

Diagnosing Borderline

A Contribution to the Question of its Conceptual Validity

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Summary. A total of 437 acute psychiatric inpatients were investigated with the help of a questionnaire containing DSM-III diagnostic criteria for schizotypal as well as for borderline personality disorder and criteria of the Flexible System for the diagnosis of schizophrenia. All patients were also independently diagnosed according to the ICD-9. The clinical ICD-9 diagnoses were compared with the diagnoses given on the basis of the three operational criteria sets mentioned. Patients fulfilling the operational criteria for schizotypal personality disorder were clinically diagnosed as mostly schizophrenic, and there was also a considerable overlap between the two groups of patients, those fulfilling the operational criteria for schizotypal personality disorder and those fulfilling the criteria of the Flexible System for the diagnosis of schizophrenia. Schizotypal personality disorder does not seem to be a clinical entity in the sense of a traditional personality disorder. The majority of patients diagnosed as borderline personality disorder received a clinical diagnosis of a personality disorder. The DSM-III criteria of borderline personality disorder discriminated satisfactorily against schizophrenia as diagnosed by the Flexible System and as diagnosed according to ICD-9. On the other hand, there was no relationship between the borderline personality disorder diagnosis and any single of the ICD-9 personality disorder types. The patients fulfilling the criteria of the borderline personality disorder were equally distributed across all ICD-9 personality disorder types. They were also significantly younger than both the non-borderline and the ICD-9 personality disorder patients. The relationship between borderline personality disorder criteria and age might thus be of a greater relevance than the relationship between these criteria and a clinical type.

Key words: Borderline personality disorder – Schizotypal personality disorder – Schizophrenia – Clinical diagnosis – Diagnostic criteria sets

Introduction

In spite of the popularity the diagnosis borderline enjoys—it is given to the majority of patients with character disorders and behaviour disturbances [17]—the diagnosis of borderline remains an issue of considerable difficulty. A comparative analysis of four sets of the most thoroughly elaborated and most influential diagnostic criteria for the borderline patients offered by Knight [12], Kernberg [8], Grinker et al. [5] and Gunderson and Singer [6] was performed by Perry and Klerman [20]: it showed a considerable lack of agreement between them. Besides, an examination of the literature concerning borderline revealed that different authors conceptualize the borderline state in a quite different way. Three borderline concepts are clearly discernible: (1) borderline equated with a *forme fruste* of schizophrenia, (2) borderline equated with a special form of personality disorder, (3) borderline equated with a general category of personality disorder/psychopathy [18].

Lately considerable efforts have been made to overcome these difficulties by developing clinical instruments allowing a reliable diagnosis of a borderline disorder. Sheeny et al. [25] developed a list of operational criteria to diagnose borderline personality disorder, Khouri et al. [11] constructed a symptom schedule for the diagnosis of borderline schizophrenia and Kolb and Gunderson [13] a diagnostic interview for borderlines. Last but not least Spitzer et al. [28] developed two item sets to provide diagnostic criteria for the first two concepts of the borderline mentioned above: for the categories of schizotypal personality disorder (borderline schizophrenia) as well as borderline (unstable) personality disorder. These two diagnostic sets have been accepted by the American Psychiatric Association and have become a part of DSM-III [1]; the diagnosis of a borderline disorder has thus been accepted as an official diagnostic label for the first time.

On the other hand, the ICD-9, currently in force and also being used in Switzerland, still does not contain any mention of this diagnostic category. In this situation, the following questions arise: (1) Using the two sets of criteria as delineated by Spitzer et al. [28] and thus the criteria of DSM-III, is it possible to separate among Swiss psychiatric inpatients a group of patients who would be diagnosed as a schizotypal personality disorder (borderline schizophrenia) and/or as a borderline (unstable) personality disorder? (2) Should this be the case, how are these patients currently diagnosed using ICD-9, and could the results not contribute to the clarification of the conceptual validity of these two diagnostic categories? [3] As in both borderline conditions, the schizotypal and the unstable personality disorder psychotic decompensations may occur [1], and as there is a close genetic connection between schizophrenia and schizotypal personality disorder [10, 22], is it possible to differentiate borderline conditions from schizophrenia?

Methods

The present investigation was performed on one of the admission units of the Psychiatric University Clinic of Bern from March, 1981 to August, 1982. Thus, it extended over 1.5 years, and only inpatients were included in the study. A special questionnaire was constructed,

containing in a random order the eight DSM-III items indicating the diagnosis schizotypal personality disorder, the eight DSM-III items indicating the diagnosis unstable personality disorder, as well as twelve items indicating the diagnosis schizophrenia. The Flexible System for the diagnosis of schizophrenia [4] consisting of clinical criteria widely used for detecting schizophrenia and developed empirically on the basis of the International Pilot Study of Schizophrenia [31] was chosen for this investigation. The population identified by the Flexible System contains a large proportion of patients considered schizophrenic by other diagnostic systems [30]. At the level of six symptoms it might be appropriately used to obtain an uncontaminated sample of schizophrenics [3]. The questionnaire was filled out by the physicians (psychiatrists in training) responsible for the treatment of every patient on the basis of an unstructured clinical diagnostic interview carried out as a rule during the first 48 h after the admission of the patient. However, as many items used are based on historical data, the additional (objective) information frequently had to be obtained first before completing the questionnaire. Physicians filling out the questionnaire were not aware of the purpose of the study; they were informed that it dealt with the psychopathological aspects of some diagnostic categories and they recognized, of course, items being related to the diagnosis of schizophrenia, of personality disorder including borderline condition as well as depression (negative schizophrenia symptoms of the questionnaire). The ICD-9 diagnoses were made by the chief of the unit, independently and blindly with regard to the ratings. In principle, all admissions to the unit were included in the study. In order not to contaminate the results, re-admissions were excluded.

Results

During the 1.5 years duration of the study there were 517 registered admissions to the unit and of these 59 (11.4%) were re-admissions. Further, in 21 patients the questionnaire could not be completed: 14 patients stayed only overnight or over the week-end, 4 patients could not be interviewed properly for reasons of language, and 3 patients could not be interviewed properly because of their progressed dementia. Thus, the questionnaires of 437 patients, 215 (49.2%) men and 222 (50.8%) women could be used in the evaluation. Table 1 (column 2) shows the distribution of the clinical ICD-9 diagnoses among the 437 patients investigated. Altogether 711 diagnoses were given; since each individual patient received 1.6 diagnoses on average, the number of diagnoses exceeds the number of patients. The diagnoses most commonly given were those of (1) personality disorder (32.3% of all patients), (2) substance use disorder (29.3%), (3) schizophrenic disorder (23.6%), (4) reactive non-psychotic disorder (20.6%), and (5) organic disorder (18.8%). This distribution may be representative for an admission unit of a state institution providing general services for acute inpatients and having no restrictive admission policy. Table 1 (columns 3–5) also indicates the number of patients who were identified by operational criteria such as schizophrenia, schizotypal personality disorder and borderline personality disorder, along with the corresponding main clinical diagnosis. As far as the allocation of these patients to the respective main clinical ICD-9 diagnosis is concerned, in patients diagnosed clinically as schizophrenic this remained the main diagnosis. In other patients with multiple diagnoses the diagnosis which chiefly reflected the actual clinical problems of the patients was chosen as the main diagnosis (e.g. alcoholism or reactive psychosis in a patient with a personality disorder). As can be seen, in 89 of 437 patients (20.4%) the criteria of the Flexible System for the diagnosis of schizophrenia (at the cut-off level of six or more items) were fulfilled.

Table 1. Distribution of all the 711 ICD-9 diagnoses among 437 patients investigated (column 2). disorder and borderline personality disorder distributed with regard to the main clinical ICD-9

Clinical ICD-9 diagnosis

1. Organic disorders	290	(Dementias)
	291	(Alcohol-induced psychoses)
	292	(Drug-induced psychoses)
	293/4	(Other organic psychoses)
	310	(Non-psychotic organic disorders)
		Total
2. Schizophrenic disorders	295	
3. Affective disorders	296	
4. Paranoid conditions and reactive psychoses	297	
	298	
		Total
5. Neuroses	300	
6. Personality disorders	301	
7. Substance use disorders	303	(Alcoholism)
	304	(Drug dependence)
	305	(Drug abuse)
		Total
8. Reactive non-psychotic disorders	308	(Acute reactions to stress)
	309	(Adjustment reactions)
	312	(Conduct disorders)
		Total
9. Mental retardation	317/8	
10. Others		
Total		

In 112 patients (25.6%) the DSM-III criteria for schizotypal personality disorder (at the cut-off level of four and more items) were fulfilled. The DSM-III criteria for borderline personality disorder (at the cut-off level of five or more items) were fulfilled in 61 (14.0%) of all patients investigated.

The majority of patients who fulfilled the criteria of the Flexible System were clinically diagnosed as schizophrenia (64.0%), and paranoid conditions and reactive psychoses (6.7%). Using the Flexible System at the cut-off level of six or more items, the clinical diagnosis of schizophrenia was confirmed in 57 of 103 patients, the sensitivity of the scale (cases correctly identified as cases) being thus 55.3%. Excluding the cases with the diagnosis of residual schizophrenia and

Number of patients identified by operational criteria as schizophrenia, schizotypal personality diagnosis (columns 3-5)

Distribution of ICD-9 diagnoses among 437 patients (437=100%)	Schizophrenia (Flexible System)	Schizotypal perso- nality disorder (DSM-III)	Borderline personality disorder (DSM-III)
17 (3.9%)	3	2	
15 (3.4%)		1	
8 (1.8%)	3	1	
11 (2.5%)	5		1
31 (7.1%)	1	7	3
82 (18.8%)	12 (13.5%)	11 (9.8%)	4 (6.6%)
103 (23.6%)	57 (64.0%)	53 (47.3%)	5 (8.2%)
46 (10.5%)	5 (5.6%)	8 (7.1%)	3 (4.9%)
9 (2.1%)	3	3	
18 (4.1%)	3	9	
27 (6.2%)	6 (6.7%)	12 (10.7%)	
46 (10.5%)		7 (6.3%)	8 (13.1%)
141 (32.3%)	5 (5.6%)	17 (15.2%)	25 (41.0%)
69 (15.8%)	1		4
29 (6.6%)			5
30 (6.9%)			1
128 (29.3%)	1 (1.1%)		10 (16.4%)
16 (3.7%)	1		1
66 (15.1%)			4
8 (1.8%)			1
90 (20.6%)	1 (1.1%)		6 (9.8%)
19 (4.3%)	2 (2.2%)	4 (3.6%)	
29 (6.6%)			
711	89 (100%)	112 (100%)	61 (100%)

schizoaffective psychosis, the sensitivity increases to 63.2%. These numbers are a little lower than those indicated in the literature [4]. Under the influence of Bleuler [2] the diagnosis schizophrenia might still be used a little less strictly in Switzerland. The specificity of the scale (non-cases identified correctly as non-cases) was 90.4% in the present investigation. This number could have been higher, however, if the cases of organic psychoses (44% of positively rated non-schizophrenics) had been excluded. As far as the schizotypal personality disorder is concerned, apart from 15 cases (13.4%) of known organic origin and of mental retardation that would have otherwise been primarily excluded from the group, the majority of patients so identified were clinically diagnosed as suffering from

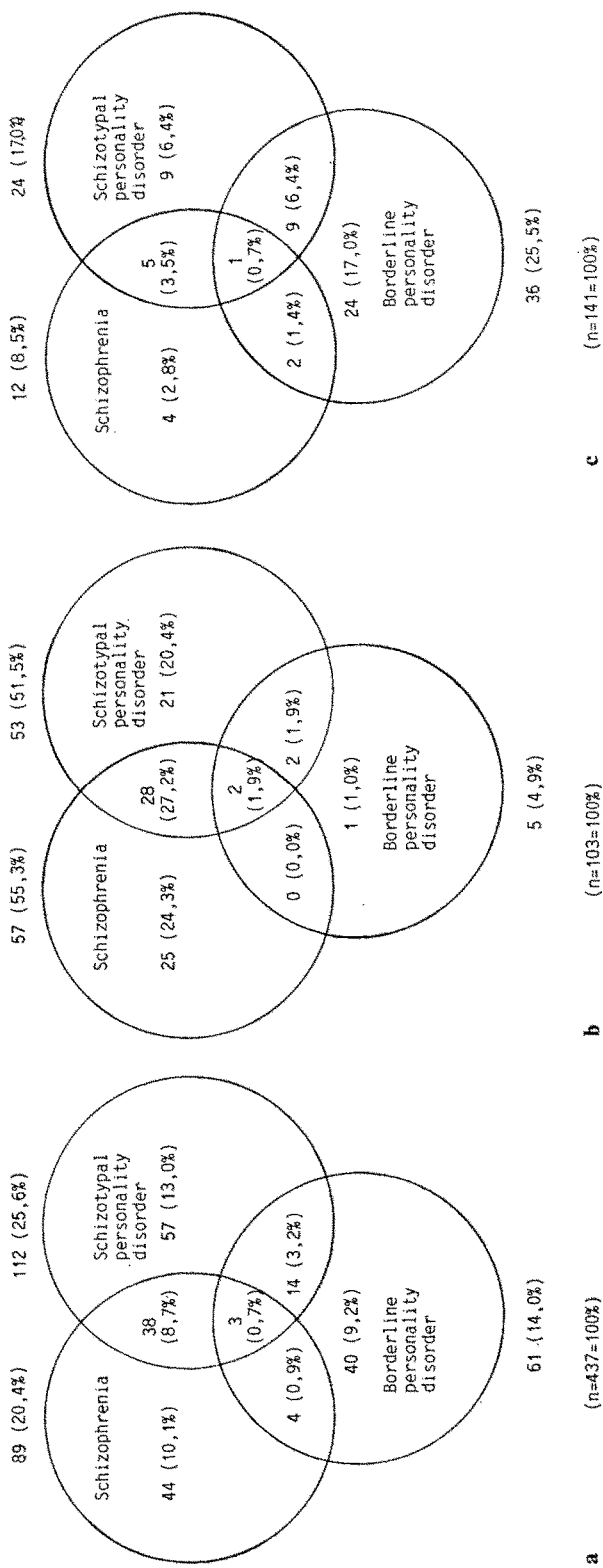


Fig. 1a-c. Number of patients fulfilling operational diagnostic criteria for schizophrenia, schizotypal personality disorder and borderline personality disorder. **a** Patients of all clinical diagnostic categories ($n = 437 = 100\%$) **b** Patients with the clinical diagnosis schizophrenia ($n = 103 = 100\%$) **c** Patients with the clinical diagnosis personality disorder ($n = 141 = 100\%$)

schizophrenia (47.3%) and paranoid conditions and reactive psychoses (10.7%). Only 15.2% of the patients identified as schizotypal personality disorder according to the DSM-III criteria had a personality disorder as their main diagnosis.

In contradiction to this finding, the majority, namely 41.0% of patients identified as borderline personality disorder by DSM-III criteria had the main clinical diagnosis personality disorder, 16.4% of them the main clinical diagnosis substance use disorder, and 9.8% that of reactive non-psychotic disorder. These diagnoses, of course, do not preclude the presence of a (borderline) personality disorder.

Figure 1a shows numbers and percentages of the patients of all clinical diagnostic categories ($n=437$) fulfilling one or more of the three operational diagnostic criteria sets investigated. It demonstrates that there is definite overlapping between schizophrenia and schizotypal personality disorder (8.7% of all patients) and hardly any between schizophrenia and borderline personality disorder (0.9% of all patients investigated). Considering the 103 patients with the clinical diagnosis of schizophrenia (Fig. 1b) the same result can be observed. In 75.7% of these patients either the operational criteria for schizophrenia or schizotypal personality disorder or for both were fulfilled with overlapping in 29.1% of these cases. Note that in 15 of 25 patients with the clinical diagnosis schizophrenia which did not fulfill one of both diagnostic criteria, the diagnosis was residual or schizoaffective schizophrenia. In only one of 103 patients diagnosed as schizophrenic were the diagnostic criteria for borderline personality disorder alone fulfilled, and there were no patients diagnosed as schizophrenic according to ICD-9 in this study which fulfilled the operational criteria for both schizophrenia and borderline personality disorder.

Considering all 141 patients with the clinical diagnosis of personality disorder (Fig. 1c) 25.5% of these fulfilled the operational criteria for borderline personality disorder, and 17.0% of them the operational criteria for schizotypal personality disorder. Taking both borderline sets together, at least one of them was fulfilled in 50 (35.5%) of these patients. The criteria for both sets were fulfilled in 10 (20%) of these 50 patients, this proportion being considerably lower than in other investigations [28]. Note that all 4 patients diagnosed clinically as having a personality disorder and fulfilling the operational criteria for schizophrenia suffered from some psychotic disorder along with a personality disorder. Table 2 shows the distribution of the 50 (35.5%) of 141 patients who were diagnosed clinically as personality disorder and who fulfilled one or both of the two operational criteria sets for borderline personality disorder along the ten ICD-9 personality disorder subtypes represented among our population. There is no preference regarding the allocation of the borderline disorders to be found with regard to the ICD-9 personality disorder types.

Table 3 presents the average age of the patients of the main diagnostic groups investigated. Within all groups men tended to be younger than women, however, this difference was statistically significant for the whole population only (t -test, $P=0.02$). With regard to the age there were no significant differences between the whole population, the schizophrenic patients (diagnosed with help of both the ICD-9 and the Flexible System), and patients diagnosed as DSM-III schizotypal personality disorder. The ICD-9 personality disorder patients

Table 2. Patients clinically diagnosed as personality disorder ($n=141$) and fulfilling the operational criteria for schizotypal and/or borderline personality disorder distributed according to the ICD-9 personality disorder types

ICD-9	Number of patients	Schizotypal personality disorder	Schizotypal and borderline personality disorder	Borderline personality disorder	Total
301.0 Paranoid	0	0	0	0	0
301.1 Thymopathic	5	0	0	1	1
301.2 Schizoid	12	2	0	3	5
301.3 Aggressive	4	0	2	0	2
301.4 Compulsive	4	1	0	0	1
301.5 Hysterical	25	1	1	7	9
301.6 Dependent	16	1	2	1	4
301.7 Sociopathic	7	0	1	2	3
301.8 Other	41	5	3	8	16
301.9 Not specified	5	2	0	0	2
Mixed	22	2	1	4	7
Total	141	14	10	26	50

Table 3. Number and average age of patients of the main diagnostic groups investigated

	Men		Women	
	Number	Age (years)	Number	Age (years)
Whole population (<i>n</i> = 437)	215	37.7 ± 14.9	222	41.9 ± 18.7
Schizophrenia (Flexible System) (<i>n</i> = 89)	44	36.1 ± 15.5	45	39.9 ± 15.8
Schizophrenia (ICD-9) (<i>n</i> = 103)	46	35.0 ± 13.2	57	37.4 ± 13.4
Schizotypal personality disorder (DSM-III) (<i>n</i> = 112)	46	36.0 ± 14.8	66	41.8 ± 18.2
Borderline personality disorder (DSM-III) (<i>n</i> = 61)	24	28.3 ± 7.4	37	29.4 ± 9.8
Personality disorder (ICD-9) (<i>n</i> = 141)	70	33.9 ± 12.3	71	37.3 ± 16.2

were significantly younger than the rest of the whole population (men $P=0.01$; women $P=0.02$). Patients diagnosed as DSM-III borderline personality disorder were significantly younger than both the non-borderline patients (men and women $P=0.001$) and the ICD-9 personality disorder patients (men $P=0.05$; women $P=0.01$). No such differences could be demonstrated for the DSM-III schizotypal personality disorder patients. Correspondingly, the borderline personality disorder patients were also significantly younger than the schizotypal personality disorder patients (men $P=0.02$; women $P=0.001$).

Discussion

The operational DSM-III criteria for schizotypal personality disorder were fulfilled in 25.6% and thus in a high proportion of our patients. The majority of them (58%) were clinically diagnosed as suffering from schizophrenia and other functional psychoses according to ICD-9. In almost 37% of these patients, fulfilling the criteria for schizotypal personality disorder, the criteria of the Flexible System for the diagnosis of schizophrenia were also fulfilled. Con-

sidering the population of clinically diagnosed schizophrenic patients, the percentage of those fulfilling the criteria of the Flexible System and those fulfilling the criteria of schizotypal personality disorder are almost the same (55.3% versus 51.5%) again with considerable overlapping in 27% of these patients. These findings confirm the close relationship between schizophrenia and schizotypal personality disorder, the criteria of schizotypal personality disorder being indeed inferred by Spitzer et al. [28] from the conception of a schizophrenia spectrum as developed by Kety et al. [10, 22]. On the other hand, it seems to be very difficult to differentiate both categories from each other. According to DSM-III the diagnosis of a schizotypal personality disorder should not be made in the patient fulfilling the criteria for schizophrenia, however, DSM-III criteria for schizophrenia are pretty restrictive compared with other diagnostic systems [29]. Depending on the criteria used for the diagnosis of schizophrenia, the diagnosis schizotypal personality disorder will be made in a more or less large proportion of patients diagnosed as schizophrenic according to the ICD-9. On the other hand, the proportion of patients having a clinical diagnosis personality disorder among those fulfilling the criteria for schizotypal personality disorder is relatively small (21.4%) in this investigation. Thus, the category of a schizotypal personality disorder does not seem to correspond to a traditional conception of a personality disorder as delineated e.g. by Schneider [24]. Using a symptom schedule for the diagnosis of borderline schizophrenia [11], a considerable overlap between borderline symptomatology and symptomatology of schizophrenic disorders was also found [23]. Genetic studies point to a strong genetic relationship between schizotypal personality disorder and schizophrenia [7] as well as to the lack of such a relationship between borderline personality disorder and schizophrenia [16].

A lack of the relationship between schizophrenia and borderline personality disorder and the possibility to differentiate these conditions from each other neatly with the help of the criteria used was fully confirmed in our investigation. There is hardly any overlap between schizophrenia diagnosed clinically according to ICD-9 and that diagnosed with the help of the Flexible System on the one hand and between borderline personality disorder diagnosed with the help of the DSM-III criteria on the other.

Kroll et al. [14] diagnosed borderline personality disorder in 14.9% of the psychiatric inpatients of a public mental hospital with help of the diagnostic interview for borderline [13] and in 8.5% of these inpatients using DSM-III criteria set. In our investigation 14% of our inpatients were identified as borderline personality disorder using DSM-III criteria. The majority of patients identified in this way received the main clinical ICD-9 diagnosis of a personality disorder or a substance use disorder or a reactive non-psychotic disorder, both latter diagnoses not excluding a personality disorder as well. Using conservative criteria Nace et al. [19] designated 12.8% of their alcoholic patients as having borderline disorder. As mentioned above, the choice of a main clinical diagnosis in those cases was not always simple; these difficulties underline the importance of a multiaxial classification introduced in the DSM-III but lacking in the ICD-9 [26]. An overlap between schizotypal personality disorder and borderline personality disorder was also found in our investigation, however, it was less pronounced than pre-

viously reported [28]. A frequent occurrence of depression in borderline patients has been reported recently [27]. In 29.5% of our patients identified as borderline personality disorder one of the ICD-9 diagnoses of a depressive disorder was given, alone or along with another one. However, even more frequently the diagnosis of some drug use disorder was given in these patients; 42.6% of them received it.

In 59% of the patients identified as borderline personality disorder a clinical diagnosis of a personality disorder was actually given. In our investigation the proportion of patients identified as borderline personality disorder among the various ICD-9 diagnosed personality disorder types was astonishingly equal, and there were borderline patients found in every ICD-9 personality disorder type represented in this study, i.e. in all types but the paranoid one. Thus, we did not succeed at all in identifying the borderline personality disorder (as defined by DSM-III criteria) as one distinct personality disorder type delineated by ICD-9 and thus we also did not succeed at all in discriminating the borderline from other personality disorders. Pope et al. [21] could not distinguish borderline from histrionic and antisocial personality disorders and Kroll et al. [15] who also arrived at a similar result, point accordingly to a danger, that a diagnostic label of borderline disorder might become a non-discriminatory synonym for personality disorder as a general category. This corresponds, however, to the third conception of the borderline disorder mentioned in the introduction, to that represented by Kernberg [8, 9], who proposed "three broad structural organizations corresponding to neurotic, borderline and psychotic organization" and who finds the borderline personality organization in the paranoid, schizoid, hypomanic and cyclothymic personality, in the impuls-ridden character, the infantile, narcissistic, as-if and antisocial personality. On the other hand, only a minority of ICD-9 personality disorder patients were identified as borderline; the question is, whether DSM-III defined borderline and non-borderline personality disorder patients might differ from each other in some other dimensions apart from that of the phenomenology of the classical personality disorder types. In this connection our finding, corresponding to that of others [14, 15] might be important, namely that of the age difference between all patients identified as borderline and the rest of the whole population examined and all those having a ICD-9 diagnosis of a personality disorder. Borderline patients are definitely younger and indeed, some of the DSM-III diagnostic criteria might actually be more related to the age than to anything else.

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