



## Dissociative Symptoms in Schizophrenia and Mood Disorder: A Comparative Study

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### ABSTRACT

**Aims & Objectives:** Aims: To compare dissociative symptoms in schizophrenia and mood disorder.

Objectives: First objective was to study the prevalence of dissociative experiences in Schizophrenia and mood disorder patients. Second was to study the association between reported childhood / adult trauma and dissociative symptoms and third was to study the association between social support and dissociative symptoms.

**Methods:** Cross sectional study design was used to collect data. Purposive sample technique was used to select 90 samples according to inclusion and exclusion criteria from Ranchi Institute of Neuro-Psychiatry and Allied Sciences, Kanke, Ranchi, Jharkhand. There were two experimental groups (schizophrenia and mood disorder) having 30 patients each & another group of 30 normal individuals. Four tools were used to collect the data. Analysis was done using Statistical Package for Social Science (SPSS) version 16.00 for Window XP. Descriptive statistics was used for summarizing socio-demographic and clinical data. Dichotomous variables of socio demographic profile (like sex, marital status, religion etc.) and background clinical parameters (like stressors, course etc.) were compared among the groups using Chi-square ( $\chi^2$ ) test with Fisher's exact test (where applicable).

**Result:** Significant difference was found in habitat, occupation and type of family. Mood disorder patients' habitat was significantly more from rural background ( $\chi^2=7.880$ ,  $p=0.019$ ). further result shows that schizophrenic group had significantly more total DES score in comparison to other two groups ( $H=46.75$ ,  $p=0.000$ ). There was no significant difference in sex, marital status, and religion among the three groups.

**Conclusion:** Schizophrenia group had experienced more childhood trauma and dissociation in comparison to mood disorder. There is an increase incidence of significant dissociation 26.7% of the schizophrenia patients and 6.7% of mood disorder patients of our study as compare to previous one.

**KEYWORDS :** Dissociative Experience Scale, Trauma Symptom Checklist-40 (TSC-40), Schizophrenia & mood disorder.

### Introduction:

Dissociation is a topic that has attracted an expansive and burgeoning literature. The term dissociation has its origin in the constituent parts of the term: dis-association, which means disconnecting or lowering the strength of associated connections. A wide range of definitions for dissociation have been proposed by mental health researchers and clinicians. While they might differ in detail, what is common in all definitions is a reference to the lack of usually expected connections between mental content. Dissociative symptoms are characterized by a compartmentalization of consciousness. That is, certain mental events that would ordinarily be expected to be processed together (e.g. thoughts, emotions, motor activity, sensations, memories and sense of identity) are functionally isolated from one another and, in some cases, rendered inaccessible to consciousness and/or voluntary recall.<sup>1</sup>

Schizophrenia is a clinical syndrome with involvement of thought, perception, emotion, movement and behavior. Its prevalence has been reported from 1 to 1.5%. The ratio of suffering is the same for both males and females. The cause of this disease is obscure. However, there are some assumptions regarding its etiology such as genetic factors, neuro-immuno-virology, and complications during pregnancy and delivery.<sup>2</sup> The term "dissociation" refers to a disorder in normal functioning of perception, memory, identity or consciousness.<sup>3</sup>

Although dissociation is the hallmark of the dissociative disorders, people with other forms of psychopathology also experience

dissociative symptoms. One study of the prevalence of dissociation in a general psychiatric population revealed that 29% of the sample exhibited pathological levels of dissociation. Dissociative symptoms may resemble psychotic symptoms in many instances.<sup>4</sup>

The association between trauma and dissociation has been well-known in patients with dissociative disorders and post trauma stress disorders, and even though patients with severe mental breakdown have higher traumatic confrontations.

Some studies indicated that there is an association between people's personal reports of neglect or abuse in childhood and dissociative symptom in adulthood schizophrenia. Emotional abuse has high positive correlation with observed dissociation in schizophrenic population. Such findings describe some genetic predispositions to schizophrenia that may be in connection with disorder of correspondence mechanism. Such process exposes children with pre-schizophrenia to higher impacts of stress.<sup>5</sup>

Thus, children, who are at risk of schizophrenia, may be more liable to suffer from dissociation as well. Sometimes, the critical cases of dissociation may be misdiagnosed as schizophrenia. In fact, it is not uncommon for patients with posttraumatic stress disorder or dissociative identity disorder to receive a misdiagnosis of Schizophrenia.<sup>6</sup> Only upon the discovery of a precipitating event are such patients reassessed and assigned proper diagnoses and treatments.<sup>7</sup> Nevertheless, investigation of premorbid trauma and ruling out of posttraumatic stress disorder (PTSD) is not a routine

occurrence in the course of psychiatric diagnosis.<sup>8</sup>

**Materials and Methods:**

**Study Design:** The study was a cross sectional hospital based study. The subjects were recruited for the study by purposive sampling technique. The study was conducted in the Ranchi Institute of Neuro-Psychiatry and Allied Sciences, Kanke, Ranchi, Jharkhand.

**Sample:** Three groups were included in the study i.e. two experimental groups (schizophrenia and mood disorder) having 30 patients each. Comparison was done between experimental groups and another group of 30 normal individuals.

**Inclusion Criteria:**

- Age range 18 – 45 years
- Patients in whom acute symptoms have clinically resolved
- Both sexes
- Consenting for study

**Exclusion Criteria:**

- Any co-morbid medical/psychiatric & neurological disorder
- Patients who had acute symptoms
- Not consenting for study

**Inclusion Criteria for Normal Controls:**

- Age, Sex and education level matched with experimental groups.
- No prior history of any major medical or neuropsychiatric illness
- Consenting for study

**Exclusion Criteria for Normal Controls:**

- Any co-morbid medical & neurological disorder

- Ever been treated for any psychiatric disorder as per ICD-10
- Not consenting for study

**Tools for Assessment:**

- 1) Socio-demographic data sheet
- 2) Dissociative Experiences Scale (DES)
- 3) Trauma Symptom Checklist-40 (TSC-40)
- 4) Global assessment functioning scale (GAF)
- 5) The 27 item social support questionnaire of Sarason (SSQ)

**Procedure:**

Patients from inpatient department of RINPAS were included in the study. After screening, as per inclusion and exclusion criteria, diagnosis was made as per ICD -10 Diagnostic criteria for research (WHO, 1992). Socio-demographic data were gathered after taking informed consent. One-time assessment was done, when the acute symptoms in the patients were clinically resolved. Patients were assessed for dissociation using Dissociative Experiences Scale-II (DES= II), childhood/adult trauma with Trauma Symptom Checklist (TSC-40), functioning with Global Assessment of Functioning Scale (GAF scale) and social support with Social Support Questionnaire (SSQ).

**Statistical analysis:** Analysis was done using Statistical Package for Social Science (SPSS) version 16.00 for Window XP. Descriptive statistics was used for summarizing socio-demographic and clinical data. The distributions of the clinical and experimental parameters were not normal.

**Results:**

**Table-1: (1)-a: Socio-Demographic Profile:**

Socio-demographic variable	Mood Disorder (M) (N=30)	Schizophrenia (S) (N=30)	Normal (N) (N=30)	2(df)	p
	n (%)	n (%)	n (%)		
Sex (male)	29(96.7)	29(96.7)	27(90)	1.694(2)	0.429
Marital status (married)	17(56.7)	18(60)	13(43.3)	1.875(2)	0.392
Religion (Hindu)	29(96.7)	25(83.3)	26(86.7)	2.925(2)	0.232
Habitat (rural)	26(86.7)	20(66.7)	16(53.3)	7.880(2)*	0.019
Occupation (employed)	5(16.7)	2(6.7)	18(60)	24.037(2)**	0.000
Type of family (extended)	11(36.7)	7(23.3)	15(50)	23.951(4)**	0.000

Legend: \*\*p<.001; \*p<.05; M= Mood disorder; S= Schizophrenia; N=Normal; 2= Chi square; df= Degree of freedom

(1)-b: Socio-Demographic Profile:

Socio-demographic variable	Mood disorder (M)	Schizophrenia (S)	Normal (N)	H(df)	p	Post-Hoc
	Mean±SD	Mean±SD	Mean±SD			
Age	27.53±6.87	31.50±6.77	27.80±4.31	6.333(2)*	0.042	M=S=N
Education in years	12.00±1.44	12.56±1.77	15.00±2.85	20.960(2)**	0.000	S=N>M
Total family income	1.30±0.59	1.20±0.484	2.40±0.81	36.027(2)**	0.000	N<M=S

Legend: \*\*p<0.001; \*p<0.05; M= Mood disorder; S= Schizophrenia; N=Normal; df=Degree of freedom; H= Kruskal-Wallis; SD= Standard deviation

Table-2: (2)-a: Background Clinical Parameters:

Clinical variable	Mood disorder	Schizophrenia	2 (df)	p
	n (%)	n (%)		
Stressor (acute)	9 (81.8)	4 (44.4)	3.039 (1)	0.081
Course (continuous including fluctuating)	26 (86.7)	17 (56.7)	6.648 (1)*	0.010
Treatment history (compliant)	18 (60.0)	13 (43.3)	1.669 (1)	0.196
Family history of psychiatric illness (affective)	14 (66.7)	14 (66.7)	0.000 (1)	1.000

Legend: \*\*p<0.001; \*p<0.05; M= Mood disorder; S= Schizophrenia; χ2= Chi square; df= Degree of freedom

(2)-b: Background Clinical Parameters:

Clinical variables	Mood disorder (M)	Schizophrenia (S)	Mann-Whitney (U)	p
	Mean±SD	Mean±SD		
Number of past episodes	7.46±4.44	4.0±3.75	233.00*	0.001
Age of onset (years)	24.13±6.08	26.46±7.64	360.50	0.185
Total duration of illness (months)	40.80±30.33	60.46±61.22	384.00	0.324
Duration of active phase illness (months)	28.86±23.83	50.06±52.44	350.50	0.141
Duration of current episode (months)	2.65±1.15	9.16±7.16	67.00**	0.000

Legend: \*\*p<0.001; \*p<0.05; M= Mood disorder; S= Schizophrenia; SD= Standard deviation

Table-(3): Comparison of Experimental Parameters among 3 Groups:

Experimental Parameters	Mood Disorder (M)	Schizophrenia (S)	Normal (N)	H(df)	p	Post-Hoc
	Mean±SD	Mean± SD	Mean±SD			
DES Score	21.77±6.36	28.31±5.03	13.58±8.08	46.75(2)**	0.000	S>M>N
TSC-40 total score	13.96±5.99	21.30±5.76	13.60±8.79	17.54(2)**	0.000	N=S>M
TSC-dissociation score	4.06±1.65	5.76±2.47	2.13±1.91	31.26(2)**	0.000	S=M>N
TSC-anxiety score	3.36±1.97	5.63±2.07	1.96±0.96	40.19(2)**	0.000	S>M=N
TSC-depression score	2.06±1.62	4.40±2.28	1.00±0.98	37.24(2)**	0.000	S>M=N
TSC-Sexual abuse trauma index (SATI) score	3.03±1.47	4.46±1.88	1.56±1.43	32.96(2)**	0.000	N<S=M
TSC-sleep disturbance score	2.40±1.49	2.76±1.95	1.06±1.05	21.35(2)**	0.000	N<S=M
TSC-sexual problems score	1.13±1.19	1.20±1.61	0.26±0.58	10.82(2)*	0.004	M=S=N
Global assessment functioning (GAF) score	63.33±4.97	60.20±3.91	82.56±3.49	62.08(2)**	0.000	N=M>S
Social support questionnaire number score (SSQ-N)	2.05±0.22	2.01±0.39	1.90±0.30	4.32(2)	0.116	M=S=N
Social support questionnaire satisfaction score	18.78±1.39	15.54±2.95	17.78±3.59	20.27(2)**	0.000	N=M>S
Social support questionnaire family (SSQ-F) score	12.16±2.18	8.53±3.03	11.60±2.13	22.88(2)**	0.000	S<N=M

Legend: \*\*p<.001; \*p<.05; M= Mood disorder; S= Schizophrenia; N=Normal; SD= Standard deviation; df= Degree of freedom

Table 3 shows comparison of experimental parameters among three groups. Schizophrenic group had significantly more total DES score in comparison to other two groups (H=46.75, p=0.000). Schizophrenia and normal group had more total score in TSC-40 in comparison to mood disorder group (H=17.54, p=0.000). TSC dissociation score was significantly more in schizophrenia and mood disorder groups in comparison to normal control group (H=31.26, p=0.000). Scores in anxiety and depression subscales of TSC-40 were significantly high in schizophrenia group in comparison to other two groups (H=40.19, p=0.000; H=37.24, p=0.000 respectively). Sexual

abuse trauma index and sleep disturbance sub score of TSC-40 were significantly higher in schizophrenia and mood disorder group in comparison to normal control group (H=32.96, p=0.000; H=21.35, p=0.000 respectively). Normal control group had more GAF score in comparison to other two groups (H=62.08, p=0.000). SSQ-satisfaction score was significantly more in mood disorder and normal group while compared to schizophrenia group (H=20.27, p=0.000). SSQ-family score was significantly low in schizophrenia group compared to rest two groups (H=22.88, p=0.000).

Table -4 Correlation between Clinical and Experimental Parameters 4) - a: Mood Disorder Group

	Total family income	Age of onset	TSC-40 total	TSC-dissociation	TSC-anxiety	TSC-depression	TSC-SATI	TSC-sleep	TSC-sexual problems	GAF-score
Education	0.339	-0.108	-0.411*	-0.403*	-0.309	-0.384*	-0.161	-0.401*	-0.202	0.029
Age of onset	0.246	1.000	-0.380*	0.031	-0.052	-0.101	-0.186	-0.103	-0.059	0.257
Total duration of illness	0.257	0.066	-0.346	-0.272	-0.193	-0.314	-0.309	-0.092	-0.363*	0.271
DES-score	-0.303	-0.216	0.227	-0.016	-0.025	0.199	0.107	0.180	-0.015	-0.482**
TSC-40 total score	-0.261	-0.380*	1.000	0.573**	0.765**	0.617**	0.512**	0.226	0.370*	-0.226
TSC-anxiety	0.174	-0.052	0.765**	1.000	0.482	0.516**	0.397*	-0.001	0.335	-0.019
TSC-depression	-0.154	-0.101	0.617**	0.517**	1.000	0.453*	0.512**	0.314	-0.217	
TSC-SATI	-0.059	-0.186	0.512**	0.421*	0.397*	1.000	0.406*	0.253	-0.055	
SSQ-S	0.390*	0.352	-0.325	0.017	-0.163	-0.175	-0.019	-0.172	-0.051	0.167

Legend: TSC=Trauma Symptom Checklist; DES=Dissociative Experiences Scale; SATI=Sexual Abuse Trauma Index; SSQ-S=Social Support Questionnaire-Satisfaction; GAF= Global Assessment of Functioning

Table 4a shows correlation between clinical and experimental parameters of mood disorder group. Education was negatively correlated with scores of TSC-40 total (rho=-0.411, p<.05), TSC-dissociation (rho=-0.403, p<.05), TSC-depression (rho=-0.384, p<.05), TSC-sleep (rho= -0.401, p<.05). Age of onset was negatively correlated with TSC-total score (rho=-0.380, p<.05). Mood disorder patients with shorter total duration of illness had more score in TSC-sexual problems (rho=-0.363, p<.05). Those mood disorder patients who scored high in DES had lower score on GAF (rho=-0.482, p<.001). TSC-40 total score was positively correlated with scores in TSC-dissociation (rho=0.573, p<.001), TSC-anxiety (rho=0.765, p<.001), TSC- depression (rho=0.617,

p<.001), TSC-SATI (rho=0.512, p<.001), and TSC sexual problems (rho=0.370, p<.05). TSC-anxiety was found to be positively correlated with TSC-depression (rho=0.516, P<.001), and TSC-SATI (rho=0.397, p<.05). TSC-depression was found high with higher scores of TSC-dissociation (rho=0.517, p<.001), TSC-SATI (rho=0.453, p<.05), and TSC-sleep (rho=0.512, p<.001). In turn TSC-SATI was positively correlated with scores in TSC-dissociation (rho=0.421, p<.05), and TSC-sleep (rho=0.406, p<.05). Mood disorder patients with high scores in TSC-depression (rho=0.512, p<.001), and TSC-SATI (rho=0.406, p<.05) had also high TSC-sleep score. SSQ-S was found to be high when total family income was high (rho=0.390, p<.05).

(4)-b: Schizophrenia Group

	Duration of current episode	DES score	TSC-40 total score	TSC-anxiety	TSC-depression	TSC-sleep	TSC-sexual problems	SSQ-S
Age	0.136	0.082	-0.410*	-0.019	-0.332	-0.427*	-0.382*	-0.060
Age of onset	-0.223	-0.207	-0.514**	-0.112	-0.429*	-0.518**	-0.352	-0.128
TSC-dissociation	0.232	0.427*	0.521**	0.368*	0.375*	0.219	0.698**	0.193
TSC-depression	0.462*	0.135	0.531**	0.468**	1.000	0.491**	0.409*	0.370*
TSC-SATI	0.196	0.339	0.531**	0.409*	0.402*	0.252	0.663**	0.199
TSC-sexual problems	0.145	0.235	0.437*	0.523**	0.409*	0.423*	1.000	0.088
GAF-score	-0.044	-0.455*	-0.152	-0.546**	-0.195	-0.074	-0.270	0.310

Legend: TSC= Trauma Symptom Checklist, DES= Dissociative Experiences Scale, SATI=Sexual Abuse Trauma Index, SSQ-S=Social Support Questionnaire-Satisfaction

Table 4b shows correlation between clinical and experimental parameters of schizophrenia group. Younger schizophrenic patients'

score in TSC-40 total (rho=-0.410, p<.05), TSC-sleep (rho=-0.427, p<.05), and TSC-sexual problems (rho=-0.382, p<.05) were

higher in comparison to older counterpart. Those schizophrenics who had *earlier age of onset* scored less in TSC-40 total ( $\rho = -0.514$ ,  $p < 0.001$ ), TSC- depression ( $\rho = -0.429$ ,  $p < 0.05$ ), and TSC-sleep ( $\rho = -0.518$ ,  $p < 0.001$ ). *TSC-dissociation* was positively correlated with total score ( $\rho = 0.521$ ,  $p < 0.001$ ) as well as scores of other sub-scales of TSC-40 like anxiety ( $\rho = 0.368$ ,  $p < 0.05$ ), depression ( $\rho = 0.375$ ,  $p < 0.05$ ), and sexual problems ( $\rho = 0.698$ ,  $p < 0.001$ ). *TSC-depression* was found to be high with longer duration of current episode ( $\rho = 0.462$ ,  $p < 0.05$ ), and with higher scores in total ( $\rho = 0.531$ ,  $p < 0.001$ ) and other sub-scales of TSC like anxiety ( $\rho = 0.468$ ,  $p < 0.001$ ), sleep ( $\rho = 0.491$ ,  $p < 0.001$ ), sexual problems ( $\rho = 0.409$ ,  $p < 0.05$ ), and SSQ-S ( $\rho = 0.370$ ,  $p < 0.05$ ). *TSC-SATI* was again positively correlated with total score of TSC-40 ( $\rho = 0.531$ ,  $p < 0.001$ ) as well as sub-scales like anxiety ( $\rho = 0.409$ ,  $p < 0.05$ ), depression ( $\rho = 0.402$ ,  $p < 0.05$ ), and sexual problems ( $\rho = 0.663$ ,  $p < 0.001$ ). *TSC-sexual problems* score was found to be higher when scores in TSC-anxiety ( $\rho = 0.523$ ,  $p < 0.001$ ) and TSC-sleep ( $\rho = 0.423$ ,  $p < 0.05$ ) were high. Schizophrenia patients who had high GAF score scored low in TSC sub-scale of anxiety ( $\rho = -0.546$ ,  $p < 0.001$ ), and DES ( $\rho = -0.455$ ,  $p < 0.05$ ).

### Discussion:

This was a hospital based cross-sectional study with the objectives to study the prevalence of dissociative experiences in psychotic patients like schizophrenia and mood disorder, and also to study the association between reported childhood trauma, dissociative symptoms and perceived social support.

Present study results revealed that schizophrenia patients experienced significant dissociation more frequently (26.7) in comparison to mood disorder patients (6.7%) and their severity of dissociation was also significantly more (mean score of DES=28.31) which was in accord with past literatures.<sup>9-10</sup> Further study results shows that two (6.7%) of normal control had significant dissociation when total DES score  $> 25$  was considered to be significant. Previous studies demonstrated that dissociative symptoms are common and that approximately 5% of the population suffers from high levels of dissociation.<sup>11</sup>

Schizophrenia patients in present study had significantly more reported childhood/adult trauma (dissociation sub score of TSC-40=5.76) especially who had earlier age of onset of their illness. Patients of schizophrenia with a comorbid dissociative disorder in one previous study have more severe childhood trauma histories, more comorbidity and higher scores for both positive and negative symptoms.<sup>12</sup> Schneiderian first rank symptoms, once thought to be pathognomic for schizophrenia, have been found to be more common in dissociative identity disorder in few studies.<sup>13</sup> Schneiderian symptoms are highly related to other dissociative symptom clusters and to childhood trauma.<sup>14</sup>

In previous studies of mood disorders, measures of dissociation were correlated with childhood trauma. In patients with high scores on dissociative experience scale, more of the affective and behavioural instability might be caused by trauma and dissociation. Among mood disorders, depression is more closely associated with dissociation.<sup>15</sup> But, present study did not find any correlation between dissociation (DES score) and trauma (TSC-40 score) in either of experimental groups ( $p \geq 0.05$ ). Interestingly normal individuals had significant correlation between these two parameters (Spearman's  $\rho = 0.535$ ,  $p = 0.002$ ).

Biological studies have demonstrated the long-lasting consequences of childhood maltreatment and neglect on the developing brain. They have shown that postnatal neglect or maltreatment provokes a cascade of stress responses that organize the brain to develop along a specific pathway selected to facilitate reproductive success and survival in a world of deprivation and strife. This pathway, however, is costly because it is associated with an increased risk of developing serious medical and psychiatric disorders and is unnecessary and maladaptive in a more benign environment.<sup>16</sup>

The vast majority of our study subjects had constantly very low dissociation scores, and a small proportion of individuals suffered from persistent dissociative symptoms. Anxiety and depression sub score of TSC-40 were high in schizophrenic patients, both of which was also correlated statistically ( $p < 0.001$ ). Sexual abuse trauma index and sleep disturbance were manifested more in experimental groups and thus their global functioning was also more impaired.

### Conclusion:

These results suggest that health care providers need to recognize symptoms of dissociation in the schizophrenic and mood disorder patients especially those who had history of childhood traumatic experiences so that steps can be taken to minimize the morbidity associated with dissociation into their adult lives.

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