

DISSOCIATIVE EXPERIENCES
IN THE GENERAL POPULATION
IN THE NETHERLANDS
AND BELGIUM:
A Study With the Dissociative
Questionnaire (DIS-Q)

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ABSTRACT

This article describes the results of the first European study on the prevalence of dissociative experiences in the general population of Belgium (Flanders) and the Netherlands. Dissociative experiences were assessed with a new self-reporting dissociation questionnaire (DIS-Q). The DIS-Q has been administered to a representative sample of the Dutch and Flemish population (N=374). The results show that dissociative experiences are quite common in the general population, and that their frequency is declining with age. About 3 percent of the population (the majority men) reports serious dissociative phenomena, and 1 percent shows scores as high as patients with multiple personality disorder. These findings suggest that dissociative disorders are seriously under-diagnosed by mental health professionals.

ASSESSMENT OF DISSOCIATIVE EXPERIENCES

For a long time, systematic large-scale studies of the prevalence of dissociative disorders in the general population were virtually impossible, since a reliable screening instrument was lacking. In the last few years, several self-reporting questionnaires have been constructed: the Perceptual Alteration Scale (PAS) by Sanders (1986), the Dissociation Evaluation Scale (DES) by Bernstein and Putnam (1986), and the Questionnaire of Experiences of Dissociation (QED) by Riley (1988). The DES, a 28-item questionnaire, is the only self-report instrument used to systematically study the prevalence of dissociative experiences in the general population.

In a first study (Ross & Ryan, 1989), the DES was administered to a group of 345 college students and 168 adolescents age twelve to fourteen. Scores showed a highly left-skewed distribution, with no differences between males and

females among both groups. The findings further suggested that dissociative experiences were more common in early adolescence than in young adulthood, and that they continue to decline with increasing age after the third decade. In a second study (Ross, Joshi, & Currie, 1990), the DES was administered to a random sample of 1055 adults in the city of Winnipeg (Canada). Results confirmed the findings from the first study: scale scores did not differ between men and women and were not influenced by income, employment status, education, place of birth, religious affiliation, or number of persons in the respondent's household. The findings suggested that dissociative experiences were common in the general population and decline with age. Ross et al. (1990) concludes that findings from clinical studies using the Dissociative Experiences Scale lead to a tentative prediction that dissociative disorders, including multiple personality disorder, may be relatively common, with a possible prevalence in the range of 3 to 10 percent of the general population!

RESEARCH PROCEDURE

This study is the first European study concerning the incidence of dissociative experiences in the general population in Belgium and the Netherlands. Methodological and psychometric shortcomings of the existing dissociation questionnaires (see Fisher & Elnitsky, 1990; Vanderlinden, Van Dyck, Vandereycken & Vertommen, 1992), stimulated the authors to construct a new self-reporting instrument, the Dissociation Questionnaire or DIS-Q (Vanderlinden, Van Dyck, Vandereycken, & Vertommen, 1992). The DIS-Q is a 63-item self-reporting scale for the measurement of dissociative experiences, using five different answer categories which indicate to what extent that item or statement is applicable to that subject (1 = not at all; 2 = a little bit; 3 = moderately; 4 = quite a bit; 5 = extremely). The DIS-Q also gathers data on the age, sex, education level, and demographic status of the subject involved. On the basis of an item and factor analysis, four subscales have been detected, which together accounted for 77 percent of the common variance: (1) identity confusion, (2) loss of control over behavior, thoughts, and emotions, (3) amnesia, and (4) absorption. The psychometric qualities of the DIS-Q are very satisfying: the Cronbach Alpha co-efficients show a good internal consistency: .96 for the total scale and, respectively, .94, .93, .88, and .67 for the four subscales. The test-retest reliability coefficient for the total scale is .94, and, respectively, .92, .92, .93, and .75 for the four subscales. These results indicate

TABLE 1
Age, Marital Status, and Educational Level of Dutch, Flemish,
and Total Samples

Demographic Status	Nationality			
	Dutch	Flemish	Total	
<i>Age</i>	10 - 20	8%	20%	12%
	21 - 30	15%	31%	21%
	31 - 40	18%	23%	20%
	41 - 50	27%	24%	26%
	51 - 60	16%	2%	11%
	Over 60	16%	0%	10%
<i>Marital Status</i>	Single	21%	35%	26%
	Married	69%	55%	64%
	Living Together	4%	4%	4%
	Divorced	2%	6%	3%
	Widowed	4%	0%	3%
<i>Educational Level</i>	Elementary	7%	9%	8%
	Junior High	66%	64%	65%
	Higher School (non-University)	19%	19%	19%
	University	8%	8%	8%

TABLE 2
Frequency Distribution of DIS-Q Scores

DIS-Q Score*	TOTAL	DIS-Q1	DIS-Q2	DIS-Q3	DIS-Q4
1.0 - 1.05	47.6%	68.2%	35.0%	61.0%	20.3%
1.5 - 2.0	37.2%	21.9%	36.9%	30.7%	36.3%
2.0 - 2.5	12.3%	7.2%	20.6%	6.1%	24.6%
2.5 - 3.0	1.9%	1.3%	5.9%	0.8%	13.9%
3.0 - 3.5	0.3%	0.5%	1.0%	1.1%	3.5%
3.5 - 4.0	0.8%	0.5%	0.3%	0.0%	0.8%
4.0 - 4.5	0.0%	0.3%	0.3%	0.3%	0.3%
4.5 - 5.0	0.0%	0.0%	0.0%	0.0%	0.0%

1 = not at all
2 = a little bit
3 = moderately
4 = quite a bit
5 = extremely

DIS-Q1 = identity confusion
DIS-Q2 = loss of control
DIS-Q2 = amnesia
DIS-Q2 = absorption

that the DIS-Q scores are very stable over time. A large validation study in both normals and several psychiatric subgroups is currently being carried out. Preliminary data support the discriminating validity of the DIS-Q.

SUBJECTS

The DIS-Q was sent to 500 subjects in the Netherlands and to 300 Flemish subjects in Belgium. The Dutch sample was obtained through random sampling from the central register of population. The Flemish sample was obtained through the cooperation of psychology students (Catholic University of Leuven), who were requested to distribute a series of questionnaires to a group of subjects who were representative of the Flemish population. In all, 374 questionnaires were collected (235 Dutch and 139 Flemish subjects), showing an almost perfect male/female ratio: 119 (50.6 percent) men versus 116 (49.4 percent) women in the Dutch sample, and 69 (49.6 percent) men versus 70 (50.4 percent) women in the Flemish sample. An overview of the age distribution, marital status, and educational level is presented in Table 1.

Our sample appears to be representative in terms of sex and educational level. However, with regard to marital status and age distribution, the divorced group in our sample is rather small, while the age distribution in the Flemish sample shows that the younger age groups (adolescents and young adults) are more numerous than the older age groups.

RESULTS

Apart from the total DIS-Q score, we studied also the separate subscale scores. All scores are average scores (sum of the scores divided by the number of items), and can vary between 1 and 5. To study the specific effect of the several variables such as age, sex, demographic status, marital status, and nation-

ality, an analysis of variance (ANOVA) was carried out. Whenever the ANOVA was significant, two-tailed t-tests of Scheffe's were done. To study the prevalence of dissociative experiences in the general population, first a cutoff score has been assessed, by comparing the scores of the normals (N = 374) with the scores of a patient group with dissociative disorders (N = 46).

The average item result (mean ± SD) for the total scale is 1.61 ± 0.40. The highest item score is 2.41 for item 47 (*I sometimes forget where I have put something*) and the lowest item score was 1.08 for item 37 (*Sometimes I suddenly notice that I find myself in a place that is unknown to me, without knowing how I got there*). The average subscale scores are as follows:

- (1) identity confusion: 1.42 ± 0.45; (range 1-4.16);
- (2) loss of control: 1.83 ± 0.54; (range 1-4.55);
- (3) amnesia: 1.47 ± 0.41; (range 1-4.45);
- (4) absorption: 2.07 ± 0.62; (range 1-4.50).

FREQUENCY DISTRIBUTION OF THE DIS-Q SCORES

Table 2 presents a frequency distribution of average scale scores in the sample (scores are divided in 8 intervals).

The subscales loss of control and absorption have the highest variation (SD) in the population, and the subscales identity confusion and amnesia most probably refer to the most pathological scales.

EFFECTS OF THE VARIABLES

Age

With regard to the total DIS-Q score, we found that age is the only variable having a significant effect on the scores (DF = 1, F = 30.89, p < .0001). These results confirm Ross's findings (Ross & Ryan, 1989, Ross et al., 1990), indicating that dissociative experiences are declining with age (see Table 3). Significant differences (p < .05) are found between subjects 10 - 20 years old and subjects 40 - 50 and > 60 years.

With regard to the DIS-Q subscale scores, we found that only the subscale loss of control is significantly (p < .05) declines with age. The declining of dissociative experiences with age in the general population seems to be a result of the scores on the subscale loss of control. A remarkable finding is the fact that dissociative experiences have

the highest variation in the mid-life age (30 - 40 years).

Sex

There was no difference between men and women for the total DIS-Q score (1.66 +/- 0.45 for men versus 1.60 +/- 0.37 for women). However, when we compared DIS-Q subscales, we found that men score significantly higher (p < .05) than women on the subscale amnesia. Items with the most significant differences are the following:

Item 13: It happens that I find new articles among my things without being able to remember having ever purchased them (p < .03).

Item 19: It happens that I am told that I act as if friends or family members were strangers to me (p < .01).

Item 25: I immediately forget what other people tell me (p < .05).

Item 31: When I watch television, I do not notice anything that goes on around me (p < .01).

Item 58: It happens that I find notes, drawings, or annotations of my own, without remembering having ever made these (p < .01).

An interesting finding is the fact that women score higher than men (however, not significantly) on the subscale loss of control (1.86 +/- 0.56 versus 1.80 +/- 0.51). On two items, the difference is highly significant: *I can, without reason, with-*

TABLE 3
DIS-Q Scores by Age in Different Age Levels

Age	DIS-Q Tot.		DIS-Q1		DIS-Q2		DIS-Q3		DIS-Q4	
	X	SD	X	SD	X	SD	X	SD	X	SD
10-20	1.8	0.4	1.6	0.4	2.2	0.5	1.6	0.4	2.1	0.5
21-30	1.7	0.3	1.4	0.3	2.0	0.5	1.5	0.4	2.1	0.6
31-40	1.7	0.6	1.5	0.6	1.9	0.7	1.5	0.5	2.1	0.6
41-50	1.5	0.3	1.3	0.4	1.7	0.4	1.3	0.3	1.9	0.6
51-60	1.6	0.4	1.4	0.5	1.7	0.4	1.5	0.4	2.0	0.6
>60	1.4	0.3	1.3	0.3	1.5	0.4	1.4	0.3	1.9	0.5

DIS-Q1 = identity confusion
DIS-Q2 = loss of control
DIS-Q3 = amnesia
DIS-Q4 = absorption

out wanting to, burst out laughing or crying (item 6; $p < .0001$) and I regularly feel an urge to eat something, even when I am not hungry (item 14; $p < .004$).

Educational Level and Nationality

Both variables have no significant effect on the DIS-Q scores. However, quite remarkably, the Flemish sample scores higher ($p < .002$) on the total DIS-Q score (1.69 +/- 0.41 versus 1.55 +/- 0.40) and on the four subscales, compared with the Dutch sample. Taking into account the effects of age (the Flemish sample was younger), the differences were no longer significant. Since the ANOVA showed that the differences were caused by the differences in age and not in nationality, we decided to make a comparison between the Flemish and Dutch sample in terms of the different age levels (10 - 20, 20 - 30, 30 - 40, 40 - 50, 50 - 60, and > 60 years of age). In this way, we found some significant differences. Flemish subjects 30 - 40 years of age scored higher ($p < .03$) on the subscale absorption, and the Flemish subjects 40 - 50 years of age scored higher ($p < .04$) on the subscale amnesia. These findings suggest that socio-cultural factors are probably influencing the DIS-Q scores.

Marital Status

The marital status (single, married, living together, divorced, widower/widow) has no significant effect on the DIS-Q scores. An interesting finding is that in the audit age group (20 to 50 years), the divorced group has the highest scores on the total DIS-Q and three subscales (identity confusion, loss of control, and amnesia), while the married group has the lowest DIS-Q scores.

Frequency of Dissociative Experiences

To study the prevalence of dissociative experiences in the general population, first a cutoff score for the total DIS-Q score was assessed, by comparing the scores of the normal sample ($N = 374$) with the scores of a patient group with dissociative disorders ($N = 46$). If a cutoff score of 2.5 is used, an excellent sensitivity (the ability to correctly identify true positive cases or subjects with dissociative disorder) and specificity (ability to correctly identify true negative cases or subjects without dissociative disorder) was detected: sensitivity was 91 percent and specificity 97 percent. However, these findings need to be replicated in larger patient samples, comparing DIS-Q scores of dissociative disorders with scores of a psychiatric patient group with mixed diagnoses. Our data indicate that eleven subjects or 2.94 percent of the total sample report serious dissociative experiences. In this group, four subjects (1.06 percent of the total sample) have DIS-Q scores as high as the scores of patients with multiple personality disorder. Next, we analyzed several characteristics of this group with scores above 2.50 on the DIS-Q ($N = 11$). Six subjects were Flemish, five Dutch, seven subjects were married, three single, and one divorced, the mean age was 34; the subjects had very different educational levels. With regard to the sex of these subjects, we were amazed by the fact that in both groups (Flemish and Dutch samples) the majority were men (seven men versus four women). This finding stands in great contrast with earlier data from the literature on the incidence of multiple personality disorder,

indicating a male/female ratio of 1:9 (see Ross, Norton, & Wozney, 1989).

DISCUSSION

Our results confirm the findings of Ross and co-workers (1989, 1990), and indicate that dissociative experiences are common in the general population. Three percent of the population reports serious dissociative experiences, and one percent even scores as high as patients with multiple personality disorder. However, these data show that the estimated prevalence of 1 - 3 percent pathological dissociative experiences in Belgium and the Netherlands is lower than in Canada (Ross, Joshi, & Currie, 1990), with a prevalence of 5 - 10 percent. These differences may be caused by cultural factors and the fact that different screening instruments (DIS-Q versus DES) were employed. A remarkable finding in our sample was the fact that the majority of the subjects with high DIS-Q scores (above the 2.5 cutoff score) were men.

The declining of dissociative experiences in older age seems to be related to the fact that adult people are mastering their lives better than are adolescents and have more control over their behavior, thoughts, and emotions. This finding also suggests that different age norms should be employed when scoring and evaluating the DIS-Q results. In general, there are no differences between men and women on the total DIS-Q scores. Men score higher on the subscale amnesia, but we presume that this is probably due to socio-cultural factors and sex-role stereotyping. The educational level and marital status have no significant effect on the DIS-Q scores, but the results suggest that in the adult sample, the divorced group seems to be the most vulnerable for confrontation with situations provoking dissociative experiences. We are wondering why Ross and co-workers (1990) neglected to study the possible effect of the demographic status on the DES scores? Taking into account the effects of age, we found some significant differences between the Flemish and Dutch sample, suggesting that DIS-Q scores are probably influenced by socio-cultural factors. In conclusion, the data of this study suggest that dissociative experiences are declining with age, and that the prevalence of serious dissociative experiences in the general population is 1 - 3 percent. If these findings will be confirmed in other studies, we believe that the prevalence of dissociative disorders has been seriously under-diagnosed by most mental health professionals. ■

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