Three diagnostic psychiatric subgroups in comparison to self-stigma, quality of life, disorder severity and coping management cross-sectional outpatient study

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Abstract

BACKGROUND: Much attention has been paid to psychological factors influencing characteristics, severity, and course of mental disorders. The objective of our investigation was to examine the interrelations among quality of life (QoL), self-stigma, and coping strategies, demographics and severity of the disorder in neurotic spectrum disorders, schizophrenia, and depressive spectrum disorders.

METHODS: A total of 343 clinically stable Czech outpatients with different mental disorders (153 with neurotic spectrum disorders; 81 with depression, and 109 with schizophrenia spectrum disorders) were included. The patients were examined by their outpatient psychiatrists during regular psychiatric checkup and completed a sociodemographic questionnaire, the Quality of Life Satisfaction and the Enjoyment Questionnaire (Q-LES-Q), the Internalized Stigma of Mental Illness Scale (ISMI), the Stress Coping Style Questionnaire (SVF-78), and the Clinical Global Impression scale (CGI).

RESULTS: The study demonstrates that the self-stigma and coping strategies are significant factors linked to the QoL in all diagnostic groups of patients. Patients with schizophrenia spectrum disorders had lower scores in QoL compared to the other two groups. The patients with depression or neurotic spectrum disorders had a lesser degree of self-stigma than the patients with schizophrenia spectrum disorders. The severity of the illness significantly correlated with the QoL, self-stigma, and coping strategies.

CONCLUSIONS: The investigation confirmed the connection between the quality of life, self-stigma, coping strategies, and the severity of the illness, in outpatients with schizophrenia spectrum disorders, depressive, and neurotic spectrum disorders. A further longitudinal study would be useful to determine the causative relationships of these variables.

ORIGINAL ARTICLE

INTRODUCTION

Psychiatric disorders, such as schizophrenia, depressive disorders, and neurotic spectrum disorders are accompanying with substantial impairment and struggles in all life areas (Jacobi *et al.* 2024, Bandelow & Michaelis 2015). More than 33.7% of the population reported an anxiety disorder during lifetime (Bandelow & Michaelis 2015). Depression is also common, and its lifetime prevalence is currently estimated at 10.8% (Lim *et al.* 2018). Schizophrenia spectrum disorders are considered to be especially severe and disabling neuropsychiatric disorders (Heinrichs & Zakzanis 1998, Kring & Moran 2008, Xia *et al.* 2011, Gur *et al.* 2014), which affect approximately 1% of the population across all cultures and socioeconomic groups (Fortinash & Holoday-Worret 2000). Treatment outcomes of these disorders leave much to be desired. During the last decades, several psychological factors have been found to significantly connect with the severity and prognosis of the mental disorders. Some relate to one's relationship towards themselves and their health issues (i.e., self-stigma), other focus on the way in which individuals cope with adversity. Another examines if and to what extent people with mental disorders find their life worth living.

Self-stigma

Self-stigma is the internalisation of negative societal stereotypes about those with mental disorders and involves three steps: cognisance of the stereotype, agreement with it, and relating it to one's self (Corrigan *et al.* 2009, Bradstreet *et al.* 2018). Self-stigma is frequent in persons with schizophrenia spectrum disorders, depressive disorder, and neurotic spectrum disorders (Ran *et al.* 2018, Bonfils *et al.* 2018). The self-stigma also seems to be associated with the depressive attributional style that can be characterized by thinking that one's mental disorder has an internal and global origin ("If I weren't so weak/lame/weird, I wouldn't suffer from depression/social anxiety/schizophrenia.") and is persistent (Ociskova *et al.* 2018). Negative prejudices and stereotypes lead to a feeling of inferiority, weakness, feeling of being unwanted, refused, unreliable because of mental problems (Parcesepe & Cabassa 2013). A significant relationship was found amongst self-stigma and the severity of the symptoms of anxiety, depression, negative and positive symptoms of schizophrenia, and severity of the disorder in many psychiatric disorders (Holubova *et al.* 2016a, Vrbova *et al.* 2017, Vrbova *et al.* 2018a). Self-stigma is also connected with undesirable outcomes amongst patients with prolonged psychosis (Firmin *et al.* 2018). The level of internalised stigma is more significant in schizophrenia spectrum disorders in comparison to the depression disorders (Holubova *et al.* 2016b).

Coping

Coping describes an effort to manage and overcome demands and critical events that pose harm, loss, challenge, threat, or benefit to a person (Lazarus 1991). The coping is seen as a significant factor of the total stress process and is recognised as an intermediating connection between stressors and psychological straining in the stress model (Ogden 2000). Different definitions of coping with stress covered different dichotomous models: problem - and emotion-focused strategies by Lazarus & Folkman (1984), adaptive or maladaptive coping strategies; positive or negative coping by Janke and Erdmann (2002); avoidance versus approach coping (Ogden 2000) or three-categorical classification models (Schwarzer & Schwarzer 1996).

In the context of self-stigma, when patients implement effective coping strategies to fight the symptoms of the illness as well as with the presence of the mental illness itself they can feel less stressed and stigmatised stressed and reported a decreased frequency of hospitalisations and relapses (Rea *et al.* 2003). Additionally, the coping strategies are tightly connected to the severity of patients' clinical status (Goossens *et al.* 2008). For example, rumination is linked with negative cognitive, affective, cognitive, and bodily reactions following stressors, proposing probable mechanisms which might strengthen the risk for development of psychopathology (Aldao *et al.* 2014). Although primary and secondary control engagement coping are connected with superior results, schemes including disengagement from the trigger are connected with more symptoms (Aldao *et al.* 2010). Specifically, disengagement strategies correlate with anxiety and depression (Wadsworth & Compas 2002), and active coping and distraction have been recognised to be connected with lower levels of internalising symptoms (Sandler *et al.* 1994).

Avoidance coping is considered to be the most commonly used coping strategy especially in phobic patients and among patients with panic disorder (Davey *et al.* 1995, Hughes *et al.* 1999, Feldner *et al.* 2004). Avoidance is also seen to be a premorbid predictor of fearful reacting in the form of bodily sensations, and also the subjective best way how to cope with anxiety-related distresses (Cox *et al.* 1992). Patients with schizophrenia in our previous study, use the negative coping more frequently than the general population (Holubova *et al.* 2016c). Also, the relation between internalised stigma, coping strategies and the severity of the disorder were detected in patients with schizophrenia. Negative coping correlated with the self-stigma and contrary patients who used more positive strategies had lower internalised stigma level (Holubova *et al.* 2016c). Patients with schizophrenia also reported significant difficulty and more limited coping with life stresses and preferred avoidance and passive coping rather than active problem-solving or help-seeking tactics (Xu *et al.* 2013, Lysaker *et al.* 2005, Montemagniet *et al.* 2014). Furthermore, in our study patients with depression

tend to use escape tendency, resignation and active avoidance strategy (Holubova *et al.* 2017).

Quality of life

World Health Organization outlines QoL as individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns, and covered specific life dimensions such as psychological status, functional abilities, personal well-being, social interaction, economic status, vocational status, and physical health (Skevington 1999). QoL measurements are an essential healthcare outcome which tries to quantitate the influence of illness on a person's functioning and well-being in several life areas that results in unhappiness (WHO 2001).

QoL is considerably decreased in schizophrenia (Sidlova *et al.* 2011). QoL is declined among individuals with a higher number of psychiatric hospitalisations, higher severity of the disorder, and those who have the higher dose of psychopharmacs. Also, those with more marked symptoms of anxiety, social fear, depression, have a poorer QoL. Finally, the QoL is decreased among patients with self-stigma (Vrbova *et al.* 2017). The overall QoL has not been different much between patients with schizophrenia and depression. However, the self-stigma is higher for the individuals with schizophrenia spectrum disorders.

QoL across in anxiety disorders has been constrained and is connected with the reduction in role functioning, social functioning, and mental health (Mendlowicz & Stein 2000, Stein & Heimberg 2004).

Hypotheses

The primary aim was to compare QoL, self-stigma, and coping strategies in three different diagnostic groups - schizophrenia spectrum disorders, depressive disorders, and neurotic spectrum disorders. In connection with these objectives, the following hypotheses were established.

(1). The quality of life, coping strategies, and self-stigma are associated with the subjective and objective severity of the disorder.
(2). The self-stigma negatively correlates with the quality of life.
(3). The self-stigma positively correlates with negative coping strategies; negatively with positive coping.
(4). The QoL negatively correlates with negative coping, and positively with positive coping.
(5). Patients with depressive disorder and neurotic spectrum disorder have a lower self-stigma in comparison with the patients with schizophrenia spectrum disorder.
(6). QoL is lower among patients with schizophrenia spectrum disorders in comparison with a patient with neurotic spectrum disorders, and patients with depression.

(7). Patients with neurotic disorders use less negative coping strategies and more positive coping strategies than patients with schizophrenia spectrum disorders, and patients with depressive disorders.

METHOD

Assessments

CGI (Clinical Global Impression) is an overall evaluation of the severity of the disorder on a seven-point scale from one (normal) to seven (most extremely ill) over the last week (Guy 1976). The subjective form is performed by patients (subjCGI), the objective form is performed by the professional (objCGI).

ISMI (Internalized Stigma of Mental Illness) contains 29 statements with a four-point scale measuring the degree of the agreement (Ritsher *et al.* 2003a). The scale allows measuring five categories of the self-stigma – *Alienation, Perceived discrimination, Stereotype endorsement, Social withdrawal, and Resistance to stigma*. The tool was standardised in a Czech population with respectable internal consistencies (Cromach alpha 0.91; Ociskova *et al.* 2014).

SVF 78 (Stress Coping Style Questionnaire) has 78 items distributed into 13 domains corresponding with a particular approach of responding to the distress (Lazarus & Folkman 1984). Czech version Cronbach alpha ranges between 0.77 and 0.94 (Svancara 2003).

The Quality of Life Satisfaction and Enjoyment (Q-LES-Q) – The questionnaire with 93 items is divided into eight areas to assess (Ritsner *et al.* 2003b). The patients evaluate each area by choosing one numeral from a five-point Likert scale agreeing to their level of satisfaction in the item. Patients fulfil the domains of *Physical health, Feelings, Leisure, Household, Work, School/study, Social Relations, General and a Sum of the quality of life*. The Czech version of the Q-LES-Q was validated by Müllerova (2001).

Statistics

Statistical programs SPSS 24 and Prism 3 were used for the data analysis. Column statistics examined the clinical and demographical information. Shapiro-Wilk W test determined the normal distribution of the variables and chi-square or Fisher exact test for analysis of the categorical data. Pearson or Spearman rank correlations were used to an examination of the interactions between variables. Multiple stepwise regression analysis was used to calculate the significance of the correlations of the particular factors. We used five per cent level of significance as meaningful.

Ethics

The local ethics committee approved the study. The protocol of study and its conduction were in agreement with the latest version of the Helsinki Declaration and standards of Good Clinical Practice (GCP, EMEA 2002). All patients signed the informed consent.

RESULT

Description of the sample

The total of 343 participants within three different groups of disorders such as: **(a) neurotic spectrum disorders** (n=153; generalized anxiety disorder and mixed anxiety-depressive disorder n=65, adjustment disorders n=33, panic disorder with or without agoraphobia n=21, somatoform disorders n=20, social phobia n=8, and obsessive compulsive disorder n=6); **(b) depression** (n=81; recurrent depressive disorder n=36, major depressive disorder n=42, dysthymia n=3); and **(c) schizophrenia spectrum disorders** (n=109; schizophrenia n=72, schizoaffective disorder n=31, persistent delusional disorder n=3, and acute polymorphic psychotic disorder n=3); agreed with the study enrollment and completed the scales. Mean age of all patients was 47.4 ± 13.1. The female population prevailed in the research population at all regardless of diagnosis (70.26%). 41.7 % of patients were married. Secondary education reached nearly a half of patients (48.1 %). Around a fifth of the patients had a university level of education (18%). Most patients were unemployed (52.47%). In total, 58% of patients received disability benefits. Maximum of them had the full disability (25.36%), followed by partial disability benefits (15.1 %); 17.49% of patients were retired (Table 1).

Patients with a diagnosis of schizophrenia spectrum disorder were statistically significantly younger than those in the neurotic spectrum disorders or with depression. The participants with the depressive disorder showed a later onset of the disorder than individuals with schizophrenia spectrum disorder. The duration of the disease was significantly longer in schizophrenia spectrum disorders, as well as the number of psychiatric hospitalisations (Table 1). The participants with schizophrenia spectrum disorders were more likely to be single without a partner. The patients suffering from a neurotic spectrum disorder were more likely to be unemployed, while the patients with psychosis had the highest rate of disability benefits (Table 1).

As regards the objective assessment of the severity of the illness assessed using objCGI, patients with psychosis showed significantly greater severity than the other groups (Table 2). However, in the subjective evaluation of the severity of the illness (subjCGI), the highest average scores were from those with neurotic disorders.

Self-stigma (ISMI-total) was higher in the participants with schizophrenia spectrum disorders. However, the use of negative and positive strategies was similar in all groups; no differences were identified (Table 2)., The QoL (Q-LES-Q-total) was lower in patients with psychosis compared to participants with neurotic spectrum disorders (Table 2).

Tab. 1. Demography and comparison of the whole sample

VARIABLE	Gender Male/ Female/ missing	Employment No/Yes/ missing	Marital Status: single/married/ divorced/ missing	Partner No/Yes/ missing	Age	Age of the disease onset	Number of hospitalizations	Lifetime duration of the disorder	Education: elementary/ vocational training/ secondary school/ university/ missing
All patients (n=343)	101/241/1	180/157/6	118/143/67/15	150/178/15	47.4 ± 13.1	36.2 ± 15.1	1.55 ± 2.92	11.7 ± 10.3	25/87/165/62/4
Neurotic spectrum disorders (n=15)	39/113/1	88/64/1	42/75/29/7	57/89/7	48.4 ± 13.9	38.6 ± 16.0	0.32 ± 0.82	9.3 ± 10.1	10/40/72/28/3
Depression (n=81)	21/60/0	35/40/6	12/44/21/4	23/54/4	52.7 ± 12.3	42.3 ± 12.8	0.51 ± 1.05	10.5 ± 10.0	5/19/40/17/0
Schizophrenia spectrum disorders (n=109)	41/68/0	33/76/0	64/24/17/4	70/35/4	42.1 ± 10.4	26.0 ± 8.8	4.22 ± 4.01	15.7 ± 9.7	10/28/53/17/1
STATISTICS	Pearson χ²: n.s.	Pearson χ²: p<0.001	Pearson χ²: p<0.001	Pearson χ²: p<0.001	Kruskal Wallis test: p<0.001	Kruskal Wallis test: p<0.001	Kruskal Wallis test: p<0.001	Kruskal Wallis test: p<0.001	Pearson χ²: n.s.

Abbreviations: M - male; F – female; Age (average age); Age of the disease onset (average age); Number of hospitalisation (average number); lifetime duration (average years); Education (number)

Tab. 2. Clinical variables of diagnostic subgroups

VARIABLE	POSITIVE COPING	NEGATIVE COPING	Q-LES-Q total	ISMI – total score	ObjCGI severity	SubjCGI severity
All patients (n=343)	12.8 ± 3.2	13.5 ± 4.1	275.5 ± 69.3	57.6 ± 13.2	3.3 ± 1.3	2.5 ± 1.2
Neurotic spectrum disorders (n=153)	12.9 ± 3.2	13.1 ± 3.9	287.9 ± 55.4	53.5 ± 11.8	2.7 ± 1.2	2.3 ± 1.2
Depression (n=81)	12.7 ± 3.2	14.3 ± 3.9	277.5 ± 67.0	56.9 ± 12.3	3.2 ± 1.3	2.5 ± 1.2
Schizophrenia spectrum disorders (n=109)	12.8 ± 3.3	13.6 ± 4.5	266.7 ± 68.4	63.9 ± 13.5	4.1 ± 1.0	2.7 ± 1.4
STATISTICS	One-way ANOVA: F=0.08 df=333: n.s.	One-way ANOVA: F=2.22 df=333; n.s.	One way ANOVA: **F=3.7 df=338, p<0.05**, Bonferroni's Multiple Comparison Test: N >SCH **p<0.05** **EFFECT SIZE F = 0.14** small difference	One way ANOVA: **F=22.1 df=339, p<0.0001**, Bonferroni's Multiple Comparison Test: N <SCH **p<0.001**; D<SCH **p<0.001** **EFFECT SIZE F = 0.37** moderate difference	Kruskal Wallis test: **p<0.001** **EFFECT SIZE F = 0.50** large difference	Kruskal Wallis test: **p<0.001** **EFFECT SIZE F = 0.14** small difference

Abbreviations: objCGI - objective Clinical Global Impression scale; subCGI - subjective Clinical Global Impression scale; Q-LES-Q - Quality of Life Satisfaction and Enjoyment Questionnaire, ISMI - Internalized Stigma of Mental Illness Scale; POS.COP - positive coping strategies; NEG. COP - negative coping strategies

Tab. 3. Partial correlations among the QoL, self-stigma, coping strategies, and demographic and clinical variables after controlling for the sex and age

Domain	Onset	Length	Hospital	objCGI	subjCGI
ISMI – total	**-0.13***	**0.18****	**0.29*****	**0.39*****	**0.52*****
POS.COP	0.05	-0.06	0.02	-0.21***	-0.36***
NEG.COP	-0.13*	0.11	0.04	0.21***	0.38***
Q-LES-Q total	0.10	-0.15*	-0.14*	-0.42***	-0.55***

Abbreviations: * p<0.05; ** p<0.01; *** p<0.001; objCGI, objective Clinical Global Impression scale; subCGI, subjective Clinical Global Impression scale; Q-LES-Q, Quality of Life Satisfaction and Enjoyment questionnaire, ISMI, Internalized Stigma of Mental Illness Scale; POS. COP, positive coping strategies; NEG.COP, negative coping strategies

Treatment

From a total of 343 outpatients, 324 of them used prescribed psychopharmacs, such as antidepressants, anxiolytics or antipsychotics (94.5 %), and only 19 patients had no history of treatment by psychopharmacs. (5.53 %). Most of the patients (N=264) reported using the psychopharmacs regularly (76.96 %), 18 of them (5.24 %) reported taking the psychopharmacs irregularly (occasionally, they overlooked to use them).

The relation between quality of life, self-stigma, coping strategies, demographic and clinical variables

After adjustment for the age and sex, the self-stigma negatively correlated with the onset of the disorder, positively with a length of the illness, a number of hospitalisations, and with the severity of the disorder measured both by objCGI and subjCGI (Table 3).

The Positive coping strategies (POS.COP) correlated negatively with the subjective and objective measured severity of the illness (subjCGI and objCGI) (Table 3), but not with other demographic factors. The Negative coping showed significant positive correlation with both types of measurements of the severity of the dis-

Tab. 4. Partial correlation between QoL, self-stigma, coping strategies after adjusting for the sex and age

	ISMI - total
POS.COP	-0.45***
NEG.COP	0.54***
Q-LES-Q total	-0.57***

Abbreviations: *** p<0.001; Q-LES-Q, Quality of Life Satisfaction and Enjoyment Questionnaire, ISMI, Internalized Stigma of Mental Illness Scale; POS.COP, positive coping strategies; NEG.COP, negative coping strategies

Tab. 5. Partial correlation among QoL and coping after controlling for the age and sex

	Q-LES-Q total
POS.COP	0.46***
NEG.COP	-0.43***

Abbreviations: *** p<0.001; Q-LES-Q, Quality of Life Satisfaction and Enjoyment Questionnaire; POS.COP, positive coping strategies; NEG. COP, negative coping

orders (Table 3). The Negative coping negatively significantly correlated with age of onset of the disorder which mean that patients who have started the disorder earlier, reported a higher level of Negative coping.

The QoL evaluated by Q-LES-Q-total statistically significantly negatively correlated with the duration of the disease and number of hospitalisations and with the subjective and objective evaluation of the severity of the illness (subjCGI and objCGI) (Table 3).

After controlling for the sex and age, self- stigma correlated negatively with Positive coping and positively with Negative coping (Table 4). Also, all subscales of ISMI were significantly connected with Positive and Negative coping.

QoL assessed by Q-LES-Q-total negatively correlates with ISMI-total after controlling for the sex and age (Table 4).

QoL (Q-LES-Q-total) correlated (after controlling for the age and sex) with Positive coping positively and with Negative coping negatively (Table 5).

QoL, self-stigma, coping strategies in three diagnostic subgroups

The self-stigma level statistically significantly differ in total score in participants with schizophrenia spectrum disorders compared to participants with neurotic spectrum disorders and depression (Table 2).

There were no statistical differences in total scores of Positive and Negative coping among three diagnostic groups (Table 2).

There were significant differences between groups in the quality of life (Q-LES-Q-total), which was the lowest in patients with the schizophrenia spectrum disorders especially in comparison with neurotic spectrum patients. There is no statistical difference in QoL among schizophrenia spectrum patients and depressive patients (Table 2).

Regression analyses

Since of the numerous issues correlated with the QoL significantly, backward stepwise regression was calculated to distinguish the most crucial factors. The dependent measurement was the Q-LES-Q total. Independent factors were a diagnostic subgroup (neurotic spectrum disorder, depression or schizophrenia spectrum disorder), age, sex, partnership, occupation, education, pension, length of the disorder, the onset of the disorder, number of hospitalisations, objCGI, subjCGI, ISMI total, POS.COP, NEG.COP. Throughout the nine steps of the backward stepwise regression, the severity of the illness, measured subjectively and objectively, employment, education, self-stigma and positive coping strategies passed significantly (Table 6).

Because of the numerous issues also correlated with the ISMI total, the backward stepwise regression was accomplished to find the most significant factors. The ISMI-total was the dependent variable. The independent factors, which entered into the regression analysis were the diagnostic subgroup (neurotic spectrum disorder, depression or psychosis), age, sex, partnership, occupation, education, pension, length of the disorder, the onset of the disorder, number of hospitalisations, objCGI, subjCGI, Q-LES-Q-total, POS.COP, NEG. COP, All requested variables entered the analysis. Throughout ten steps of the backward stepwise regression, the most influential variables connected with the ISMI were a diagnostic subgroup, subjCGI, number of hospitalisations, POS.COP, NEG.COP and Q-LES-Q sum (Table 7).

DISCUSSION

The primary goal of the investigation was to compare QoL, self-stigma, and coping strategies in three different diagnostic groups - schizophrenia spectrum disorders, depressive disorders, and neurotic spectrum disorders. All three factors have been found to significantly influence the severity and prognosis of mental disorders (Aldao *et al.* 2014, Holubova *et al.* 2016c, Vrbova *et al.* 2017, Vrbova *et al.* 2018a). However, it is not entirely clear to what extent are they prominent in different mental disorders. The main results show that:

(a) The quality of life is higher in neurotic spectrum disorders patient than in schizophrenia spectrum disorder patients. This finding might be attributed to the severity of the disorders because schizophrenia is generally considered more severe and debilitating than neurotic disorders. The QoL of depressive patients is in the middle without the significant difference between the other two groups.

Tab. 6. Backward stepwise regression analysis of Q-LES-Q Sum as dependent factor

Regressors	B	SE	β	t	Significance
Diagnostic subgroup	6.698	3.917	0.091	1.710	0.088
objCGI	-6.710	2.906	-0.130	-2.309	**0.022**
subjCGI	-12.181	3.082	-0.229	-3.952	**0.001**
employment	-26.173	6.327	-0.201	-4.137	**0.001**
education	8.705	3.593	0.111	2.423	**0.016**
ISMI-total	-1.491	0.306	-0.308	-4.869	**0.001**
POS.COP	2.518	1.037	0.128	2.429	**0.016**
ANOVA: F= 36.88 df=261; **p<0.001** Adjusted r squared = 0.49					

Abbreviations: SE=standard error; objCGI, objective Clinical Global Impression scale; subCGI, subjective Clinical Global Impression scale; , ISMI, Internalized Stigma of Mental Illness Scale; POS.COP, positive coping strategies

Tab. 7. Backward stepwise regression analysis of ISMI-total as the dependent factor

Regressors	B	SE	β	t	Significance
Diagnostic subgroup	2.887	0.731	0.189	3.952	**0.001**
subjCGI	2.270	0.549	0.206	4.133	**0.001**
Number of hospitalizations	0.602	0.208	0.140	2.886	**0.004**
POS.COP	-0.874	0.191	-0.215	-4.577	**0.001**
NEG.COP	0.719	0.153	0.220	4.688	**0.001**
Q-LES-Q total	-0.050	0.011	-0.243	-4.788	**0.001**
ANOVA: F= 62.887 df=261; **p<0.001** Adjusted r squared = 0.587					

Abbreviations: SE=standard error; objCGI, objective Clinical Global Impression scale; subCGI, subjective Clinical Global Impression scale; ISMI, Internalized Stigma of Mental Illness Scale; POS.COP, positive coping strategies; Q-LES-Q, Quality of Life Satisfaction and Enjoyment Questionnaire

(b) Participants with schizophrenia spectrum disorders had the higher mean score of self-stigma than other two groups of patients. There is no difference between neurotic spectrum disorders patients and depressive disorders participants in the level of the self-stigma

(c) The meant scores of the positive and negative coping strategies in neurotic, depressive and schizophrenia spectrum disorders patients are nearly the same; there is no difference between groups.

Another important part of results, focusing on the relationships between factors shows, that:

(d) The overall QoL is highly correlated with the objective measurement and subjectively assessed severity of the illness, employment, education, self-stigma, and positive coping. All these factors passed with statistical significance through multiple regression analysis. The dividing into diagnostic subgroup is less important – doesn´t pass with statistical significance.

(e) On the other site, the overall self-stigma is highly correlated with the diagnostic subgroup, but also with subjective evaluation of the severity of the illness, the number of hospitalisations, negatively with positive coping and positively with negative coping, and also with the overall quality of life. All these factors passed with statistical significance through multiple regression analysis.

These results are remarkable because some factors, such as the severity of the illness, the self-stigma, and the coping strategies, are changeable in all of the presented diagnostic groups. The severity of the disorder is manageable using psychopharmacs, the self-stigma and coping using cognitive behavioural therapy (Ociskova *et al.* 2015, Ociskova & Prasko 2015).

In the next part of the discussion, we focus on our hypotheses. We articulated seven hypotheses as follows:

(1) The quality of life, coping strategies, and self-stigma will be related to the subjective and objective severity of the illness.

This hypothesis is confirmed in the study after adjusting for the age and sex, concerning all three observed variables and severity of the disorder. It means that the patients, whose psychopathology has been evaluated by the clinician as less severe or who self-evaluated themselves as less ill, less self-stigmatised themselves and use more positive coping strategies and less of negative coping; and they have the significantly higher quality of life. Many earlier studies highlight a significant association between the severity of illness and some of these

variables (Goossens *et al.* 2008, Aldao *et al.* 2010, Sidlova *et al.* 2011, Oakley *et al.* 2012, Holubova *et al.* 2015, Grambal *et al.* 2016, Holubova *et al.* 2016d, Kamaradova *et al.* 2016, Ociskova *et al.* 2015, Ociskova *et al.* 2016, Prasko *et al.* 2016, Vrbova *et al.* 2018a, Vrbova *et al.* 2018b). Our data show that all these factors are interrelated.

(2) The self-stigma negatively correlates with the QoL.

This hypothesis has been established in the study after controlling for the sex and age. ISMI correlate negatively with Q-LES-Q total. This cross-sectional investigation cannot answer the question of causality. These findings are supported by the research of Vrbova *et al.* (2017) and Ran *et al.* (2018) in schizophrenia spectrum disorder patients; in Ociskova *et al.* (2016) in neurotic spectrum disorders; in Oakley *et al.* (2012) in patients with depression. In these studies, the level of self-stigma negatively correlates with QoL in separate diagnostic groups. Our study shows that this link between self-stigmatisation and quality of life may have a transdiagnostic nature.

(3) The self-stigma correlates positively with negative coping strategies; negatively with positive coping.

This hypothesis was also established in the investigation regardless of the type of mental disorder. The results are in accordance with our previous studies in separate diagnostic subgroups (Ociskova *et al.* 2015, Holubova *et al.* 2016c, Holubova *et al.* 2017). As we expected, self- stigma was associated with Positive coping negatively and with Negative coping positively after adjusting for the age and sex. These outcomes are in agreement with Rea *et al.* (2003) who identified that when patients implement effective coping strategies to deal with symptoms of the illness, they felt less stressed and stigmatised, and show a decreased rate of hospitalisations and relapses. However, in connection with self-stigma and coping strategies, the severity of symptoms and type of mental illness play a significant role according to our research findings (see hypothesis n.1).

(4) The quality of life correlates with positive coping positively; with negative coping negatively.

This hypothesis was also confirmed. We found out that Positive and Negative strategies are associated with the quality of life and lead to the fact that Positive coping has a positive effect on QoL. These findings are in link with the outcomes of Dijkstra & Homan (2016), where strategies were connecting with more engaged coping such as reassuring thoughts and active confronting, are related with the higher sense of control and psychological well-being. On the other side, strategies connected with disengagement copings, such as avoidance, passive reaction pattern, and palliative reaction, were related with a reduced amount of perceived control, which in turn was negatively linked with psychological well-being.

Gattino *et al.* (2015) point to the finding that problem-focused coping strategies, i.e., using support, positive reframing, and active coping, increase the QoL in all its domains, while emotion-focused coping, i.e., self-blame, reduces QoL. Another study also showed similar findings (Herbert & Gregor 1997, Pereira-Morales *et al.* 2018).

(5) Patients with depressive disorder and neurotic spectrum disorder have a lower of self-stigma compared to patients with schizophrenia spectrum disorder.

Statistical analyses have confirmed this hypothesis with the findings that patients with depression or neurotic spectrum disorders showed a lower of self-stigma than patients with the schizophrenia spectrum disorders. There is no difference between neurotic spectrum disorders than in depressive individuals in the total score of ISMI.

The study of Kamaradova *et al.* (2016) found no dissimilarities between diagnostic groups in the investigation compared self-stigma in outpatients with bipolar disorders, schizophrenia spectrum disorders, neurotic spectrum disorders, depressive disorders, patients with alcohol dependence, and personality disorders in the same cross-sectional design, but in the university clinic setting (see discussion above). The patients from the study of Kamaradova *et al.* (2016) were, younger, with a shorter duration of the illness, higher education, treated in the university setting. It is possible, that patient with schizophrenia spectrum disorder attending university outpatient´s setting is in average less seriously ill than patient attending standard psychiatric outpatient setting, what is confirmed with higher mean CGI in schizophrenia spectrum patients in our investigation than in the study of Kamaradova *et al.* (2016).

(6) Quality of life will be lower among participants with schizophrenia spectrum disorders in comparison with a patient with neurotic disorders, and participants with depressive disorders.

The stated hypothesis was confirmed in this study because of significant differences among groups in the total score of QoL. Results in this investigation can lead to consideration, that schizophrenia spectrum disorders disorder is often more severe and persistent than other mental illnesses with complex impacts on QoL (Ventura *et al.* 2009, Lepage *et al.* 2014).

(7) Patients with neurotic disorders use more positive management strategies and less negative coping strategies than participants with schizophrenia spectrum disorders, and participants with depressive disorders.

This hypothesis was not confirmed at all, because we did not discover significant differences in total scores of Positive and Negative coping using among these three groups.

Regression analysis detected that the essential factors connecting with QoL were the objective and subjective severity of the illness, education, employment, self-stigma and Positive coping strategies. About the self-stigma, regression analysis proved that the most critical factors were the diagnostic subgroup, subjCGI, number of hospitalisations, Positive and Negative coping, and the QoL. Each of these variables influences the main

monitored variables for different disease groups to a different extent, so further investigations are required to better identify the effects of individual variables, especially about causality. Identifying contributing factors can be used targeted psychotherapeutic interventions in a comprehensive effort to improve conditions for mentally ill people at all levels.

Limitations

Most of the research information was gained by using self-reported forms, which can be considered limiting concerning subjective bias. This is true excepting demographic data and the objectively assessed severity of the illness. Limitation of the survey is that the exact type and quantity of the prescribed psychopharmacs were not monitored. Another limitation is that the level of depression was not measured, so it is not possible to compare scores of depressive symptoms of the three groups. Another limitation was that the interrater reliability of the physicians was not completed. Finally and most prominently, longitudinal surveillance would be better than a cross-sectional investigation, because the changes in QoL, self-stigma, and coping strategies in the course of the different stages of the therapy could be useful for the recognition of the causality.

CONCLUSION

This investigation shows that the level of self-stigma and coping are main factors connected to the QoL of three diagnostic groups of patients. Patients with depression, neurotic spectrum disorders and those with schizophrenia spectrum differ in the total scores of QoL. Schizophrenia spectrum disorder patients had statistically significantly lower means scores in against the other two groups. No differences were found between overall scores of Positive and Negative coping among three groups. Patients with depression or neurotic patients do have lower self-stigma in comparison with patients with schizophrenia spectrum disorders. Actual severity of illness plays a significant role in all of three examined variables - QoL, self-stigma, and coping strategies. The longitudinal investigation that would observe the development of these factors over a more extended period could be the subsequent step to indicate the causations involved.

DISCLOSURE

The authors declare no conflicts of interest in this study.

ACKNOWLEDGEMENT

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