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Is Conversion a Dissociative Symptom?

Является ли конверсия диссоциативным симптомом?

Summary.
Background: DSM-IV continues to classify conversion disorder separately from the dissociative disorders, together with the somatoform disorders. This is done on the basis that conversion disorder presents with bodily symptoms, whereas the dissociative disorders concern mental symptoms. It remains a clinical research question, though, whether symptoms of conversion disorder and the dissociative disorders overlap in their clinical presentation as has been maintained by ICD-10 in which conversion disorder belongs to the group of dissociative [conversion] disorders.
Methods: In a sample of 130 clinical and non-clinical participants, conversion items and dissociative items (as measured by the State Scale of Dissociation / SSD) were examined by Pearson correlation coefficients, principal components factor analyses, and confidence intervals.
Results: The conversion symptoms clustered with the other dissociative symptoms on the one general factor that ran through the entire SSD, accounting for 61 % of the variance. Conversion symptoms correlated highly significantly with the total SSD score, and further behaved like the other dissociative symptoms in their presentation in dissociative disorders, as compared with other psychiatric disorders and control subjects.
Conclusion: Conversion symptoms are closely related clinically to other dissociative symptoms. Thus, these results support the ICD-10 categorisation of conversion disorder among dissociative disorders. Notwithstanding these results, other ways to differentiate between conversion disorder and the dissociative disorders may still have merit. For example, a study of the neurophysiological correlates of dissociative and conversion symptoms might elucidate the merits of this differentiation.

Резюме. DSM-IV продолжает классифицировать конверсионные расстройства о тдельно от диссоциативных, вместе с соматоформными. Это происходит на основании того, что конверсионные расстройства представлены телесными с имптомами в то время, как диссоциативные расстройства содержат психиче ские симптомы. Этот аспект всё ещё остаётся вопросом клинических исслед ований, хотя пока симптомы конверсионного и диссоциативного расстройс тв частично перекрываются в своей клинической представленности, как ут верждается в МКБ-10, в которой конверсионное расстройство принадлежит к г руппе диссоц- ииациативных (конверсивных). В качестве образца были взяты 130 о бследованных в клинике участников и контрольной группы, у которых обнар уживались конверсионные и диссоциативные признаки (по шкале диссоциа ии SSD). Они проверялись по персональному корреляционному к оэффициенту, принци- пиальным компонентам факторного анализа и показате лям достоверности. Конверсионные симптомы объединяю тся с другими диссоциативными симптом- ами по одному общему фактору, кото рый проходит через всю SSD, встречаясь в 61% случаев вариант. Ко нверсионные симптомы очень существенно корроли- руют с общим показател ем SSD, и в дальнейшем развиваются подобно другим диссоциат ивным симптомам, представленным в диссоциативных расстройствах по сра внению с таковыми при других психиатрических з болеваниях и у контроль ных субъектов. Конверсионные симптомы напрямую связаны с другими диссо ци-

ативными симптомами. Таким образом, эти результаты подтверждают кате горизацию конверсионных расстройств среди диссоциативных по МКБ-10. Несмотря на эти результаты, всё ещё заслуживают проведения другие исследования по дифференциации между ко нверсионными и диссоциативными расстройствами. Например, могло бы быть проведено изучение нейрофизиологических коррелятов диссоциативных и конверсионных расстройств.

Introduction

The quest ion wheth er conve rsion shoul d be classified separately from dissociative symptoms, is pertinent because there is disagreement between two important diagnostic classification systems the DSM-IV (APA, 1994) and the ICD-10 (WHO, 1992).

Figure 1 is a schematic comparison between DSM-IV and ICD-10 in which the disagreement about the category to which conversion disorder belongs, is evident. The DSM-IV somatoform disorders are made up of *physical* or *bodily* symptoms, e.g., weakness, pain, anaesthesia, or other malfunctions of the body, whereas the DSM-IV dissociative disorders consist of so-called *mental* symptoms, e.g., an altered sense of personal identity, memory impairment, an altered perception of self and the environment, etc. According to this metaphysical division, conversion disorder consists of physical symptoms such as paralysis, anaesthesia, or convulsions, and is therefore classified as a somatoform disorder. The grey rectangle in Figure 1, that represents conversion disorder, therefore falls to the left of the line between the somatoform disorders and the dissociative disorders in the top (DSM-IV) row.

The ICD-10 groups conversion disorder with the dissociative disorders, on the basis of a shared me ch an is m, whe th er th is me ch an is m is a psychodynamic dissociation/sp litting/"spaltu ng", or whether it refers to a pathophysiological mechanism. Also, the word "conversion" features in the name of this group of disorders, viz. "Dissociative [conversion] disorders". Thus, the grey rectangle represen ting

conversion disorder in Figure 1 falls to the right of the line between the somatoform disorders and the dissociative disorders in the bottom (ICD-10) row.

Instead of using DSM-IV's rather metaphysical approach in order to decide where conversion belongs, empirical investigation of the clinical presentation of conversion symptoms may elucidate the issue. Thus, the empirical question is whether conversion symptoms are associated clinically *with* dissociative symptoms, or whether conversion symptoms present clinically *without* dissociative symptoms, i.e., separately? The results of such investigation could inform us whether conversion is a kind of dissociation, or whether it is a separate phenomenon.

Methods

Subjects

This empirical investigation drew on data from a study on the psychometric validity and reliability of the State Scale of Dissociation/SSD (Krüger & Mace, 2002) for which ethical approval and written informed consent had been obtained.

The study population (n=130), summarised in Table 1, consisted of two groups of subjects: 67 adult patients and 63 control subjects. Among the patient group, a subgroup of patients with a diagnosis of a dissociative disorder was included as a criterion group, for they were anticipated to show the highest prevalence and severity of dissociative symptoms. Their DSM-IV diagnoses were dissociative amnesia (n=1), dissociative identity

Figure 1   Categorisation of conversion disorder: DSM-IV VS ICD-10

DSM-IV	Somatoform disorders		Dissociative disorders	
ICD-10	Somatoform disorders		Dissociative [conversion]	Other neurotic

Conversion disorder

disorder (n=1), and dissociative disorder (not otherwise specified) (n=8). Patients suffering from a major depressive episode, schizophrenia, and patients suffering from alcohol withdrawal served as contrasting samples to the patients suffering from dissociative disorders.

None of the patients of the contrasting samples had significant comorbid psychopathology or significant personality problems. These contrasting samples were included owing to the frequent comorbidity and symptom overlap between dissociative symptoms and depressive disorders (Ross et al., 1990; Saxe et al., 1993), between dissociative symptoms and schizophrenia and other psychotic illnesses (Steinberg et al., 1994; Ellason & Ross, 1995), and between dissociative symptoms and alcohol- and other substance-abuse-related problems (Dunn et al., 1993; Wenzel et al., 1996).

Patients fulfilling DSM-IV criteria for the above disorders were identified among all consecutive admissions to the general adult inpatient treatment facilities of the South Warwickshire Mental Health Services NHS Trust, England, during a five month period. Patients who suffered from a first or recurrent major depressive episode at that time were included. Patients with schizophrenia were included if they had been experiencing active phase symptoms. Patients suffering from alcohol withdrawal, without significant other psychoactive substance use, were included if they were at "Day 2" or "Day 3" of an alcohol withdrawal treatment regimen. Patients with an enduring dissociative disorder were identified from regular attendees at community-based facilities of the same Trust. The control group consisted of undergraduate university students without a history of psychiatric treatment.

The main advantage of studying various diagnostic subgroups is that it helps to prevent biased results. Conversion symptoms occur in various psychiatric disorders, and dissociative symptoms occur in various psychiatric disorders as well as among people without psychiatric disorders. This wide spectrum of presentation had been accounted for by the various subgroups, among which the presentation of conversion symptoms and (other) dissociative symptoms could be compared.

Instruments

For the purposes of this investigation, the scores obtained by the subjects on the State Scale of Dissociation/SSD (Krüger & Mace, 2002) were used. The SSD is a 56-item, self-report scale of the intensity / severity of dissociative symptoms at the time that the scale is completed. It is specifically designed to measure dissociative *states* as opposed to a dissociative *trait* / tendency to dissociate. The SSD consists of 7 subscales: derealisation, depersonalisation, identity confusion, identity alteration, conversion, amnesia, and hypermnesia. Each item expresses how the person might experience that symptom at that point in time. The SSD was developed as a state measure for the purpose of studying the concurrent neurophysiological correlates of dissociative states, eg. EEG changes that may accompany dissociative states.

The advantage of using a *state* scale here was that it enabled us to study the *concurrent* presence or simultaneous presentation of conversion symptoms with other dissociative symptoms. It was advantageous furthermore to use this state scale of dissociation here since conversion symptoms are accommodated with other dissociative symptoms within one scale (i.e., the SSD), using the same format and same scoring, thus yielding comparable results.

Analysis

The four main questions were:

Do conversion symptoms cluster with dissociative symptoms? In other words, do conversion symptoms and dissociative symptoms form a part of the same construct? To address this question, principal

Table 1   Demographic characteristics of the study population

	N	Mean age (yrs) $\pm$ SD	% Male
Whole population	130	34.26 ± 6.01	43.8
Patients	67	38.94 ± 6.13	52.2
Controls	63	29.29 ± 4.80	34.9
Alcohol withdrawal	20	39.80 ± 5.38	80.0
Major depressive episode	19	44.21 ± 7.55	31.6
Schizophrenia	18	34.17 ± 5.37	55.6
Dissociative disorder	10	35.80 ± 4.07	30.0

components analysis was done with varimax rotation. In this analysis items that belong to the same construct would show higher correlation coefficients with each other, than with items that belong to a different construct. If conversion is a kind of dissociation then conversion symptoms would cluster together with other dissociative symptoms. If conversion is not a kind of dissociation, conversion symptoms would cluster in a separate, independent factor.

Do conversion symptoms correlate with the total SSD score? If conversion is a kind of dissociation, the conversion subscale scores would show high Pearson correlation coefficients with the total SSD score. If conversion is not a kind of dissociation, the conversion subscale scores would not correlate highly with the total SSD score.

How prominently do conversion symptoms present in dissociative disorders as compared with other psychiatric disorders? If conversion is a kind of dissociation, it could be anticipated that patients with dissociative disorders would have the highest intensity of conversion symptoms, that is, higher than patients with other psychiatric disorders. Pearson correlation coefficients and 95% confidence intervals would be used to examine this question.

Do conversion symptoms behave like dissociative symptoms in their clinical presentation? If conversion is a kind of dissociation, the subscale-total Pearson correlation coefficients of the conversion subscale should be similar to those of the other dissociative symptom subscales.   The differential distribution of conversion scores in patients with various disorders should be similar to the distributions of other dissociative symptoms, as seen on the 95% confidence intervals.

Table 2   Principal components analysis of SSD item scores

Factor	Eigen value	% Variance
1	23.762	42.4 %
2	4.05	7.2 %
3	2.282	4.1 %
4	2.051	3.7 %
5	2.003	3.6 %
Total:		61.0 %

Results

Table 2 summarises the results of the principal components analysis, with varimax rotation, of the individual SSD item scores. Five factors, all of them with Eigen values > 2, accounted for 61% of the variance in the item scores. These five factors overlapped they did not form distinct, separate factors. Moreover, the first, largest factor explained 42,4% of the variance. Many of the items loaded significantly onto more than one of these factors. Conversion symptoms loaded onto especially the second factor, but also onto the first, third and fourth factors. These results are interpreted as that there is one general factor that runs through the entire SSD. It therefore cannot be said that conversion symptoms cluster separately from other dissociative symptoms (see first question for analysis above).

Figure 2 shows the mean Pearson correlation

Figure 2   Conversion-total SSD correlation across diagnostic subgroups
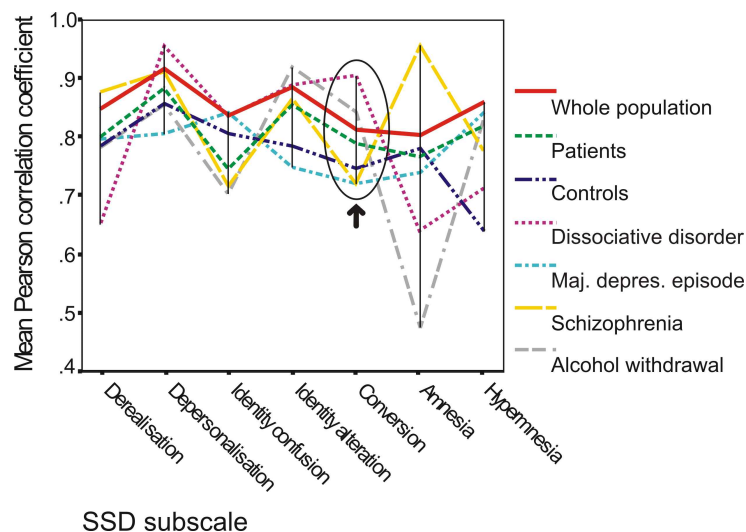
coefficients between each SSD subscale and the total SSD score for various diagnostic subgroups. The solid line indicates the whole study population of 130 subjects. The group of conversion-total SSD correlation coefficients indicated by the arrow are all statistically highly significant at the 0.01 level, demonstrating that the conversion subscale scores correlate highly significantly with the total SSD score in all the diagnostic subgroups. These high correlations are of the same order as the correlations between the other SSD subscale scores and the total SSD score, demonstrating that conversion symptoms behave like the other dissociative symptoms in their subscale-total SSD correlations (see second and fourth questions for analysis above). The finding that the highest conversion-total SSD correlation coefficients were found in the patients with dissociative disorders, as compared with the patients with other psychiatric disorders or the control subjects (Figure 2) further supports the relatedness of conversion with other dissociative symptoms (see second question for analysis above).

Figure 3 addresses the third question for analysis above by showing the 95% confidence intervals for the conversion subscale scores in the various diagnostic subgroups. As anticipated, the patients with dissociative disorders showed the highest intensity of conversion symptoms higher than the patients with other psychiatric disorders and the control subjects.

Conversion symptoms behave like dissociative symptoms in their confidence intervals across diagnostic subgroups. That is, the confidence intervals for the conversion subscale in Figure 3 show a distribution across the diagnostic groups similar to the confidence intervals of amnesia and depersonalisation. Figure 4 shows the 95% confidence intervals for the amnesia subscale scores in the various diagnostic subgroups. It is similar to the confidence intervals in Figure 3 in that the patients with dissociative disorders have the highest intensity of amnestic symptoms higher than the patients with other psychiatric disorders and the control subjects. Similarly, Figure 5 shows the 95% confidence intervals for the depersonalisation subscale scores in the various diagnostic subgroups. It is similar to the preceding two figures in that the patients with dissociative disorders have the highest intensity of depersonalisation higher than the patients with other psychiatric disorders and the control subjects. The other subscales of the SSD showed a similar pattern.

Discussion

The results of this study provide evidence that conversion is a kind of dissociation in spite of DSM-IV that classifies conversion with somatoform disorders instead of among dissociative disorders. This evidence is found in the clinical presentation of conversion

Figure 3 Confidence intervals of conversion scores in patients with dissociative disorders VS other disorders
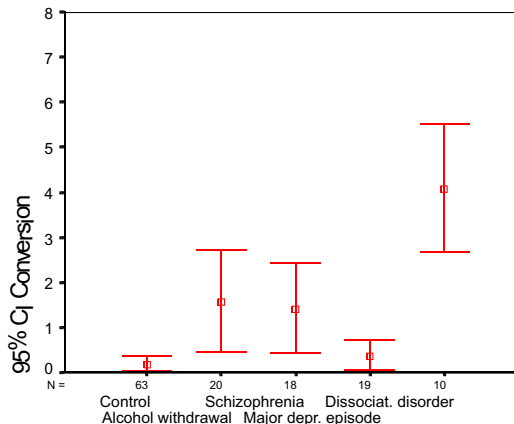

Figure 4 Confidence intervals of amnesia scores in patients with dissociative disorders VS other disorders
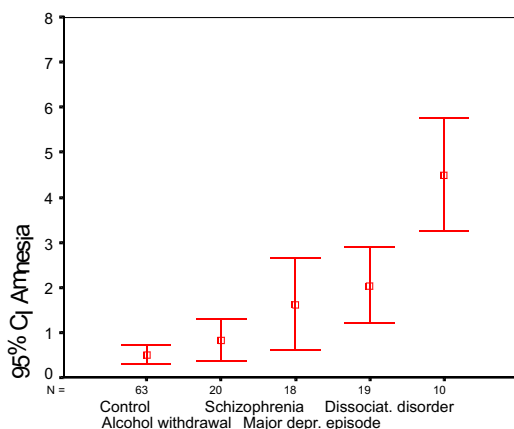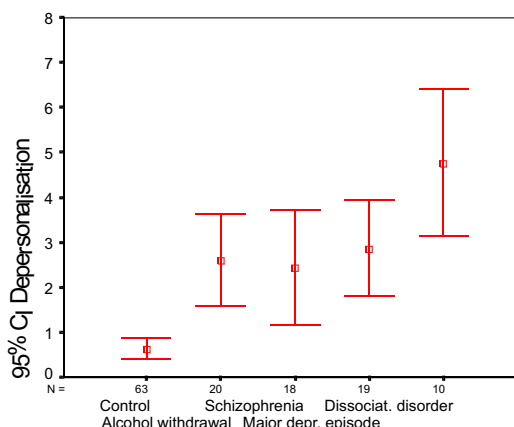

Figure 5 Confidence intervals of depersonalisation scores in patients with dissociative disorders VS other disorders

symptoms. First, the clustering of conversion symptoms with the other dissociative symptoms in one large general factor on principal components analysis (Table 2) suggests that conversion belongs to the same construct as the other dissociative symptoms, i.e., that conversion is a kind of dissociation.

Second, this suggestion is further supported by highly significant correlations between the conversion subscale scores and the total SSD scores (Figure 2). Similar results were found in another study among 10 psychiatric patients who were known to dissociate severely and 22 nurses (Krüger & Mace, 2002): all the item-total correlation coefficients for the conversion subscale of the SSD were statistically highly significant (6 out of 8 items) or statistically significant (the remaining 2 out of 8 items).

Third, the high intensity / most severe presentation of conversion symptoms in the patients with dissociative disorders as compared with other psychiatric disorders (Figure 3), also suggests that conversion is a kind of dissociation.

Fourth, the similarities between the 95% confidence interval distributions across the diagnostic subgroups, for the conversion, amnesia, and depersonalisation subscale scores (Figures 3, 4, 5) also demonstrate that conversion symptoms behave like dissociative symptoms in various psychiatric disorders.

The State Scale of Dissociation was a prerequisite to derive at these findings, since it can measure conversion symptoms and other dissociative symptoms in their *concurrent* presentation. The concurrent measurement on a single *state* scale of these symptoms provides stronger evidence of relatedness between conversion and dissociation, than would have been obtained from measurements on separate *trait* scales, which measure the usual frequency of dissociative experiences, such as the Dissociative Experiences Scale / DES (Bernstein & Putnam, 1986), and the usual frequency of conversion symptoms, such as the Somatoform Dissociation Questionnaire / SDQ (Nijenhuis et al., 1996).

The limitations of this study are: It assumes that an empirical approach to the problem of whether conversion is a dissociative symptom would carry more weight than another approach, e.g., a metaphysical approach. Nonetheless, insofar as the current diagnostic classification systems are based on the descriptive phenomenology of psychiatric illness, the empirical approach to the dissociative experiences seems justified. Further, the subgroup of patients suffering from dissociative disorders was relatively small (n=10). Replication studies could benefit by using a larger sample of patients suffering from dissociative disorders, especially patients suffering from conversion disorder.

Notwithstanding the empirical approach to dissociative experiences, which was followed in this study, other ways to differentiate between conversion symptoms and dissociative symptoms (or between

conversion disorder and dissociative disorders) may still have merit. For example, a study of the neurophysiological correlates of dissociative and conversion symptoms might elucidate the merits of this differentiation. In a pilot study (Krüger, 1999) done on 11 patients with complex partial seizures, the concurrent EEG correlates of conversion symptoms were compared to those of other dissociative symptoms. Canonical correlations were studied between the total SSD and subscale scores, and EEG waveband power (ä, è, á, and â power) in digitalized, Fast Fourier Transformed, spectrally analysed EEG recordings. The canonical correlations for the conversion subscale were similar to those for the other dissociative symptom subscales. Being a pilot study, other studies should follow to examine these findings further among patients suffering from various psychiatric disorders.

In conclusion, this study of the empirical presentation of conversion with other dissociative symptoms suggests that conversion symptoms are closely related clinically to other dissociative symptoms - even that conversion is a kind of dissociative symptom. For this reason, it is probably better to classify conversion disorder with the other dissociative disorders, as is done in the ICD-10.

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