

# The relationship between somatoform dissociative symptoms and psychotic symptoms in patients with schizophrenia

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## Objectives

Dissociative disorders have been previously subsumed under the diagnostic construct of hysteria, which has been described the occurrence of various unexplained medical symptoms, without evidence of tissue pathology that can adequately or solely account for the symptoms<sup>1,2</sup>. Typically dissociative symptoms include paralysis, abnormal movements, inability to speak, blindness, deafness, pseudoseizures, memory loss and detachment from one's own mental processes, body or environment<sup>3</sup>. According to the current (fifth) edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-V) the essential feature of dissociation is a disruption of the normal integrative functions of consciousness, memory, identity and perception of the environment<sup>4</sup>. Over recent years researchers have proposed to name the latter manifestations of dissociation psychological dissociation<sup>5</sup>. Clinical observations also indicate that dissociation can manifest in somatoform ways, which is called somatoform dissociation<sup>6-8</sup>. Although somatoform disorders are not conceptualized as dissociative disorders in the DSM-V, the strong correlation between dissociative and somatoform disorders<sup>9</sup> indicates that dissociation and particular somatization symptoms may be manifestations of a single underlying principle<sup>1</sup>. Moreover, the International Classification of Diseases, Tenth Edition<sup>10</sup> includes somatoform dissociation within dissociative disorders of movement and sensation. Somatoform dissociation designates dissociative symptoms that phenomenologically are related to body, and psychological dissociative symptoms are those that phenomenologically involve psychological variables<sup>1</sup>.

Dissociative phenomena are commonly related to prior traumatization; Initial description was that mental functions can be separated from conscious awareness in response to psychologic stress<sup>3</sup>. This relationship was confirmed by a number of studies<sup>11-15</sup>. Other studies, however, have related dissociative symptoms to concurrent psychiatric disease rather than trauma<sup>16</sup>. Few studies have examined the effect of current psychiatric illness on dissociative symptoms. This is surprising since there is consistent evidence that dissociative symptoms are highly correlated with psychopathology<sup>12</sup>. However a 29% prevalence of dissociative symptoms in the psychiatric population has been reported<sup>17</sup>, which is high compared with a 5% rate of dissociation in the general population. Dissociative phenomena in schizophrenia is reported with a prevalence of up to 60%<sup>18</sup> which is an intermediate extent, i.e. less than in other entities such as personality disorder and posttraumatic stress disorder and more than in controls<sup>17,19,20</sup>.

The level of dissociative symptoms reported for patients with schizophrenia spectrum disorders varies substantially. Schafer et al. examined 30 female patients with schizophrenia spectrum disorders at admission and several weeks later when they were stabilized. They detected a significant decrease of the "Dissociative Experiences Scale" DES mean score from 21.0 at admission to 11.9 at the second interview<sup>21</sup>. Investigations including schizophrenic patients irrespective of the stage of their illness consistently find higher mean DES scores between 15.7 and 28.5<sup>17-20,22,23</sup>. Studies

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including patients in remission generally reported lower DES scores ranging between 9.9 and 15.3<sup>24-26</sup>. Obviously, the stage of the disorder seems to play an important role on DES scores. Therefore changing levels of dissociative symptoms as a result of the severity of the current disease merit some attention. Other studies suggest that dissociation is not generally associated with psychoticism, and it is only related with specific features contributing to the broad construct of psychoticism. Analyzing a schizophrenic sample, Spitzer et al found a close association between dissociative symptoms and positive symptoms of schizophrenia as measured by positive and negative syndrome scale. Patients with a predominance of positive symptoms of schizophrenia had significantly higher DES mean scores compared with patients with a predominance of negative symptoms (mean 21.1 vs 9.2). Delusions and hallucinations were strongly and positively related to the DES score. However, among the negative symptoms only passive social withdrawal shows a significant correlation to the DES<sup>20</sup>.

Importantly, empirical data suggest that there is a complex and important relationship between trauma, dissociation and psychosis<sup>18 22 27-33</sup>. Recently a study was demonstrated that high-dissociators reported elevated rates of childhood trauma, more positive symptoms and more negative symptoms of schizophrenia but to a lesser degree<sup>18</sup>. Vogel et al investigated the association between trauma, posttraumatic stress disorder (PTSD) and dissociation in patients diagnosed with schizophrenia. Their results revealed no association of either trauma or PTSD with high dissociation, and their results also showed that those with high dissociation were also confronted with a more severe episode of schizophrenia<sup>16</sup>. Schäfer et al. examined a large sample of patients with schizophrenia spectrum disorders, and they found that positive symptoms were the best predictor of dissociation at admission, but when patients were stabilized childhood sexual abuse was the best predictor of dissociative symptoms<sup>34</sup>.

The dissociation is initially used as a means of defense or an attempt to adapt to the pain; if the extent of the abuse is sufficient, then the dissociative response regularly becomes relied on as a defense mechanism. For example dissociation plays a significant role in post-traumatic syndromes in which amnesia makes the individual unaware of prior trauma. Amnesia might be a coping mechanism from the stressful event. Therefore, schizophrenic symptoms (hallucination, delusion) could be stressful events that may provide an opportunity for dissociative symptoms as a coping mechanism from these schizophrenic symptoms. We asked the question of, whether psychotic symptoms itself is associated independently from trauma and pathological posttrau-

matic conditions with dissociative symptoms. We suggested that psychopathological distress as a result of 1- subsequent to re-experiencing hallucinations, delusional beliefs, 2- social withdrawal namely leaving patients in social isolation, so providing less opportunity for reality testing, might cause dissociative symptoms as a coping mechanism. Moreover psychological and neurobiological coping mechanisms may be significantly impaired by schizophrenia itself; hence dissociation occurs in schizophrenic patients.

The findings in studies published to date reveal an association between greater dissociation and severity of schizophrenia symptoms. These studies investigated psychological dissociative symptoms, somatoform manifestation of dissociative process have not been considered. All empirical studies to date used DES to assess dissociative experiences among patients with schizophrenia. However DES may not be a valid instrument to screen for dissociative symptoms among schizophrenic patients<sup>35 36</sup>.

We aim to investigate the level of dissociation by somatoform dissociation questionnaire in schizophrenic out patients without trauma or self-reported posttraumatic symptoms. Although various studies evaluating association between positive and negative symptoms of schizophrenia and dissociation, there is no empirical data about the relationship between the insight in schizophrenic patients and dissociative phenomena. The second purpose of the present investigation is to further examine whether there is a significant difference of the insight of schizophrenia between patients with high scores of somatoform dissociation and low scores of somatoform dissociation.

## Method

### Patients and Methods

Fifty patients diagnosed with schizophrenia without trauma or self-reported posttraumatic symptoms according to the Diagnostic and Statistical Manual of Mental Disorder, Fifth Edition (DSM-V) criteria gave their written informed consent and participated in the study. Patients were required to meet the following selection factors: age between 18 and 65 years, definite exclusion of any organic disorder, cognitive impairment (low intelligence level), or severe drug or alcohol abuse for the last six months. Two patients were excluded as a result of low intelligence level. The study was approved by the responsible ethics committee (The ethic committee of Eskisehir State Hospital). The final sample included 48 patients comprised of 30 men (62.5%) with a mean age of 38.2 years (SD, 11.2) and 18 women (37.5%) with a mean age of 38.7 years (SD, 7.8). The mean duration of illness was 13.3 years (SD, 9.1). Psychotic symptoms were measured using the

Scale for the Assessment of Positive Symptoms (SAPS) and the Scale for the Assessment of Negative Symptoms (SANS) and clinical global inventory (CGI). The insight concerning psychotic symptoms was measured using the Brown Assessment of Beliefs Scale (BABS). Furthermore patients were assessed by an expert to complete the somatoform dissociation questionnaire, and the expert was blind to the results of the positive and negative symptoms of schizophrenia, clinical global inventory and brown insight scale in all cases. We performed a statistical comparison of values in schizophrenia patients with higher ( $SDQ \geq 30$ ) and lower ( $SD < Q30$ ) dissociation. This criterion was chosen because the SDQ values of 30 or above are used as cut-off score for somatoform dissociation<sup>37</sup>.

### Assessment Instruments

**Scale for the Assessment of Positive Symptoms (SAPS), Scale for the Assessment of Negative Symptoms (SANS):** SANS and SAPS<sup>38</sup> were administered via semi structured interview, to elicit information about the presence and severity of positive and negative psychotic symptoms. The SAPS is split into 4 domains and assesses the presence of hallucinations, delusions, bizarre behavior and positive formal thought disorder. The Turkish version of SAPS has satisfactory internal consistency (Cronbach 's alpha = 0.84), high test-retest reliability ( $r = 0.87$ )<sup>39</sup>. The SANS is split into 5 domains and assesses the affective blunting, alogia, avolition/apathy, anhedonia/asociality and disturbance of attention. The Turkish version of SANS yields good to excellent statistical parameters (Cronbach's alpha = 0.91, test-retest coefficient = 0.94)<sup>40</sup>. Both of the assessments (SANS and SAPS) are conducted on a six point scale (0 = not at all to 5 = severe).

**Clinical Global Inventory (CGI):** CGI<sup>41</sup>, is a clinical assessment for the severity of mental illness, and it is rated by a clinician who is experienced with the disease. The assessment is rated on the following seven point scale: 1 = normal, not at all ill; 2 = borderline mental ill; 3 = mildly ill; 4 = moderately ill; 5 = markedly ill; 6 = severely ill; 7 = among the most extremely ill patients.

**Somatoform Dissociation Questionnaire (SDQ):** SDQ<sup>5</sup> evaluates the severity of somatoform dissociation. The 20 items of SDQ were derived from a pool of 75 items describing clinically observed somatoform dissociative symptoms that in clinical settings had appeared upon reactivation of particular dissociative parts of the personality and that could not be medically explained. The items are supplied with a Likert type 5 point scale; ranging from 1 = this applies to me not at all, to 5 = this applies to me extremely. Sar explored the psychometric characteristics of SDQ in Turkish people. The assessment has satisfactory internal consistency (Cronbach alpha = 0.94, test-retest coefficient  $r = 0.95$ )<sup>42</sup>.

**Brown Assessment of Beliefs Scale(BABS):** BABS<sup>43</sup> was designed to assess delusions across a wide range of psychiatric disorders. Investigators proposed that insight spans a continuum ranging from good insight, in which patients clearly recognize the excessiveness and/or senselessness of their beliefs, to poor insight or delusional conviction, in which the beliefs are considered realistic and reasonable. BABS evaluates insight concerning delusions or psychotic symptoms. BABS has been shown to have excellent internal consistency (Cronbach alpha = 0.90) and good test- retest reliability ( $r = 0.80$ ) among the Turkish population<sup>44</sup>.

### Statistical Analysis

The statistical analysis of the data was computed using the Statistical Package for the Social Sciences (SPSS, version 21). In order to establish correlation between the different psychopathological dimensions Pearson's coefficient was calculated. For statistical group comparison between patients with higher somatoform dissociation ( $SDQ \geq 30$ ) and lower somatoform dissociation ( $SDQ < 30$ ), the independent samples T test was used.

### Results

The schizophrenic study sample is characterized in Table I. Table II shows the results described by Pearson correlation coefficients. Positive symptoms which were assessed by SAPS display significant correlation with the dissociative symptoms which is assessed by SDQ ( $r = 0.29$ ,  $p < 0.05$ ). Negative symptoms which is assessed by SANS, and insight which is assessed by BABS did not show any statistically correlation with dissociative symptoms (SDQ). However, the severity of schizophrenia shows a significant correlation with the scores of SDQ ( $r = 0.31$ ,  $p < 0.05$ ) (Table II).

The criteria used to divide the participants into two groups resulted in the loss of no participants from the analysis: 26 individuals were low dissociators with scores under 30 on the SDQ and the remaining 22 participants scored above 30 on the SDQ were high dissociators. The high dissociators had an average score on the SDQ of 36 compared to 24 for the low dissociators ( $p < .00001$ ). When the psychotic symptoms; BABS, CGI, SAPS and SANS scores were compared between two groups, results of independent t test do not show statistically significant differences between the two groups on the BABS scores ( $t = 1.7$ ,  $p > 0.05$ ) and SANS ( $t = 0.2$ ,  $p > 0.05$ ) scores. On the other hand SAPS scores and severity of the disease display significant differences between the low dissociators and high dissociators ( $t = 2.5$ ,  $p \leq 0.01$ ;  $t = 2.6$ ,  $p \leq 0.01$ , respectively) (Table III). Moreover we explore whether there is a relationship between psychotic symptoms and somatoform dissociation.

TABLE I.

	Low Dissociation 26 (54.2%)	High Dissociation 22 (45.8%)	Whole Sample 48 (100%)
Female	9 (34.6)	9(40.9)	18 (37.5)
Male	17 (65.4)	13 (59.1)	30 (62.5)
Marital Status			
Single	15 (57.7)	15 (68.2)	30 (62.5)
Married	8 (30.8)	5 (22.7)	13 (27.1)
Divorced	3 (11.5)	2 (9.0)	5 (10.4)
School			
No school	0	1 (4.5)	1(2.1)
< 9classes	14 (34.6)	15 (36.4)	29(60.4)
9-12classes	10 (19.2)	6 (27.3)	16(33.3)
university	2 (7.7)	0	2(4.2)
Occupation			
Jobless	19 (73.1)	17 (77.2)	36 (75.0)
Full-time	5 (19.2)	3 (13.2)	8 (16.7)
Part-time	1 (3.8)	2 (9.1)	3 (6.3)
Pension	1 (3.9)	0	1 (2.0)

TABLE II. Pearson correlation statistics for severity of psychotic symptoms and dissociation

	SAPS	SANS	BABS	CGI
Dissociation symptoms (SDQ)	0.29*	0.003	0.15	0.31*

\* Significant at the 0.05 level (one- tailed).

TABLE III. Correlation between low and high dissociation, respectively, by means T- test

	Low dissociation SDQ ≤ 30		High dissociation SDQ > 30		t	P
	mean	SD	mean	SD		
CGI	3.5	0.9	4.3	1.2	2.6	0.016
SAPS	19.7	14.2	33.5	21.6	2.5	0.013
SANS	32.4	18.8	33.6	16.4	0.2	0.82
BABS	13.1	6.8	16.1	4.8	1.7	0.08

tive phenomena. Analysis of the relationship between specific schizophrenic symptoms and dissociative features illustrates another aspect (Table IV). Only certain symptoms are significantly correlated with various dissociative dimensions. Delusions are significantly correlated with the most of the items of SDQ and the total score of SDQ. None of other psychotic features are correlated with the various dissociative levels.

## Discussion

The present cross-sectional study investigates the relationship of categorical findings of somatoform dissociative symptoms and psychotic symptoms in patients diagnosed with schizophrenia. In our study we found that somatoform dissociation was associated with more severe symptoms of schizophrenia. These findings are

**TABLE IV.** Correlation between subgroups of saps, cgi and the items of SDQ.

	Hallucinations	Delusions	Bizarre behavior	Positive formal thought disorder	CGI
SDQ1; I have trouble urinating	-0.24	0.19	-0.26	0.10	0.15
SDQ2; I dislike tastes that I usually like	0.23	0.21	0.23	0.19	0.25
SDQ3; I hear sounds from nearby as if they were coming far away	0.24	0.36*	0.25	0.24	0.20
SDQ4; I have pain while urinating	0.16	0.17	0.16	0.20	0.42**
SDQ5; My body or a part of it feels numb	0.19	0.32*	0.25	0.16	0.16
SDQ6; I have pain while urinating	0.16	0.26	0.12	0.22	0.24
SDQ7; I have an attack that resembles an epileptic seizures	0.12	0.36*	0.05	0.08	0.14
SDQ8; My body or a part of it, are insensitive to pain	0.17	0.30	0.19	0.07	0.18
SDQ9; I dislike smells I usually like	0.12	0.34	0.19	0.21	0.30
SDQ10; I feel pain in my genitals	-0.06	0.08	-0.19	0.16	0.06
SDQ11; I cannot hear for a while as I am a deaf	-0.04	0.35*	0.07	0.14	0.13
SDQ12; I cannot see for a while as I am a blind	-0.12	0.11	-0.07	0.14	0.03
SDQ13; I see things around me differently than usual	0.18	0.10	0.12	0.11	0.02
SDQ14; I am able to smell much better or worse	0.06	0.22	0.02	0.05	0.05
SDQ15; It is as if my body, or part of it, has disappeared	-0.04	0.10	0.09	0.22	-0.11
SDQ16; I cannot swallow, or can only swallow with great difficulty	-0.04	0.08	0.02	0.14	-0.04
SDQ17; I cannot sleep for nights on end, but remain very active during the day.	-0.23	-0.05	-0.15	-0.20	0.18
SDQ18; I cannot speak (or only with great effort) or I can only whisper	0.13	0.30*	0.22	0.19	0.31*
SDQ19; I am paralyzed for a while	0.11	0.33*	0.13	0.19	0.09
SDQ20; I grow stiff for a while	0.16	0.09	0.01	0.29	0.25*
<b>Total SDQ</b>					

\* Significant at the 0.05 level (one-tailed); \*\* Significant at the 0.01 level (one-tailed).

consistent with the studies that revealed high dissociation were also confronted with a more severe episode of schizophrenia<sup>16 18 20</sup>. In our study we also find a close relationship between positive symptoms of schizophrenia and somatoform dissociative symptoms<sup>18 20 45</sup>. Some authors hypothesize that the findings of consistently elevated scores on DES in schizophrenic sample with high positive symptoms may not be reliable, it could be the result of shared item content<sup>34</sup>. Moreover, some authors suggested that delusional patients can have problems in understanding the items of DES, and it can be difficult to distinguish dissociative phenomena from delusions<sup>35</sup>. Another issue is that when DES is used, somatoform manifestations of dissociative processes have not been considered<sup>34</sup>.

As a result of these comments in our study we used the SDQ (Somatoform Dissociative Questionnaire) to measure dissociative symptoms more appropriately and also to cover somatoform manifestation of dissociative symptoms. Our findings on SDQ are confirming the previously reported assumption that high dissociation was also confronted with a more severe episode of schizophrenia and there is a relationship between the positive symptoms of schizophrenia and dissociative symptoms.

The correlation between delusions and some items of the SDQ reported by our sample merit some attention. Janet had reportedly viewed, dissociation as being intrinsically pathological and causally bound to unresolved traumatic memories<sup>46</sup>. Freud proposed in collaboration with Breuer that the dissociative process was

the result of repression of traumatic material in unconscious<sup>46</sup>. In our study we suggest that the impact of delusions on a particular individual might cause stressful events as similar as to unresolved traumatic memories. The degree of experienced distress may depend on many variables, including the degree of current psychiatric illness. As a result of distress that is caused by delusions somatoform dissociative symptoms occur as a coping mechanism. For example authors recommend that in amnesic dissociation amnesia occurs as a coping mechanism for the trauma. In our study it is interesting to see that there is a correlation between delusions and the items 'I cannot hear for a while as I am a deaf', 'I cannot speak or I can only whisper', 'I am paralyzed for a while'. According to this correlation dissociation may be functional, providing a source of resilience or response to schizophrenic symptoms. Cases were reported where even severe dissociative symptoms such as alternate personalities and amnesic episodes disappeared when the psychotic disorder was successfully treated<sup>47</sup>. Moreover Giese et al proposed that dissociation might arise as a defense against the "disorganizing pressure of abnormal affect" in patients with psychotic mood disorders or that psychotic symptoms might lower the threshold for the expression of dissociation<sup>48</sup>. As a result of our findings we suggest that especially positive symptoms of schizophrenia may cause distress on individuals and because of this distress accompanying somatoform dissociative symptoms may increase. Psychotic experiences itself might be stressful events that cause somatoform dissociative symptoms. Another possible explanation might be that both psychotic and dissociative manifestations could be an independent result of congenital vulnerability. Walker et al hypothesized that some congenital vulnerability for schizophrenia may be associated with impaired coping mechanisms<sup>49</sup>. Thus, an individual who is at risk for schizophrenia may also be at risk for more somatoform dissociative experiences. Given of the reports on dissociation in schizophrenia, our findings could resemble the previously reported assumption that psychological and neurobiological coping mechanisms may be significantly impaired by schizophrenia itself and also dissociative phenomena might be possible inherence in schizophrenia<sup>26</sup>. One obvious clinical implication is that all clients with psychotic symptoms or diagnoses should be asked about dissociative experiences. Although there are many studies that research the association between positive and negative symptoms of schizophrenia and dissociation, there is no systematic study that evaluate the association between insight of schizophrenia and dissociation. In our study we aimed to investigate the association between insight of schizophrenia and dissociation as well. The existing findings

suggest that dissociative symptoms are related to severe psychotic symptoms. In the present study we investigate whether there is any differences concerning insight between participants with greater dissociation and low dissociation in schizophrenic population. In our study we reveal that there is no difference of insight among the participants with higher levels and lower levels of dissociative symptoms.

Studies published to date all identify a substantial subgroup of individuals in treatment for schizophrenia who exhibit high dissociation scores. Even carefully interpreting our data, there is no significant association between insight of schizophrenia and somatoform dissociative experiences; therefore no differences are accepted about insight in the subgroup of schizophrenia which includes high dissociators. Investigating whether psychotic symptoms are related to the development of somatoform dissociative symptoms is not only important theoretically but has crucial clinical implication in relation to the accurate assessment, formulation and treatment of psychotic disorders. Determination of the relationship between somatoform dissociative symptoms and psychotic symptoms is also important to develop an appropriate intervention. For example if delusions seems to be related to maintenance distress that cause somatoform dissociation as a coping mechanism, then these beliefs could be targeted in therapy. Moreover, it would also appear to be important to assess for the presence of somatoform dissociative symptoms in individuals presented with schizophrenia symptoms. Subsequent interventions could then focus on teaching different strategies for reducing the distress of symptoms. While the results of the present study are intriguing, its limitations should also be noted. In our study patients with emotional abuse could not be objectively determined.

Clearly, there is a need for further research to expand upon the initial findings observed in the present study. More specifically, there is a need for research to replicate this study using a sample with posttraumatic stress disorder (PTSD) and trauma history, to map the relationship between somatoform dissociation and specific types of schizophrenia symptoms in more detail and to explore how dissociation and insight towards psychotic experiences are related.

Future studies employing two groups; one of them is consisting of people with schizophrenia diagnoses with trauma or post-traumatic stress disorder and the other group is consisting of people with schizophrenia diagnoses but without trauma or post-traumatic stress disorder are needed to compare and to develop our understanding.

### Conflict of interest

None.

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