



Psychiatry

Interpersonal and Biological Processes

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/upsy20

Beyond Symptoms – A Cross-Sectional Study Exploring Functioning in Psychiatric Outpatients

Niklas Hörberg, Ioannis Kouros, Lisa Ekselius & Mia Ramklint

To cite this article: Niklas Hörberg, Ioannis Kouros, Lisa Ekselius & Mia Ramklint (2024) Beyond Symptoms – A Cross-Sectional Study Exploring Functioning in Psychiatric Outpatients, *Psychiatry*, 87:4, 353-371, DOI: [10.1080/00332747.2024.2395754](https://doi.org/10.1080/00332747.2024.2395754)

To link to this article: <https://doi.org/10.1080/00332747.2024.2395754>



© 2024 The Author(s). Published with license by Taylor & Francis Group, LLC.



[View supplementary material](#)



Published online: 11 Sep 2024.



[Submit your article to this journal](#)



Article views: 548




[View related articles](#)



[View Crossmark data](#)



Beyond Symptoms – A Cross-Sectional Study Exploring Functioning in Psychiatric Outpatients

Niklas Hörberg , Ioannis Kouros, Lisa Ekselius, and Mia Ramklint

Objective: This study aimed to explore factors influencing functioning in psychiatric outpatients, both separately and in combination. The primary objectives were to determine predictors of functioning, assess their significance in a combined analysis, and quantify their collective predictive power.

Method: A sample of 137 psychiatric outpatients diagnosed with bipolar disorder, borderline personality disorder, or attention deficit hyperactivity disorder (ADHD) participated in this cross-sectional study, undergoing semi-structured diagnostic interviews for psychiatric and personality disorders. Participants also completed assessments of current functioning, personality traits (temperament and character), attachment style, and childhood trauma. Linear regression models were employed to analyse the relationships between these factors and level of functioning.

Results: The majority of temperament and character traits and attachment dimensions, as well as having a personality disorder, predicted impaired functioning, but comorbidity and childhood trauma did not. When all variables were taken into account in a multiple regression analysis, only the temperament and character traits Harm Avoidance and Self-directedness remained significantly predictive ($p = .006$ and $.003$, respectively). These two factors explain about one-third of the variance.

Conclusions: Personality traits—more specifically, the temperament trait Harm Avoidance and the character trait Self-directedness—are strong predictors of functioning among psychiatric outpatients. Interestingly, when accounting for these factors, traditionally associated variables, such as attachment, comorbidity, and childhood trauma, lost their significance as predictors. These findings

Niklas Hörberg, MD, is a specialist in psychiatry and *PhD* student employed at Akademiska Sjukhuset, Uppsala, at an outpatient unit for young adult psychiatric patients since 2017. *Ioannis Kouros, MD*, is a specialist in psychiatry and *PhD* student employed at Akademiska Sjukhuset, Uppsala. *Lisa Ekselius MD, PhD*, is a specialist in psychiatry and holds a position as senior professor at Uppsala University. Her research focuses on individual differences in personality traits and cognitive processes relevant to mental vulnerability and mental illness. *Mia Ramklint MD, PhD*, is a specialist in child and adolescent psychiatry and psychiatry employed as professor of child and adolescent psychiatry at Uppsala University.

Address correspondence to Niklas Hörberg, MD, Department of Medical Sciences, Uppsala University, Akademiska Sjukhuset, ingång 10, Uppsala SE-751 85, Sweden. E-mail: niklas.horberg@uu.se

This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent.

underscore the pivotal role of specific personality traits in understanding and predicting the functioning of psychiatric patients.

INTRODUCTION

Although clinical care and treatment are often based on the patient's current diagnoses and symptoms, clinicians quickly note that, in some cases, these say very little about a patient's level of functioning. Functioning, the ability to perform important tasks in life, such as in work and relationships, varies greatly among psychiatric patients. One patient with a certain diagnosis may work full time and have well-functioning relationships, whilst another patient with the same diagnosis may never have held a job, or had constant relationship difficulties.

This study addresses functional impairments in areas like work, relationships, family life, and home. Assessing impairment is crucial because symptomatic remission and functional recovery do not always align. Treatment goals should include functional improvement alongside symptom relief (Sanchez-Moreno et al., 2017). Evaluating functioning, along with the amount of support and level of performance, is vital as these are linked to the level of functioning (Jaeger et al., 2003). Functional assessments can estimate care needs (Goering et al., 1996), aid in treatment planning and prediction (American Psychiatric Association, A, 2000; Piersma & Boes, 1997), measure change over time, and evaluate treatment effects (Michelson et al., 1998; Piersma & Boes, 1997).

Impaired function can lower quality of life (QoL), as seen in various age groups and diagnoses (Alonso et al., 2022; Karakis et al., 2023; Liao et al., 2019; Nevarez-Flores et al., 2019). However, the relationships are complex (Vogt et al., 2019), with weak to moderate correlations at the group level, allowing individuals with lower levels of functioning to still live fulfilling lives.

Psychiatric diagnoses are mainly defined by symptoms, but impaired functioning is also a diagnostic criterion (American Psychiatric Association, A, 2000, 2013). The

degree of impairment is linked to psychiatric disorders and degree of comorbidity, which has been shown in many different patient groups (Farooqui et al., 2022; Goldman et al., 1992; Hecht et al., 1990; Huppert et al., 2009; Olfson et al., 1997).

Impairment is greater when personality disorders (PDs) are present (Johnson et al., 2000; Newton-Howes et al., 2008; Ramirez et al., 2008; Skodol et al., 2002), especially affecting social functioning (Newton-Howes et al., 2008), and work performance (Ettner et al., 2011), leading to higher risks of long-term sick leave or early retirement (Gjerde et al., 2014; Østby et al., 2014).

Childhood traumatisation can also contribute to impairment (Davidson et al., 2009; Gil et al., 2009; Peleikis et al., 2005; Sansone et al., 2005; Sugaya et al., 2012), and a dose-response relationship has been observed (Sugaya et al., 2012). Maltreated children show impaired academic and social skills (Romano et al., 2015), and childhood trauma also affects psychiatric comorbidity (Chen et al., 2010; Kessler et al., 2010; Norman et al., 2012), attachment (Unger & De Luca, 2014), and personality development (Martin-Blanco et al., 2014).

Attachment theory, describing how humans relate to important others (Bowlby, 1969), which also influences functioning. Attachment pattern can be either secure or insecure, and there are two main insecure domains: avoidance (consisting of the subdomains Discomfort with closeness and Relationships as secondary) and anxiety (consisting of Preoccupation with relationships and Need for approval) (Feeney et al., 1994). Attachment theory applies to both infant-caregiver relationships and aspects of personality and social functioning in adult relationships (Hazan & Shaver, 1987). Insecure attachment seems to increase the risk of developing a cognitive framework

predisposing for depression (Morley & Moran, 2011) and correlations can also be seen with personality disorders in general (Fossati et al., 2003), for a review, see Agrawal et al. (2004). Several psychiatric disorders are positively correlated with insecure attachment, for example bipolar disorder (Morriss et al., 2009), depression (Strodl & Noller, 2003), and eating disorders (O’Shaughnessy & Dallos, 2009). Although the results are mixed, attachment has been shown to be associated with impairment in patients with severe mental illnesses (Pearse et al., 2020).

Personality is a related construct that also correlates with functioning. Cloninger’s psychobiological model for the structure and development of personality incorporates the domains of temperament and character (Cloninger et al., 1993). Temperament is a heritable determinant. Cloninger’s model includes four dimensions of temperament: Novelty Seeking (NS) characterized by exploration in response to novelty, impulsive decision-making, extravagance in approach to cues of reward, quick loss of temper, and avoidance of frustration, Harm Avoidance (HA) by anticipatory worry, avoidant behaviors such as fear of uncertainty and shyness of strangers, and fatigability, Reward Dependence (RD) by sentimentality, social attachment, and dependence on the approval of others and Persistence (PS) by perseverance despite frustration and fatigue.

The other domain in Cloninger’s model is character, which consists of three dimensions, and is said to influence personal and social effectiveness (Cloninger et al., 1993). Self-directedness (SD) is associated with agency—the ability to set goals and act consistently and adaptively to achieve them. Cooperativeness (C) refers to social tolerance, empathy, interest in others, and helpfulness. Self-transcendence (ST) includes a reduced focus on the self, transpersonal identification with nature, and spiritual acceptance. According to the model, the phenotype of personality develops as a result of constant

interactions between temperament and environmental influences.

High HA and low SD have been associated with more impairment, high PS has been associated with career success, and SD and C with better social functioning, explaining about one-tenth of the variation in career and relationships (Gutiérrez et al., 2016). SD has repeatedly predicted greater impairment, even when comorbidity and executive functioning are controlled for (He et al., 2019). However, dimensions with a more interpersonal focus, such as RD and C, had little or no effect on functioning (He et al., 2019). In general, only more extreme levels of traits have detrimental effects, with the exceptions of RD, SD, and C, which were only beneficial, and HA and ST, which were consistently harmful (Gutiérrez et al., 2016).

As described above, several studies have examined how individual factors influence functioning, but the current state of knowledge is uncertain regarding how these relationships appear when considering all the described factors within the same model.

Aims

The aim of this study is to explore factors beyond symptom severity that explain current levels of functioning in psychiatric outpatients.

The main hypotheses to be tested are:

1. Functioning is negatively associated with degree of comorbidity, presence of personality disorders, childhood traumatization, insecure attachment, personality traits (assessed as temperament and character, and more specifically low levels of C and SD, and high levels of HA).
2. These factors contribute independently in a regression model.

Beyond the main hypotheses, we also explore the following research questions:

- A To what extent do the factors mentioned above account for the variance in the level of functioning?
- B Do the results differ depending on whether a patient-rated or clinician-rated instrument is used?
- C Are different sub-domains of functioning (work/school, social functioning, and family life/home responsibilities) predicted by the same factors?

MATERIALS AND METHODS

Ethics

The study follows the Declaration of Helsinki and was approved by the Regional Ethical Review Board in Uppsala (Dnr 2008/171). To address the ethical concern that patients might feel pressured to participate, the mail invitation clarified that participation was voluntary and would not impact their care. A post-study survey showed that most participants were satisfied with their involvement.

Participants

Patients were recruited from the Out-patient Unit for Young Adults at the University Hospital in Uppsala, Sweden. Patients ($n = 759$) diagnosed with Borderline Personality Disorder (BPD), Bipolar Disorder (BP), Attention Deficit Hyperactivity Disorder (ADHD), or combinations thereof, between May 1, 2005, and October 31, 2010, were sent invitations by post. Diagnoses were made by trained physicians or clinical psychologists according to the DSM-IV-TR criteria, see (Hörberg et al., 2016) for details. The selection of patients with BPD, BP, and/or ADHD was part of a study which examined delimitations as well as comorbidity patterns in patients with symptoms of impulsivity and emotional instability (Kouros et al., 2024). This dataset provided a valuable resource, apart from the aforementioned diagnoses also encompassing a wide

range of information, which allowed for a comprehensive analysis. A total of 230 patients (30.3%) agreed to participate, signing written consent. Exclusion criteria were severe psychotic or manic symptoms. One patient was excluded because of mania and 92 were excluded due to incomplete data. For participants to be eligible for the study, data on functioning, comorbidity, personality disorders, childhood trauma, attachment, and temperament/character was needed. The final sample included 137 patients (103 females, 34 males, mean age 23.2 years (19–28), SD 2.1). Data for the subsample used for Global Assessment of Functioning (GAF-F) calculations are presented in the appendix.

Procedure

Participants were interviewed once or twice, depending on the time needed, by four medical doctors from the clinical unit. Initial interviews collected social and demographic data, followed by semi-structured diagnostic interviews. SDS-ratings and GAF-ratings, assessing symptoms and functioning separately, were performed by trained clinicians with excellent inter-rater reliability, as detailed in another publication (Hörberg et al., 2016).

Measures

The brief, self-rated Sheehan Disability Scale (SDS) (Sheehan, 1983) is a combined visual, numerical, and descriptive scale used to assess current (within the last month) functional impairment caused by psychiatric symptoms. A value from zero (“the symptoms do not affect function at all”) to 10 (“symptoms have an extreme effect on functioning”) is ascribed to each of three areas: work/school, social, and family life/home responsibilities. The sum of the three values yields a total SDS score between 0 and 30.

The SDS has high internal consistency and the same one-factor structure in both the original version (Arbuckle et al., 2009;

Hodgins, 2013; Leon et al., 1997) and the Swedish translation (Hörberg et al., 2016). The SDS has been shown to be both reliable and valid for various patient populations such as primary care (Leon et al., 1997), bipolar disorder (Arbuckle et al., 2009) or social phobia (Hambrick et al., 2004), and validity has been shown to be moderate for patients with panic disorder (Leon et al., 1992). It has been shown that the sum of the three SDS subscales is more useful than using the three subscales separately (Hambrick et al., 2004), and is the method primarily used in this paper, although the sub-scales will be analysed regarding research question C. The Swedish SDS has psychometric properties similar to those of the English original, Cronbach's alpha 0.77, and has shown both concurrent and external validity (Hörberg et al., 2016).

The Early Trauma Inventory Self-Report, Short Form (ETISR-SF) is a shortened form of the Early Trauma Inventory (ETI) (Bremner et al., 2007), designed to be self-administered to retrospectively measure trauma before the age of 18 years. It comprises 27 trauma items organised into four domains: general trauma (11 items), physical abuse (5 items), emotional abuse (5 items), and sexual abuse (6 items) (Bremner et al., 2007).

ETI and ETISR-SF have been shown to be valid instruments in diverse populations (Bremner et al., 2000, 2007; Hyman et al., 2005; Jeon et al., 2012; Osorio et al., 2013; Plaza et al., 2011) and have good test-retest reliability (Jeon et al., 2012; Osorio et al., 2013; Plaza et al., 2011). The Swedish version has similar psychometric properties as both the original version and other translations (Hörberg et al., 2019). Different methods for scoring ETI and ETISR-SF have been discussed (Bremner et al., 2000, 2007). Simply counting the number of traumatic events was shown (Bremner et al., 2007) to be just as valid as more complicated scoring algorithms, and this method is used in the present study.

The Attachment Style Questionnaire (ASQ) (Feeney et al., 1994) is a self-report

questionnaire which measures attachment style dimensionally for five factors. Discomfort with Closeness (DIS), which indicates difficulty trusting others; Relationships as Secondary (REL), reflecting a tendency to prioritize achievement over relationships; Confidence (CON), representing self-assurance in interpersonal relations; Need for Approval (NEE), denoting a strong fear of rejection and desire for validation from others; and Preoccupation with Relationships (PRE), emphasising worry of abandonment. The score for each factor is based on several items from the questionnaire (9 for DIS, 4 for REL, 6 for CON, 5 for NEE, and 5 for PRE).

The ASQ has also been used in different populations, showing satisfactory psychometric properties in adult (Cronbach's alpha 0.51–0.79) (Ravitz et al., 2010), general, and psychiatric populations (Cronbach's alpha 0.67–0.74 in clinical samples) (Andrea Fossati, Feeney, Donati, Donini, Novella, Bagnato, Acquarini, et al., 2003). The Swedish version has a Cronbach's alpha of 0.54–0.89 for the different dimensions and is satisfactorily validated in both clinical and non-clinical groups (Axfors et al., 2017; Håkanson, 1996). The Swedish manual is used in this paper (Tengström, 1997).

A 29-item short-form version of the ASQ (ASQ-SF) has been developed, demonstrating similar satisfactory internal consistency and a better factor fit than the longer ASQ-version (Karantzas et al., 2010).

The Temperament and Character Inventory (TCI) is a self-report questionnaire consisting of 238 dichotomous true/false items measuring the four temperament and three character dimensions detailed in the introduction. The Swedish translation has been tested in clinical samples achieving an internal consistency of 0.895 (Cronbach's alpha). Norm data are available for the Swedish translation (Brändström et al., 2001).

The Global Assessment of Functioning (GAF) assesses functioning and psychiatric symptoms separately on a 1–100 scale, where GAF-F refers to functioning (Zanarini et al., 2005). Even though the validity of GAF differs

between studies (Goldman et al., 1992; Jones et al., 1995), later studies support its meaningfulness (Hilsenroth et al., 2000).

The Structured Clinical Interview for DSM IV Axis I Disorders, Clinical Version (SCID-I CV) (First et al., 1996) is a semi-structured interview for axis I disorders. The reliability of SCID-I CV has generally been shown to be good (Skre et al., 1991; Zanarini & Frankenburg, 2001; Zanarini et al., 2000) and has demonstrated superior validity over standard clinical interviews (Kranzler et al., 1996; Ramirez Basco et al., 2000).

The Structured Clinical Interview for DSM-IV-Axis II Disorders (SCID-II) (First et al., 1997) was used to diagnose personality disorders. SCID-II has demonstrated good reliability in most studies (Arntz et al., 1992; Lobbestael et al., 2011; Maffei et al., 1997). The interviewers underwent prior training, including reliability assessment, see (Hörberg et al., 2016) for more information.

Statistical Methods

SDS was treated as a ratio scale, which is usual when using the instrument, although it could be argued that it also has the characteristics of an ordinal scale. If a single SDS item was missing, it was then calculated as the mean value of the other items. If there were missing data for more than one SDS item, the participant in question was excluded. As for the ETI, participants with more than three missing items were excluded, and if more than one item was missing from the ASQ and TCI. No missing data concerning diagnoses was allowed. Comorbidity data were operationalized as the number of diagnostic groups from which the participant had current diagnoses, based on the SCID-I interview. The groups used are presented in Table 1.

The data on functioning measures was normally distributed based on graphical visualisations and skewness ratios (skewness/standard error-quotient $< \pm 2.5$). Since some variables showed skewness (skewness/std error of no. of SCID-I diagnoses: 4.33, C: -3.443 , DIS:

-3.957), a Generalized Linear Model (GLzM) was constructed to ensure that deviations from the normal distribution did not affect the multiple regression model. Data on the number of PDs were so skewed (skewness/std error = 7.386) that the variable was converted to a dichotomous variable (has/does not have any SCID-II PD). This dichotomous variable and the “original variable” (number of PDs) had approximately the same Spearman correlation to SDS (0.292 and 0.302 respectively).

A GLzM analysis confirmed that the same variables were significant as in the multiple regression model, indicating that skewness did not affect the regression results.

Simple linear regressions for all variables identified those significantly predicting SDS scores (see Table 2). Then, to reduce the number of independent variables in the multiple regression model, only variables which significantly, or close to significantly (sig. < 0.10), predicted functioning individually were included.

Fisher’s Z-test was used for comparison of Self-rated and Clinician-rated functioning (Lenhard & Lenhard, 2014).

Regarding multicollinearity, the Spearman correlations between variables (see correlation matrix in the appendix) were mostly below 0.5, with a few between 0.5 and 0.6 (HA & SD, HA & NEE, SD & C, NEE & PRE). The VIF values in the multiple regression model were < 10 , indicating no multicollinearity issues.

Significance level was set at 5%. All statistical calculations were performed using IBM SPSS Statistics version 28.0.

RESULTS

Descriptive data on the sample are presented in Table 1. A correlation matrix (Spearman correlations) between all predictors and outcomes is included in the appendix.

TABLE 1. Descriptive Data

Functioning	
SDS total score	15.04 (6.81)
SDS: Work/school	5.40 (2.96)
SDS: Social	4.96 (2.64)
SDS: Family life	4.67 (2.77)
GAF-F, mean (SD)	59.25 (11.33)
Comorbidity and personality disorders	
No. of SCID-I diagnoses	2.40 (1.78)
Any bipolar disorder	76 (55.5%)
PTSD	9 (6.6%)
ADHD	38 (27.7%)
Any affective disorder	100 (73.0%)
Any anxiety disorder	90 (65.7%)
Any somatoform disorder	8 (5.8%)
Any eating disorder	39 (28.5%)
Any substance use disorder	3 (2.2%)
Personality Disorders	
Any PD diagnosis (n, %)	82 (59.9%)
BPD	50 (36.5%)
No. of personality disorders	1.25 (1.50)
Attachment	
ASQ-SF	
(mean, SD)	
Confidence (CON)	3.39 (1.06)
Discomfort with closeness (DIS)	4.24 (0.86)
Relationships as secondary (REL)	2.80 (0.87)
Preoccupation with relationships (PRE)	3.94 (1.15)
Need for approval (NEE)	4.25 (1.02)
Childhood traumatization (ETI)	
Experienced any trauma (n, %)	133 (97.1%)
No. of total experienced childhood traumas	7.38 (4.61)
Temperament and character (TCI)	
Novelty Seeking (NS)	24.69 (6.17)
Harm Avoidance (HA)	22.58 (7.01)
Reward Dependence (RD)	14.58 (3.48)
Persistence (PS)	4.61 (1.86)
Self-directedness (SD)	21.74 (8.83)
Cooperativeness (C)	29.07 (6.60)
Self-transcendence (ST)	12.11 (6.67)

Note: Descriptive data concerning sample (n = 137) characteristics including functioning, comorbidity, personality disorders, childhood traumatization, attachment, and temperament and character scores.

Abbreviations: SDS: Sheehan Disability Scale GAF-F: Global Assessment of Functioning, BPD: Borderline Personality Disorder, PD: Personality Disorder, ASQ: Attachment Style Questionnaire, ETI: Early Trauma Inventory, TCI: Temperament and Character Inventory.

Simple Linear Regression (Hypothesis 1)

In the linear regression analyses of the independent variables, there were several variables that significantly predicted functioning: having any PD diagnosis, four temperament and character traits (HA, PS, SD, and C), and four attachment dimensions (DIS, CON, NEE, and PRE); see Table 2 for further details.

Multiple Regression (Hypothesis 2)

In a regression model using the above mentioned significant predictors, only HA and SD remained significant ($B = 0.248$ sig. .006 and $B = 0.254$ and sig. .003 respectively).

Variance Explained (Research Question A)

In the multiple regression model, the R -value was .620, R^2 .384, and adjusted R^2 .340. A comparison with other regression models is available in Table 3.

Specific Domains of Functioning (Research Question B)

There were some differences between the various domains of functioning as measured by the SDS, see Table 3.

Both HA and SD significantly predicted an SDS score for work/school, while only HA predicted an SDS score for social life and only SD predicted an SDS score for family life/home responsibilities.

TABLE 2. Simple Linear Regression Analyses

	R	β	Sig.
Comorbidity	.120	0.460	.161
Any PD diagnosis (dichotomous)	.314	4.34	<0.001*
Experienced childhood traumas (ETI-score)	.093	0.138	.279
TCI			
Novelty seeking (NS)	.03	0.033	.732
Harm avoidance (HA)	.497	0.483	<0.01*
Reward dependence (RD)	.095	-0.186	.272
Persistence (PS)	.182	-0.664	.033*
Self-directedness (SD)	.532	-0.410	<0.001*
Cooperativeness (C)	.200	-0.206	.019*
Self-transcendence (ST)	.041	-0.042	.635
ASQ SF			
Discomfort with closeness (DIS)	.353	2.810	<0.001*
Relationships as secondary (REL)	.022	0.173	.798
Confidence (CON)	.340	-2.176	<0.001*
Need for approval (NEE)	.354	2.357	<0.001*
Preoccupation with relationships (PRE)	.284	1.684	<0.001*
Avoidance	.332	3.251	<0.001*
Anxiety	.383	2.735	<0.001*

Note: Simple linear regression analyses predicting functioning (SDS) on all variables individually, R and β -values. $N = 137$.

*Significance level (<0.1) qualifies for use in multiple regression model.

Abbreviations: PD: Personality Disorder, ASQ: Attachment Style Questionnaire, ETI: Early Trauma Inventory, TCI: Temperament and Character Inventory.

TABLE 3. Multiple Regression Models

	SDS total score	SDS work/school	SDS social	SDS family life	GAF-F
Adj. R^2	.340	.236	.214	.220	.296
Significant ¹ predictors	HA, SD	HA, SD	HA	SD	HA, SD

Note: Multiple regression analyses on different measures of functioning. $n = 137$ for SDS scores, $n = 130$ for the GAF-sample. ¹ Sig. < 0.05 .

Abbreviations: SDS: Sheehan Disability Scale, GAF: Global Assessment of Functioning, HA: Harm Avoidance, SD: Self-directedness, PD: Personality Disorder, C: Cooperativeness.

Comparison of Self-Rated and Clinician-Rated Functioning (Research Question C)

The use of clinician-rated functioning (GAF-F) did not change the predictors that were significant and the changes in explained variance were minor, see Table 3, and not significant (Z -value = 0.40).

DISCUSSION

Several individual variables were found to significantly predict functioning: the majority of temperament and character traits (HA, PS, SD, and C) and attachment dimensions (DIS, CON, NEE, and PRE), as well as having a personality disorder. PS, SD, C, and CON were positively correlated with functioning, while the other variables were negatively correlated. More surprisingly, however, neither comorbidity (all diagnostic groups taken into account) nor childhood trauma predicted functioning. However, when all variables are taken into account in a multiple regression analysis, only the temperament and character traits Harm avoidance (HA) and Self-directedness (SD) remained significantly predictive, HA being a negative predictor and SD a positive. The notion that harm avoidance (HA) plays a significant role in functioning, especially in a psychiatric population, seems reasonable. Various forms of avoidance behaviors, which align with high HA scores, present clear problems for many patients with, for example, mood, anxiety, and obsessive-compulsive

disorders. The centrality of avoidance in psychiatric disorders is also reflected in the significant focus on reducing avoidance behaviors in cognitive behavioral therapy. Similarly, the importance of (SD) for functioning appears logical, given the nature of this character trait—the ability to set goals and act consistently and adaptively to achieve them—which seems essential for achieving a high level of functioning.

Judging by the high adjusted R^2 in the multiple regression model, personality (although not in the form of personality disorders, but as HA and SD) seems to be an important predictor of functioning in psychiatric outpatients, explaining about one-third of the variance, which is very high compared to previous research (Roberts et al., 2007).

There were some minor differences when predicting certain areas of functioning, although the same traits are involved: only HA predicted lower social functioning, only SD predicted higher home/family life functioning, but both HA and SD predicted functioning at work/school. In the specific subtypes of functioning, the degree of explanation was somewhat lower, although still high (adjusted R^2 .214-0.236).

As mentioned, many of the hypothesised factors individually predicted functioning but, somewhat surprisingly, only two temperament and character traits (HA, SD) remained significant in a multiple regression model. It is known that HA and SD are correlated to functioning (Gutiérrez et al., 2016; He et al., 2019), but it is more surprising that the many other factors in the multiple regression model were not, since previous research has shown an association.

A possible explanation is that personality indeed predicts functioning, and the individually significant factors (attachment, temperament and character, and personality disorders) all in some way reflect personality, but that these constructs have a substantial overlap. The most predictive aspects of personality are perhaps HA and SD, thereby making other personality-related constructs non-significant when they are present in the same model (i.e., low SD is known to be predictive of personality disorders (Svrakic et al., 1993), but the impairment comes from having these traits and acting accordingly, not directly from fulfilling the criteria of a PD diagnosis). Similarly, the aspects of attachment that are known to affect functioning negatively, attachment anxiety, and avoidance (Chotai et al., 2005; MacDonald et al., 2013; Pearse et al., 2020), are perhaps better explained by the related constructs of HA and SD. Relatively strong correlations between HA and SD and these variables, which have also been seen in previous studies (Chotai et al., 2005), support the view that these constructs are related. Attachment can possibly be seen as part of a broader construct of personality, although not a component that determines functioning when temperament and character are taken into account. However, other studies that also examining attachment and personality together have shown that both constructs contribute to explaining at least the degree of PTSD symptoms (Ogle et al., 2015). examined the extent to which insecure attachment affects PTSD symptoms, comparing it with other factors such as the personality trait neuroticism (from the Big Five). Regarding PTSD symptoms specifically, this study demonstrates the influence of both personality and attachment, indicating that both factors contribute to the symptom burden in PTSD. Previous research on attachment and the personality model Big Five has shown that there are associations between attachment style and personality trait measures, and that attachment style dimensions are better predictors of relationship quality than measures of the Big Five, but that neither of the measures are redundant (Nofhle & Shaver, 2006). In

addition, the strong explanatory value of temperament and character can be seen to strengthen the validity of temperament and character, which has been subject to some criticism regarding both the construct as a whole, and the TCI as a valid and reliable measure (Farmer & Goldberg, 2008).

Also noteworthy is that comorbidity and childhood trauma, which have been related to functioning in other studies, were not significant predictors in this study when personality was also taken into account. Previous research also shows that childhood trauma is linked to temperament and character, with traumatisation being associated with higher HA and lower SD and C (de Carvalho et al., 2015; Gutiérrez et al., 2002; Perna et al., 2014), but not when correlated separately. In this study, childhood trauma was not significantly correlated to functioning.

There could be several possible explanations for this. One is the characteristics of the study sample. The participants had high levels of comorbidity and trauma (>97% having experienced at least one trauma), which lowers the variance, thereby limiting the prospect of finding a significant association. In a sample also containing participants without diagnoses and with less trauma, e.g., a normal population, comorbidity and trauma might have been predictive. The relatively small sample size may also have prevented a weak association from reaching significance. A third possible explanation could be that many participants, since they were or had been actively attending an outpatient clinic, had received treatment mitigating the effects of trauma and their diagnoses: if a bipolar disorder is treated with a mood stabiliser, or PTSD symptoms are treated with CBT, the impact on functioning is presumably reduced. In addition, in accordance with the treatment protocols at the clinic, axis I disorders (in DSM 5 terminology roughly equivalent to non-personality disorders) are usually treated prior to treatment of personality disorders, which could have resulted in some patients having received treatment for comorbidity but not PDs, with personality-related

problems then having a relatively larger impact on functioning than comorbidity-related problems.

Regarding the sub-scales of the SDS, impairment in the work/school domain of functioning was predicted by both HA and SD, perhaps reflecting that such activities require being able to deal with anxiety related to demands and social situations (affected by HA) and the ability to take responsibility for one's life and commit to one's goals (SD). Social functioning was predicted only by HA, which might reflect that anxiety or avoidance is the most common cause of impairment (perhaps in the form of avoidance) in the social domain. Only SD predicted functioning in the domain of family life/home responsibilities, perhaps reflecting that anxiety and avoidance do not play a major role here, unlike goal-oriented behaviour.

There was no difference regarding which factors were predictive if functioning was rated by patients (SDS) or clinicians (GAF). Beyond perhaps strengthening the validity of both rating measures, this also supports that possible confounders, such as the participants' personality, do not influence the reliability of self-rated measures of functioning.

The present study has some weaknesses, some of which pertain to generalizability. Firstly, the selection of participants, consisting only of psychiatric outpatients selected since they had been diagnosed with BPD, BP, and/or ADHD, limits the generalizability of the results, even though it should be noted that the prevalence of other psychiatric diagnoses was high. Additionally, the high prevalence of eating disorders (28.5%) and the low prevalence of substance abuse (2.2%) further reduce the generalizability. Another limitation and source of possible bias is the low response rate (30.3%) and the relatively large number of patients excluded ($n = 92$) due to missing data. The latter was largely because patients (for participation in the previously mentioned BBA study) were given the option to participate in different parts of the data collection, and

therefore were excluded from this study when data needed was missing. Yet another limitation related to the generalizability issue is that 75% of participants were female with an average age of around 23 years. A problem concerning the validity of the SDS assessments of functioning is that the patient is the only source of information. No estimates of symptoms were included, and measures of symptom severity may have been a better predictor of functioning than the more blunt measure based on the number of diagnoses (comorbidity). As mentioned above, treatment received might also have affected functioning and no information about this was included. Other factors not analysed which might predict functioning are neuropsychiatric disorders, cognitive capabilities, and socio-economic status. It is also worth mentioning that state (e.g., being depressed) might have influenced the participants' ratings regarding traits and attachment, thus affecting the results. Finally, in parts of the discussion above it is assumed that personality traits lead to life problems, although there is research suggesting that personality undergoes changes in response to life experiences and psychiatric illness. The cross-sectional design of this study, however, limits inferences about causality.

The strengths of the study are that multiple factors were taken into account, whereas many previous studies have only focused on the effect of single variables on functioning. The study sample was also well diagnosed and characterised.

CONCLUSION

Personality, more specifically, the temperament trait Harm Avoidance and the character trait Self Directedness, were strong predictors of functioning. Interestingly, when these traits were taken into account, other factors usually associated with impairment, such as

attachment, comorbidity, or childhood trauma, were no longer significant predictors of functioning.

Clinical Implications

The results highlight the importance of taking personality traits into account in clinical assessments of functioning. If in future research these results are shown to be generalizable, and given there is a causal relationship between HA/SD and functioning, some interesting clinical questions can be raised. Can a person's level of HA/SD be changed through pharmacological or therapeutic interventions, and could treatments directed specifically at these traits be a possible pan-diagnostic method to increase patient functioning? In CBT, for example, techniques aimed at reducing anxiety-driven avoidance behaviours are a central component. Could these techniques or SSRIs be used to reduce a person's HA? Similarly, could techniques from Acceptance Commitment Therapy (ACT) or Good Psychiatric Management (GPM) be applied to increase a person's Self-directedness and thereby level of functioning?

There is some support that treatment, particularly CBT, can favourably affect HA and SD. A difficulty when researching this subject is discerning what constitutes the underlying "true" personality (trait) and to what extent personality is temporarily affected by depression (state). In the case of depression, several studies on pharmacological treatment have shown effects in the form of lower HA and/or higher SD, although at least some of these effects are believed to be state effects (Abrams et al., 2004; Boz et al., 2007; Hirano et al., 2002; Richter et al., 2000).

Treatment studies of anxiety disorders and eating disorders, which are perhaps less prone to the state vs. trait problem, generally show lower HA and, in the case of CBT, also higher SD after treatment (Anderson et al.,

2002; Dalle Grave et al., 2007; Lyoo et al., 2003; Mörtberg et al., 2007).

ACKNOWLEDGMENTS

We are grateful to all the patients who chose to participate, as well as to J. D. Bremner for permission to translate the ETI and to David Sheehan for the permission to use the SDS. We would also like to thank statistician Hans Arinell for his statistical advice and to Ann-Charlotte Fält and Lena Knutsson-Medin for valuable help with the administrative work.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author(s).

FUNDING

This work was supported by Uppsala County Council (ALF), the Söderström Königskå Foundation, and the Märta and Nicke Nasvell Foundation.

AUTHOR CONTRIBUTIONS

Niklas Hörberg: conceptualisation, methodology, formal analysis, investigation, data curation, writing—original draft

Ioannis Kouros: investigation, data curation, writing—review

Lisa Ekselius: conceptualisation, writing—review & editing

Mia Ramklint: conceptualisation, methodology, investigation, writing—review & editing, supervision, funding acquisition

DATA AVAILABILITY STATEMENT

The participants of this study did not give written consent for their data to be shared publicly, so due to the sensitive nature of the research supporting data is not available.

SUPPLEMENTARY MATERIAL

Supplemental data for this article can be accessed online at <https://doi.org/10.1080/00332747.2024.2395754>.

ORCID

Niklas Hörberg  <http://orcid.org/0000-0001-6490-5990>

REFERENCES

- Abrams, K. Y., Yune, S. K., Kim, S. J., Jeon, H. J., Han, S. J., Hwang, J., Sung, Y. H., Lee, K. J., & Lyoo, I. K. (2004). Trait and state aspects of harm avoidance and its implication for treatment in major depressive disorder, dysthymic disorder, and depressive personality disorder. *Psychiatry and Clinical Neurosciences*, 58(3), 240–248. <https://doi.org/10.1111/j.1440-1819.2004.01226.x>
- Agrawal, H. R., Gunderson, J., Holmes, B. M., & Lyons-Ruth, K. (2004). Attachment studies with borderline patients: A review. *Harvard Review of Psychiatry*, 12(2), 94–104. <https://doi.org/10.1080/10673220490447218>
- Alonso, M. A. M., Barajas, M. E. S., Ordóñez, J. A. G., Ávila Alpirez, H., Fhon, J. R. S., & Duran-Badillo, T. (2022). Quality of life related to functional dependence, family functioning and social support in older adults. *Revista da Escola de Enfermagem da U S P*, 56, e20210482. <https://doi.org/10.1590/1980-220x-reeusp-2021-0482es>
- American Psychiatric Association, A. (2000). *Diagnostic and statistical manual of mental disorders* (4th. Ed-ReviseEd ed.). American Psychiatric Association.
- American Psychiatric Association, A. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). American Psychiatric Association.
- Anderson, C. B., Joyce, P. R., Carter, F. A., McIntosh, V. V., & Bulik, C. M. (2002). The effect of cognitive-behavioral therapy for bulimia nervosa on temperament and character as measured by the temperament and character inventory. *Comprehensive Psychiatry*, 43(3), 182–188. <https://doi.org/10.1053/comp.2002.32359>
- Arbuckle, R., Frye, M. A., Brecher, M., Paulsson, B., Rajagopalan, K., Palmer, S., & Degl'innocenti, A. (2009). The psychometric validation of the Sheehan disability scale (SDS) in patients with bipolar disorder. *Psychiatry Research*, 165(1–2), 163–174. <https://doi.org/10.1016/j.psychres.2007.11.018>
- Arntz, A., van Beijsterveldt, B., Hoekstra, R., Hofman, A., Eussen, M., & Sallaerts, S. (1992). The interrater reliability of a Dutch version of the structured clinical interview for DSM-III-R personality disorders. *Acta Psychiatrica Scandinavica*, 85(5), 394–400. <https://doi.org/10.1111/j.1600-0447.1992.tb10326.x>
- Axfors, C., Sylvén, S., Skalkidou, A., & Ramklint, M. (2017). Psychometric properties of the attachment style questionnaire in Swedish pregnant women: Short and full versions. *Journal of Reproductive and Infant Psychology*, 35(5), 450–461. <https://doi.org/10.1080/02646838.2017.1342786>
- Bowlby, J. (1969). *Attachment and loss, vol. 1: Attachment* (2nd ed.). Basic Books.
- Boz, C., Gazioglu, S., Altunayoglu, V., & Hocaoglu, C. (2007). Effect of serotonergic antidepressant therapy on temperament and character scales in patients with chronic tension-type headache. *Psychiatry and Clinical Neurosciences*, 61(5), 534–542. <https://doi.org/10.1111/j.1440-1819.2007.01704.x>
- Brändström, S., Richter, J., & Przybeck, T. (2001). Distributions by age and sex of the dimensions of temperament and character inventory in a cross-cultural perspective among Sweden, Germany, and the USA. *Psychological Reports*, 89(3), 747–758. <https://doi.org/10.2466/pr0.2001.89.3.747>
- Bremner, J. D., Bolus, R., & Mayer, E. A. (2007). Psychometric properties of the early trauma inventory–self report. *Journal of Nervous & Mental Disease*, 195(3), 211–218. <https://doi.org/10.1097/01.nmd.0000243824.84651.6c>
- Bremner, J. D., Vermetten, E., & Mazure, C. M. (2000). Development and preliminary psychometric

- properties of an instrument for the measurement of childhood trauma: The early trauma inventory. *Depression and Anxiety*, 12(1), 1–12. [https://doi.org/10.1002/1520-6394\(2000\)12:1<1::AID-DA1>3.0.CO;2-W](https://doi.org/10.1002/1520-6394(2000)12:1<1::AID-DA1>3.0.CO;2-W)
- Chen, L. P., Murad, M. H., Paras, M. L., Colbenson, K. M., Sattler, A. L., Goranson, E. N., Elamin, M. B., Seime, R. J., Shinozaki, G., Prokop, L. J., & Zirakzadeh, A. (2010). Sexual abuse and lifetime diagnosis of psychiatric disorders: Systematic review and meta-analysis. *Mayo Clinic Proceedings*, 85(7), 618–629. <https://doi.org/10.4065/mcp.2009.0583>
- Chotai, J., Jonasson, M., Hägglöf, B., & Adolfsson, R. (2005). Adolescent attachment styles and their relation to the temperament and character traits of personality in a general population. *European Psychiatry*, 20(3), 251–259. <https://doi.org/10.1016/j.eurpsy.2004.11.008>
- Cloninger, C. R., Svrakic, D. M., & Przybeck, T. R. (1993). A psychobiological model of temperament and character. *Archives of General Psychiatry*, 50(12), 975–990. <http://www.ncbi.nlm.nih.gov/pubmed/8250684>
- Dalle Grave, R., Calugi, S., Brambilla, F., Abbate-Daga, G., Fassino, S., & Marchesini, G. (2007). The effect of inpatient cognitive-behavioral therapy for eating disorders on temperament and character. *Behaviour Research and Therapy*, 45(6), 1335–1344. <https://doi.org/10.1016/j.brat.2006.09.016>
- Davidson, G., Shannon, C., Mulholland, C., & Campbell, J. (2009). A longitudinal study of the effects of childhood trauma on symptoms and functioning of people with severe mental health problems. *Journal of Trauma & Dissociation*, 10(1), 57–68. <https://doi.org/10.1080/15299730802485169>
- de Carvalho, H. W., Pereira, R., Frozi, J., Bisol, L. W., Ottoni, G. L., & Lara, D. R. (2015). Childhood trauma is associated with maladaptive personality traits. *Child Abuse and Neglect*, 44, 18–25. <https://doi.org/10.1016/j.chiabu.2014.10.013>
- Ettner, S. L., Maclean, J. C., & French, M. T. (2011). Does having a dysfunctional personality hurt your career? Axis ii personality disorders and labor market outcomes. *Industrial Relations*, 50(1), 149–173. <https://doi.org/10.1111/j.1468-232X.2010.00629.x>
- Farmer, R. F., & Goldberg, L. R. (2008). A psychometric evaluation of the revised temperament and character inventory (TCI-R) and the TCI-140. *Psychological Assessment*, 20(3), 281–291. <https://doi.org/10.1037/a0012934>
- Farooqui, A. M., Arya, A., Singh, A., & Dalal, P. K. (2022). Psychiatric comorbidity, psychosocial problems, and functioning of people who inject opioids: An observational study. *Addiction and Health*, 14(3), 218–223. <https://doi.org/10.34172/ahj.2022.1310>
- Feeney, J. A., Noller, P., & Hanrahan, M. (1994). *Assessing adult attachment (Attachment in adults: Clinical and developmental perspectives)*. Guilford Press.
- First, M. B., Gibbon, M., Spitzer, R. L., Williams, J. B., & Benjamin, L. S. (1997). *Structured clinical interview for DSM-IV personality disorders. SCID-II*. American Psychiatric Press, Inc.
- First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. (1996). *Structured clinical interview for DSM-IV axis I disorders, clinical version. SCID-CV*. American Psychiatric Press, Inc.
- Fossati, A., Feeney, J. A., Donati, D., Donini, M., Novella, L., Bagnato, M., Acquarini, E., & Maffei, C. (2003). On the dimensionality of the attachment style questionnaire in Italian clinical and nonclinical participants. *Journal of Social & Personal Relationships*, 20(1), 55–79. <https://doi.org/10.1177/02654075030201003>
- Fossati, A., Feeney, J. A., Donati, D., Donini, M., Novella, L., Bagnato, M., Carretta, I., Leonardi, B., Mirabelli, S., & Maffei, C. (2003). Personality disorders and adult attachment dimensions in a mixed psychiatric sample: A multivariate study. *Journal of Nervous & Mental Disease*, 191(1), 30–37. <https://doi.org/10.1097/01.nmd.0000044443.94975.3a>
- Gil, A., Gama, C. S., de Jesus, D. R., Lobato, M. I., Zimmer, M., & Belmonte de Abreu, P. (2009). The association of child abuse and neglect with adult disability in schizophrenia and the prominent role of physical neglect. *Child Abuse and Neglect*, 33(9), 618–624. <https://doi.org/10.1016/j.chiabu.2009.02.006>
- Gjerde, L. C., Røysamb, E., Czajkowski, N., Knudsen, G. P., Ostby, K., Tambs, K., Kendler, K. S., Reichborn-Kjennerud, T., & Orstavik, R. E. (2014). Personality disorders and long-term sick

- leave: A population-based study of young adult Norwegian twins. *Twin Research and Human Genetics*, 17(1), 1–9. <https://doi.org/10.1017/thg.2013.90>
- Goering, P., Lin, E., Campbell, D., Boyle, M. H., & Offord, D. R. (1996). Psychiatric disability in Ontario. *The Canadian Journal of Psychiatry*, 41(9), 564–571. <http://www.ncbi.nlm.nih.gov/pubmed/8946079>
- Goldman, H. H., Skodol, A. E., & Lave, T. R. (1992). Revising axis V for DSM-IV: A review of measures of social functioning. *The American Journal of Psychiatry*, 149(9), 1148–1156. <http://www.ncbi.nlm.nih.gov/pubmed/1386964>
- Gutiérrez, F., Gárriz, M., Peri, J. M., Vall, G., & Torrubia, R. (2016). How temperament and character affect our career, relationships, and mental health. *Comprehensive Psychiatry*, 70, 181–189. <https://doi.org/10.1016/j.comppsy.2016.07.014>
- Gutiérrez, F., Sangorrín, J., Martín-Santos, R., Torres, X., & Torrens, M. (2002). Measuring the core features of personality disorders in substance abusers using the temperament and character inventory (TCI). *Journal of Personality Disorders*, 16(4), 344–359. <https://doi.org/10.1521/pedi.16.4.344.24125>
- Håkanson, T. (1996). Attachment Style Questionnaire, Översättning till svenska samt inledande utprovning.
- Hambrick, J. P., Turk, C. L., Heimberg, R. G., Schneier, F. R., & Liebowitz, M. R. (2004). Psychometric properties of disability measures among patients with social anxiety disorder. *Journal of Anxiety Disorders*, 18(6), 825–839. <https://doi.org/10.1016/j.janxdis.2003.10.004>
- Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality & Social Psychology*, 52(3), 511–524. <https://doi.org/10.1037/0022-3514.52.3.511>
- He, J. A., Antshel, K. M., Biederman, J., & Faraone, S. V. (2019). Do personality traits predict functional impairment and quality of life in adult ADHD? A controlled study. *Journal of Attention Disorders*, 23(1), 12–21. <https://doi.org/10.1177/1087054715613440>
- Hecht, H., von Zerssen, D., & Wittchen, H. U. (1990). Anxiety and depression in a community sample: The influence of comorbidity on social functioning. *Journal of Affective Disorders*, 18(2), 137–144. <http://www.ncbi.nlm.nih.gov/pubmed/2137471>
- Hilsenroth, M. J., Ackerman, S. J., Blagys, M. D., Baumann, B. D., Baity, M. R., Smith, S. R., Price, J. L., Smith, C. L., Heindselman, T. L., Mount, M. K., & Holdwick, D. J., Jr. (2000). Reliability and validity of DSM-IV axis V. *The American Journal of Psychiatry*, 157(11), 1858–1863. <http://www.ncbi.nlm.nih.gov/pubmed/11058486>
- Hirano, S., Sato, T., Narita, T., Kusunoki, K., Ozaki, N., Kimura, S., Takahashi, T., Sakado, K., & Uehara, T. (2002). Evaluating the state dependency of the temperament and character inventory dimensions in patients with major depression: A methodological contribution. *Journal of Affective Disorders*, 69(1–3), 31–38. [https://doi.org/10.1016/s0165-0327\(00\)00329-3](https://doi.org/10.1016/s0165-0327(00)00329-3)
- Hodgins, D. C. (2013). Reliability and validity of the Sheehan disability scale modified for pathological gambling. *BMC Psychiatry*, 13(1), 177. <https://doi.org/10.1186/1471-244X-13-177>
- Hörberg, N., Kouros, E., & Ramklint, M. (2016). The Swedish version of the Sheehan disability scale - A valid and brief measure of functioning. *European Journal for Person Centered Healthcare*, 4, 208. <https://doi.org/10.5750/ejpc.v4i1.1075>
- Horberg, N., Kouros, I., Ekselius, L., Cunningham, J., Willebrand, M., & Ramklint, M. (2019). Early trauma inventory self-report short form (ETISR-SF): Validation of the Swedish translation in clinical and non-clinical samples. *Nordic Journal of Psychiatry*, 73(2), 81–89. <https://doi.org/10.1080/08039488.2018.1498127>
- Huppert, J. D., Simpson, H. B., Nissenon, K. J., Liebowitz, M. R., & Foa, E. B. (2009). Quality of life and functional impairment in obsessive-compulsive disorder: A comparison of patients with and without comorbidity, patients in remission, and healthy controls. *Depression and Anxiety*, 26(1), 39–45. <https://doi.org/10.1002/da.20506>
- Hyman, S. M., Garcia, M., Kemp, K., Mazure, C. M., & Sinha, R. (2005). A gender specific psychometric analysis of the early trauma inventory short form in cocaine dependent adults.

- Addictive Behaviors*, 30(4), 847–852. <https://doi.org/10.1016/j.addbeh.2004.08.009>
- Jaeger, J., Berns, S. M., & Czobor, P. (2003). The multidimensional scale of independent functioning: A new instrument for measuring functional disability in psychiatric populations. *Schizophrenia Bulletin*, 29(1), 153–168. <https://doi.org/10.1093/oxfordjournals.schbul.a006987>
- Jeon, J. R., Lee, E. H., Lee, S. W., Jeong, E. G., Kim, J. H., Lee, D., & Jeon, H. J. (2012). The early trauma inventory self report-short form: Psychometric properties of the Korean version. *Psychiatry Investigation*, 9(3), 229–235. <https://doi.org/10.4306/pi.2012.9.3.229>
- Johnson, J. G., Rabkin, J. G., Williams, J. B., Remien, R. H., & Gorman, J. M. (2000). Difficulties in interpersonal relationships associated with personality disorders and axis I disorders: A community-based longitudinal investigation. *Journal of Personality Disorders*, 14(1), 42–56. <http://www.ncbi.nlm.nih.gov/pubmed/10746204>
- Jones, S. H., Thornicroft, G., Coffey, M., & Dunn, G. (1995). A brief mental health outcome scale—reliability and validity of the global assessment of functioning (GAF). *British Journal of Psychiatry*, 166(5), 654–659. <http://www.ncbi.nlm.nih.gov/pubmed/7620753>
- Karakis, I., Boualam, N., Moura, L. M., & Howard, D. H. (2023). Quality of life and functional limitations in persons with epilepsy. *Epilepsy Research*, 190, 107084. <https://doi.org/10.1016/j.eplepsyres.2023.107084>
- Karantzas, G. C., Feeney, J. A., & Wilkinson, R. (2010). Is less more? Confirmatory factor analysis of the attachment style questionnaires. *Journal of Social & Personal Relationships*, 27(6), 749–780. <https://doi.org/10.1177/0265407510373756>
- Kessler, R. C., McLaughlin, K. A., Green, J. G., Gruber, M. J., Sampson, N. A., Zaslavsky, A. M., Aguilar-Gaxiola, S., Alhamzawi, A. O., Alonso, J., Angermeyer, M., Benjet, C., Bromet, E., Chatterji, S., de Girolamo, G., Demyttenaere, K., Fayyad, J., Florescu, S., Gal, G., Gureje O., Maria Haro J., ... Williams, D. R. (2010). Childhood adversities and adult psychopathology in the WHO World Mental Health Surveys. *British Journal of Psychiatry*, 197(5), 378–385. <https://doi.org/10.1192/bjp.bp.110.080499>
- Kouros, I., Holmberg, H., Ekselius, L., & Ramklint, M. (2024). Temperament, but not childhood trauma, distinguishes borderline personality disorder from bipolar disorder and ADHD. *Nordic Journal of Psychiatry*, 78(1), 79–86. <https://doi.org/10.1080/08039488.2023.2267041>
- Kranzler, H. R., Kadden, R. M., Babor, T. F., Tennen, H., & Rounsaville, B. J. (1996). Validity of the SCID in substance abuse patients. *Addiction*, 91(6), 859–868. <http://onlinelibrary.wiley.com/doi/10.1046/j.1360-0443.1996.91685911.x/abstract>
- Lenhard, W., & Lenhard, A. (2014). Hypothesis tests for comparing correlations.
- Leon, A. C., Olfson, M., Portera, L., Farber, L., & Sheehan, D. V. (1997). Assessing psychiatric impairment in primary care with the Sheehan disability scale. *International Journal of Psychiatry in Medicine*, 27(2), 93–105. <http://www.ncbi.nlm.nih.gov/pubmed/9565717>
- Leon, A. C., Shear, M. K., Portera, L., & Klerman, G. L. (1992). Assessing impairment in patients with panic disorder: The Sheehan disability scale. *Social Psychiatry & Psychiatric Epidemiology*, 27(2), 78–82. http://download.springer.com/static/pdf/329/art%253A10.1007%252FBF00788510.pdf?auth66=1400066477_79da1696a9a71faaf9130bfd11a3a988&ext=.pdf
- Liao, S. C., Ma, H. M., Lin, Y. L., & Huang, W. L. (2019). Functioning and quality of life in patients with somatic symptom disorder: The association with comorbid depression. *Comprehensive Psychiatry*, 90, 88–94. <https://doi.org/10.1016/j.comppsy.2019.02.004>
- Lobbetael, J., Leurgans, M., & Arntz, A. (2011). Inter-rater reliability of the structured clinical interview for DSM-IV axis I disorders (SCID I) and axis II disorders (SCID II). *Clinical Psychology & Psychotherapy*, 18(1), 75–79. <https://doi.org/10.1002/cpp.693>
- Lyoo, I. K., Yoon, T., Kang, D. H., & Kwon, J. S. (2003). Patterns of changes in temperament and character inventory scales in subjects with obsessive-compulsive disorder following a 4-month treatment. *Acta Psychiatrica Scandinavica*, 107(4), 298–304. <https://doi.org/10.1034/j.1600-0447.2003.00054.x>

- MacDonald, K., Berlow, R., & Thomas, M. L. (2013). Attachment, affective temperament, and personality disorders: A study of their relationships in psychiatric outpatients. *Journal of Affective Disorders, 151*(3), 932–941. <https://doi.org/10.1016/j.jad.2013.07.040>
- Maffei, C., Fossati, A., Agostoni, I., Barraco, A., Bagnato, M., Deborah, D., Namia, C., Novella, L., & Petrachi, M. (1997). Interrater reliability and internal consistency of the structured clinical interview for DSM-IV axis II personality disorders (SCID-II), version 2.0. *Journal of Personality Disorders, 11*(3), 279–284. <https://doi.org/10.1521/pedi.1997.11.3.279>
- Martin-Blanco, A., Soler, J., Villalta, L., Feliu-Soler, A., Elices, M., Perez, V., Arranz, M. J., Ferraz, L., Alvarez, E., & Pascual, J. C. (2014). Exploring the interaction between childhood maltreatment and temperamental traits on the severity of borderline personality disorder. *Comprehensive Psychiatry, 55*(2), 311–318. <https://doi.org/10.1016/j.comppsych.2013.08.026>
- Michelson, D., Lydiard, R. B., Pollack, M. H., Tamura, R. N., Hoog, S. L., Tepner, R., Demitrack, M. A., & Tollefson, G. D. (1998). Outcome assessment and clinical improvement in panic disorder: Evidence from a randomized controlled trial of fluoxetine and placebo. The fluoxetine panic disorder study group. *The American Journal of Psychiatry, 155*(11), 1570–1577. <http://psychiatryonline.org/data/Journals/AJP/3694/1570.pdf>
- Morley, T. E., & Moran, G. (2011). The origins of cognitive vulnerability in early childhood: Mechanisms linking early attachment to later depression. *Clinical Psychology Review, 31*(7), 1071–1082. <https://doi.org/10.1016/j.cpr.2011.06.006>
- Morriss, R. K., van der Gucht, E., Lancaster, G., & Bentall, R. P. (2009). Adult attachment in bipolar 1 disorder. *Psychology and Psychotherapy, 82*(Pt 3), 267–277. <https://doi.org/10.1348/147608309x415309>
- Mörtberg, E., Bejerot, S., & Aberg Wistedt, A. (2007). Temperament and character dimensions in patients with social phobia: Patterns of change following treatments? *Psychiatry Research, 152* (1), 81–90. <https://doi.org/10.1016/j.psychres.2006.10.003>
- Nevarez-Flores, A. G., Sanderson, K., Breslin, M., Carr, V. J., Morgan, V. A., & Neil, A. L. (2019). Systematic review of global functioning and quality of life in people with psychotic disorders. *Epidemiology and Psychiatric Sciences, 28*(1), 31–44. <https://doi.org/10.1017/s2045796018000549>
- Newton-Howes, G., Tyrer, P., & Weaver, T. (2008). Social functioning of patients with personality disorder in secondary care. *Psychiatric Services, 59*(9), 1033–1037. <https://doi.org/10.1176/appi.ps.59.9.1033>
- Noftle, E. E., & Shaver, P. R. (2006). Attachment dimensions and the big five personality traits: Associations and comparative ability to predict relationship quality. *Journal of Research in Personality, 40*(2), 179–208. <https://doi.org/10.1016/j.jrp.2004.11.003>
- Norman, R. E., Byambaa, M., De, R., Butchart, A., Scott, J., Vos, T., & Tomlinson, M. (2012). The long-term health consequences of child physical abuse, emotional abuse, and neglect: A systematic review and meta-analysis. *PLOS Medicine, 9*(11), e1001349. <https://doi.org/10.1371/journal.pmed.1001349>
- O’Shaughnessy, R., & Dallos, R. (2009). Attachment research and eating disorders: A review of the literature. *Clinical Child Psychology and Psychiatry, 14*(4), 559–574. <https://doi.org/10.1177/1359104509339082>
- Ogle, C. M., Rubin, D. C., & Siegler, I. C. (2015). The relation between insecure attachment and posttraumatic stress: Early life versus adulthood traumas. *Psychological Trauma: Theory, Research, Practice and Policy, 7*(4), 324–332. <https://doi.org/10.1037/tra0000015>
- Olfson, M., Fireman, B., Weissman, M. M., Leon, A. C., Sheehan, D. V., Kathol, R. G., Hoven, C., & Farber, L. (1997). Mental disorders and disability among patients in a primary care group practice. *The American Journal of Psychiatry, 154*(12), 1734–1740. <http://www.ncbi.nlm.nih.gov/pubmed/9396954>
- Osorio, F. L., Salum, G. A., Donadon, M. F., Forns-Dos-Santos, L., Loureiro, S. R., & Crippa, J. A. (2013). Psychometrics properties of early trauma inventory self report - short form (ETISR-SR) for

- the Brazilian context. *PLOS ONE*, 8(10), e76337. <https://doi.org/10.1371/journal.pone.0076337>
- Østby, K. A., Czajkowski, N., Knudsen, G. P., Ystrom, E., Gjerde, L. C., Kendler, K. S., Ørstavik, R. E., & Reichborn-Kjennerud, T. (2014). Personality disorders are important risk factors for disability pensioning. *Social Psychiatry & Psychiatric Epidemiology*, 49(12), 2003–2011. <https://doi.org/10.1007/s00127-014-0878-0>
- Pearse, E., Bucci, S., Raphael, J., & Berry, K. (2020). The relationship between attachment and functioning for people with serious mental illness: A systematic review. *Nordic Journal of Psychiatry*, 74(8), 545–557. <https://doi.org/10.1080/08039488.2020.1767687>
- Peleikis, D. E., Mykletun, A., & Dahl, A. A. (2005). Current mental health in women with childhood sexual abuse who had outpatient psychotherapy. *European Psychiatry*, 20(3), 260–267. <https://doi.org/10.1016/j.eurpsy.2005.01.004>
- Perna, G., Vanni, G., DiChiaro, N. V., Cavedini, P., & Caldirola, D. (2014). Childhood trauma, temperament, and character in subjects with major depressive disorder and bipolar disorder. *Journal of Nervous & Mental Disease*, 202(9), 695–698. <https://doi.org/10.1097/nmd.0000000000000186>
- Piersma, H. L., & Boes, J. L. (1997). The GAF and psychiatric outcome: A descriptive report. *Community Mental Health Journal*, 33(1), 35–41. <http://www.ncbi.nlm.nih.gov/pubmed/9061261>
- Plaza, A., Torres, A., Martin-Santos, R., Gelabert, E., Imaz, M. L., Navarro, P., Bremner, J. D., Valdes, M., & Garcia-Esteve, L. (2011). Validation and test-retest reliability of early trauma inventory in Spanish postpartum women. *Journal of Nervous & Mental Disease*, 199(4), 280–285. <https://doi.org/10.1097/NMD.0b013e31821245b9>
- Ramirez, A., Ekselius, L., & Ramklint, M. (2008). Axis V – global assessment of functioning scale (GAF), further evaluation of the self-report version. *European Psychiatry*, 23(8), 575–579. <https://doi.org/10.1016/j.eurpsy.2008.05.001>
- Ramirez Basco, M., Bostic, J. Q., Davies, D., Rush, A. J., Witte, B., Hendrickse, W., & Barnett, V. (2000). Methods to improve diagnostic accuracy in a community mental health setting. *The American Journal of Psychiatry*, 157(10), 1599–1605. <http://psychiatryonline.org/data/Journals/AJP/3717/1599.pdf>
- Ravitz, P., Maunder, R., Hunter, J., Sthankiya, B., & Lancee, W. (2010). Adult attachment measures: A 25-year review. *Journal of Psychosomatic Research*, 69(4), 419–432. <https://doi.org/10.1016/j.jpsychores.2009.08.006>
- Richter, J., Eisemann, M., & Richter, G. (2000). Temperament and character during the course of unipolar depression among inpatients. *European Archives of Psychiatry and Clinical Neurosciences*, 250(1), 40–47. <https://doi.org/10.1007/pl00007538>
- Roberts, B. W., Kuncel, N. R., Shiner, R., Caspi, A., & Goldberg, L. R. (2007). The power of personality: The comparative validity of personality traits, socioeconomic status, and cognitive ability for predicting important life outcomes. *Perspectives on Psychological Science*, 2(4), 313–345. <https://doi.org/10.1111/j.1745-6916.2007.00047.x>
- Romano, E., Babchishin, L., Marquis, R., & Frechette, S. (2015). Childhood maltreatment and educational outcomes. *Trauma, Violence & Abuse*, 16(4), 418–437. <https://doi.org/10.1177/1524838014537908>
- Sanchez-Moreno, J., Martinez-Aran, A., & Vieta, E. (2017). Treatment of functional impairment in patients with bipolar disorder. *Current Psychiatry Reports*, 19(1), 3. <https://doi.org/10.1007/s11920-017-0752-3>
- Sansone, R. A., Dakroub, H., Pole, M., & Butler, M. (2005). Childhood trauma and employment disability. *International Journal of Psychiatry in Medicine*, 35(4), 395–404. http://journals.sagepub.com/doi/abs/10.2190/3XUR-1PWJ-0DT3-BJFJ?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%3dpubmed
- Sheehan, D. (1983). *The anxiety disease*. Scribner.
- Skodol, A. E., Gunderson, J. G., McGlashan, T. H., Dyck, I. R., Stout, R. L., Bender, D. S., Grilo, C. M., Shea, M. T., Zanarini, M. C., Morey, L. C., Sanislow, C. A., & Oldham, J. M. (2002). Functional impairment in patients with schizotypal, borderline, avoidant, or obsessive-compulsive personality disorder. *The American Journal of Psychiatry*, 159(2), 276–283. <http://www.ncbi.nlm.nih.gov/pubmed/11823271>

- Skre, I., Onstad, S., Torgersen, S., & Kringlen, E. (1991). High interrater reliability for the structured clinical interview for DSM-III-R axis I (SCID-I). *Acta Psychiatrica Scandinavica*, 84(2), 167–173. <http://onlinelibrary.wiley.com/doi/10.1111/j.1600-0447.1991.tb03123.x/abstract>
- Strodl, E., & Noller, P. (2003). The relationship of adult attachment dimensions to depression and agoraphobia. *Personal Relationships*, 10(2), 171–185. <https://doi.org/10.1111/1475-6811.00044>
- Sugaya, L., Hasin, D. S., Olfson, M., Lin, K. H., Grant, B. F., & Blanco, C. (2012). Child physical abuse and adult mental health: A national study. *Journal of Traumatic Stress*, 25(4), 384–392. <https://doi.org/10.1002/jts.21719>
- Svrakic, D. M., Whitehead, C., Przybeck, T. R., & Cloninger, C. R. (1993). Differential diagnosis of personality disorders by the seven-factor model of temperament and character. *Archives of General Psychiatry*, 50(12), 991–999. <https://doi.org/10.1001/archpsyc.1993.01820240075009>
- Tengström, H. (1997). *ASQ – Manual till den Svenska versionen 1997* (Version 2).
- Unger, J. A. M., & De Luca, R. V. (2014). The relationship between childhood physical abuse and adult attachment styles. *Journal of Family Violence*, 29(3), 223–234. <https://doi.org/10.1007/s10896-014-9588-3>
- Vogt, D., Taverna, E. C., Nillni, Y. I., Booth, B., Perkins, D. F., Copeland, L. A., Finley, E. P., Tyrell, F. A., & Gilman, C. L. (2019). Development and validation of a tool to assess military Veterans' status, functioning, and satisfaction with key aspects of their lives. *Applied Psychology Health and Well-Being*, 11(2), 328–349. <https://doi.org/10.1111/aphw.12161>
- Zanarini, M. C., & Frankenburg, F. R. (2001). Attainment and maintenance of reliability of axis I and II disorders over the course of a longitudinal study. *Comprehensive Psychiatry*, 42(5), 369–374. <https://doi.org/10.1053/comp.2001.24556>
- Zanarini, M. C., Frankenburg, F. R., Hennen, J., Reich, D. B., & Silk, K. R. (2005). Psychosocial functioning of borderline patients and axis II comparison subjects followed prospectively for six years. *Journal of Personality Disorders*, 19(1), 19–29. <https://doi.org/10.1521/pedi.19.1.19.62178>
- Zanarini, M. C., Skodol, A. E., Bender, D., Dolan, R., Sanislow, C., Schaefer, E., Morey, L. C., Grilo, C. M., Shea, M. T., McGlashan, T. H., & Gunderson, J. G. (2000). The collaborative longitudinal personality disorders study: Reliability of axis I and II diagnoses. *Journal of Personality Disorders*, 14(4), 291–299. <https://doi.org/10.1521/pedi.2000.14.4.291>