the context for all internal experiences (20). To establish a healthy sense of self, ACT emphasizes the development of good PT skills (21). To see oneself as the context of all experiences, one needs to take perspective from the experiences. Therefore, from an ACT point of view, a healthy PT ability is necessary not only for empathy but also for psychological flexibility.

As mentioned above, there is a lack of data about predictors of SF in people with antisocial personality disorder. In this study, we aim to investigate predictors of SF from a CBS perspective. We question and analyze developmental characteristics, symptom severity, psychological flexibility, and PT. We hypothesize that both psychological flexibility and PT are important in predicting SF as much as symptom severity.

METHOD

Participants

The research sample consisted of 220 male individuals with ASPD who applied to a psychiatric hospital's outpatient units. Individuals with comorbid schizophrenia and other psychotic disorders or mental retardation were excluded and those who agreed to participate in the research voluntarily between the ages of 18 and 65 years were included.

Materials and Procedure

Our research was approved through the decision of the local Ethics Committee. Individuals who applied to outpatient clinics for treatment with antisocial personality features were assessed with face-to-face evaluations by one of the researchers for clarifying ASPD diagnosis after informed consent was obtained. Following the interview, participants were asked to fill out the scales listed below.

Structured Clinical Interviews for Diagnostic and Statistical Manual of Mental Disorders-Based diagnoses

Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) Axis I Disorders (SCID-I), is a DSM-IV-based diagnostic interview to evaluate axis I clinical psychiatric diagnoses (22). Its reliability study for the Turkish version was conducted by Ozkurkucugil et al. (23). We used SCID-I to evaluate if there was any axis I disorder that corresponds to our exclusion criteria.

SCID-II is a diagnostic interview tool for personality disorders. A reliability study of its Turkish version was conducted by Coskunol et al. (24) and $K=1$ was reported for the ASPD subscale. We used SCID-II total points to diagnose ASPD and to measure symptom severity.

Interpersonal Reactivity Index

IRI was used to evaluate empathy levels with four dimensions (11). The validity and reliability study of the Turkish version of IRI was performed by Engeler and Yargic (25). The scale, consisting of 28 items, is a 5-point Likert-type scale and each item is scored from 0 to 4 points. IRI has four subscales, which are four-dimensional measures: perspective taking (PT), empathic concern (EC), fantasy scale (FS), and personal distress (PD). These subscales determine relatively independent and separate individual qualifications. We used only the PT subscale of IRI for this research. In its reliability study for the Turkish version, Cronbach's alpha of the PT subscale was reported as 0.73 (25). Here, perspective taking refers to putting oneself in someone's place, the ability to look from others' perspectives and

accept their views, and corresponding with the cognitive empathy dimension (11).

Acceptance and Action Questionnaire-II (AAQ-II)

AAQ-II is developed to measure the differences in psychological inflexibility by focusing on experiential avoidance attitudes among individuals (26). AAQ-II is a 7-point Likert-type scale, and the participants grade how the expressions in the items match their own by providing scores from 1 (never true) to 7 (always true). An increase in the score represents a decrease in psychological flexibility and hence an increase in experiential avoidance. Turkish validity and reliability study was performed by Yavuz et al. (27), and they reported Cronbach's alpha coefficient as 0.84.

Self-as-Context Scale (SACS)

Self-as-Context Scale was developed by Gird and Zettle (28), and it aims to evaluate the degree of one's ability to see himself or herself as the context of his or her experiences. This scale is a 7-point Likert-type scale with one dimension and higher points indicate a better sense of self-as-context. At the time of the study, there was no reliability study of this scale in Turkish. For this study, we found Cronbach's alpha as 0.84. The scale was translated into Turkish by two independent translators other than the researchers.

Cognitive Fusion Questionnaire (CFQ)

This scale was developed by Gillanders et al. (29) to measure the degree of cognitive fusion. It is a 7-point Likert-type scale with a single dimension and higher points indicate higher cognitive fusion levels. At the time of the study, there was no reliability study of this scale in Turkish. For this study, we found Cronbach's alpha as 0.82. The scale was translated into Turkish by two independent translators other than the researchers.

Social Functioning Scale (SFS)

SFS was developed by Birchwood et al. (30), and the validity and reliability study of the Turkish version was conducted by Yaprak Erakay and Gulseren (31). In this study, they reported Cronbach's alpha as 0.8. To evaluate SF, the scale contains the following subdimensions: social engagement/social withdrawal, interpersonal functioning, prosocial activities, recreation activities, independence, and employment. High total points indicate an increase in functionality. The scale was originally developed to assess SF in people with schizophrenia (30), and in our research, the social engagement/social withdrawal, interpersonal functioning, and prosocial activities of the scale were used as recreation activities, independence, and employment are less related to ASPD than to schizophrenia.

Table 1: Participants' developmental context and substance use situation

	Yes, n=220	%
Immigration	117	53.2
Violence	185	84.1
Divorce of parents	87	39.5
Violence to mother	109	49.5
Suicide attempt	97	44.1
Psychiatric disorder in family	78	35.5
Alcohol use	154	70
Tobacco use	205	93.6
Drug use	196	89.1

Statistical Analyses

After an investigation of the data set, continuous variables were assessed for normal distribution, skewness, and kurtosis. The relationship between continuous variables was analyzed through Pearson's correlation. Standard multiple regression was used to evaluate predictors of the social functioning scale. Statistical analyses were conducted using SPSS version 20.0.

RESULTS

The study was completed with 220 men who were diagnosed with ASPD by SCID-II. The mean age was 28.6 ± 6.6 years (19–54). Fifteen percent of the participants were married. Education levels were found to be 30% for 5 years, 34.1% for 8 years, 28.6% for 11 years, and 7.3% for 13 years or more. Of the participants, 37.3% were found to have no employment. Table 1 shows the information about participants' developmental context.

We evaluated means, minimum–maximum scores, and standard deviations of continuous variables. Table 2 shows the results of AAQ-II, CFQ, SACS, SFS, and IRI-PT subscales.

Table 3 shows the baseline correlations between continuous variables. According to this, SF total score was found to be significantly correlated with AAQ-II ($r=-0.194$, $p=0.004$); SAC ($r=-0.220$, $p=0.001$); CFQ ($r=-0.224$, $p=0.001$); SCID-II ($r=-0.197$, $p=0.003$), and IRI-PT ($r=-0.152$, $p=0.024$).

Multiple regression analysis was also performed to estimate whether AAQ-II, CFQ, SAC, and PT have any predictive value on SF. Our model had a predictive value of 14% and SCID-II ($p=0.028$, $\beta=-0.144$); SACS ($p=0.001$, $\beta=0.222$); and CFQ ($p=0.015$, $\beta=0.211$) were found to have a statistically significant contribution,

Table 2: Descriptive statistics of psychometric evaluations

	Min	Max	Mean	SD
AAQ-II	7	49	28	11.03
SAC	11	77	53.97	13.77
CFQ	7	49	27.3	10.32
SCID-II-adult	16	30	25.22	3.96
SCID-II-childhood	18	36	26.48	3.93
SCID-II	35	66	51.71	6.52
SF-IP	0	12	6.16	2.86
SF-SE	0	15	8.89	3.12
SF-PS	0	53	17.95	12.13
SF (total)	0	76	33	14.93
IRI-PT	0	28	15.58	5.50

SD: Standard deviation; AAQ: Acceptance and Action Questionnaire; SAC: Self-as-Context Scale; CFQ: Cognitive Fusion Questionnaire; SCID: Structured Clinical Interviews for DSM; SF: Social functioning; SF-IP: Social Functioning Interpersonal Subscale; SF-SE: Social Functioning Social Engagement/Social Withdrawal Subscale; SF-PS: Social Functioning Prosocial Subscale; IRI-PT: Interpersonal Reactivity Index-Perspective Taking Subscale.

whereas AAQ-II ($p=0.847$, $\beta=0.017$) and PT ($p=0.281$, $\beta=0.072$) have shown no statistically significant contribution (Table 4).

Another multiple regression analysis was also conducted to estimate predictors of SF subscales. According to this, our model explained 9% of predictors for the prosocial behavior subscale, and it was predicted by SCID-II ($p=0.019$, $\beta=-0.159$) and CFQ ($p=0.026$, $\beta=-0.198$). Our model for interpersonal relations explained 12% of predictors, and it is predicted by SAC ($p<0.001$, $\beta=0.283$). The last subscale, social withdrawal, is explained by our model as 16%, and it was predicted by SAC ($p<0.001$, $\beta=0.292$) (Table 5).

DISCUSSION

In this study, in which we evaluated the possible predictors of SF and developmental context for people with ASPD from a CBS point of view, there are multiple points worth discussing. First of all, the results showed that this participant group has low rates of employment, years of education, and marriage, high rates of tobacco (93.6%), alcohol (70%), and drug (89.1%) use, suicide attempt (44.1%), and previous appliance to psychiatry and family history of psychiatric disorder (35.5%). Besides, the results also showed that there are high rates of experiencing violence as a child (84.1%), violence of father to mother (49.5%), immigration (53.2%), and parental divorce (39.5%) in the developmental histories of the participants.

Table 3: Baseline correlations

	1	2	3	4	5	6	7	8	9	10
1. SF (total)	1									
2. AAQ-II	-0.194** 0.004	1								
3. Age	-0.068 318	0.103 0.128	1							
4. SAC	0.220** 0.001	0.030 0.658	0.090 0.184	1						
5. CFQ	-0.224** 0.001	0.658** 0.000	0.017 0.802	0.119 0.079	1					
6. SF-IP	0.589** 0.001	-0.183** 0.006	-0.002 0.974	0.273 0.000	-0.159* 0.019	1				
7. SF-SE	0.559** 0.000	-0.257** 0.00	-0.038 0.571	0.280 0.000	-0.216** 0.001	0.484** 0.000	1			
8. SF-PS	0.948** 0.000	-0.129 0.056	-0.073 0.282	0.134* 0.047	-0.183** 0.007	0.364** 0.000	0.316** 0.000	1		
9. SCID-II	-0.197** 0.003	0.212** 0.002	0.044 0.518	-0.046 0.501	0.162* 0.016	-0.045 0.504	-0.151* 0.025	-0.194** 0.004	1	
10. IRI-PT	0.152* 0.024	-0.160* 0.017	0.020 0.772	0.240** 0.00	0.059 0.384	0.124 0.67	-0.128 0.058	125 0.065	-0.080 0.237	1

AAQ: Acceptance and Action Questionnaire; SAC: Self-as-Context Scale; CFQ: Cognitive Fusion Questionnaire; SCID: Structured Clinical Interviews for DSM; SF: Social functioning; SF-IP: Social Functioning Interpersonal Subscale; SF-SE: Social Functioning Social Engagement/Social Withdrawal Subscale; SF-PS: Social Functioning Prosocial Subscale; IRI-PT: Interpersonal Reactivity Index-Perspective Taking Subscale. The first lines indicate Pearson's correlations. The second lines are p values. *: Correlation is significant at 0.05 level; **: Correlation is significant at 0.01 level.

Table 4: Regression analyses for social functioning

	Unstandardized coefficients		Standardized coefficients	t	Sig.
	β	S.E.	β		
SCID-II (total)	-0.329	8.99	-0.144	-2.208	0.028
SAC	0.241	0.072	0.222	3.357	0.001
CFQ	-0.305	0.125	-0.211	-2.449	0.015
IRI-PT	0.195	0.180	0.072	1.081	0.281
AAQ-II	-0.024	0.118	-0.017	-0.200	0.842

S.E.: Standard error; AAQ: Acceptance and Action Questionnaire; SAC: Self-as-Context Scale; CFQ: Cognitive Fusion Questionnaire; SCID: Structured clinical interviews for DSM; IRI-PT: Interpersonal Reactivity Index-Perspective Taking Subscale; p<0.05 statistically significant (bold values).

According to behaviorism, personality is a combination of behavioral traits which arise from several developmental contingencies (32). In line with this, children from low-income families (33), with negligent and/or permissive parenting (34), and childhood victims of abuse (35) are found to have more delinquent or aggressive behavior. Moreover, studies that investigate the relation between ASPD and childhood context found that witnessing parental violence (36) and exposure to childhood abuse and neglect (37) are risk factors for developing ASPD symptoms. Combining these with our results, we can say that childhood developmental context for people with ASPD has an important effect on both ASPD symptoms and SF.

By means of predictors of general SF, we found that ASPD severity, self-as-context, and cognitive fusion predict general SF, whereas PT and experiential avoidance do not. Moreover, in our study, self-as-context has been shown to predict SF, interpersonal relationships, and social withdrawal.

Self-as-context is the ability to observe one's own feelings, thoughts, and other private experiences along with having a perspective of a context for these internal phenomena (17). As one of the core processes in the psychological flexibility model, it refers to a more flexible behavioral repertoire, which is not under the rigid control of private experiences. For example, someone who has a better self-as-context ability could behave more prosocially even if he or she feels angry or frustrated.

Table 5: Regression analyses for social functioning subscales

	Unstandardized coefficients		Standardized coefficients	t	Sig.
	β	S.E.	β		
Prosocial subscale					
SCID-II (total)	-0.296	0.125	-0.159	-2.373	0.019
SAC	0.115	0.060	0.131	1.936	0.055
CFQ	-0.233	0.104	-0.198	-2.237	0.026
IRI-PT	0.168	0.151	0.076	1.114	0.267
AAQ-II	0.050	0.99	0.045	0.507	0.613
Interpersonal subscale					
SCID-II (total)	0.006	0.029	0.013	0.192	0.848
SAC	0.059	0.015	0.283	4.233	<0.001
CFQ	-0.033	0.024	-0.119	-1.369	0.173
IRI-PT	0.017	0.035	0.032	0.478	0.633
AAQ-II	-0.028	0.023	-0.109	-1.242	0.216
Social engagement/social withdrawal subscale					
SCID-II (total)	-0.039	0.031	-0.081	-1.269	0.206
SAC	0.066	0.015	0.292	4.497	<0.001
CFQ	-0.039	0.026	-0.130	-1.529	0.128
IRI-PT	0.010	0.037	0.018	0.277	0.782
AAQ-II	-0.045	0.024	-0.159	-1.855	0.065

S.E.: Standard error; Dependent variable: Social Functioning Scale. AAQ: Acceptance and Action Questionnaire; SAC: Self-as-Context Scale; CFQ: Cognitive Fusion Questionnaire; SCID: Structured clinical interviews for DSM; IRI-PT: Interpersonal Reactivity Index-Perspective Taking Subscale; $p < 0.05$ statistically significant (bold values).

According to Hayes, “self-as-context enables or facilitates many different experiences, including theory of mind, empathy, compassion, self-compassion, acceptance, defusion, and a transcendent sense of self” (19). In line with this, from a CBS point of view, self-as-context ability is reported to have many important implications for relationships as it promotes compassion, intimacy, and acceptance (20).

One interesting finding from our study was that PT when measured with IRI did not seem to predict SF while self-as-context did. One possible reason for this might be that although on a theoretical basis these two measurements could overlap, they may not necessarily measure the same thing. Our finding of the mild correlation between these two measurements could support this assumption. PT, as measured by IRI, refers to one’s ability to take the perspective of others while self-as-context means taking the perspective of oneself.

We found cognitive fusion as a predictor for general social functioning and prosocial subscale. As one of the six core processes in the ACT psychological flexibility model, cognitive fusion means seeing one’s own thoughts as the ultimate truth and letting those thoughts control behaviors rigidly (38). Researchers found that fusing with thoughts

to a greater extent leads people to be less sensitive to context, that is, following a thought rigidly could decrease awareness of contextual changes (39). Besides predicting SF, we found a statistically significant relationship between cognitive fusion and ASPD severity. From a functional contextualistic point of view, in a developmental context that reinforces antisocial behaviors, thoughts like “if you don’t want to get hurt, you must hit first” are gradually reinforced and people gradually become fused with this thought. Although it might be a useful or even protective thought in a context in which a child faces violence, fusing with it could make people insensitive to contextual changes such as peoples’ prosocial behaviors. When the context changes to a safer one, following this kind of thought could easily disrupt social relationships.

We found that experiential avoidance did not predict SF. Although we found experiential avoidance significantly correlated with SF and its subscales, the result of experiential avoidance not predicting SF could mean that people with ASPD might not use rigid experiential avoidance strategies in social contexts. Rather than experiential avoidance, impulsivity might be a predictor of SF as people with ASPD are known as impulsive (40). Nevertheless, we found a significant

correlation between experiential avoidance and ASPD severity. Our results also showed ASPD severity as one of the predictors of SF. Regarding the significant correlation between experiential avoidance and ASPD severity, one possible explanation for experiential avoidance and SF prediction might be that experiential avoidance has an indirect effect on ASPD severity.

There are several limitations of our study. First, our models have only explained 10%–15% of cases. This means there are other important variables that could predict SF in people with ASPD. Second, our measurement tools are only based on self-reports that decrease the reliability of the results. Also, we had two measurement tools that have no reliability study. Yet, we found acceptable Cronbach’s alpha values regarding scales in our study. Another important limitation of our study was that our study sample consisted of only males. This is because ASPD is more common in men (41), and it should be remembered that this study sample consisted of people who applied to the hospital. Thus, our results should be generalized carefully.

To conclude, our findings suggest that in people with ASPD, the degree of SAC and CF has a predictive value in terms of SF besides symptom severity. Further research is needed to replicate this finding and to see its relationship with treatment. Also, as prevention, developmental contexts play a very important role. Providing nurturing environments for children in the family, at school, and in other social contexts could reinforce prosocial behaviors and protect them from the devastating results of antisocial behaviors.

Contribution Categories		Author Initials
Category 1	Concept/Design	K.F.Y., O.S.
	Data acquisition	O.S.
	Data analysis/Interpretation	K.F.Y., O.S., A.N.
Category 2	Drafting manuscript	K.F.Y., A.N.
	Critical revision of manuscript	K.F.Y., A.N.
Category 3	Final approval and accountability	K.F.Y., A.N., O.S.

Ethical Approval: The Bakirkoy Prof. Mazhar Osman Training and Research Hospital for Psychiatry, Neurology, and Neurosurgery Ethics Committee granted approval for this study (date: 05.05.2015, number: 2015/460).

Informed Consent: Informed consent was obtained form all participants.

Peer-review: Externally peer-reviewed.

Conflict of Interest: The authors declare that they have no conflict of interest.

Financial Disclosure: The authors declare that they have no financial support.

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