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The associations between subjective perception of mental health, mutual communication, and resiliency in people suffering from schizophrenia

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Abstract:

The aim of the study: The aim of the study was to assess the associations between resiliency, patient's perception of mutual communication in close relationships, and the subjective perception of mental health. Subject or material and methods: Sixty-one patients diagnosed with schizophrenia completed the following questionnaires: the RAS (subscales included: determination, openness, competencies, tolerance and life attitude), the mutual communications subscale from the PRQ, and the GHQ-12.

Results: Investigation showed positive associations between openness and tolerance with patient's perception of mutual communication. Based on this findings, a model of double mediation was created and included two factors of resiliency. Double mediation analysis revealed a significant indirect effect of patients` perception of mutual communication on the subjective perception of mental health mediating through openness and tolerance.

Discussion: Deducing from the results, the patients` perception of mutual communication appears to be a significant determinant of the two factors of resiliency that play a key role in the state of mental health.

Conclusions: Building effective and positive communication (e.g., in family or couples therapy) can have a long-term impact on mental health, provided it fosters the development of psychological resilience traits.

schizophrenia; resiliency; mutual communication; mental health

INTRODUCTION

Warner [1] proposed four-steps interactive model for factors that have an impact on the prevalence, characteristics and course of schizophrenia. This model illustrates the process in which the influence of individual and environmental factors increases in severity, consequently leading to the development of schizophrenia, from genetic and neurobiological factors, through developmental period of individual and reveal of psychosis, to post-psychotic time. The macroso-

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cial system, which includes the family environment, can provoke distress among people with schizophrenia. This construct describes family communication patterns which express criticism, hostility and emotional over-involvement in contact with relatives [2]. Expressed emotion (EE) give an insight into family members' attitudes towards the patient and illustrate how a family functions [3]. Many previous research have investigated communication patterns between patients and family members [2], including EE as an important indicator of patient's psychosocial functioning, but there is considerably less research on communication between patients and their partners.

On the other hand, psychosocial factors, like social support, can enhance personal skills, reduce negative consequences of everyday stress [4], and promote better functioning in long – term perspective [5]. It seems that the associations between personal qualities and environmental factors are bidirectional and colligating. Moreover, recovery-oriented approach promotes reviewed definition of recovery process as much more than just symptoms remission. It includes, among other, better social and cognitive functioning and paying attention to the important role of subjective component to the process of recovery. Some authors also consider resilience as a personal resource that is associated with a milder course of schizophrenia [6], or as an individual trait, named resiliency, which promotes recovery [7]. Resiliency is a protective factor against suicide [8], just like social support [9,10], effective coping strategies [11] and antipsychotic drugs [12]. The impact of resiliency on mental health is well documented [13,14]. Some factors associated with resiliency include self-esteem [15], quality of life [16] and social support [10]. In patients suffering from schizophrenia, resiliency is perceived as the ability to cope with stress and adversity; it is also a beneficial feature which enables better insight into the illness [17]. Torgalsbøen [14] argues that patients with schizophrenia who were considered convalescents had higher levels of resiliency than patients in remission and experienced less positive and depressive symptoms [14]. It seems that resiliency can play a mediating role in the process of recovery [18]. The challenge for future studies is to discover the direction of the relationship between resiliency and recovery in order to understand which of the mentioned factors directly strengthens resiliency and which directly influences the healing process.

Schizophrenia is a severe mental disease which influences thoughts, behaviours, feelings, psychosocial functioning, and quality of life [19]. Close relationships are fundamental elements of human functioning and have lasting effects on the indicators of mental and somatic health [20]. Romantic relationships provide a lot of benefits, including for people with schizophrenia [21]. People who maintain satisfying and sustainable emotional relations have higher levels of self-esteem, higher need to care about others, and a better attitude towards social environment [22]. However, people with schizophrenia are less likely to form close relationships [23], although previous studies have shown that they are able to create and maintain them [24].

In recent decades, sexuality has played an important role in the exploration of intimacy in people suffering from schizophrenia [25]. Unfortunately, not much research has investigated the associations between close relations and the process of recovery [23], or between close relations and individual traits [26], notably personal resources. In McCann [27] qualitative study, patients declared the importance of intimacy in their lives. Close relations are associated not only with sexuality but also with trust, warmth, support, care, loyalty, sympathy and companionship. Being in a romantic relationship supports recovery and promotes better well-being [28]. Marriage reduces some health problems, presumably thanks to personal support from the partner, as well as overall social support. Moreover, marriage decreases stigmatisation [29]. On average, the first psychotic symptoms appear one or two years later in married men than in singles [30]. Marriage also reduces the risk of suicide [31]. Previous studies examined only resiliency as a single mediator in mental health models in schizophrenia spectrum disorders [32], however, the factors of resiliency that are part of the mediation process are unclear. There were evidences that resiliency is highly dependent on other people [33] and is connected with better psychosocial functioning [34]. In order to fully understanding which factors of resiliency are buffers in interaction between mutual com-

munication and the subjective mental health, we proposed a model investigating the multifactorial scale of resiliency. The following hypotheses were formulated. Firstly, the level of factors of resiliency will be higher in patients currently engaged in close relationship than in singles. Secondly, factors of resiliency will be positive predictors of subjective mental health. Thirdly, patients perception of mutual communication will be positively associated with some factors of resiliency and subjective mental health. Fourthly, factors of resiliency will mediate the relationship between patients' perception of mutual communication and subjective mental health.

METHOD

Participants and procedure

61 individuals participated in the study aged 20–67 (M = 41.53, SD = 11.014). Females constituted 47.5% (n = 29) of the sample, and 52.5% were men (n = 32). The inclusion criteria included diagnosis of schizophrenia in the phase of remission according to ICD-10, age above 18 years old, and informed consent to participate in the study. Exclusion criteria included the lack of patient's insight, a history of moderate to severe mental retardation or neurological diseases, alcohol and/or substance abuse and severe deterioration of mental health in the last four week. Participants were recruited from day treatment units, inpatient psychiatric wards and mental health clinics. Participants from a variety of institutions were included in the study in order to procure a large enough sample of patients in close relationship. After patients` consent was obtained, participants were asked to complete all questionnaires. During this initial meeting, they were informed about the aim of the study. Participants could resign from participating in the study at any time. The bioethics committee approved the study.

The patients recruited for the study were participants of day-care units or occupational therapy workshops, as no active psychotic symptoms were present at the time of inclusion, or they had been referred to such programs following inpatient treatment for the purpose of psychiatric rehabilitation, improvement of overall functioning, and social reintegration. During the study, no systematic data were collected on patients' pharmacological treatment. This decision was made because the study was primarily designed as an exploration of psychological and psychosocial factors, rather than a pharmacological investigation. It should also be emphasized that the conclusions concern individuals who were able to attend therapeutic sessions and psychotherapy on their own, and who were not experiencing an active psychotic episode per se. The baseline characteristics of the participants are presented in Table 1.

Table 1. Baseline characteristics of the participants (n = 61).

Variables	*n*	[%]
Sex		
Female	29	47.5
Male	32	52.5
Marital status		
Single	32	52.5
In relationship	29	47.5
Marital	23	79.4
Cohabit	6	20.6
Educational level		
Primary	2	3.3
Secondary	22	36.0
Vocational	21	34.4
Higher	14	23.0
Lack of information	2	3.3
Institution		
In patient	17	27.9
Day ward	27	44.2
Outpatient clinic	17	27.9

MEASURES

The Partner Relations Questionnaire by Hahlweg [35] is a 30-item self-report scale designed to analyse the quality of intimate relationships. It includes three scales: (1) mutual communication, (2) behaviours in quarrels and (3) intimacy (in this study, the last scale was excluded). A higher mutual communication score indicates more adaptive relationship behaviour (e.g., communicating, attending, compromising). A higher

behaviours in quarrels score indicates more maladaptive and inappropriate behaviours (e.g., hitting, hoarding, diminishing). Items are rated on a 4-point Likert scale from 0 (never/very rarely) to 3 (very often). In this study were used only mutual communication subscale and Cronbach's alpha for mutual communication was 0.83.

The Resiliency Assessment Scale (SPP-25), constructed by Ogińska-Bulik and Juczyński [36], measures resiliency as a personality feature and is used to assess coping with difficult life situations. It contains five factors: (1) determination and persistence in actions; (2) openness to new experiences and a sense of humour; (3) competencies to cope with and tolerate negative affect; (4) tolerance of failures and treating life as a challenge; and (5) optimistic life attitude and ability to mobilize in difficult situations. The reliability of the scale was satisfactory (Cronbach's alpha for total score was 0.89; for all factors between 0.74 to 0.85).

The short version of Goldberg's General Health Questionnaire [37] is a 12-item instrument that is used for the evaluation of subjective mental health. In this study the scale was reversed. A higher score meant better subjective mental health. GHQ-12 is a reliable tool (Cronbach's alpha = 0.79). GHQ-12 scores are interpreted as an estimation of mental health, but not as the probability of the occurrence of mental illness.

The statistical characteristics of all variables are presented in Table 2.

Table 2. Statistical characteristics of variables (n = 61).

Variables	Minimum	Maximum	*M*	*SD*	Median	95% CI
Resiliency total score	1.16	3.88	2.51	0.123	2.48	2.26; 2.77
Determination	1.60	4.00	2.83	0.113	2.80	2.59; 3.06
Openness	0.80	4.00	2.64	0.155	2.80	2.32; 2,95
Competencies to cope	0.80	4.00	2.34	0.147	2.40	2.04; 2.64
Tolerance	1.00	4.00	2.50	0.157	2.40	2.17; 2.81
Life attitude	0.20	4.00	2.28	0.156	2.20	1.96; 2.59
Mutual Communication	0.40	2.80	1.65	0.114	1.60	1.41; 1.88
Mental health	1.17	4.00	2.79	0.078	2.92	2.62; 2.94

STATISTICAL ANALYSIS

SPSS Statistics (version 25) was used for the correlation and regression analyses; the PROCES macro (version 3.2) was used for mediation analysis. The statistical tests were conducted under the assumption that the values were normally distributed. Statistical analyses were performed with a significance level of 0.05. All recruited patients completed self-report questionnaires. The study was conducted using ANOVA to explore the differences between singles and patients in close relationships. The associations between the resiliency factors and the measures of patient's perception of mutual communication were tested using Pearson's correlation. Stepwise regression analysis was used to test predictors of subjective mental health, while double mediation analyses were used to broaden the understanding of the relationships among all variables. A stepwise regression analysis was used in order to choose the best predictor variables, especially as we expected that all factors of resiliency could be strongly correlated between each other. Separate double mediation analysis was used to estimate adjusted direct and indirect effect of patients` perception of mutual communication on subjective mental health via two resiliency factors (openness and tolerance) [38]. We decided to use multiple mediation model to investigate indirect associations between close relationship factors and subjective mental health. Especially, that not all resiliency factors were significant predictors of subjective mental health, and it can be concluded that strengthening some resiliency factors can be more effective for mental health than others. Bootstrapping with 5000 resamples was conducted to estimate

total, direct, and indirect effects, and to generate 95% confidence intervals. An effect was considered significant if the confidence interval did not include zero.

RESULTS

One-way ANOVA was used to determine levels of resiliency differences between singles and people in close relationships. The results showed significant differences between the two groups ($p \leq 0.05$). Patients in relationships had a higher level of resiliency ($M = 2.51$) than singles ($M = 2.07$). People in close relationships also displayed higher levels of the two resiliency factors: *determination and persistence in actions* ($M = 2.83$, $p \leq 0.01$; singles $M = 2.21$) and *optimistic life attitude* and *the ability to mobilize in difficult situations* ($M = 2.28$, $p \leq 0.05$; singles $M = 1.74$). No significant variation was found in *openness to new experiences* and *sense of humour, competencies to cope* and *tolerance of negative affect*, as well as in *tolerance of failures* and *treating life as a challenge* ($p \geq 0.05$). The results are presented in Table 3.

Table 3. One-way ANOVA results for differences in Resiliency between singles and individuals in Close Relationships.

Predictors	patients in relationship		single		*F*	*p*	Effect size
	M	*SD*	*M*	*SD*			
Resiliency total	2.51	0.662	2.07	0.822	5.397	0.024	0.08
Tolerance	2.49	0.846	2.19	0.909	1.795	0.001	0.03
Determination	2.83	0.606	2.21	0.805	11.18	0.12	0.16
Openness	2.64	0.836	2.29	0.880	2.491	0.067	0.04
Competencies to cope	2.34	0.789	1.91	0.995	3.473	0.185	0.06
Life attitude	2.28	0.832	1.74	0.966	5.385	0.024	0.08

Next, Pearson's analysis was conducted on all variables. Total resiliency score showed a significant positive association with patients' perception of mutual communication ($r = 0.40$, $p \leq .05$) and with subjective mental health ($r = 0.63$, $p \leq 0.001$). Increased levels of subjective mental health were associated with all resiliency factors: *determination and persistence in actions* ($r = 0.42$, $p \leq 0.001$), *openness to new experiences and a sense of humour* ($r = 0.53$, $p \leq 0.001$), *competencies to cope and tolerance of negative affect* ($r = 0.60$, $p \leq .001$), *tolerance of failures and treating life as a challenge* ($r = 0.70$, $p \leq 0.001$), as well as *optimistic life attitude and the ability to mobilize in difficult situations* ($r = 0.55$, $p \leq 0.001$). Moreover, the results of the Pearson's correlation revealed significant associations between patients` perception of mutual communication and two factors of resiliency (*openness* $r = 0.48$, $p \leq 0.01$; *tolerance* $r = 0.44$, $p \leq 0.05$). Likewise, associations between *tolerance* and *mental health* ($r = 0.69$, $p \leq 0.01$) were found.

The stepwise regression analysis was used to evaluate the significance of the predictors of subjective mental health. The model explained 46.8% of total variance ($p \leq 0.001$). *Tolerance of failures and treating life as a challenge* were the only positive predictors of subjective mental health explaining 56.7% of total variance ($p \leq 0.001$). The results are presented in Table 4.

Table 4. Stepwise regression analysis for patients' subjective mental health.

Predictors	*B*	β	*SE*	*t*	*p*
Tolerance	**5.73**	**0.75**	**0.962**	**5.95**	**< 0.001**
Determination	-0.01			-0.49	0.628
Openness	-0.10			-0.53	0.603
Competencies to cope	0.11			0.57	0.571
Life attitude	-0.18			-0.99	0.334
Mutual Communication	-0.13			-0.92	0.368

Bold – predictor included to model

Resiliency as a mediator of the relationship between partner's perception of mutual communication and the patient's subjective mental health

Tolerance of failures and treating life as a challenge was the only significant predictor of subjective mental health (Tab. 4). Additionally, a stepwise regression model was used to elicit further data and to verify the influence of patients` perception of mutual communication on patients' subjective mental health. Neither of them predicted subjective mental health.

Subsequently, based on the identified connections, a mediation model was constructed (Fig. 1). The overall mediation model was significant ($R2$ = 0.58, $F(3,25)$ = 11.64, $p \leq 0.001$). The level of a patients` perception of communication was predictive of *openness* (b = 0.32, p = 0.005) but it did not predict *tolerance* (b = 0.07, p = 0.518). Similarly, the level of openness significantly predicted tolerance (b = 0.72, $p \leq 0.001$) but it did not predict subjective mental health (b = – 0.1, p = 0.763). The mediation analysis revealed a significant indirect impact of patients` perception of mutual communication on subjective perception of mental health (b = 0.36; 95% CI [0.06; 0.70]), mediated through two factors of resiliency (*openness* and *tolerance*). The results are shown in Table 5.

Table 5. Standardized effect size of the mediation analysis for patients' perception of mutual communication.

Predictor	Variables											
	M1 (openness)				M2 (tolerance)				Y (subjective mental health)			
	Effect	*SE*	*p*	95% CI	*Effect*	*SE*	*p*	95% CI	*Effect*	*SE*	*p*	95% CI
X (mutual communication)	0.32	0.16	0.009	[0.89; 0.56]	0.07	0.1	0.518	[-0.14; 0,26]	-0.12	0.16	0.434	[-0.44; 0.20]
M1 (openness)	-	-	-		0.72	0.15	<0.001	[0.42; 1.02]	-0.1	0.31	0.763	[-0.74; 0.55]
M2 (tolerance)	-	-	-		-	-	-		1.29	0.30	<0.001	[0.67; 1.92]
	R^2= 0.23 $F(1,27)$ = 7.98, p=0.009				R^2= 0.58 $F(2,26)$ = 17.87, p<0.001				R^2= 0.58 $F(3,25)$ = 11.64, p<0.001			

X – independent variable; Y – dependent variable; M1 – mediator no. 1; M2 – mediator no. 2

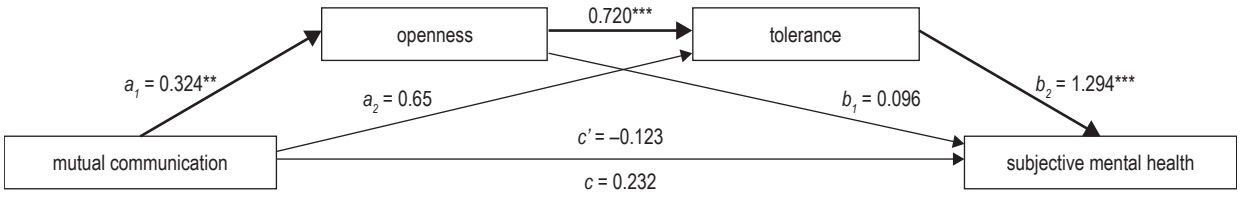

Fig. 1. Results of the mediation analysis for communication. Coefficients are unstandardized regression weights. ** Significant at the 0.01 level; ***Significant at the 0.001 level.

DISCUSSION

The results of this study were consistent with the first hypothesis, i.e. patients currently engaged in close relationship reported a higher level of resiliency total score and two factors of resiliency: *determination and persistence in actions* and *optimistic life attitude and the ability to mobilize in difficult situations*. Uygur and Esen Danaci [39] identified that intimate relations were the needs of the patients mostly negatively affected in the course of the disorder. Many previous studies have suggested that close relationships may be a significant key source of resilience for people with severe mental illness [32,34]. According to Connolly [40] couple resilience is as important

relational process, which maximizes relational strengths to overcome external challenges and stressors. Lim et al. [41] examined dyadic effects of resilience on psychological distress for cancer survivor couples and demonstrated that resilience in relationship strongly predicted personal psychological distress. Interestingly, partners` psychological distress was impacted by survivor resilience. Likewise, Conger et al. [42] suggested that marital relations research should focus on interactional and individual romantic partner characteristics that promote resilience.

The results support the second hypothesis. Resiliency factors were positively correlated with better mental health reported by people suffering from schizophrenia. This implies that people who are open to new experiences and more determined, persistent in their activities use humour in order to reduce negative mood and tension; they can also tolerate negative affect and treat life as a challenge. Resilient individuals also perceive themselves as having better mental health condition. These conclusions are in accordance with the findings of longitudinal research that focused on the recovery process among patients after the first episode of psychosis. These findings demonstrated that resiliency has a relevant role in returning to healthy functioning [14,43]. Although resiliency decreases in the active phase of the disease, it returns to baseline during the stabilization phase and favourably influences the regeneration process [44]. In this study, the results indicate that the strongest positive predictor of mental health were *tolerance of failures and treating life as a challenge*; this is consistent with previous research in which resiliency was interpreted as the energy needed to strive to overcome challenges and make changes in life [45]. The third hypothesis was only partially supported. This analysis found evidence for connections between mutual communication in close relationship and two factors of resiliency. According to patients, positive statements from a partner were associated with theirs *openness to new experiences and a sense of humour*, as well as *tolerance of failures and treating life as a challenge.* Previous studies showed that people who perceive establishing relationship as not too risky are more willing to do so [46], and they experience them as more satisfying [47]. A supportive partner partially buffers the consequences of negative affect in stressful situations, thus contributing to positive adaptation and assisting coping in difficult circumstances [22]. On the other hand, the results demonstrated that the perceived level of a partner's communication did not have a direct association with mental health in patients with schizophrenia. In other studies concerning EE similarly no associations were found between EE and the severity of symptoms [48,49]. Some researchers suggested that resiliency can differentiate families with high EE and low EE [50]. This highlights the fact that little is known about patients' subjective experiences of mutual communication in their close relationships.

Findings from this study ties in well with previous studies related to intimate relationships, wherein a healthy patterns in close relationship had a positive impact on recovery [20,23,27-29,51,52]. Little attention has previously been paid to the influence of resiliency on the interaction between the quality of an close relationship and a patient's recovery [45]. The current study extended this matter by performing a mediating analysis, the results of which show that better pattern of a partner's communication from a patient's point of view was not a direct predictor of the patient's mental health. However, the components of resiliency (*openness to new experiences and a sense of humour*, as well as *tolerance of failures and treating life as a challenge*) positively affect communication with the partner and the patient's perceived mental health (Fig. 1; Tab. 5). The mediation model highlights the crucial role of psychological resilience as a mechanism that translates good quality mutual communication into improved mental health. Mutual communication can stimulate the development of openness, which in turn enhances tolerance for difficulties and challenges. Tolerance of failures is the decisive factor that ultimately improves the patient's subjective mental health. Therefore, improving the patients` and their partners` communication skills promotes better coping with stress. A similar conclusion was reached in other research which showed that improving communication in a couple encourages lower intensity of positive symptoms and decreases EE in both partners [53].

The last hypothesis was supported by the findings indicating for the first time as to our knowl-

edge, that better mutual communication in couples among people suffering from schizophrenia strengthens two significant factors of resiliency, which mediates better mental health. According to cognitive models of stress events, often associated with severe mental illness, may lead to changes in existing schemas about oneself and the couple [54]. Better mutual communication can be accommodating for both, patient and partner, to change the schemas based on mutual acceptance, partner support and active coping strategies [55]. Braughton et al. [56] analysed data from qualitative studies concerning partners with a history of trauma exposure and with trauma-related symptoms. They pointed that a couple's adaptive processes included shared beliefs and goals, mutual collaboration and psychological flexibility, as well as connectedness. On the other hand, they identified some barriers, which hindered functioning in dyads, such as individual perceptions, behaviours, past experiences, and different interactive patterns, which intensified relational instability, contentious communication and difficulties with distress tolerance. In turn, Baucom et al. [57] suggested that communication in the couples can act like a protective factor and indicate resiliency in couples with mood disorders. Findings from many previous studies indicated strong mutual associations between relationship functioning and individual mental health. Relationship discord provokes worse individual treatment outcomes [58]. Interestingly, researchers suggest that people tend to perceive partners` patterns of communication similarly to their own [59]. It is an important finding for therapeutic practice – changing maladaptive communication patterns and improving resiliency simultaneously can lead to the reduction of psychopathology, even when working with only one person from the couple.

People suffering from severe mental illnesses can benefit from a close relationship if it is a satisfying one and if the patient perceives it as such. Nevertheless, it should not be forgotten that during periods when the disease gets worse, not only the patient suffers, but often all of the patient's family members, especially the partner, who is usually the one most involved in the recovery process. Moreover, the results of our research demonstrate the importance of changing irrational attitudes towards close relationships to reduce interpersonal suffering and help patients take responsibility for their recovery. Psychological interventions should focus on developing openness and tolerance for failures as key elements influencing mental health. This can be achieved through training in coping with failures, shifting perceptions of life challenges as opportunities, and promoting acceptance and flexibility in difficult situations.

LIMITATIONS

There are several limitations of this study. It was performed on a relatively small sample. The heterogeneity of the group should be highlighted – patients who were asked to participate in this study were from different institutions. Due to the relatively small sample size and the limited statistical power of the behaviours in quarrels scale, the results in this regard should be treated with appropriate caution. The questionnaires used in this study measured the well-being here and now, but the scales can be vulnerable to many factors (for example, actual mood) and therefore limit generalization of the results. A more broad assessment is recommended which considers other factors, i.e., psychopathological state (such as the intensity of symptoms, especially negative ones), insight into the disease, psychosocial functioning, and the sense of empowerment during the course of this illness, attachment styles. Studies indicate that as many as 30–50% of patients with schizophrenia experience impaired insight into their own health status, not only during the active phase of the illness but also due to various neurocognitive complications resulting from psychosis, as well as other factors such as the necessity of high-dose pharmacological treatment [60]. However, findings from a randomized study conducted on a large sample of patients with schizophrenia showed that impaired insight was present in approximately 10% of participants, primarily those with severe or moderately severe symptoms. These individuals tended to overestimate their quality of life and rated their symptom severity more mildly compared to their scores on the Positive and Negative Syndrome Scale (PANSS). This suggests

that patients with mild or moderate symptom severity are generally able to accurately recognize and evaluate their health status [61]. The study investigated patients' subjective experiences, but it did not describe their functioning in relationships per se. A patient's way of looking at a relationship can only reveal the subjective experience [62].

CONCLUSIONS

Medical professionals should be aware of this distorted thinking, which particularly occurs in young people, and should try to modify it, as intimate relationships provide significant benefits [21]. The results of this study show that if a patient perceives the relationship as fulfilling and the partner as empathetic, mindful and honest, the resiliency to some malicious consequences of schizophrenia improves significantly. In the long-term perspective being able to maintain a satisfactory, close relationship may improve the chance of a favourable course of the disorder. Building effective and positive communication (e.g., in family or couples therapy) can have a long-term impact on mental health, provided it fosters the development of psychological resilience traits.

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