Psychiatria Danubina, 2021; Vol. 33, Suppl. 4, pp 518-528
Conference paper

Original article

DIFFERENCES IN RESILIENCE, SELF-STIGMA AND MENTAL HEALTH RECOVERY BETWEEN PATIENTS WITH SCHIZOPHRENIA AND DEPRESSION

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SUMMARY

Introduction: *There is growing evidence that resilience is a key factor for prevention of mental disorder. Low resilience levels were found in individuals at clinical high risk to psychosis and schizophrenia. Higher level of resilience was associated with better functioning, less severe negative, anxiety and depressive symptoms. Low level of self stigma is associated with recovery from schizophrenia. Aim of this paper was to determine whether resilience and self-stigma are significant predictors of mental health recovery in patients diagnosed with schizophrenia and depression treated in a rehabilitation-oriented program.*

Subjects and methods: *51 patients diagnosed with psychoses and 53 patients with depression treated in day hospital participated in this study. Internalized Stigma of Mental Illness Scale (ISMI), The Boston University Empowerment Scale (BUES), Perceived Devaluation and Discrimination (PDD) Scale, Mental Health Recovery Measure (MHRM) and Resilience questionnaire were used.*

Results: *Self-stigma positively correlates with PDD (r=0.44; p=0.000), and negatively with BUES (r=-0.78; p=0.000), resilience (r=-0.51; p=0.000) and with recovery (r=-0.59; p=0.000) in two groups. In addition, a higher PDD score indicates poorer levels of empowerment (r=-0.42; p=0.000), resilience (r=-0.35; p=0.000) and recovery (r=-0.44; p=0.000). Mental health empowerment, resilience and recovery all correlate significantly and positively with each other. Cross-group comparison results show the best results for patients with schizophrenia. Sociodemographic factors do not affect resilience, self-stigma nor recovery.*

Conclusion: *Self-stigma and resilience are connected with moderate correlation. Research supports the need for interventions that prevent self-stigma and increase resilience in the treatment of schizophrenia patients.*

Key words: *resilience - self-stigma - psychiatric illness – schizophrenia – rehabilitation - stress resistance*

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INTRODUCTION

Resilience is the psychological competence to deal with and go beyond traumatic or stressful events, resulting in being positively changed and strengthened. It is the ability to repair oneself after damage, to cope, to resist something, but also to build and succeed in a positive reorganizing life, despite difficult situations (Rossi et al. 2017). It is an outcome, product of successful adaptive functioning in the presence of adverse events (Bonnano 2004). Resilience includes the capacity to cope with future negative events (Southwick et al. 2014), individual's ability to use external support systems such as family and social network (Staring et al. 2009). Personal resources include personality traits such as emotional stability, autonomy, adaptability, and strong ability to plan and organize life (Xanthopoulou et al. 2007) which serve as protective factor to face adversity. Personality strengths that relate to resilience include high self-esteem, extroversion and optimism, social competence, problem solving, autonomy and sense of purpose.

In summary, resilience refers to the processes of patterns of positive adaptation and development in the context of significant threats to an individual' homeostasis, it is a dynamic, multidimensional construct which helps the individual to cope with stress, referring not only to psychological skills but also to the ability to include family, social, and external support systems (Zizolfi et al. 2019). Resilience includes recovery (return to homeostasis) and sustainability (potential to grow, move forward) (Masten & Wright 2010).

There is growing evidence that resilience is important for positive mental health (Trompetter et al. 2016) as well as for recovery form mental illness (Wahl 2012, Patel et al. 2018), so it can be a key factor for prevention of mental disorder. The identification and development of personal resources could integrate and empower recovery strategies and ensure more positive outcomes, in both psychosocial functioning and symptomatology (Poloni et al. 2018).

Patients suffering from schizophrenia show chronic difficulties in coping with major stressful events and low stresses of daily life (Corrigan & Toomey 1995, Mueser et al. 1997) they use weaker adaptive mechanisms (Van den Bosch et al. 1993) which may be related to exacerbation thus making them more vulnerable to stressors (Rocca et al. 2009).

Low resilience levels were found in individuals at clinical high risk state for development of psychosis (Drvaric et al. 2015) and schizophrenia. High resilience levels in individuals at high risk for psychosis are related to less severe negative, anxiety and depressive symptoms, as well as higher social functioning (Bozikas

& Parlapani 2016). Schizophrenia patients with higher resilience levels and optimism showed higher levels of happiness that associated in turn with lower perceived stress and higher personal mastery (Jain & Jain 2020).

Resilience and recovery are related concept. In comparison with clinical recovery related to remission, personal recovery is a process that is individual and unique to each person. The most frequently cited definition of recovery states that recovery is a deeply personal, unique process of changing one's attitudes, values, feelings, and goals, skills and/or roles. It is a way of living a satisfying, hopeful, and contributing life even with the limitations caused by illness. Recovery involves the development of new meaning and purpose in one's life» (Anthony et al. 2002). Recovery is a self-determined and holistic journey that people undertake to heal and grow. Recovery is facilitated by relationships and environments that provide hope, empowerment, choices and opportunities that promote people reaching their full potential as individuals and community members" (Nelson et al. 2014). A recovery orientation in treatment of mental illness holds that individuals are more than the sum of their symptoms-diagnoses and that recovery involves "a redefinition of one's illness as only one aspect of a multi-dimensional sense of self, capable of identifying, choosing, and pursuing personally meaningful goals and aspirations." (Fitzpatrick 2013).

Self-stigma or internalized stigma is related to accepting stereotyped attitudes of mental illness by a person with mental illness as personally relevant, which leads to decrease in self-esteem and self-efficacy (Štrkalj-Ivezić et al. n.d.) More than one third of patients with schizophrenia in a multicenter study showed high levels of self-stigma (Brohan et al. 2010). Research shows that self-stigma is associated with difficulties with subjective and objective recovery including helplessness (Lysaker et al. 2007), decreased self-esteem (Watson & River 2005, Corrigan et al. 2006), low self-esteem, low quality of life (Lysaker et al. 2007, Fung et al. 2007), impoverishment of social relationships (Lysaker et al. 2007) and increased depression risk (Ritsher et al. 2003). There is an association between high levels of internalized stigma and reduced perception of empowerment as well as increased perception of discrimination (Brohan et al. 2010, Sesar et al. 2016). Low level of stigma is related with increase social contact in sample of patients with schizophrenia (Brohan et al. 2010) and higher level of self-efficacy. Higher levels of empowerment protect against self-stigma (Corrigan et al. 2006).

Research (Livingston & Boyd 2010, Sesar et al. 2016) found that socio-demographic characteristics (gender, age, education, employment, marital status, income, nationality) were not significantly correlated with self-stigma, while high levels self-stigma associated with loss of hope, low self-esteem, low empowerment, low quality of life and poor social support.

The main objective of this study was to determine whether resilience and self-stigma are significant predictors of mental health recovery in patients diagnosed with schizophrenia and depression treated in a recovery-oriented rehabilitation program. It is hypothesized that patients with low levels of self-stigma and high levels of resilience will have better treatment outcomes and it is to be expected that rehabilitation programs focused on recovery will have the effect of reducing self-stigma, increasing resilience and recovery. To this end, we sought to investigate the relationship between self-stigma, resistance and recovery in patients diagnosed with schizophrenia and schizoaffective psychosis, treated in long term supportive group therapy (at least one year), compared with patients diagnosed with depression treated in a short-term (three month) program day hospitals.

SUBJECTS AND METHODS

The study was conducted during the first half of 2019 at the Vrapče Psychiatric Clinic in Zagreb. It involved 104 participants with a psychiatric disorder, including 68 women and 36 men. The average age of the participants was 47.3 years with an SD of 10.96 (range 22-74 years). There were 53 participants with depression and 51 with psychotic disorders. Onset of treatment for mental illness averaged 31.7 years with SD=12.38. Age of defining the first diagnosis ranged from 12 to 60 years. Other sociodemographic and disease-related data are provided in Table 1.

The study was approved by the Ethics Committee of the University of Applied Health Sciences and the Psychiatric Clinic Vrapče. Participants were informed verbally and in writing of the methods of implementation and the purpose of the research and the confidentiality of the results, after which they signed informed consent and completed the questionnaire individually. The questionnaire was completed during discharge from a day hospital or rehabilitation program.

RESULTS

Descriptive statistics for the entire sample

In some categories, there is a total of more than 100% of the answers, as participants provided multiple answers – such as the question of who they live with, the choice of spouse / children and parents or relatives. In addition, it is possible that somewhere the sum of percentages does not reach 100% due to unanswered questions that we did not specifically express. Sociodemographic data and "personal aspects of the disease" data are presented in Table 1.

Our sample was predominantly comprised of women, with a high school diploma, followed by higher education - a quarter of the sample, and least amount of participants with a master's degree or Ph.D.

Table 1. Distribution of sociodemographic and disease-related data of psychiatric patients (N=104)

Variable	Category	Frequency	%
Gender	Male	36	34.6
	Female	68	65.4
Education	Elementary school	14	13.5
	High school	63	60.6
	University	25	24.0
	MSc, Ph.D	2	1.9
Current residence	Homeless	1	1.0
	Hospital	6	5.8
	Own property (house, flat)	82	78.8
	Sub-tenant	9	8.7
	Relatives	6	5.8
Who do they live with	Spouse / children	47	45.2
	Parents or relatives	29	27.9
	Friends	2	1.9
	Roommate	1	1.0
	Alone	23	22.1
Partner	Yes	53	51.0
	No	47	45.2
Friend	Yes	91	87.5
	No	12	11.5
Person of trust	Yes	85	81.7
	No	16	15.4
A close person within the family	Yes	46	44.2
	No	57	54.8
Employment	Full time	26	25.0
	Part time	9	8.6
	Unemployed, looking for a job	12	11.5
	Unemployed because of benefits	2	1.9
	Disability	19	18.3
	Student	1	1.0
	Retired	37	35.6
Income	Disability	16	15.4
	Disability pension	22	21.1
	Donations, welfare assistance	3	2.9
	Regular pension	15	14.4
	Paycheck	26	25.0
	Family assistance	26	25.0
	Other	12	11.5
Familiarity with diagnosis	Yes	86	82.7
	No	4	3.8
	Not sure	13	12.5
Consent to diagnosis	Completely agree	74	71.2
	Partially agree	12	11.5
	Disagree	2	1.9
	Not sure	14	13.5

Participants mostly live in their own property – almost 80%, with less than 10% representing all other categories, most of which are sub-tenants. Slightly less than half of the sample live with spouses and/or children, followed by those who live with their parents or relatives - 28%, 22% live alone, while the other categories are at very low frequencies. There is only slightly more than half of the sample in a relationship with a partner. Vast majority have friends and a person of trust. Almost 55% of participants stated that they do not have a close person within the family.

In terms of employment, the majority of the sample is comprised of pensioners with 35%, a quarter of the sample is full-time employed, followed by patients who cannot work due to disability, followed by unemployed job seekers. Other categories are represented by less than 10%. Four participants provided two answers each, most often a part-time job with a different status. Although most retirees are in the sample, paycheck and family assistance are the most common sources of income for participants, followed by disability pensions and regular pensions. 13 participants stated two

or even three sources of income, the most commonly – family assistance.

Over 80% of the sample is aware of their diagnosis, 12.5% are not sure, while four patients (2.6%) do not know the diagnosis. 82% of the participants in the sample fully or partially agree with their diagnosis, 13.5% are uncertain, and two patients completely disagree.

The average value of self-stigma belongs to the category of very low, empowerment is moderate, the perception of impairment and discrimination is present but not pronounced, resilience is relatively low, it is on the border of the first two categories - developmental and established. The theoretical range of a mental health recovery measure is 1 to 5, so an average value of 3.49 indicates a slight recovery. There are also different categorizations for depression (with 3, 4, or even 6 categories), but the averages obtained all indicate moderate depression. We can observe that the median (C) and the arithmetic mean are quite similar for all variables except for depression where there is a deviation of 2 and a half points.

Averages in the empowerment domain show that our participants rate their sense of power better than their confidence level. Of the various domains of MHRM, the most positive result, observing the medians, was obtained for learning and self-redefinition, spirituality and overcoming setbacks, while general well-being was the weakest.

Comparison of two different diagnoses

In addition to the condition of the whole sample, we were also interested in comparing the two groups with different mental health problems, so we performed a t-test for this purpose. Table 2 presents descriptive statistics for all composite variables (scales and subscales), with age and onset of treatment, and Table 3 shows only significant t-tests.

We can observe a continuous trend of results: participants with depression are older and started treatment later. In addition, in all observed variables they show poorer status compared to psychotic patients.

According to the results on the self-stigma questionnaire, both groups express low self-stigma. Perceptions of impairment and discrimination are also, on average, slightly above the midpoint of the scale (2.59 for psychoses, 2.75 for depression) and we can say that it is moderate. The empowerment measured by the BUES for both groups is also moderate (depression with a value of 2.5 exactly at the limit of low and moderate empowerment), and the differences are not numerically pronounced. In terms of resilience, depressed patients fall into the weakest category, which is developmental resilience, while participants with psychosis belong to a slightly better category with established resilience.

We can conclude that the most positive results were obtained for mental health recovery (MHRM) because the results for both groups are in the upper half of the scale values (3.13 for depression, 3.87 for psychosis).

Interpreting the data shown in Table 4, we can see that the group of participants with psychotic disorders is significantly younger than the participants with depression (the difference in the average is five and a half years) and treatment occurred significantly earlier. The empowering experience (BUES) and the results on its subscales are more pronounced than in depressed patients. In the psychotic patients we have also noticed a significantly higher levels of resilience and better mental health

Table 2. Descriptive statistics for composite variables (total scores on questionnaires and their domains) for patients with mental disabilities (N=104)

	C	M	SD	Min	Max
Composite					
Self-stigma – ISMI	2.17	2.17	0.47	1.17	3.48
Empowerment – BUES	2.65	2.58	0.39	1.65	3.59
Devaluation – PDD	2.67	2.67	0.43	1.33	3.58
Resilience	39	37.73	9.75	12	58
Mental health recovery – MHRM	3.62	3.49	0.78	1.50	5.00
Depression – BDI*	27	24.54	12.75	0	52
BUES Domains					
Self-esteem - self-efficacy	2.78	2.69	0.62	1.00	4.00
Power - powerlessness	3.12	3.02	0.70	1.13	4.50
MHRM Domains					
Overcoming obstacles	3.75	3.72	0.67	1.50	5.00
Empowerment	3.50	3.31	0.95	1.00	5.00
Learning and self redefinition	4.00	3.84	0.85	2.00	5.00
Basic functioning	3.50	3.37	0.89	1.50	5.00
General welfare	3.25	3.19	1.08	1.00	5.00
New potential	3.50	3.31	0.86	1.00	5.00
Spirituality	3.75	3.45	1.35	1.00	5.00
Advocacy and improvement	3.50	3.42	0.82	1.00	5.00

Legend: * only for a group of participants with depression; For all results, except for resistance and BDI, relative total results are expressed for ease of comparison

Table 3. Descriptive statistics for each of the groups of difficulties separately: depressive (N = 53) and psychosis (51)

Variable	Diagnosis	M	SD	Min	Max
Age	depression	50.04	10.812	22	74
	psychosis	44.45	10.473	27	64
Treatment onset	depression	37.51	12.233	12	60
	psychosis	25.72	9.366	15	53
ISMI	depression	2.25	0.548	1.17	3.48
	psychosis	2.09	0.390	1.24	2.97
PDD	depression	2.76	0.408	2.08	3.58
	psychosis	2.59	0.441	1.33	3.42
BUES	depression	2.50	0.455	1.65	3.59
	psychosis	2.66	0.288	2.00	3.41
RESILIENCE	depression	32.76	9.953	12	58
	psychosis	42.80	6.398	28	56
MHRM	depression	3.13	0.808	1.50	4.77
	psychosis	3.87	0.547	2.50	5.00
BUES self-esteem, self-efficacy	depression	2.56	0.687	1.00	4.00
	psychosis	2.84	0.502	1.33	4.00
BUES power - powerlessness	depression	2.87	0.773	1.13	4.50
	psychosis	3.19	0.564	1.50	4.50
MHRM Overcoming obstacles	depression	3.50	0.695	1.50	5.00
	psychosis	3.95	0.568	2.50	5.00
MHRM Empowerment	depression	2.89	0.969	1.00	5.00
	psychosis	3.78	0.685	2.00	5.00
MHRM Learning and self-redefinition	depression	3.43	0.883	2.00	5.00
	psychosis	4.27	0.547	2.75	5.00
MHRM Basic functioning	depression	2.96	0.843	1.50	5.00
	psychosis	3.82	0.715	2.00	5.00
MHRM General welfare	depression	2.67	1.109	1.00	5.00
	psychosis	3.73	0.751	2.25	5.00
MHRM New potentials	depression	2.97	0.942	1.00	5.00
	psychosis	3.70	0.563	2.25	5.00
MHRM Spirituality	depression	3.04	1.362	1.00	5.00
	psychosis	3.88	1.208	1.00	5.00
MHRM Advocacy and improvement	depression	3.19	0.885	1.00	4.50
	psychosis	3.67	0.685	2.25	5.00

Legend: in bold are those variables for which a significant difference was obtained by t-test

Table 4. Significant differences obtained by t-test between the group of depressed (N=53) and psychotic patients (51)

Variables	t	df	P
Age	2.585	95	0.011
Onset of treatment	5.533	97	0.000
Resilience	6.039	85	0.000
BUES	2.143	82	0.035
Self-esteem - self-efficacy	2.327	91	0.022
Power - powerlessness	2.327	91	0.022
MHRM	5.027	76	0.000
Overcoming obstacles	3.615	102	0.000
Empowerment	5.379	94	0.000
Learning and self-redefinition	5.767	86	0.000
Basic functioning	5.376	93	0.000
Advocacy and improvement	2.976	97	0.004
General welfare	5.503	85	0.000
New potentials	4.769	85	0.000
Spirituality	3.245	96	0.002

recovery. In all domains of mental health recovery, participants with psychosis have significantly higher scores compared to depressed patients. The difference for the sense of discrimination (PDD) is not statistically significant, but it is very close to significance (t=1.94; df=97; P=0.055) and the difference is again moving towards a more positive experience of psychotic patients.

For variables that are distributed significantly different from the normal distribution, we performed additional verification by a non-parametric statistical procedure. The Mann-Whitney U test confirmed the results of the t-test because a significant difference was obtained for all eight MHRM domains as well as for both BUES domains, with risk levels ranging from 0.000 to 0.027. As with the parametric statistics, no significant difference was found for PDD alone (P=0.09).

Differences related to sociodemographic characteristics

Considering the numerous sociodemographic characteristics, as well as additional data related to the disease, their relationship with the different measures used was analyzed: gender, partner, friend, person of trust, close family member, employment, income, familiarity and acceptance of diagnosis.

Men and women across the sample differ significantly in age. Women are on average 6 and a half years older than men. Men are 43 years old and women are just over 49 and a half years old (t=2.907; df=95; P=0.005). A significant difference with identical significance was obtained for both BUES subscales: power - powerlessness and self-esteem – self-efficacy (t=2.105; df=96; P=0.038) toward a more positive outcome for women.

Participants who were diagnosed with some form of depressive disorder (NZ=36; NM=14) had a significant gender difference for the three subscales: new potentials on MHRM (t=2.175; df=50; P=0.036), self-esteem - self-efficacy on BUES (t=2.049; df=49; P=0.046), and power-powerlessness on BUES (t=2.049; df=49; P=0.046). In all statistically significant differences, women have achieved better results. In the group of psychotic patients, there were 14 men and 36 women, and the difference was obtained only for age (t=2.328; df=45; P=0.024): women are on average 7 years older than men (MZ=47.4: MM=40.5).

In terms of whether the participants had a partner (53) or not (47), there was a significant difference across the whole sample only for age (t=2.317; df=92; P=0.023) and treatment initiation (t=2.414; df=98; P=0.018): participants that are in a relationship are, on average, five years older (49.8 years compared to 44.6) and started treatment six years later than those without a partner (34.4 in; compared to 28.5).

There were 34 patients with depression in the cohort and 17 without a partner. A significant difference was obtained only for the MHRM subscale - new potentials (t=3.1; df=47; P=0.003) where participants that are in the relationship achieved a significantly better result. In participants with some of the psychotic disorders, the relationship between patients in a relationship and without a partner is reversed: here, most of the sample consists of patients without a partner: 19 have a relationship and 30 are without a partner. Differences with respect to this feature were obtained for the overall score on the BUES - empowerment scale (t=2.118; df=41; P=0.040), and both of its subscales: self-esteem - self-efficacy (t=2.132; df=43; P=0.039), and power – powerlessness (t=2.132; df=43; P=0.039). There was also a significant difference for MHRM - mental health recovery (t=2.096; df=38; P=0.043), two self-empowerment subscales (t=2.422; df=45; P=0.020) and advocacy and improvement (t=2.722); df=44; P=0.009). In all groups, participants that have a partner achieved significantly better results than those that are not in a relationship.

When asked if they considered someone who they often see, a friend – 91 participants responded positively and 12 negatively. Due to the small number of participants who have no friends, the results obtained should be taken with reserve. Table 5. shows the results only for statistically significant differences.

We have observed that for all the obtained differences, non-friends achieve significantly worse results, with these differences making a significant shift on the scale.

In the group of patients with depression, only seven patients stated that they had no friend compared to 46 who responded positively, and the difference was obtained only on the overall mental health recovery score, and on five of its subscales, the direction being the difference as in the previous examples: better status reported patients who declare they have a friend. Given that only five of them reported having no friends in the group of psychotic patients, we did not test for significance of the difference between the subgroups.

When asked if they had a best friend, someone they can trust, 85 patients answered positively, while 16 answered in the negative. A large number of significant differences on scales and subscales were obtained for this dichotomous variable (Table 6).

Participants that have a person of trust have shown a significant difference in all categories: self-stigma is lower, resilience and mental health recovery are higher, encompassing as many as seven of the eight mental health recovery aspects and both subscales on the Empowerment Scales (BUES).

In patients with depression, 43 have confidence, while eight do not. A significant difference between them was obtained for the level of general depression - BDI (t=2.267; df=43; P=0.028), where the difference is as high as 11 points (M for those that have a person of trust is 34.4, and for those without 23.2). For BUES, MHRM and resilience, and for all their subscales, a significant difference was also obtained in the same direction as for the previous groups: non-trusted participants were significantly worse off.

Table 5. Average values and difference testing with respect to partner ownership

Variable	Among the people that you often see, do you consider anyone a friend?	M	t	df	P
PDD	yes	2.64	2.122	96	0.036
	no	2.94			
MHRM	yes	3.58	3.227	83	0.002
	no	2.77			
Self-empowerment	yes	3.39	2.623	99	0.010
	no	2.61			
Learning and self-redefinition	yes	3.94	3.457	98	0.001
	no	3.08			
Basic functioning	yes	3.43	1.992	92	0.049
	no	2.86			
Advocacy and improvement	yes	3.54	3.838	96	0.000
	no	2.62			
General welfare	yes	3.29	2.685	93	0.009
	no	2.42			
New potentials	yes	3.40	2.669	96	0.009
	no	2.71			
Spirituality	yes	3.59	2.925	95	0.004
	no	2.36			

Table 6. Average values and testing differences in regard to having a person of trust

Variable	Do you have best friend, someone you can confide to?	M	t	df	P
ISMI	yes	2.12	2.092	86	0.039
	no	2.40			
Resilience	yes	3.24	2.437	96	0.017
	no	2.71			
MHRM	yes	3.63	3.857	83	0.000
	no	2.76			
Overcoming obstacles	yes	3.85	2.884	99	0.010
	no	3.19			
Self empowerment	yes	3.42	2.573	97	0.012
	no	2.75			
Learning and self-redefinition	yes	3.99	3.197	97	0.005
	no	3.14			
Basic functioning	yes	3.49	3.111	92	0.002
	no	2.73			
New potential	yes	3.46	3.350	95	0.001
	no	2.70			
Spirituality	yes	3.66	3.351	93	0.001
	no	2.47			
Advocacy and improvement	yes	3.55	3.265	94	0.002
	no	2.83			
Self-esteem - self-efficacy	yes	2.77	2.327	93	0.002
	no	2.39			
Power - powerlessness	yes	3.12	2.327	93	0.002
	no	2.69			

Of the 50 patients with psychotic disorder who answered this question, 42 have a person of trust and eight do not. They differ significantly in mental health recovery (MHRM) and only two subscales of that questionnaire. All the differences are in the same direction as already stated.

There are 46 patients in the sample that have a close family member, while the other 57 do not. No statistically significant difference was found between them for the total scores on the scales and subscales. A significant difference was obtained only for age (t=2.48; df=94; P=0.015). In the group of patients with depression, the ratio of those who have and who do not have a close family member is 28 to 25, and in patients with psychotic disorder 29 to 21, while there are no significant differences between them.

Table 7. Average values and difference testing with respect to familiarity with the diagnosis

Variable	Were you informed of your diagnosis by your physician?	M	t	df	P
ISMI	yes no / not certain	2.11 2.50	2.717	87	0.008
BUES	yes no / not certain	2.61 2.35	2.389	91	0.019
Resilience	yes no / not certain	3.27 2.47	3.829	98	0.000
MHRM	yes no / not certain	3.62 2.75	3.970	84	0.000
Self-empowerment	yes no / not certain	3.44 2.65	3.271	99	0.001
Learning and self-redefinition	yes no / not certain	3.99 3.06	4.326	98	0.000
Basic functioning	yes no / not certain	3.49 2.74	3.223	93	0.002
General welfare	yes no / not certain	3.37 2.18	4.232	94	0.000
New potentials	yes no / not certain	3.43 2.75	3.092	97	0.003
Spirituality	yes no / not certain	3.58 2.85	2.041	95	0.044
Advocacy and improvement	yes no / not certain	3.53 2.81	3.344	96	0.001
Self-esteem - self-efficacy	yes no / not certain	2.75 2.39	2.200	95	0.030
Power - powerlessness	yes no / not certain	3.09 2.69	2.200	95	0.030

86 participants were informed of their diagnosis, while 17 was not or was uncertain. The results of descriptive statistics and significant differences are presented in Table 7.

Patients who were not informed of their diagnosis or are not sure have a significantly worse status on all scales and subscales for which a significant difference is obtained, with these differences being quite noticeable in some aspects. For example, on the General Welfare Subscale the difference is 1.19 on a scale of 1 to 5.

For patients with depression, the ratio is 40 to 13, and those who are familiar with their diagnosis score significantly better on the level of resilience (t=2,598; df=49; P=0,012) and on the mental health recovery scale (t=3,067; df=42; P=0.004), as well as on five of its subscales. Only a small number of participants with psychotic disorder do not know their diagnosis or are uncertain about it – only four, while the rest know, and due to the large difference in samples, we did not check the significance of differences between these groups.

When asked about consent to the diagnosis, four answers were offered to the participants (I completely agree, partially agree, disagree at all, not sure). The first two responses were treated together (category *yes*) with 86 participants, while the remaining two categories were grouped in the *no* or *uncertain* category with 16 participants. A significant difference was found between them only for the level of self-stigma - ISMI (t=2.252; df=86; P=0.027) and for only one MHRM subscale: advocacy and improvement (t=2.202; df=95; P=0.030). Self-stigma is more pronounced in a group that disagrees or is uncertain about their diagnosis, and their score on the advocacy and improvement subscale is weaker.

In patients with depression, those who agree with their diagnosis in relation to those who are not or are uncertain are 44:7 and in psychotic 42:9. There was no significant difference for patients with psychosis, while significant differences were found for mental health recovery (t=2.391; df=40; P=0.022) and for three of its subscales: the category of participants who agreed with the diagnosis had better status.

For employment (work status), participants were able to choose 9 categories, which were classified into two categories: the first consists of those who *work* full time or part-time, while the category *does not work* included students, unemployed for whatever reason, retired and disabled. 33 patients work, while 69 do not. Between them, a significant difference was obtained at the beginning of treatment (t=4.802; df=102; P=0.000): patients that work began their treatment up to 11 years later. Patients who do not work are significantly more resilient (t=3.083; df=99; P=0.003), experience less impairment and discrimination (t=2.140; df=97; P=0.035), and achieve greater results on overall mental

recovery health (t=2.344; df=84; P=0.021), and in five of its domains: overcoming obstacles (t=3.666; df=102; P=0.000), self-empowerment (t=3.03; df=100; P=0.003), baseline functioning (t=3.396; df=93; P=0.001), general well-being (t=2.015; df=94; P=0.047) and spirituality (t=2.844; df=96; P=0.005).

The ratio of those who *work* and *do not work* in the depressed group is 28 to 25, while in the group of patients with psychotic disorder only 5 patients were employed, compared to 46 who do not work. Therefore the significance of the differences will not be evaluated for them. Patients with depression that are employed, began treatment significantly later than those who were not (t=2.555; df=38; P=0.015). The latter started treatment at an average age of 33, while employed patients began their treatment at the age of 41.5.

Correlations

No overall score on the scales correlates with age, but only significantly correlates positively with the start of treatment (r=0.581; p=0.000): the older the person, the later he or she begins treatment. Self-stigma has been shown to be highly correlated with scores on all other scales and subscales, but due to the abundance of correlations, we will not report the results for subscales further. Self-stigma correlated positively with PDD (impairment and discrimination) (r=0.532; p=0.000) and depression (r=0.654; p=0.000), and negative with BUES (r=-0.738; p=0.000), resilience (r=-0.504; p=0.000) and recovery (r=-0.530; p=0.000). These are significant, solid, and even high connections: the more one experiences self-stigma, the more they perceive greater impairment and discrimination, the more depressed they are, and the weaker, resilient and resilient they are. Also, a higher PDD score that represents a more pronounced perception of impairment and discrimination indicates poorer levels of empowerment (r=-0.44; p=0.000), resilience (r=-0.446; p=0.000), recovery (r=-0.499 ; p=0.000) and greater depression (r= 0.481; p=0.001). The above correlations are moderate, slightly lower than with self-stigma.

Mental health empowerment, resilience and recovery all correlate significantly and positively with each other: the higher the empowerment and resilience, the better (or vice versa). The correlation between strength and resilience is r=0.725 with p=0.000, strength and recovery is 0.613 with p=0.000, while resilience and recovery are highly correlated (r=0.861; p=0.000).

Depression correlates negatively with positively expressed scores (BUES, resilience and MHRM), and these correlations are solid to high: with BUES r=-0.676, with resilience r=-0.696, with MHRM r=-0.744, and all correlations were significant with p=0.000.

The correlation of educational attainment with other variables was verified by Spearman's correlation coefficient. Education is significant, though low associated with only two MHRM subscales: learning and redefining (ρ=0.232; p=0.019), and advocating for improvement (r=0.256; p=0.011): the more educated a person is, the higher scores on these two subscales, indicating her better mental health recovery.

DISCUSSION

The aim of this paper was to determine whether resilience and self-stigma are significant predictors of mental health recovery in patients diagnosed with schizophrenia and depression treated in a group rehabilitation program. Given the literature data suggesting lower resolution, individuals are at risk for psychosis (Kim & Jang 2019) better social functioning in patients diagnosed with schizophrenia that have greater resilience (Sesar et al. 2016) better recovery in patients with low self-stigma (Livingston & Boyd 2010) and the potential for therapeutic effects on increasing resilience (Lucksted et al. 2011). In addition to verifying these findings, we were also interested in investigating whether there is a difference in self-stigma and resilience with respect to the recovery of patients diagnosed with schizophrenia, treated in a long-term rehabilitation program (1 to 3 years) and a short-term 3-month rehabilitation program for those diagnosed depression.

We assumed that a rehabilitation program for individuals diagnosed with schizophrenia, who are expected to have low levels of resilience and high levels of self-stigma, will increase resilience, decrease self-stigma, and promote recovery. The results showed a difference between the comparison groups. Better results (higher resilience, greater empowerment and recovery) have been shown by patients treated for psychosis in a long-term rehabilitation program, which confirms that it is possible to increase resilience and indicate that it takes time to develop resilience. Whole-sample results for patients with psychosis and depression showed that mental health empowerment, resilience, and recovery correlated significantly and positively regardless of diagnosis: the greater the empowerment and resilience, and the better (or vice versa) recovery, self-stigma is more pronounced, the smaller the results in all domains of mental health empowerment and recovery. Patients with a larger social network also had better results. The results of this study, similar to the results of Brohan et al. 2010 confirmed the link between self-stigma, empowerment, perception of discrimination and social network in such a way that empowerment, reduction of perceptions of discrimination and social network are associated with lower levels of self-stigma, which opens optimism about the effectiveness of therapy-based treatments on empowering and fostering a useful social network. They are also consistent with other authors who state that a greater level of empowerment protects against self-stigma (Wahl 2012). The results are also in line with those of other authors who suggest that self-efficacy is a protective factor for better treatment outcomes.

When examining possible differences in the degree of self-stigma, empowerment, perception of impairment and discrimination, resilience and recovery between groups of different sociodemographic characteristics (gender, age, education, marital status, employment, income, and type of housing), we obtained slightly different results than others authors (Livingston & Boyd 2010. Sesar et al. 2016). In our study, female gender was associated with higher levels of empowerment, patients with a partner, friends and a person of trust also showed better scores on all scales, which is consistent with the results of other authors. Patients who do not work are significantly more resilient and experience less impairment and discrimination, suggesting that working environments are potentially stressful and discriminatory.

Our study is in line with the research of other authors (Fung et al. 2007, Sesar et al. 2016) who found an association between self-stigma and empowerment that is inherent in resilience, suggesting that treatment programs should be individualized in order to increase - empowerment and thus resilience, and reduce self-stigma, promoting recovery from mental disorder.

Limitations

Given that the observed groups differed, apart from the diagnosis, by the duration of therapy, we can assume that it also contributed to some extent to the better status of the schizophrenic patients compared to the depressed who had half the treatment. But this has yet to be further tested in better controlled conditions. Unfortunately, this is difficult to achieve in research on this subject, due to the delicacy of the issue and the justifiably stringent ethical rules that do not allow the provision of "lower quality care" for research purposes.

It should be borne in mind that the research was conducted in only one psychiatric institution, which makes the sample appropriate and less suitable for generalization, and that, although we guarantee confidentiality, it was not completely anonymous. This may have influenced the preference for providing socially positive responses, given that the examiners were healthcare professionals who participated in the care of these participants. We therefore recommend that in further research, interviewers be “neutral” persons so that the role of the patient / participant does not overlap and affect the results.

Also, for a better understanding of the relationship between resilience, self-stigma, and mental health recovery, it would be interesting to monitor them over a period of time, such as examining whether it changes two months after being discharged, which we did not have the opportunity to do in this study. In addition, education level, marital status and number of children could provide useful details in the sociodemographic profile of participants, and we unfortunately did not have them.

Notwithstanding these limitations, we believe that our research will shed additional light on aspects of the recovery of psychiatric patients.

CONCLUSION

In light of evidence supporting a positive association between resilience, low self stigma and recovery from schizophrenia and based on the fact that resilience is modifiable and could improve with treatment, these associations should be considered when planning psychosocial interventions tailored to patients’ needs, so we agree with other that studies that implement resilience and other positive psychology concepts reinforce schizophrenia research shift from risk to protective factors, reverse the question "which factors associate with relapse and chronicity" to "which factors promote recovery" and are promising for the development of additional therapeutic approaches. The correlation between resilience, self-stigma and recovery, regardless of the diagnosis, implies the need for treatment programs that will increase resilience and prevent self-stigma and thus be protective for mental health.

Acknowledgements: None.

Conflict of interest: None to declare.

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