The effect of child sexual abuse on social functioning in schizophrenia spectrum disorders

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Abstract

The objective of this study was to explore social functioning in schizophrenic patients who have suffered child sexual abuse (CSA) in comparison with those who have not suffered from it in a Spanish sample of 50 patients with schizophrenia or schizoaffective disorder. The Quality of Life Scale (QOL), the Childhood Trauma Questionnaire (CTQ-SF) and the NEO-FFI were administered in this study. We found a CSA prevalence of 22% in our sample. Results showed that QOL global scores reduced by 7.72%, almost at a statistically significant level (p=0.071), in sexually abused patients in comparison with those who did not report sexual abuse. Regression analysis in the QOL scales showed no differences in intrapsychic foundation scores, nor in the social relations scale. Scores in the instrumental role scale were reduced by 3.92 points in patients with CSA (p=0.010). It was found that neuroticism scores increased by 5.61 points in patients with a history of CSA in comparison with those who did not report a history of CSA (p=0.040). Extraversion results did not differ between the trauma group and those who did not suffer trauma. Clinical implications of these results are discussed.

Keywords: Child sexual abuse, schizophrenia spectrum disorders, social functioning.

Psychopathological research in recent years has evolved towards finding risk factors that would explain the etiology of schizophrenia spectrum disorders. Van Os, Kenis, & Rutten, (2010) show that high heritability estimates indicate a strong genetic influence in these disorders. However, the well-known 'stress-vulnerability' model of etiological influence in psychiatry assumes that genetic factors operate by making individuals selectively vulnerable to environmental risks (gene–environment interaction, or GxE). Environmental risk factors for schizophrenia are diverse, and they can occur both in prenatal stages as well as in early and late childhood. Examples of environmental factors include urbanization, being a member of a minority group, cannabis use and trauma.

Recent research shows that exposure to trauma, such as child abuse, may result in a heightened risk of developing schizophrenia, severe levels of positive symptoms among persons with schizophrenia, impairment in social and vocational functioning over time, severe levels of anxiety and poorer response to treatment (Bentall, Wickham, Shevlin, & Varese, 2012; Varese et al., 2012; Lysaker, Outcalt, & Ringer, 2010; Gil et al., 2009). Shah et al., (2014) define child abuse as maltreatment that involves non-accidental behavior towards another person, which is outside the norms of conduct and entails substantial risk of causing physical or emotional harm.

One of the most traumatic events is child sexual abuse (CSA), which is highly prevalent in people with schizophrenia spectrum disorders. Research shows that 34.5% of individuals with a psychotic disorder have suffered CSA compared to 1.8% of individuals with no psychiatric diagnosis (Lysaker, Buck, & Larocco, 2007).

CSA has been shown to impair social functioning. Victims of CSA are at an especially high-risk of developing insecure attachment representation, which is associated with relational problems, including couple dissatisfaction (Godbout, Briere, Sabourin, & Lussier, 2014). In turn, social functioning is also an area that is affected in patients with schizophrenia. Research shows that social impairment generally worsens over the course of the disorder and is often resistant to antipsychotic

treatment (Bora, Eryavuz, Kayahan, Sungu, & Veznedaroglu, 2006). This evidence poses the following question: Given that CSA and suffering from schizophrenia impair social functioning, do patients with schizophrenia spectrum disorders who have suffered CSA demonstrate greater impairment in social functioning than those patients who have not suffered from CSA?

Several studies have explored the relationship between childhood abuse and social functioning in patients diagnosed with schizophrenia. Hodgins, Lincoln, & Mak (2009), showed the importance of evaluating maltreatment in order to improve social functioning through a specific treatment. Gil et al., (2009) found an association between physical and emotional neglect in childhood and a poorer social functioning in adulthood. However, this was not true for CSA. Few studies have examined the specific impact of CSA in the social functioning of patients diagnosed of schizophrenia. Lysaker, Meyer, Evans, Clements, & Marks, (2001) explored the presence of CSA and the social functioning of 54 patients diagnosed with schizophrenia or schizoaffective disorder. It was found that individuals with a history of CSA had poorer role functioning, fewer of the psychological resources necessary for sustaining intimacy, and higher levels of emotional instability and turmoil. In light of the scarcity of studies in this area, it is necessary to contribute more evidence regarding the influence of CSA on the social functioning of patients diagnosed with schizophrenia. With this in mind, we intended to replicate the Lysaker et al., study (Lysaker et al., 2001) including a more precise instrument to evaluate CSA.

The **objective** of this study was to explore social functioning in schizophrenic patients who have suffered CSA in comparison with those who have not suffered from it. We hypothesized that (a) those patients that have suffered CSA will show: Poorer levels of role or work functioning, a pattern of less frequent social contact with others, lower levels of the psychological resources necessary for interpersonal relationships, and higher levels of vulnerability to emotional turmoil.

Methods

Participants

Participants were recruited at a community rehabilitation center at the Corporació Sanitaria Parc Taulí in Sabadell (Barcelona) between April and July of 2015. The initial sample comprised 57 possible participants, although 5 of them decided not to take part in the study, and 2 were not able to schedule the required appointments in order to participate. Therefore, the final sample comprised 50 persons who had been diagnosed with schizophrenia or schizoaffective disorder. Individuals were excluded if they had intellectual disability or a history of traumatic head injury. In addition, all of the participants were in a postacute phase of their illness, as defined by having no hospitalizations or changes in medication in the past month. The demographic characteristics of the participants are summarized in Table 1.

{Insert table 1}

Instruments

The Quality of Life Scale (QOL) (Heinrichs, Hanlon, & Carpenter, 1984) in its Spanish version (Rodríguez, Soler, Rodríguez M., Jarne Esparcia, & Miarons, 1995) was used to assess the participant's current interpersonal and work functioning. The QOL is a 21-item semi-structured interview administered by clinically trained staff which is designed to evaluate the patient's social functioning. The individual items of the QOL are scored on a 7-point Likert scale, with higher ratings indicating higher levels of functioning.

Three subscales from the QOL were used. The first was intrapsychic foundation, which measures the building blocks from which interpersonal functioning is derived. The second was interpersonal relations, which measures interpersonal and social functioning. Finally, we employed

the instrumental role scale, which assesses functioning in a defined social role. The Spanish version of the QOL demonstrates high internal consistency, with a global Cronback's alpha of 0.9634.

The NEO Five Factor Inventory (NEO-FFI) (Costa & McCrae, 1992) in its Spanish version (Cordero Pando, Pamos, Seisdedos Cubero, & Costa, 1999) was used to assess the personality dimensions that are important to social functioning. It consists of a self-report test in which participants are asked to rate on a 5-point Likert scale the degree to which individual statements are true or not true about themselves. Neuroticism and extroversion were used for this study. These two factors have been found to be reliable and stable among persons with schizophrenia, and both are related to role functioning (Lysaker et al., 2001). Si tienes las alfas de la escala global o de las 2 subescalas empleadas mejor ponerlas.

The presence of CSA was determined using the short version of the Childhood Trauma Questionnaire (CTQ-SF) (Bernstein et al., 2003) in its Spanish version (Hernandez et al., 2013). The CTQ-SF is a 28-item retrospective self-administered questionnaire that measures five different types of child maltreatment: emotional abuse, physical abuse, sexual abuse, emotional neglect and physical neglect. Each one of these five subscales is represented by 5 items assessed using a 5-point Likert scale. The Spanish version of the CTQ-SF shows Cronbach alphas between 0.66 and 0.94 for its five scales, as well as good convergent and divergent validity. (Hernandez et al., 2013). The presence of a history of CSA was determined by scores higher than 8 points (moderate-severe) in the sexual abuse scale of the CTQ-SF.

Procedure

The authors of the article who were responsible for the community rehabilitation center approved all of the eligible candidates to participate in the study. Candidates were appointed to an individual meeting and asked if they agreed to participate in the study. After they provided informed consent, participants were directed to the principal author who individually administered

the QOL and NEO-FFI. The CTQ-SF was administered by the patient's current therapist in order to minimize distress.

Statistical analysis

Statistical analysis was performed using STATA 14.0. To analyze raw comparisons between patients with CSA and those without, we used the student t-test and pearson chi-square, or fisher exact test if expected frequencies were lower than 5. To determine the effect of CSA on the QOL, neuroticism and extraversion, different linear regression models were estimated taking CSA as the independent variable, with the dependent variables being global QOL, its three scales, neuroticism and extraversion. In these models we tested if gender moderated the influence of CSA on each dependent measure. Also, we examined if gender, age, and number of hospitalizations were necessary as adjusting terms in the regression models. These terms remained in the model if the difference between adjusted and raw effects was superior to 10% (Maldonado & Greenland, 1993). These regression models proportionate the adjusted mean difference in QOL, neuroticism and extraversion between CSA and non-CSA participants. In addition Cohen's D was calculated for each mean difference. The error I type was 0.05 for all analysis.

Results

We found a CSA prevalence of 22% in our sample. The clinical and psychometric measures descriptive statistics for the two grups and its raw statistical comparisonare shown in table 2. Global QOL and its scales present systematically lower values in the CSA group. Neuroticism seem higher for CSA while extraversion has similar mean values.

{Insert table 2}

Regression analysis results are summarised in table 3. In the analysis of the influence of sexual abuse on total QOL, gender was not an interaction term (p=0.205). Similarly, it did not have

an interaction effect for the analysis of intrapsychic foundation (p=0.480), interpersonal relations (p=0.052), instrumental role (p=0.942), neuroticism (p=0.630) and extraversion (p=0.239). We can see that QOL global scores were reduced by 7.72% almost at a statistically significant level (p=0.071), in patients who had a history of CSA in comparison with those who did not report sexual abuse. Regression analysis in the QOL scales showed that intrapsychic foundation scores were reduced by 1.54 points in those patients with a history of CSA, although these differences were not significant (p=0.490). In the interpersonal relations scale we found the same trend (p=0.102). Scores in the instrumental role scale were reduced by 3.92 points in those patients with CSA (p=0.010). Regression analysis for the neuroticism factor showed that scores increased by 5.61 points in patients with a history of CSA in comparison with those who did not have a history of CSA (p=0.040). Extraversion results did not differ between the trauma group and those who did not suffer trauma (p=0.649).

Cohen's D present moderate to high values (D>=0.5) for QOL, interpersonal relations, instrumental role and neuroticism.

{Insert table 3}

Discussion

First, we did found a fairly high prevalence of CSA among patients with schizophrenia and schizoaffective disorder, even though it was lower than in previous literature. The results obtained in the present study were in line with those of the Lysaker et al. (2001) study. Although we were not able to find significant results in all the analyses performed, the differences were in the direction expected in the hypothesis. We found that those patients who experienced CSA had poorer levels of role or work functioning, a worse general quality of life and higher levels of vulnerability to emotional turmoil.

As in the study by Lysaker et al. (2001), we did not find a significant difference between the two groups in the levels of extraversion, and in the results from the scale of social relations, which assesses interpersonal and social functioning. These results support their hypothesis that CSA is not linked to the level of socialization, which is usually low in patients with schizophrenia. However, we did not obtain a significant difference in the intrapsychic foundation scale, which measures the building blocks from which interpersonal functioning is derived.

Although we did not find all the significant results we expected, these results are relevant at a clinical level. The difference in global QOL approached statistical significance, which suggests that CSA may have a considerable effect in the general reduction of quality in life. The significant results shown in instrumental role, which measures functioning in a defined social role, demonstrate that CSA also impairs the adjustment to work or specific social desirable roles, which may limit the patient's ability to successfully perform a job in the future. We also found that people who suffered from CSA were more vulnerable to emotional turmoil, which is shown by higher results in neuroticism. This is important at a clinical level, suggesting that CSA can be considered a risk factor for a higher emotional instability, which in turn may impair social functioning. One possible way to explain why CSA further impairs social functioning in patients with schizophrenia spectrum disorders may be perceived parental support. As demonstrated by Godbout et al., (2014) on non-clinical population who have suffered CSA, perceived parental support counteracts negative outcomes and foster healthier interpersonal and interpersonal adjustment in CSA victims, perhaps through the development of positive internal working models of self and other. In future research it would be interesting to study if perceived parental support is lower in patients victims of CSA diagnosed with schizophrenia spectrum disorders in comparison with general population and if perceived parental support can be a mediator variable for a higher impairment on social functioning. Our results might not be specific for schizophrenia spectrum disorders. A meta-analysis by Olatunji, Cisler & Tolin (2007) showed that their results revealed a large effect size indicating poorer overall

QOL among anxiety patients versus controls and that preliminary evidence does suggest that QOL may be most compromised in patients with panic disorder and PTSD. Therefore, we could expect that a history of CSA would further impair social functioning in patients diagnosed with anxiety disorders.

This study was considered as a pilot study, so it had several limitations. First, the CTQ-SF and NEO-FFI are self-administered questionnaires, which can be prone to limitations. Fisher et al., (2009) expose that retrospective designs can produce unreliable and inaccurate accounts as events recalled from a long time ago may be affected by normal processes of forgetting, depressed mood, infantile and traumatic amnesia, subsequent events, and a need to justify or understand mental illness. These are potentially compounded by the cognitive impairments, delusional beliefs, and detachment from reality associated with psychosis. Also, we used a moderate to severe cut-off score in the CTQ-SF. However, some patients did report suffering from CSA at low to moderate levels, which may have affected the results at some levels. Interviewing patients in more detail about the characteristics of the abuse in those patients who report some level of abuse might be interesting to evaluate if CSA actually occurred and to what extent it has affected the patients throughout their lives. Our sample characteristics and size may also help to explain why we did not obtain the expected significant results in all the analyses performed. First, a sample of 50 patients does not provide enough statistical power. Second, we had a higher number of female patients in our sample (38%) than in the Lysaker et al. (2001) study. Finally, some of the patients in both groups did suffer from other types of abuse, such as emotional neglect, physical neglect, physical abuse and emotional abuse. However, we measured CSA with a more comprehensive and precise instrument than in the study by Lysaker et al., (2001) which can reduce false positives, and then show that there are actually fewer differences than the previously shown in literature. In future research it would be important to include patients from other hospitals in order to obtain a more representative

sample, as well as to measure and control by severity of the disorder, symptoms, duration of the disorder, and use a specific instrument to assess psychosocial functioning.

As stated by Hodgins et al., (2009), at a clinical level it is relevant to find out if the patient has a history of CSA in order to propose therapeutic approaches that focus on improving social and role skills. For example, patients could be encouraged to engage in therapy programs that strengthen their job skills, as well as social interactions. At the same time, knowing if the patient has suffered from CSA can help to focus on therapies which are targeted to reduce their levels of emotional instability.

Overall, our results were consistent with the Lysaker group. Patients with schizophrenia or schizoaffective disorder did show a high prevalence of CSA, and those patients with a history of CSA showed poorer levels of role or work functioning, a lower quality of life and higher levels of vulnerability to emotional turmoil. Overall, it confirms that a history of CSA may impair social functioning in patients with schizophrenia spectrum disorders.

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Table 1.

Demographic and clinical variables descriptive statistics of the sample (n=50)

	Without CSA	**With CSA**	
	n(%)	**n(%)**	**p**
Sex:			
Male	25(80.65%)	6(19.35%)	0.727
Female	14(73.68%)	5(26.32%)	
Level of education:			
Primary	10(76.92%)	3(23.08%)	
Secondary	28(80%)	7(20%)	0.544
Superior	1(50%)	1(50%)	
Any type of abuse			
Yes	21(65.6%)	11(34.4%)	0.004
No	18(100%)	0(0%)	
Diagnostic			
Schizophrenia	26(78.79%)	7(21.21%)	1.000
Schizoaffective disorder	13(76.47%)	4(23.53%)	
Sexual abuse			
Yes	11(22%)		
No	39(78%)		

Table 2.

Raw comparison on clinical and psychometric variables between non-CSA and CSA patients (n=50)

	Without CSA			**With CSA**			
	Mean(SD)	**Min**	**max**	**Mean(SD)**	**Min**	**max**	**p**
Age	40.48(9.11)	18.87	58.92	38.98(10.28)	22.64	55.72	0.640
QOL (Global)	49.90(13.30)	27	76	42.18(6.82)	28	52	0.071
Intrapsychic foundation	22.18(6.74)	11	35	21(5.16)	10	27	0.594
Interpersonal relations	20.49(8.41)	6	39	16.45(5.59)	10	26	0.142
Instrumental role	13.28(4.33)	3	21	9.36(4.51)	3	14	0.010
Neuroticism	64.21(8.40)	41	75	69.82(4.94)	62	75	0.040
Extraversion	35.38(10.20)	25	56	35.64(9.19)	25	50	0.942
# of hospitalizations	2.77(1.80)	1	7	3.64(3.20)	0	10	0.247

Table 3.

Regression analysis on the influence of CSA on Quality of life scales and personality scores (n=50)

	b	t	p	CI 95%	Cohen's d
QOL	- 7.72%	-1.85	0.071	-16.1 to 0.69	0.53
Intrapsychic foundation*	-1.54	-0.70	0.490	-6 to 2.9	0.21
Interpersonal relations*	-4.63	-1.67	0.102	-10.2 to 0.96	0.50
Instrumental role	-3.92	-2.7	0.010	-6.8 to -1.00	0.78
Neuroticism	5.61	2.11	0.040	0.25 to 11	0.61
Extraversion*	-1.55	-0.46	0.649	-8.4 to 5.2	0.14

*Adjusted by number of hospitalizations, gender and age