Neuroendocrinology Letters Volume 42 No. 2 2021
ISSN: 0172-780X; ISSN-L: 0172-780X; Electronic/Online ISSN: 2354-4716
Web of Knowledge / Web of Science: Neuroendocrinol Lett
Pub Med / Medline: Neuro Endocrinol Lett

ORIGINAL ARTICLE

Self-stigma, severity of psychopatology, dissociation, parental style and comorbid personality disorder in patient with neurotic spectrum disorders

Part 1: Relationships between self-stigma and clinical, psychosocial and demographic factors in neurotic spectrum disorder patients

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Submitted: 2020-12-27 Accepted: 2021-01-20 Published online: 2021-05-02

Key words: **Neurotic spectrum disorders; Dissociation; Childhood adverse events; Parental style; Self-stigma; Comorbidity; Personality disorders**

Neuroendocrinol Lett 2021; **42**(2):99–112 **PMID:** 34217167 NEL420221A09

Abstract

OBJECTIVES: Self-stigma represents a process of accepting negative social prejudices with a consequent negative impact on many areas of the patient's life (self-concept, social and work functioning, relationships, cooperation in treatment, quality of life, willingness to strive for something). The study was aimed to examine the level of self-stigma and other significant variables potentially related to self-stigma (personality characteristics, childhood traumatisation, anxiety, depression, personality disorder, dissociation, parental styles, attachment).

METHOD: The study was conducted at the Psychotherapeutic section of the Psychiatric Department in Regional Hospital Liberec from October 2015 to March 2019. A total of 96 hospitalised patients with neurotic spectrum disorders diagnosed by an experienced psychiatrist according to ICD-10 (panic disorder and/or agoraphobia, social phobia, generalised anxiety disorder, mixed anxiety depressive disorder, somatoform disorder, obsessive-compulsive disorder, adjustment disorders) were included into the study and filled in the test battery.

RESULTS: The main finding is that self-stigma is related to the severity of the disorder, anxiety and depression, social anxiety, the comorbid occurrence of other anxiety disorders or personality disorders, dissociation, personality temperamental traits Harm Avoidance, Reward Dependence and Self-Directedness. We have not established a connection between attachment in close relationships and self-stigma. The most important predictors of self-stigma are the disorder's duration, reduced Self-Directedness, a higher rate of depression and social anxiety,

which together explain 58% of severity if self-stigma.
CONCLUSIONS: Self-stigma is a contemporary topic in research and clinical practice. The results can be used as a basis for the development of targeted intervention strategies aimed at reducing self-stigma or for further research studies in the field of self-stigma.

INTRODUCTION

Self-stigma is an internal process of evaluation and decision-making for individuals with mental health problems, feelings of inadequacy, inability to fulfil expectations, inferiority, shame, and increased self-blame when life goals are not achieved (Lenhardt 2004). Self-stigmatising individuals accept social prejudices about mental disorders, agree with them and apply them to their self-concept and self-perception (Corrigan *et al.* 2011). Self-stigma has many negative effects on individuals with mental disorders. It is associated with a higher rate of general psychopathology. It may cause decreased self-esteem (Corrigan *et al.* 2009), reduce the ability to function and coping with everyday demands (Yanos *et al.* 2012), stimulate the development of anxiety or depressive symptoms (Ociskova *et al.* 2016, Prasko *et al.* 2016), leads to avoiding face-to-face contact (Corrigan *et al.* 2009, Mestdagh & Hansen 2014), increase suicide risk (Vrbova *et al.* 2018), lower adherence to treatment (Carrara & Venturac 2018), and decrease quality of life (Gaebel *et al.* 2008, Yanos *et al.* 2008, Kamaradova *et al.* 2016).

Problems also arise in social functioning, where self-stigma strengthens avoidance, and in more severe cases, it can lead to partial or complete social isolation (Schulze & Angermeyer 2003). It affects the sense of desire and ability to find a potential partner or causes problems in being a partner in intimate relationships at all (Wright *et al.* 2007). Most self-stigma focused research also points to a significant correlation between internalised stigmatisation and the severity of psychopathology in various mental illnesses such as depression and anxiety (Markowitz 2001; Drapalski *et al.* 2013; Ociskova *et al.* 2016; Lorona *et al.* 2018; Ociskova *et al.* 2018). According to many studies, demographic factors (gender, the heredity of mental disorder and education) are not usually related to self-stigma (Gerlinger *et al.* 2013; Kamaradova *et al.* 2016).

Research into self-stigma tries to identify some variables that may affect higher rates of self-stigma in some individuals. Some individuals with mental illness do not self-stigmatise themselves; others take an indifferent, neutral attitude, and some individuals self-stigmatise themselves in a high degree (Corrigan 2002). A study by Ociskova *et al.* (2018) focused on the research of personality characteristics and self – stigmatisation has shown that self-stigma is closely related to higher Harm Avoidance and lower Self-Directedness Cloninger personality typology. Further research points to the relationship between self-stigma and defence mechanisms of an individual, such as dissociation associated with the degree of self-stigma (Ociskova *et al.* 2018).

Concerning parental styles, patients with anxiety disorders had significantly lower maternal care levels in the Parental Bonding Instrument (PBI) and marginally lower father care than the non-clinical research population (Picardi *et al.* 2013). The relationship between parenting styles and self-stigma is not investigated in research studies. Instead, research focuses on the role of parental stigma and self-stigma in seeking help for themselves or their family members (Surapaneni 2018).

Study objectives and hypotheses

The study aims to examine the level of self-stigma and other significant variables potentially related to self-stigma (personality characteristics, childhood traumatisation, anxiety, depression, parental styles) in a group of inpatients with neurotic spectrum disorders. According to the following hypotheses, the overall rate of self-stigma in neurotic spectrum disorders is related to:
(a) the severity of psychopathology;
(b) the degree of dissociative symptoms;
(c) comorbid mental disorders;
(d) the personality trait of Harm Avoidance
(e) the personality trait of Self-Directedness;
(f) the childhood traumatisation;
(g) the parenting style;
(h) the attachment in close partnership.

METHOD

The study was conducted at the Psychotherapeutic ward of the Psychiatric Department in Regional Hospital Liberec from October 2015 to March 2019. There is a 6-week therapeutic program for the treatment of patients with neurotic spectrum disorders. Patients signed informed consent.

Patients were given a test battery of self-assessment questionnaires during the first, third and the sixth weeks of their psychotherapeutic stay. At the beginning of the stay, the trained psychologist conducted a standard diagnostic interview MINI, an objective evaluation of the degree of anxiety using HAMA and objective evaluation of the clinical impression CGI. The attending psychiatrist concluded the diagnosis and objCGI at the end of the stay. The criteria for inclusion in the study are shown in the table (Table 1).

Measurements

The demographic questionnaire inquired gender, age, age at the onset of a disorder, duration of the disorder, marital status, employment status, retirement or disability benefits, education, number of previous hospitalisations, current medication, family history.

MINI (International Neuropsychiatric Interview) is a standard diagnostic interview developed by

Tab. 1. Inclusion and exclusion criteria for enrolment in the study

Age over 18 years
Diagnosis of neurotic spectrum disorder according to ICD-10 (F40 – F49)
Voluntary hospitalisation at the department without the need for increased oversight
Signed informed consent
Without intellectual deficit, severe physical illness and comorbid drug use

Tab. 2. Average drug doses recalculated by drug indices

PSYCHOFARMACS		**Indexed dose (average + SD)**
Antidepressants (n=81)	*Paroxetine Index*	33.70 ± 17.97
Anxiolytics (n=47)	*Diazepam Index*	6.38 ± 3.53
Antipsychotics (n=26)	*Risperidon Index*	1.37 + 1.12

Notes: S.D. (standard deviation)

Sheehan and Lecrubier (1997) that includes diagnostic criteria for 17 common psychiatric disorders according to DSM-IV and ICD-10. Sensitivity is higher than 0.70 in all revised disorders except dysthymia, obsessive-compulsive disorder and drug dependence (Sheehan *et al.* 1998). The interview lasts approximately 20 minutes, providing a reliable diagnosis according to ICD-10 in a short time (Lecrubier *et al.* 1997).

HAMA (Hamilton Anxiety Scale) is a widely used and well-proven tool to measure the severity of anxiety in a patient created by Max Hamilton in 1959. The scale is used to assess the severity of anxiety (Hamilton 1959) clinically. The reliability and validity of the method are acceptable (Maier *et al.* 1988). The administration takes 15-20 minutes. The scale consists of 14 items designed to assess the severity of the patient's anxiety.

CGI (Clinical Global Impression) is a scale for global assessment of psychopathology severity (Guy 1976). The assessment is performed by a psychologist or psychiatrist using an objective scale (objCGI). The severity of the disorder is assessed in the CGI on a seven-point scale ranging from 1 (normal) to 7 (the most seriously ill patient). The patient assesses subjective severity with subjCGI, which also includes seven levels of severity. The internal consistency of the tool is satisfactory (Zaider *et al.* 2003).

BAI (Beck's Anxiety Inventory) created by Aaron T. Beck, contains 21 questions with a choice from 0 (does not occur at all) to 3 (occurs significantly and severely). Patients evaluate perceived common anxiety symptoms and their severity during the last week (Leyfer *et al.* 2006; Beck *et al.* 1988). The method has excellent internal consistency (mean $\alpha = 0.92$) (De Ayala *et al.* 2005). The Czech translation was validated by Kamaradova *et al.* (2015). Cronbach's alpha is 0.92. (Kamaradova *et al.* 2015). Test-retest reliability after one week was 0.75 (Beck *et al.* 1996).

BDI-II (Beck's Depression Inventory, Second Edition) is a 21-item scale identifying depressive symptoms. Patients evaluate symptoms over the last 14 days on a 4-point range. Administration takes 5-10 minutes; the method is designed for a population aged 13-80 years (Storch *et al.* 2004). BDI-II has a high internal consistency ($\alpha = 0.91$) (Beck *et al.* 1996). The internal consistency of the scale is higher in the psychiatric population ($\alpha = 0.86$) than in the general population ($\alpha = 0.81$) (Storch *et al.* 2004). The Czech BDI-II shows adequate psychometric characteristics (Ociskova *et al.* 2017).

Bernstein and Putnam created a **DES** (Dissociative Experience Scale) in 1986 as a self-assessment scale containing 28 items. The items describe a wide range of normal (e.g. daydreaming) and pathological dissociative experiences (e.g. depersonalisation and derealisation) (Carlson 1997). Test-retest stability over time exhibits excellent psychometric properties (0.93). The internal consistency evaluated by Cronbach alpha is 0.96 (Bernstein & Putnam 1986).

LSAS (Liebowitz Social Anxiety Scale) is a short 24 items questionnaire created in 1987 by Michael Liebowitz. This scale aims to assess the extent of social interactions the patient is concerned about. It is divided into two areas - 13 questions about anxiety and 11 about social situations. LSAS was initially conceptualised as a clinically driven objective assessment scale but was subsequently validated as a self-assessment scale (Rytwinski *et al.* 2009). The internal consistency of LSAS is high (Heimberg *et al.* 1999).

ISMI (Internalized Stigma of Mental Illness) is a measurement of subjective experience with stigma. It contains 29 items divided into five areas that the patient assesses on a 4-point Likert-type scale (Ritsher *et al.* 2003). The internal consistency of the scale is excellent (Boyd *et al.* 2014). The questionnaire was standardised in the Czech Republic by Ociskova *et al.* (2014). Cronbach's alpha of Czech translation is high ($\alpha = 0.91$) (Ociskova *et al.* 2014). It also shows very good reliability in split-half (Spearman-Brown coefficient = 0.93) and test-retest reliability 3 weeks after the first measurement ($r = 0.90$, $p < 0.001$).

Tab. 3. Demographic data

VARIABLES	PATIENTS (n=96)
Age	44.09 ± 11.34
Sex (M: F)	27: 69
The onset of the disorder	35.63 ± 13.83
Length of the disorder	8.74 ± 9.36
Number of hospitalizations	1.9 ± 2.34
Education	
elementary	7
vocational training	29
secondary school	41
university	18
missing	1
Marital status	
single	34
married	36
divorced	24
widow, widower	2
Partner	
no	35
yes	61
Employment	
no	34
yes	58

Tab. 4. Mean scores of assessment scales

Assessment scales	Average scores ± SD
ObjCGI	3.03 ± 0.71
SubjCGI	3.96 ± 1.15
HAMA	15.40 ± 7.67
BDI-II	23.86 ± 12.70
BAI	22.63 ± 13.88
SWL	15.37 ± 6.93
LSAS	
fear	52.51 ± 16.91
avoidance	52.28 ± 18.31
total	104.91 ± 34.32
missing	1
SPRAS	49.96 ± 29.01
SDS	
work	5.55 ± 3.02
society	6.01 ± 2.96
family	5.21 ± 2.82
total	16.77 ± 7.65

Notes: Data are presented as means, standard deviations (sd) and number N (%), Clinical Global Impression (CGI), objCGI (objective CGI), subjCGI (subjective CGI), HAMA (Hamilton Anxiety Scale A), BDI-II (Beck Depression Inventory), BAI (Beck Anxiety Inventory), SWL (Satisfaction with Life Scale), LSAS (Liebowitz Social Anxiety Scale), S.P.R.A.S. (Sheehan Patient-Related Anxiety Scale), SDS (Sheehan Disability Scale)

TCI (Temperament and Character Inventory) is a personality questionnaire from Cloninger *et al.* (1994). The questionnaire measures seven dimensions of personality (Banas 2003). TCI-R questionnaire is not entirely standardised in the Czech environment. The percentile standards were created in the original version of TCI (Preiss *et al.* 2007). The internal consistency and test-retest reliability are high; the method's psychometric properties are excellent (Preiss *et al.* 2007).

PBI (Parental Bonding Style) was developed by Parker *et al.* (1979) to assess parental custody during the first 16 years of life. The 25-item questionnaire contains a retrospective assessment of parenting 4-point scale, separately for father and mother. The Czech version was compiled by Cikosova and Preiss (2011). Cronbach's alpha's internal consistency ranges from 0.79 to 0.84 for both scales for the father, and from 0.82 to 0.85 for both scales for the mother. Test-retest reliability after three weeks was 0.85 to 0.96 (Parker *et al.* 1979). A Czech validation study confirmed excellent psychometric characteristics (Preiss *et al.* 2012).

ECR-R (Experience in Close Relationships) is one of the questionnaires used to measure relationships by Fraley *et al.* (2000). The questionnaire items are used to assess anxiety (certainty x uncertainty in relationships) and avoidant relationships in adulthood (safe x dangerous proximity). The psychometric properties are suitable for research and clinical practice. The internal consistency of the Czech translation ranges from 0.86 to 8.7. Test-retest stability over time is satisfactory (Seitl *et al.* 2016).

CTQ (Childhood Trauma Questionnaire) is a self-assessment scale containing 28 items from Bernstein & Fink (1998). It focuses on five major traumatic areas (emotional, physical and sexual abuse and emotional and physical neglect), which the patient evaluates retrospectively (Liebschutz *et al.* 2018). Reliability for CTQ is excellent (Bernstein & Fink, 1998). The internal consistency is high (Bernstein *et al.* 2003). Cronbach's alpha for sexual abuse is 0.93-0.95; for emotional and physical neglect, it is 0.88-0.92; for emotional abuse, it is 0.84-0.89, and physical abuse is 0.81-0.86. Test-retest reliability is 0.80 after three months (Adams 2007).

SPRAS (Sheehan Patient-Related Anxiety Scale, Sheehan *et al.* 1988). The questionnaire consists of 35 items describing anxiety symptoms evaluated on a four-point scale of the Lickert type. Patients evaluate their condition during the previous week. A score above 30 points is considered elevated; a score above 80 is considered severe. The English version of the method

Tab. 5. Mean values in questionnaires

Questionnaires	Average scores ± SD
DES score	14.93 ± 13.91
DES-T	9.49 ± 13.31
CTQ	
emotional abuse	10.21 ± 4.85
psychological abuse	8.01 ± 4.38
sexual abuse	6.93 ± 4.61
emotional neglect	14.59 ± 4.68
psychological neglect	9.55 ± 4.35
trauma minimization	2.51 ± 0.83
P.B.I.	
Father-care	18.87 ± 9.00
Father-hyperprotection	14.51 ± 7.54
Mother-care	21.93 ± 8.97
Mother-hyperprotection	16.53 ± 8.19
TCI	
Harm Avoidance	29.63 ± 6.15
Novelty Seeking	21.67 ± 5.16
Reward Dependence	25.50 ± 4.61
Persistence	25.05 ± 5.46
Self-Directedness	24.50 ± 6.48
Co-operation	30.86 ± 4.88
Self-Transcendence	19.80 ± 6.92
ISMI score	62.66 ± 13.65
alienation	13.89 ± 3.76
Stereotype Endorsement	13.09 ± 3.27
Perceived Discrimination	9.80 ± 2.78
Social Withdrawal	13.10 ± 3.89
Stigma Resistance	12.77 ± 2.52

Notes: Data are presented as means, S.D. and number N (%), DES (Dissociation Scale), DES-T (pathological dissociation), ECR-R (Experience in Close Relationship), CTQ (Childhood Trauma Questionnaire), P.B.I. (Parental Bonding Instrument), TCI (Temperament and Character Inventory), ISMI (Internalized Stigma of Mental Illness)

Tab. 6. Relationship between self-stigma and demographic factors

Demographic factors	ISMI
Age	Pearson r= - 0.010
Duration of the disorder	Pearson r= **0.262 ***
The onset of the disorder	Pearson r= -0.180
Number of hospitalisation	Pearson r= 0.022
Male / Female	64.81±13.53 / 61.81±13.68/ unpaired t-test: t=0.96, df=94, ns
Employment Yes/No	62.67±13.53 / 63.09 ±13.85 unpaired t-test: t=-0.141, df=90, ns
Partner Yes/No	62.33±12.76 / 63.23 ±15.25 unpaired t-test: t=-0.310, df=94, ns
Education:	
elementary (n=7)	69.71±12.35
vocational training (n=29)	66.17±12.47
secondary school (n=41)	60.46±13.82
university (n=18)	58.11±13.49 one-way ANOVA, F=2.410, df=3: ns

Notes: Spearman correlation (S), Pearson correlation (P), statistical significance * p <0.05, ** p <0.01, *** p <0.001, ns (not statistically significant), No. (number), ANOVA (analysis of variance), ISMI (Internalize Stigma of Mental Illness)

has an excellent validity of 94% and a positive predictive value of 75% (Kick *et al.* 1994).

SDS (Sheehan Disability Scale, Sheehan *et al.* 1996). This is an analogue measurement of functional disability in work/study, social and family life (3 areas). The patient assesses the extent to which these life areas are disrupted on a 10-point scale (Sheehan *et al.* 1996). Arbuckle *et al.* (2009) reported an internal consistency value using Cronbach alpha of 0.89.

SWL (Satisfaction with Life Scale, Pavot & Diener 1993). It is a short 5-item tool for measuring global assessment of life satisfaction and subjective well-being. For each item, SWL is recorded on a 7-point scale of the Lickert type. A score between 5-9 indicates extreme dissatisfaction with life, while a score between 31-35 indicates extreme satisfaction (Pavot & Diener 2008). The Cronbach alpha coefficient ranges from 0.79 to 0.89; the internal consistency of the scale is high.

Treatment

Patients were treated according to the recommended guidelines for the treatment of neurotic disorders. Mean drug doses are shown in the table (Table 2). Most of the patients used psychopharmacs before entering psychotherapeutic course (96.9 %); only three patients did not use any psychopharmacs (3.1 %).

Statistic

The S.P.S.S. version 24.0 (S.P.S.S. Inc, 2008), and Prism (GraphPad PRISM version 5.0, http://www.graphpad.com/prism/prism.htm) were used for statistical analysis. For quantitative, demographic and clinical data, averages and standard deviations were calculated using descriptive statistics. The normality of data distribution was determined by Shapiro-Wilk W. One-Way ANOVA analysis compared several groups within the normal data distribution (Tukey was used as the Post Hoc Test). We compared the two groups with the two-tailed T-test independent-selection or the Mann-Whitney U-test (M.W.). Relations between variables were compared using correlation coefficients (Pearson coefficient for parametric data and Spearman nonparametric correlation coefficient). We used Fisher's test or chi-square

Tab. 7. Relationship between self-stigma and clinical factors

Clinical factors	ISMI score
ObjCGI	**0.381** **
SubjCGI	**0.422** **
HAMA	**0.380** **
BDI-II	**0.676** **
BAI	**0.531** **
SPRAS	**0.586** **
LSAS	**0.590** **
SWL	**-0.473** **
SDS	**0.491** **

Notes: Spearman correlation (S), statistical significance * p <0.05, ** p <0.01, *** p <0.001, Clinical Global Impression (CGI), objCGI (objective CGI), subjCGI (subjective CGI), HAMA (Hamilton Anxiety Scale A), BDI-II (Beck Depression Inventory), BAI (Beck Anxiety Inventory), ISMI (Internal Stigma of Mental Illness), SWL (Satisfaction with Life Scale), LSAS (Liebowitz Social Anxiety Scale), S.P.R.A.S. (Sheehan Patient-Related Anxiety Scale), SDS (Sheehan Disability Scale)

to verify the relationship between alternative variables (gender, education, marital status, partnership). Stepwise regression analysis was used to analyse the meanings of variables in correlation relationships. For all statistical tests, we worked with a 5% significance level. To assess the strength of the relationship between variables within the correlation coefficients, Cohen correlation model developed for psychological testing was used (1988): a very weak relationship (0.00-0.09), weak relationship (0.09-0.29), moderate relationship (0.30-0.49) and strong relationship (0.50-1.00).

Ethics

The study complies with the latest version of the Helsinki Declaration and the Principles of Good Clinical Practice (EMEA 2002). All participants signed informed consent before entering the study after the nature of the procedures had been fully explained. The local ethics committee of University Hospital Olomouc approved this project.

RESULTS

Demographic variables

A total of 96 inpatients with neurotic spectrum disorder diagnosed by an experienced psychiatrist according to ICD-10 (panic disorder and/or agoraphobia, social phobia, generalised anxiety disorder, mixed anxiety depressive disorder, somatoform disorder, obsessive-compulsive disorder, adjustment disorders) were included into the study. Descriptive data of the research sample are shown in the table (Table 3).

Clinical variables

The averages of the assessment scales evaluated by both the objective scales and the self-assessment scales are stated in the table (Table 4).

The average values obtained from the individual self-assessment questionnaires are shown in the table (Table 5).

Self-stigma and demographic factors

Self-stigma measured by the overall ISMI score (at baseline of the course) correlated positively with the disorder's duration. Age, disease onset, and a number of hospitalisations had no connection with the overall ISMI score (Table 6). There are no differences between gender, partnership, employment, and education (Table 6).

Self-stigma and clinical factors

The overall ISMI score correlated positively with objective and subjective assessment of the mental disorder severity at baseline (objCGI and subjCGI), objective anxiety scale (HAMA), depression (BDI-II), subjective anxiety scale (BAI), Sheehan's anxiety scale (S.P.R.A.S.), social anxiety (LSAS), disadvantaged scale (SDS), and negatively correlated with satisfaction with life scale (SWL). The higher the objectively and subjectively assessed severity of the mental disorder, anxiety, depression, social anxiety and the limitations are resulting from a mental disorder, the higher the self-stigma rate is or vice versa (this study cannot respond to the causality of variables). Greater life satisfaction is associated with lower self-stigma rates (Table 7).

Tab. 8. Self-stigma and diagnostic subgroups on neurotic disorders

ISMI	Panic disorder with /without agoraphobia (n=9)	Social phobia (n=26)	G.A.D. and mixed anxiety depressive disorder (n=43)	Adaptive disorder (n=9)	Somatoform disorder (n=9)	Statistic
ISMI score	66.78 ± 16.02	65.19 ± 12.15	61.77 ± 15.27	57.67 ± 12.77	60.44 ± 5.41	one-way ANOVA: F=0.829, df=94, n.s.

Notes: One-Way ANOVA (analysis of variance), ns (not significant), ISMI (Internalized Stigma of Mental Illness)

Tab. 9. Comparison of group self-stigma with and without comorbid disorders

	Without depressive disorder (n=31)	With depressive disorder (n=65)	Statistics
ISMI score	60.32 ± 14.08	63.77 ± 13.41	Unpaired T-test: t=-1.159, df=94, n.s.
	Without another anxiety disorder (n=76)	**With another anxiety disorder (n=20)**	
ISMI score	61.08 ± 13.69	68.65 ± 11.98	Unpaired T-test: t=-2.254, df=94, p<0.05
	Without personality disorder (n=67)	**With personality disorder (n=29)**	
ISMI score	59.46 ± 12.62	70.03 ± 13.27	Unpaired T-test: t=-3.711, df=94, p<0.001

Notes: ns (not significant), ISMI (Internalized Stigma of Mental Illness)

Self-stigma and diagnostic subgroups

The patients were divided into five primary groups according to the principal diagnosis for which they were admitted for a psychotherapeutic course: (1) panic disorder with/without agoraphobia, (2) social phobia, (3) generalised and mixed anxiety depressive disorder, (4) somatoform disorder and (5) adaptive disorders. The group of patients with the obsessive-compulsive disorder was not included in the comparison because of the small number of respondents (n = 3). The diagnostic groups did not significantly differ in the overall self-stigma or I.S.M.I subscales (Table 8). Patients with neurotic disorders self-stigmatise themselves approximately equally.

Self-stigma and comorbidity with depressive disorder

Patients with neurotic spectrum disorders were divided into two groups according to the presence of comorbid depressive disorder. Statistical analysis did not show a significant difference in self-stigma between groups with or without comorbid depression (Table 9).

Comorbidity with another anxiety disorder

Furthermore, we compared groups with the occurrence of another comorbid anxiety disorder to the principal diagnosis and a group without a comorbid anxiety disorder in self-stigmatisation. Both groups differ in overall self-stigma under the presence of another anxiety disorder (Table 9). Patients with comorbid anxiety disorder self-stigmatise themselves at a higher rate than those without a comorbid anxiety disorder.

Comorbidity with a personality disorder

Comparison of groups with or without comorbid personality disorder showed that comorbid personality disorder affects the severity of self-stigma. Patients with comorbid personality disorder self-stigmatise in a significantly higher degree than patients without personality disorder (Table 9).

Self-stigma and personality characteristics

TCI evaluated personality traits. The overall self-stigma correlates positively with the personality characteristics of Harm Avoidance, negatively with the Reward Dependence and Self-directedness characteristics (Table 10). The causality of the relationship between self-stigma and personality characteristics is unknown. Individuals with higher items of Harm Avoidance and lower Reward Dependence and Self-directedness may have a greater tendency to self-stigmatise or vice versa.

Self-stigma and dissociation

The dissociation rate measured by the DES scale, including the pathological dissociation score (DES-T), correlated significantly positively with the overall ISMI, including ISMI subscales except for the Stigma Resistance subscale (Table 11). Patients with a higher dissociation rate (healthy or pathological) self-stigmatise themselves more than those with lower levels of dissociation.

Self-stigma and traumatisation in childhood

The CTQ Questionnaire evaluated traumatisation in childhood. The overall ISMI score correlates positively

Tab. 10. Correlation between self-stigma and personality traits according to Cloninger's TCI

Cloninger's dimensions	ISMI score
Harm Avoidance	**0,475*****
Novelty Seeking	0,057
Reward Dependence	**-0,254***
Persistence	-0,152
Self-Directedness	**-0,515*****
Co-operation	-0,003
Self-Transcendence	0,113

Notes: Pearson correlation (P), statistical significance * p <0.05, ** p <0.01, *** p <0.001, TCI-R (Temper and Character Inventory), ISMI (Internalized Stigma of Mental Illness)

Tab. 11. Relationship between self-stigmatisation and traumatisation in childhood CTQ

ISMI	Emotional neglect	Psychological neglect	Sexual abuse	Emotional abuse	Psychological abuse
ISMI score	**0,343****	**0,231***	0,134	**0,294****	**0,233***
Alienation	**0,388****	**0,229***	0,175	**0,309****	**0,277****
Stereotype Endorsement	**0,255***	0,195	0,042	**0,220***	0,168
Perceived Discrimination	**0,323****	**0,246***	0,142	**0,244***	**0,282****
Social Withdrawal	**0,353****	**0,238***	0,096	**0,278****	**0,202***
Stigma resistance	0,050	0,022	0,103	0,146	0,008

Notes: Pearson correlation (P), statistical significance * p <0.05, ** p <0.01, *** p <0.001, ISMI (Internalized Stigma of Mental Illness Scale), CTQ (Childhood Trauma Questionnaire)

with emotional and psychological abuse and neglect. Domains also correlate with ISMI subscales Alienation, Perceived Discrimination and Social Withdrawal. ISMI subscale Stigma resistance does not correlate with any traumatic childhood experience. Stereotype Endorsement's subscale positively correlates only with emotional abuse and emotional neglect in childhood (Table 11).

Self-stigma and parental style

The parental style was evaluated using the Parental Bonding Instrument (P.B.I.). Maternal care does not correlate significantly with the overall self-stigma score. Paternal care is negatively related to the overall ISMI score, so a higher level of perceived care from a father in childhood is probably associated with a lower tendency to self-stigma. Maternal and paternal hyper-protectivity are in a weak positive relationship with self-stigma. Paternal and maternal hyper-protectivity correlate with ISMI subscales Alienation, Perceived Discrimination and Social Withdrawal. Stigma resistance does not associate with any parental style (Table 11).

Self-stigma and attachment in close relationship

The Experience Close Relationship Scale (ECR-R) was used. Anxiety and avoidance attachment in partnership correlate neither with the overall self-stigma nor with ISMI subscales (Table 12).

Regression analysis of self-stigma and related factors

Correlation analyses revealed a number of links between self-stigma and clinical, demographic and personality factors, so the next step was to determine which ones are the most significant and if there is no collinearity between them. We used linear, backward step regression analysis to determine the most important factors. An independent variable is the duration of the disorder, HAMA, objCGI, subjCGI, DES-T, BDI-II, BAI, LSAS score, SDS score, Harm Avoidance, Reward dependence, Self-directedness, which correlated moderately or strongly with ISMI, entered to the analysis as regressors. The total score of ISMI was a dependent variable. The most significant regressors of ISMI belong to the disorder's duration, Self-Directedness, initial depression value by BDI-II, and social anxiety score LSAS, which together explain 58.4% of self-stigma (Table 13).

Tab. 12. Relationship between self-stigma and clinical variables

DISSOCIATION DES	*DES score*	*DES-T*			
ISMI score	**0.467** **	**0.466** **			
CHILDHOOD TRAUMA CTQ	*Emotional neglect*	*Psychological neglect*	*Sexual abuse*	*Emotional abuse*	*Psychological abuse*
ISMI score	**0.343** **	**0.231** *	0.134	**0.294** **	**0.233** *
PARENTAL STYLE PBI	*Paternal care*	*Paternal hyper-protectivity*	*Maternal care*	*Maternal hyper-protectivity*	
ISMI score	**-0.219** *	**0.309** **	-0.160	**0.248** *	
ATTACHMENT ECR-R	*Anxiety attachment*	*Avoidant attachment*			
ISMI score	0.183	0.159			

Notes: Pearson correlation (P), statistical significance * p <0.05, ** p <0.01, *** p <0.001; ISMI (Internalized Stigma of Mental Illness Scale); DES (Dissociation Scale); DES-T (pathological dissociation); CTQ (Childhood Trauma Questionnaire); PBI (Parental Bonding Instrument); ECR-R (Experience in Close Relationship)

Tab. 13. Regression analysis results for the ISMI dependent variable

ISMI	Regressors	B	S.E.	β	t	Significance
10. step	Duration of the disorder	0.252	0.122	0.158	2.060	0.043
	Self-Directedness	-0.466	0.209	-0.210	-2.228	0.029
	BDI-II initial value	0.448	0.110	0.403	4.081	0.000
	LSAS score	0.102	0.036	0.252	2.862	0.005
	F= 28.058 df=77, p<0.001, Adjusted R Square = 0.584					

Notes: SE (standard error), β (beta), B (regression coefficient), statistical significance * p <0.05, ** p <0.01, *** p <0.001, ISMI (Internalized Stigma of Mental Illness), BDI-II (Beck Depression Inventory), LSAS (Liebowitz Social Anxiety Scale)

DISCUSSION

Self-stigma, demographic and clinical factors

According to our findings, self-stigma does not correlate with demographic characteristics such as age, illness onset, number of hospitalisations, gender, and relationship status. The level of education was related to self-stigma only in partial subscales (Perceived Discrimination and Stereotypes Endorsement), not to the overall level of ISMI. This result differs from some other studies where employment correlates with ISMI (Kamaradova *et al.* 2016, Kalisova *et al.* 2018).

Our conclusions are partially consistent with other studies that show that demographic factors (gender, heredity and education level) are not related to self-stigma in different diagnostic groups (Gerlinger *et al.* 2013, Vrbova *et al.* 2014, Kamaradova *et al.* 2016, Sedlackova *et al.* 2015, Kalisova *et al.* 2018). The study of Cinculova *et al.* (2015, 2017) did not show any link between self-stigma and age, age of onset of the disorder. However, unlike in our research, Kamaradova *et al.* (2016) found a relationship between self-stigma and the number of hospitalisations. In our study, self-stigma correlated with the duration of the disorder. The study by Kalisova *et al.* (2018) is consistent with our study in patients with psychotic disorders where the length of the disorder is related to the degree of self-stigma.

According to Turkmen *et al.* (2017), as the duration of mental disorder increases, the rate of self-stigma increases, particularly the acceptance of stereotypes and the inability to function socially. We found that the diagnostic subgroups do not differ significantly among themselves in the overall self-stigma rate, i.e. patients with neurotic spectrum disorders self-stigmatise approximately equally regardless of the particular diagnostic unit. When comparing self-stigma of different diagnostic groups, Kamaradova *et al.* (2016) also state that the rate of self-stigma does not differ between diagnostic groups. Ociskova *et al.* (2015) state that it is not so much about a specific diagnosis that is important, but rather a subjective and objective severity of the disorder and comorbid personality disorders affect the level of self-stigma.

Self-stigma and severity of the disorder

Most research into self-stigma reveals a significant correlation between internalised stigmatisation and the intensity of symptoms such as depression, anxiety and severity of psychopathology in various mental disorders (Markowitz 2001, Vrbova *et al.* 2014, Kamaradova *et al.* 2016, Hajda *et al.* 2015, Cinculova *et al.* 2015, Ociskova *et al.* 2016, Lorona *et al.* 2018). Ociskova *et al.* (2015) found that self-stigma was related to the objective and subjective severity of the disorder. A higher rate of self-stigma is positively associated with higher severity of the disorder assessed by the physician and reported by the patient. It is also connected with a higher subjective evaluation of the anxiety and depression of the patient. The results are consistent with Ociskova *et al.* (2015) study in patients with neurotic disorders who found that self-stigma positively correlated with the more severe objective and subjective psychopathology, higher symptoms of anxiety and depression.

Self-stigma and comorbidity

Contrary to the hypothesis, we did not confirm the correlation between the level of self-stigma and comorbid depression. This finding is undoubtedly to ponder. Whether patients are suffering from a mild, moderate, or severe depressive disorder when the psychiatrist primarily diagnosed them only with an anxiety disorder. The comorbid depressive disorder was detected only through a structured interview by MINI. Our findings are inconsistent with Ociskova *et al.* (2015) in neurotic patients, who reported that comorbid depressive disorder also determined only by MINI, was significantly related to self-stigma.

The presence of another comorbid anxiety disorder and comorbid personality disorder appears to be significant in the self-stigma rate — comorbid groups with these disorders self-stigmatise to a greater extent than patients without comorbid anxiety disorder or personality disorders. The importance of comorbid personality disorder is consistent with the research by Ociskova *et al.* (2015) and Rüsch *et al.* (2006), who confirmed a higher rate of self-stigma in patients with a comorbid personality disorder. Rüsch *et al.* (2006) focused on a more accurate diagnosis. He compared a group of patients with a pure social phobia with the

second group. The social phobia was combined with a borderline personality disorder—the group of patients with personality disorder self-stigmatised to a significantly higher degree. Similar findings in comorbid personality disorders (specifically emotional-unstable disorders) are also reported in Grambal *et al.* (2016), where a psychiatrist established the primary diagnosis of personality disorder.

It may be contemplated that comorbid anxiety disorders or personality disorders may indicate an overall more severe disorder that the patient is experiencing. Similarly, in the studies of Kamaradova *et al.* (2016) and Ociskova *et al.* (2015), it was found that patients with comorbid personality disorder are more self-stigmatising, consistent with our conclusions.

Self-stigma and personality characteristics

The Liotti study (2013) showed a correlation of the temperament dimension of Harm Avoidance and the character dimension of Self-Directedness with anxiety symptoms. Samochowiec *et al.* (2005) found significantly elevated Harm Avoidance subscales, reduced Novelty Seeking in women, increased Reward Dependence and reduced Persistence, Self-Directedness and Cooperation in all anxiety patients. The relationship between self-stigma, increased Harm Avoidance, and decreased Self-Directedness has also been found in other studies (Ociskova *et al.* 2015, Ociskova *et al.* 2015, Praško *et al.* 2016).

In this study, we found that self-stigma correlated positively with the personality characteristics of Harm Avoidance, negatively with the Reward Dependence and Self-directedness. Harm Avoidance and Self-directedness correlate with all ISMI subscales (Reward Dependency does not correlate with Perceived Discrimination). The presence of a higher score of Harm Avoidance combined with low Reward Dependence and low self-directedness seems to be one of the possible personality profiles associated with the tendency to self-stigmatise (Svrakić *et al.* 2002, Kose 2003). However, the nature of the relationship between self-stigma and personality characteristics is still unknown because we did not examine these variables' causality.

Similar findings are reported by Ociskova *et al.* (2015), who found that self-stigma positively correlates with the personality traits Harm Avoidance and negatively with Self-Directedness. In connection with a higher rate of self-stigma in patients with neurotic spectrum disorders, these personality traits are significant (Ociskova *et al.* 2014; Ociskova *et al.* 2018). In comparison to our findings, the authors also found a relationship between self-stigma and the personality trait Persistence, which was not confirmed in our study. Different results may be caused by different composition of people in the sample. In the Ociskova *et al.* (2015) study, there was a narrow sample of anxiety disorders; in our study, the sample was composed of all neurotic disorders according to ICD-10).

Ociskova *et al.* (2015) also found that high Self-Directedness and hope reduce self-stigma. Margetic *et al.* (2010) also found a relationship between self-stigma and high Harm avoidance and low Self-Directedness in patients with schizophrenia and Wachleski *et al.* (2008). The regression analysis in our study found only that the low level of the Self-Directedness as a significant predictor of self-stigma, not the high level of Harm Avoidance.

Concerning the presumed inheritance of temperament and partial inheritance of character traits, we can only assume that at least the stated temperament characteristics (Harm Avoidance and Reward Dependence) may influence self-stigma level. Thus, self-stigmatising patients may be more sensitive to rejection in social relationships due to congenital avoidance and lower self-management.

Self-stigma and dissociation

In the dissociation scale (DES), patients achieved an average of 14.93 + 13.91 points (Carlson & Putnam, 1993), which occurs in anxiety disorders (Prasko *et al.* 2016). The pathological dissociation rate is 9.49 + 13.31 and is comparable to the results of a study on the Czech population of neurotic disorders (Praško *et al.* 2016). The dissociation rate measured by the DES scale, including the score for pathological dissociation (DES-T), correlated significantly with self-stigma. Patients with a higher rate of dissociation (healthy or pathological) are more self-stigmatising. The same results are reported by Ociskova *et al.* (2015).

Self-stigma and traumatisation in childhood

In this submitted study, we found that average scores in the childhood traumatisation (CTQ) questionnaire are low for emotional, psychological and sexual abuse, moderate for emotional neglect, and on the border between low and moderate for psychological neglect (Bernstein & Fink 1998). We found that self-stigma (and its subscales Alienation, Perceived Discrimination, and Social Withdrawal) correlated positively with emotional and psychological abuse and neglect. The Stereotype Endorsement subscale positively correlated only with emotional abuse and emotional neglect in childhood.

We have not found a relationship between sexual traumatisation in childhood and self-stigma. This finding may be caused either by the fact that the link is not there or caused by false-negative result due to the low number of probands with sexual abuse in their history in the sample. Based on the findings, patients with emotional or psychological maltreatment or neglect may feel more alienated and socially withdrawn from society with the more significant potential to develop self-stigma. We cannot compare these results with other studies' results because the relationship

between childhood traumatisation and self-stigma has not yet been studied in patients with neurotic spectrum disorders. That is why our review is unique.

Although the association of childhood traumatisation with self-stigma has not been studied in patients with a neurotic spectrum of disorders, it has been studied in patients with alcohol dependence. Stolzenburg *et al.* (2017) found that childhood traumatisation correlates positively with a higher rate of self-stigma, greater acceptance of social stereotypes and more significant adverse effects on self-esteem.

Self-stigma and parental style

Several types of parental behaviour are associated with excessive anxiety in children, including high levels of criticism and control, low levels of warmth, and lack of support for autonomy (McLeod *et al.* 2007, Budinger *et al.* 2013). Our study found that parental custody and upbringing of patients in childhood were low for paternal care and high for paternal hyper-protection according to PBI questionnaire. Maternal care was also low, while maternal hyper-protection was high. The same conclusions are presented by Picardi *et al.* (2013), who found that patients with anxiety disorders had significantly lower levels of maternal care and marginally lower paternal care in PBI questionnaire than in non-clinical populations. Parenting styles in childhood in patients with neurotic spectrum disorders were characterised by the lower manifestation of caring sensation and a higher proportion of control or hyper-protectivity (Parker *et al.* 1979).

The relationship between parenting styles and self-stigma has not yet been investigated in research studies, so this is also the unique finding reported in our study. It seems that paternal care has proved significant because the higher level of perceived care from father in childhood is probably associated with a lower tendency to self-stigmatise. On the contrary, maternal care did not correlate with self-stigma. Maternal and paternal hyper-protectivity are in a weak positive relationship with self-stigma. Greater control by the mother or father may affect the patient's self-confidence and self-esteem with potential susceptibility to self-stigma (Wolfradt *et al.* 2003).

Self-stigma and attachment in close relationship

According to the ECR-R questionnaire, we found that the partnership anxiety attachment is on average 4.76 + 7.96; for avoidance attachment binding 3.78 + 5.61, which represents an increased average score in both scales compared to the non-clinical population (Lečbych & Pospíšilíkova 2012, Seitl *et al.* 2016; Hašto *et al.* 2018). Individuals with high scores of anxieties, avoidance, or both in partnership feel insecure, so they tend to rely on secondary attachment strategies (Cassidy & Kobak 1988). However, in this study, we did not find the relationship between anxiety or avoidant attachment in relationship and self-stigma, not even in ISMI subscales. Relationship attachment (safe or uncertain) does not seem to affect the degree of self-stigma.

Answers to study objectives and hypotheses

The study aimed to examine the level of self-stigma and other significant variables potentially related to self-stigma (personality characteristics, childhood traumatisation, anxiety, depression, parental styles, attachment) in a group of inpatients with neurotic spectrum disorders. According to the following hypotheses in this study, we find out:

(a) **the severity of psychopathology** (higher rate of self-stigma is positively related to a higher objective and subjective severity of the disorder, and a higher level of anxiety, and depression);
(b) **the degree of dissociative symptoms** (confirmed by finding a high correlation between the scores of the dissociative experience (DES) and pathological dissociation (DES-T) with the overall ISMI score);
(c) **comorbid mental disorders** (confirmed by the association between self-stigma and the comorbid occurrence of another anxiety or personality disorder, however, we have not found the link between self-stigma and comorbid depression);
(d) **the personality traits of Harm Avoidance and Self-Directedness** (confirmed by the positive correlation of Harm avoidance and negative correlation of Self-Directedness and Reward Dependence with ISMI score);
(e) **the childhood traumatisation** (established for emotional and psychological abuse, emotional and psychological neglect and self-stigma score, not for self-stigma and sexual abuse);
(f) **the parenting style** (confirmed by finding a negative correlation between ISMI and paternal care, positive correlation between ISMI and maternal and paternal hyper-protectivity, maternal care does not correlate with ISMI);
(g) **the attachment in close partnership**, we were unable to establish a connection between self-stigma and attachment in the close partnership or avoidant attachment or anxious attachment.

Limitations of the study

The study has many limitations. The test battery consisted of self-assessment questionnaires that may be affected by the patient's subjective testimony. On the other hand, objective evaluation methods (objCGI, HAMA, MINI) were used, which increases the validity of the results. Another limitation is that the research sample consisted of a heterogeneous population of patients with a neurotic spectrum of disorders. Also, the patients who had other comorbid disorders may have had different severities. Another limitation of the study is that patients have taken different doses of different drugs converted to an index dose of the reference drug. However, some factors, notably

the degree of dissociation, anxiety and depression connected to the medication, may have affected.

CONCLUSION

The main findings are that self-stigma is related to the disorder's severity, the comorbid occurrence of other anxiety disorders, personality disorders and dissociation. Personality traits also play role – we proved that high level of Harm Avoidance and low level of Reward Dependence and Self-Directedness are considerable risk factors regarding self-stigma. We have not established a connection between attachment in close relationships and self-stigma. The most important predictors of self-stigma are the duration of the disorder, reduced Self-Directedness, a higher rate of depression and social anxiety, which explains 58% of the severity of self-stigma.

ACKNOWLEDGEMENTS

Supported by the Ministry of Health, Czech Republic – Conceptual development of research organisation (FNOL 0098892).

DISCLOSURE

The authors report no conflicts of interest in this work.

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