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Health anxiety in somatoform disorders – Results of a comparative longitudinal study

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Abbreviations:

HAQ = Health Anxiety Questionnaire
HA = health anxiety
H = hypochondriasis
S = nonhypochondriacal somatoform disorders
D = depression
P = panic disorder
M = medically ill patients

ABSTRACT

Objectives: *This paper aims at evaluating health anxiety in somatoform patients, compared to depressive patients, patients with panic disorder and patients with medical conditions, initially and six months later.*

Patients and methods: *The study included 140 patients with somatoform disorders (50 patients with a diagnosis of hypochondriasis-H and 90 patients with nonhypochondriacal somatoform disorders-S), 50 patients with depression (D), 50 with panic disorder (P) and 50 medically ill patients (M). The patients were evaluated for health anxiety (HA) using the Health Anxiety Questionnaire (HAQ), at presentation and at six months of antidepressant treatment.*

Results: *The initial and the final scores of HAQ were significantly higher in hypochondriasis than in all other groups; in nonhypochondriacal somatoform disorders the HAQ was higher than in depression, panic disorder and medical conditions. The HAQ scores diminished at 6 months in all groups, but they remained still higher in somatoform patients (H and S) than in normal adaptative HA group (medically ill). There is a positive correlation between the initial and the final scores HAQ especially in H and S patients.*

Conclusions: *The present study has revealed that hypochondriasis is characterised by the highest score HAQ and may be considered a "health anxiety disorder". Somatoform disorders are characterised by high and persisting levels of HA and might be sustained as a distinct diagnostic category. HA may be considered as a "trait" dimension in somatoform disorders. Antidepressants seem to be effective in diminishing health anxiety. The initial score of HAQ may be used as a predictor of the severity of the evolution in somatoform disorders.*

Keywords: health anxiety, somatoform disorders, hypochondriasis, comorbidity, depression, nic disorder

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INTRODUCTION

Since their introduction in DSM–III as a distinct diagnostic category for somatic symptoms "not explained by a general medical condition" Somatoform Disorders have been subject to controversy. It has remained as such in the successive versions of DSM-III-R, DSM-IV and DSM IV TR (1), allowing the focus on a previously neglected and misdiagnosed category of patients, frequently present in primary care (2,3) and in liaison psychiatry (4,5).

The planning process for DSM-V is still judged by several authors as an opportunity to reconsider the somatoform disorders category (6). The ideas for DSM-V range from a relatively "conservative" suggestion that changes should be made, while retaining the group of somatoform disorders (7-10) to a "radical" proposal to abolish the somatoform group altogether (6,11,12).

In this field, Noyes and coll. have recently proposed a dimensional reconceptualization on somatoform disorders, based on marked and persistent somatic distress and care-eliciting behavior (13).

The presence of unexplained somatic symptoms is not the only condition for the diagnosis of a somatoform disorder. In fact, people with hypochondriasis and other somatoform disorders are also characterized by excessive anxiety about health and by beliefs that one's physical integrity is threatened (14). The care–eliciting behaviour is part of the cognitive-behavioural psychopathology of health anxiety. According to this model, there are several components of health anxiety, including disease conviction, disease fears, disease preoccupation, bodily checking and reassurance seeking, disease-related avoidance and escape behaviours. The cognitive, emotional and behavioural components of health anxiety define the psychopathology of somatoform disorders (15).

Another problem in marking the boundaries of somatoform disorders is their large comorbidity with depression and anxiety, especially in primary care (16). The Kielholz's concept of "depression masqée" posed even since 1973 the problem of the overlap between somatization and depression (17). Depressive patients often complain of somatic symptoms, the relationship between depression and somatization being thus strongly supported (18).

Even if comorbidity is frequent in people with somatoform disorders, depression and anxiety fail to fully explain the presence of unexplained somatic symptoms. For example, in a recent survey of 1,500 primary care patients with somatization symptoms in aproximatively 20%, controlling for comorbid psychiatric or medical illness did not change the study's findings, suggesting that somatization is a distinct entity and not a symptom of another underlying disorder (19). ❑

Hypothesis of the study

Are somatoform disorders simply variantes of anxiety or depressive disorders, or are they a distinct diagnostic category, and, if this is the case, what is their psychopathological core?

Considering somatoform disorders as a distinct diagnostic category, is health anxiety definitory for them?

In order to offer some answers to these major questions, we used 3 hypotheses:

1. Health anxiety is higher in somatoform patients compared to psychiatric patients diagnosed with depression or panic disorder, as well as medically ill patients without psychiatric disorders.
2. Considering the level of HA in the somatoform group, patients with hypochondriasis would score higher than nonhypochondriacal patients.
3. After correct treatment received for 6 months HA will be less important in all psychiatric groups, but still higher in the somatoform group.

To test these hypothesis we assessed HA in a group of somatoform patients, compared with 3 control groups: depressive patients, patients with panic disorder and medically ill patients without a psychiatric diagnosis, at presentation and after 6 months of treatment. ❑

PATIENTS AND METHODS

Patients

The study included consecutive outpatients recruited at the Department of Liaison Psychiatry in the University Hospital of Bucharest.

All the subjects for the study fulfilled the general inclusion and exclusion criteria:

a) Inclusion criteria:

- Age: 20 – 70 years
- Education: at least 8 classes
- GAF index (*Global Assessment of Functioning*)(1): at least 50 (100 representing the highest level of functioning in all areas).
- Signed agreement for participation (according to the Helsinki Declaration, all participants included in the study were informed in writing about the study and agreed to participate)

b) Exclusion criteria:

- Psychotic disorders
- Personality disorders
- Dementia or other organic mental disorders
- Mental retardation

Study design

This is a longitudinal study on 290 subjects in which the score of health anxiety in somatoform patients (with hypochondria-H or with nonhypochondriacal somatoform disorders-S) was compared with the score of health anxiety in depressive (D), panic disorder (P) or patients with a medical condition (M) as controls, on presentation and 6 months later.

After a first evaluation the patients were categorized into one of these diagnostic groups (H, S, D, P, M) by a liaison psychiatrist (the author) (FIGURE 1).

Study group – somatoform disorders:

Subgroup 1: **Hypochondriacal** patients (H) (N=50) (ICD 10 complete criteria for the diagnosis of hypochondriasis)

This subgroup included patients with hypochondriasis as a single psychiatric diagnosis or associated with major depression (34%), dysthimia (14%), panic disorder (14%), somatization–complete form or abridged form (20%). As comorbidity is much more the rule than the exception in hypochondriasis, the results obtained under conditions of comorbidity are much more significant.

Subgroup 2: Nonhypochondriacal **somatoform disorders** (S) (N=90)

This subgroup included undifferentiated somatoform disorders (ICD 10), somatization

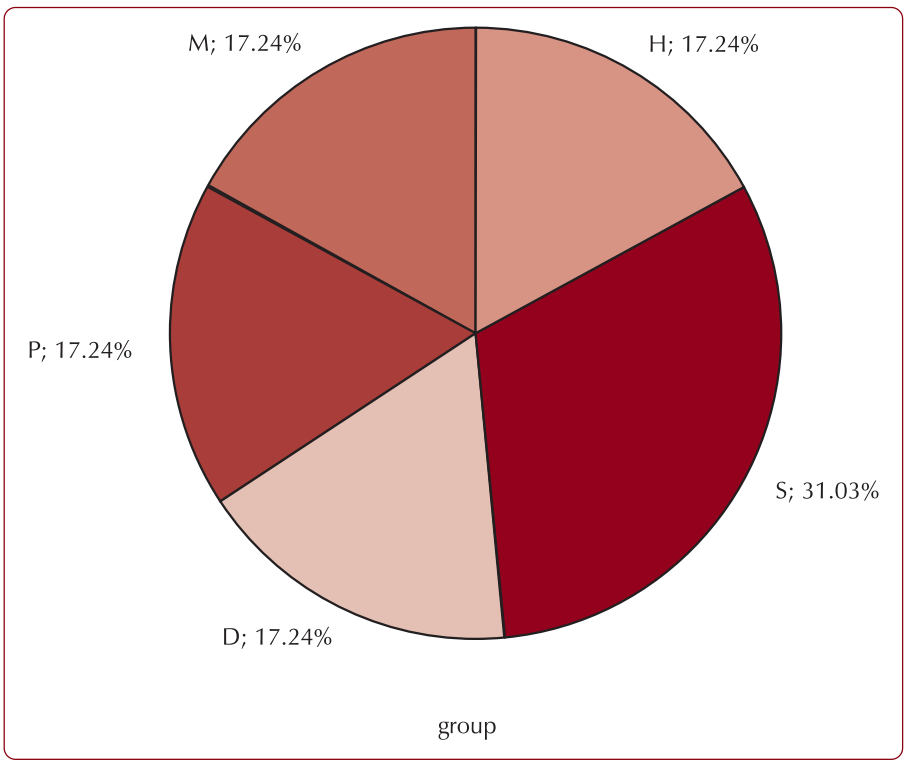

FIGURE 1. Patients distribution by groups

– complete form (ICD 10) or abridged form, pain disorder (ICD 10) as single diagnosis or associated with major depression (12.2%), dysthimia (20%), panic disorder (15.55%).

Conversion disorder, body dysmorphic disorder (judged as "psychopathological different") were excluded (6,20).

Control groups

Depression group (D) (N=50):

Inclusion criteria: Patients with major depressive disorder (ICD 10)

Exclusion criteria: psychiatric or somatic comorbidity

Depressive patients often complain of somatic symptoms, the relationship between depression and somatization being strongly supported. A depressive group was chosen as control in order to test the hypothesis that HA in somatoform disorders is not due to a depressive dimension.

Panic Disorder group (P) (N=50):

Patients with panic disorder (ICD 10)

Exclusion criteria: psychiatric or somatic comorbidity

Patients with panic disorder represented a control group for anxiety. AP patients are known to have their own high level of HA, so a significant difference between the AP group and the somatoform group should be a stronger argument for the specificity of HA in somatoform disorders.

Medically ill group (M) (N=50)

Inclusion criteria: presence of a chronic noninvalidating general medical condition

Exclusion criteria: presence of a psychiatric diagnosis (N=50).

This type of patients fit well to form a control group because they already have a certain degree of health anxiety that can be considered a normal adaptative one. This allowed us to assume that the health anxiety noticed in the somatoform group is more than the result of a prolonged contact with the medical staff (as is also the case of medically ill patients). ❑

METHODS

The Romanian version of the Health Anxiety Questionnaire (HAQ)-validated by the author in a previous study (21) was given to consecutive outpatients fulfilling the criteria for inclusion in each group of the study, initially and 6 months later.

The original Health Anxiety Questionnaire (HAQ) designed by Lucock and Morley in 1996 is one of the most used self-report measures of health anxiety (22). It contains 21 items describing health worries and preoccupations, fear of illness and death, reassurance seeking behaviours and the interference with the person's life. The questionnaire is based on Kellner's Illness Attitude Scale (23) and the cognitive behavioural model of health anxiety; it was developed to identify individuals with high levels of concern about their health.

Respondents rate each item on a four point scale; never or rarely (0), sometimes (1), often (2) or most of the time (3). The maximum total score is therefore 63.

Both the original version and the Romanian version have good internal consistency, test-retest reliability, and discriminant validity (21, 23).

During the 6 months of follow-up the patients (except the somatic patients group) received antidepressants +/- anxiolitics, according to the specific psychopathological pattern of each patient. Results of recent studies confirm that antidepressants seem to be more effective than placebo in treating somatoform disorders, improving bodily pain, physical symptoms, and anxiety (24,25).

Demographic data concerning age, sex and education level were collected, in order to avoid differences in HAQ between groups due to this kind of variables. For education we used 4 levels: level 1 = 8 degrees, level 2 = highschool, level 3 = post highschool, level 4 = higher education.

Description of the study population

The subjects were aged between 18 and 66 years, with a total mean age of 40.9 years. The age distribution by decades is represented in FIGURE 2.

The mean ages in each group are figured in TABLE 1.

The sex distribution was 56.6% women and 43.4% men. The distribution by education levels was: level 1: 5.5%, level 2: 22.4%, level 3: 37.9%, level 4: 34.1%. The distribution by sex and education levels in each group are figured in TABLE 2.

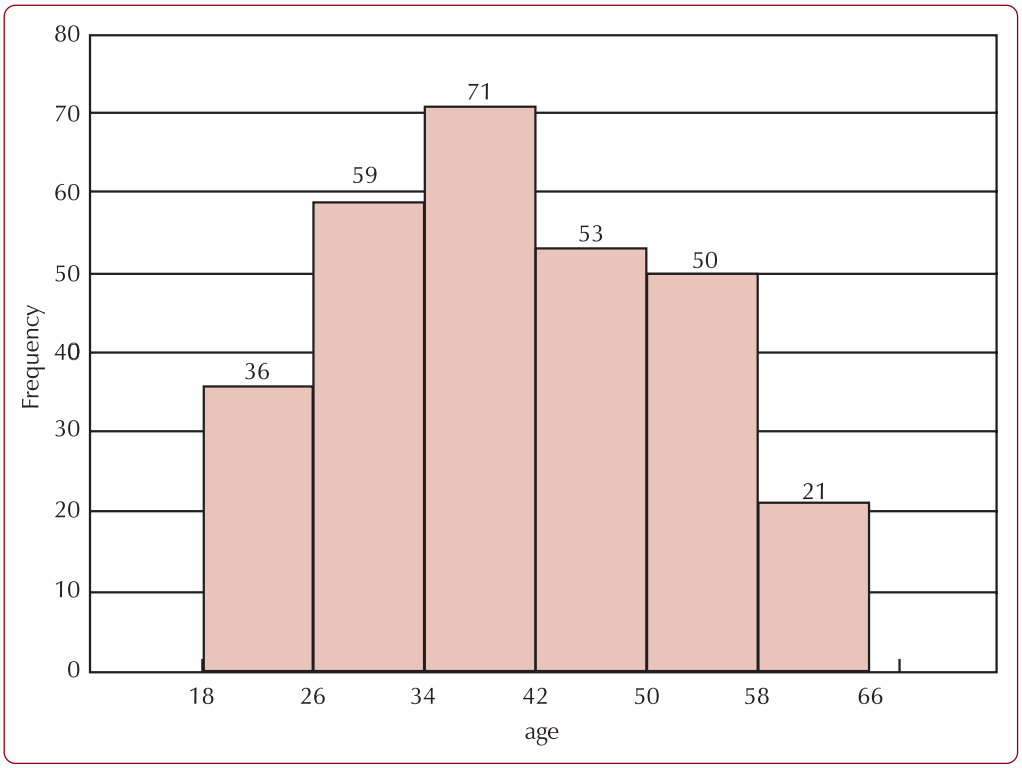

FIGURE 2. Age distribution by decades

Group	Age	
	Mean	Standard deviation
P	38.40	11.17
D	41.06	12.27
H	39.80	13.03
M	45.56	10.88
S	40.24	11.72
Total	40.90	11.96

TABLE 1. The mean ages in the study groups and control groups

Statistics

Statistical analysis was performed using the SPSS version 15, Epi Info ver.3.3.2 and Excel 2003. A descriptive analysis was made, and study variables were checked for normal distribution. Barlett's and Levene's Test was used for Inequality of Population Variances, the two sample two tails t test (for two groups) and ANOVA (for multiple groups), the Parametric Tests for Inequality of Population Means for normal distribute variables, the Kruskall-Wallis,

Group	Sex		Levels of education				
	F	M	1	2	3	4	Total
P	27 (54.0%) 16.5%	23 (46.0%) 18.3%	6 (12.0%) 37.5%	10 (20,0%) 15.4%	17 (34,0%) 15.5%	17 (34.0%) 17.2%	50 (17.2%)
D	28 (56.0%) 17.1%	22 (44.0%) 17.5%	5 (10.0%) 31.3%	10 (20.0%) 15.4%	19 (38.0%) 17.3%	16 (32.0%) 16.2%	50 (17.2%)
H	27 (54.0%) 16.5%	23 (46.0%) 18.3%	0 (0.0%) 0.0%	11 (22.0%) 16.9%	25 (50.0%) 22.7%	14 (28.0%) 14.1%	50 (17.2%)
M	27 (54.0%) 16.5%	23 (46.0%) 18.3%	2 (4.0%) 12.5%	12 (24.0%) 18.5%	18(36.0%) 16.4%	18 (36.0%) 18.2%	50 (17.2%)
S	55 (61.1%) 33.5%	35 (38.9%) 27.8%	3 (3.3%) 18.8%	22 (24.4%) 33.8%	31 (34.4%) 28.2%	34 (37.8%) 34.3%	90 (31.0%)
Total	164(56.6%) 100%	126(43.4%) 100%	16 (5.5%) 100%	65 (22.4%) 100%	110 (37.9%) 100%	99 (34.1%) 100%	290 (100%)

TABLE 2. Distribution by sex and levels of education

a nonparametric test equivalent to ANOVA for variables not normal distributed. Multiple Comparison procedures were used for testing mean differences detected by Anova and Kruskall-Wallis tests, Paired Samples T-Test for comparing the mean of HAQ1 and the mean of HAQ2 and the Pearson *r* for correlations. ❑

RESULTS

Demographic variables

A post hoc test Bonferroni was applied to verify the significance of age differences by groups (ANOVA p=0.03).

There were no significant difference in mean ages between groups H, S, D and AP, so they do not account for the differences in HAQ scores between these groups. As concerns the group M (medically ill), it has a higher mean age compared to the group P (p<0.02). The presence of a general medical condition being associated with aging, a higher mean age in medically ill should correlate with a higher score HAQ, which makes the difference between this group and group P even more significant.

There were no statistically significant differences in HAQ between males, females and levels of education, so the differences in the scores HAQ between groups are not biased by sex and education level.

Scores HAQ at the first evaluation (HAQ 1)

At the first evaluation the mean scores HAQ ranged between 44.28 (group H) and 10.14 (group M) with group S (26.91), group P (17.04) and group D (13.62) scoring intermediately between these extreme values.

The mean scores of the HAQ 1 are figured in TABLE 3.

For detecting the groups between which there are differences we used multiple Comparison Tests.

Group H scored significantly higher than the group S and all the control groups (D, P, M) (P<0.001). Group S scored higher than all the control groups (D,P,M) (p<0.001).

There were no significant differences between group D and group P, nor between group D and group M.

Group P scored significantly higher than group M. Group P scored higher than group D but the difference is not statistically significant (p>0.05).

Group	Frequency	Mean	Mediane	Standard deviation
P	50 (17.2%)	17.04	17.0	3.60
D	50 (17.2%)	13.62	14.0	3.03
H	50 (17.2%)	44.28	45.0	6.65
M	50 (17.2%)	10.14	10.0	1.84
S	90 (31.0%)	26.91	27.0	5.39
Total	290 (100%)	23.02	19.0	12.40

TABLE 3. Mean scores, mediane and standard deviation for the **HAQ 1**

The mean scores HAQ 1 for each group and the extreme values are represented in FIGURE 3.

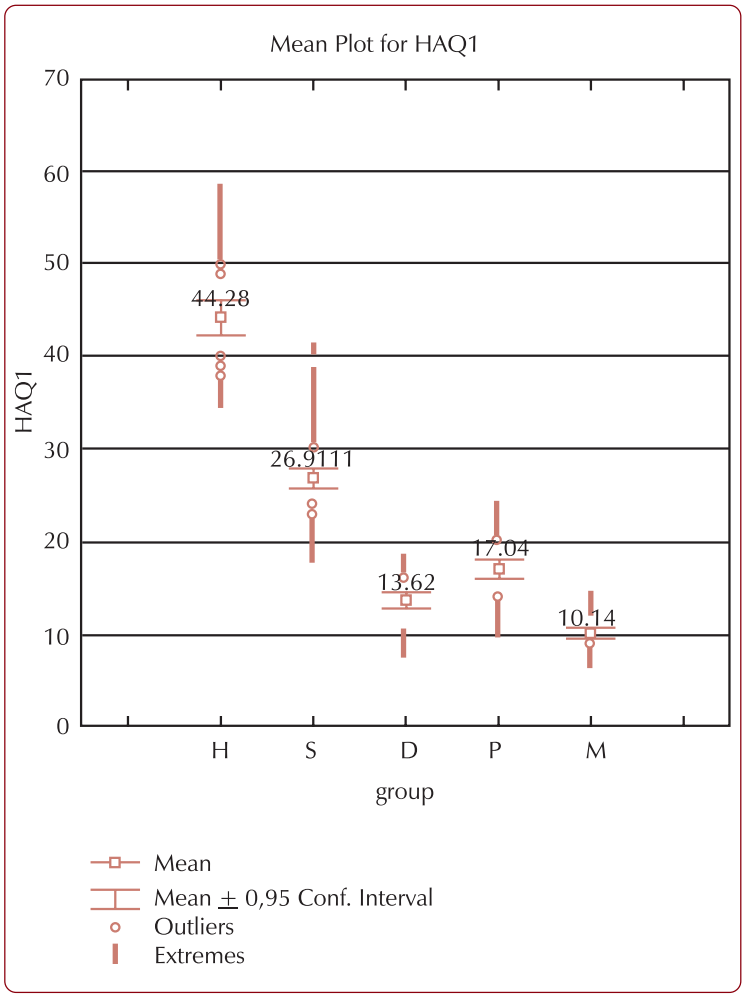

FIGURE 3. The mean scores HAQ 1

Scores HAQ at the second evaluation (HAQ 2)

For the second evaluation of the HAQ, the mean scores ranged between 23.02 for group H and 8,54 for group D, with intermediate values for group S (15,78), P (10.52) and

Group	Frequency	Mean	Mediane	Standard deviation
P	50 (17.2%)	10.20	10.00	2.12
D	50 (17.2%)	8.54	8.00	1.54
H	50 (17.2%)	23.02	22.00	6.43
M	50 (17.2%)	10.20	10.00	1.72
S	90 (31.0%)	15.78	15.00	3.88
Total	290 (100%)	13.85	12.0	6.20

TABLE 4. Mean scores, mediane and standard deviation for the HAQ 2

M (10,52). The mean scores for HAQ 2 are figured in TABLE 4.

There are significant differences between group H and all the other groups: S, D, P, M ($P<0,01$). Group S also scored significantly higher than group D, P, or M ($p<0,01$). There were no statistically significant differences between the HAQ 2 of groups D, P and M.

The mean scores HAQ 2 of each group and the extreme values are represented in FIGURE 4.

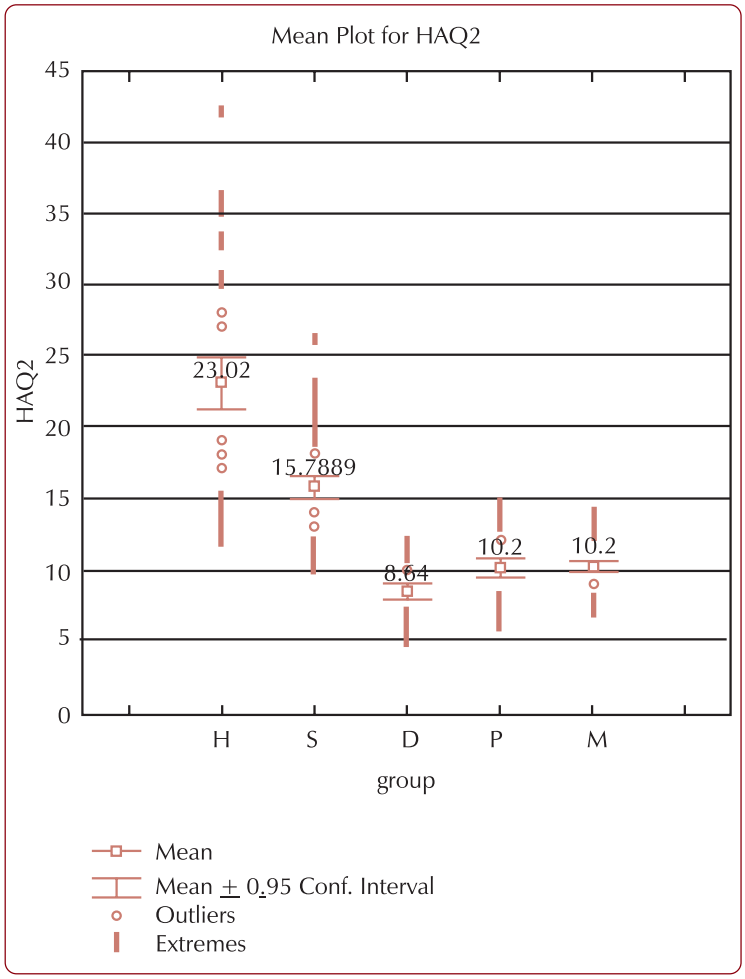

FIGURE 4. Mean scores HAQ 2

Score HAQ 1 compared to score HAQ 2

Mean scores HAQ 1 are significantly higher than mean scores HAQ 2 for each group ($p<0,01$ for paired samples test) excepting the group M ($p>0,05$).

The HAQ 1 and HAQ 2 compared in each group are represented in FIGURE 5.

Correlation score HAQ 1 – score HAQ 2

The correlation between the score HAQ 1 and the score HAQ 2 was evaluated for all the patients. The best correlation of the 3 correlations types (linear, logarithmic and polynomial) correspond to a polynomial function: $R=0,884$ for all the patients (see FIGURE 6). Evaluation by groups revealed that the best correlations were found in group H (linear: $R=0.728$, logarithmic: $R=0.725$, polynomial: $R=0.729$) and group S (linear: $R=0.675$, logarithmic: $R=0.676$, polynomial: $R=0.676$). ❑

DISCUSSION

HAQ was not influenced by demographical variables (age, sex, education). It is an argument to consider the differences in HAQ between groups simply determined by the very psychopathology of each group in the study.

At the first evaluation there were significant differences in HAQ scores between groups. Group H (hypochondriasis) had the highest score HAQ (**44.28 ± 6.65**), i.e.approximatively twice higher than that of group S and over 4 times higher than the score of group M (medically ill) (chosen as a "normal adaptative health anxiety" group). This result may support the classification of hypochondriasis as "health anxiety disorder" proposed by certain authors in the DSM V (6).

Group S (somatoform nonhypochondriacal disorders) scored approximatively twice lower than that of group H (**26.91 ± 5.39**) but significantly higher than the scores of group P (**17.04 ± 3.60**) and group D (**13.62 ± 3.03**) which were not significantly different from each other. One can conclude that the high level of HA in somatoform group is not simply due to an anxious or depressive transnosological pathology.

The differences in health anxiety scores are significant even if the study group included not only purely somatoform patients but also hypochondriacal and somatoform patients

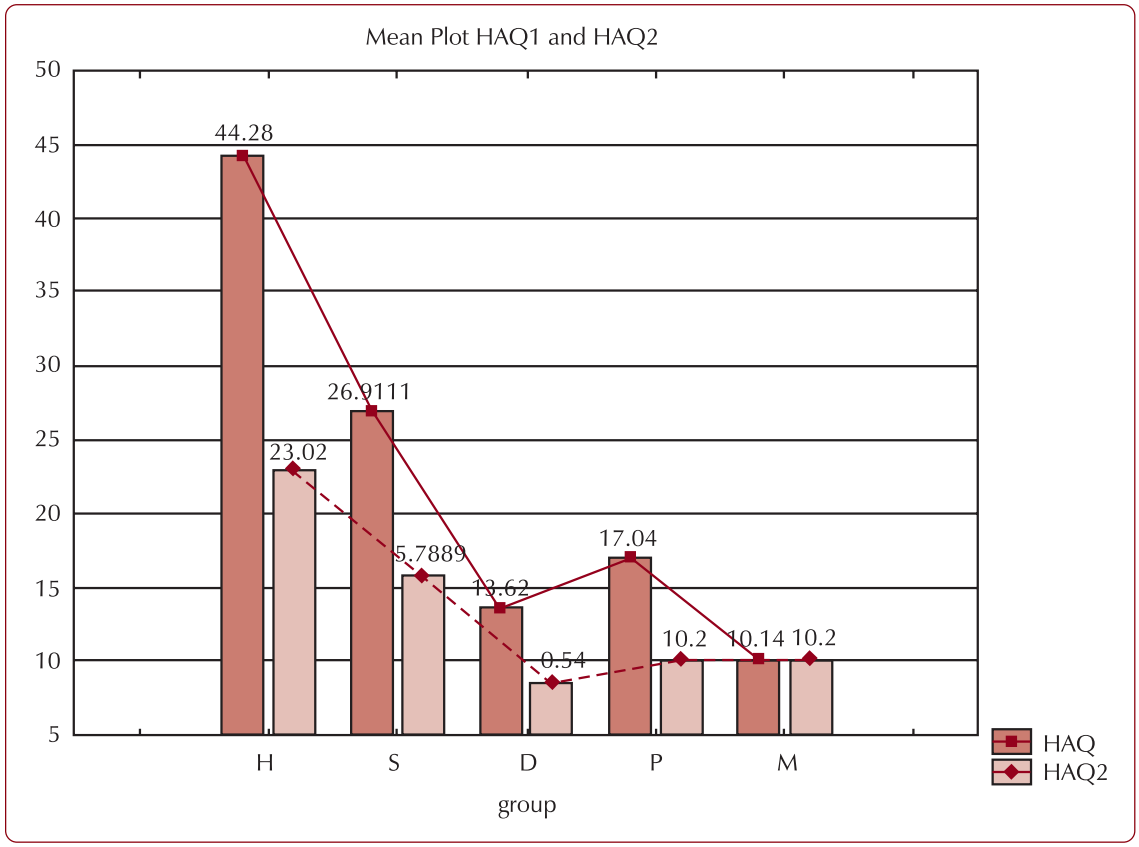

FIGURE 5. Scores HAQ 1 and HAQ 2 compared in each group

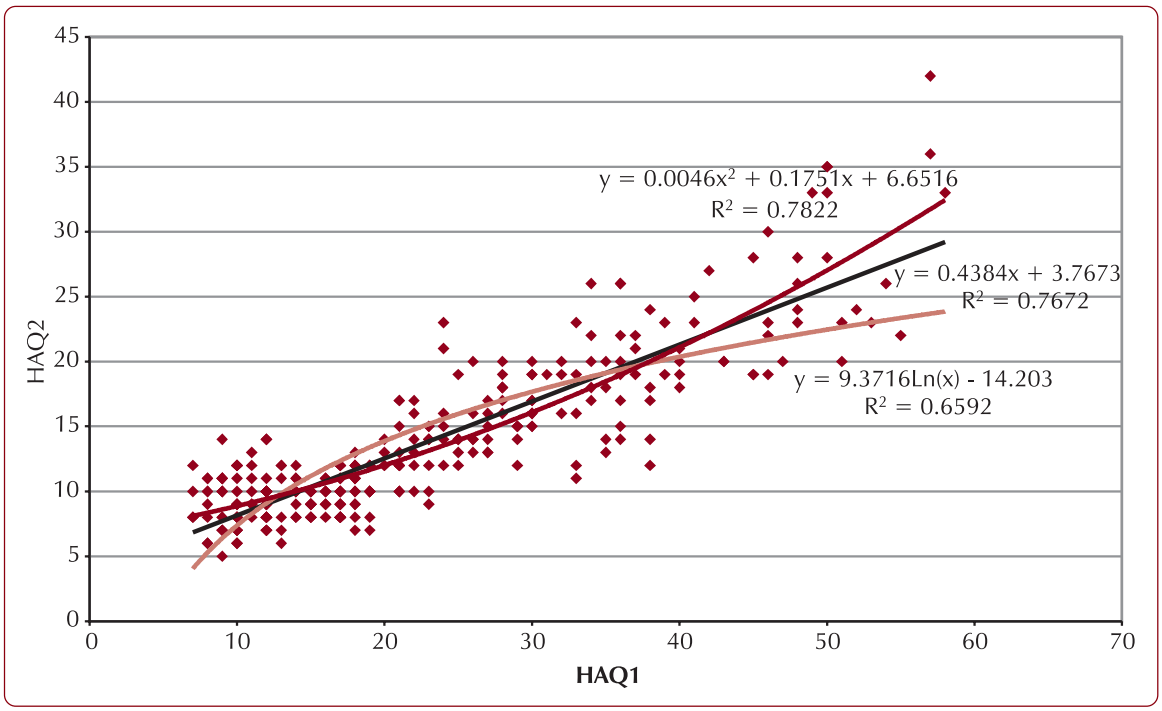

FIGURE 6. Correlation HAQ 1- HAQ 2

comorbid with depression and anxiety. Therefore the results may be considered still more relevant. This supports the hypothesis that somatoform disorders are qualitatively different as regard as health anxiety from merely depressive or anxious patients and that health anxiety may be representative for their psychopathology.

Group P scored higher than group M (normal adaptative HA). This result confirmed previous studies in literature (26). Group P scored higher than group D but the difference is not statistically significant. The specificity of the psychopathology of a panic attack involves corporal unpleasant sensations and death anxiety, favoring a rise in HA. The depressive patient interprets his symptoms in a negative way, hence an increased health anxiety as in patients diagnosed with panic disorder. In the present study group D scored slightly higher (not statistically significant) than group M; patients in group M are more health anxious than persons with no somatic or psychiatric pathology (27). A further study comparing depressive patients with normal controls would be more relevant for the evaluation of HA in depression.

At the second evaluation, after 6 months of treatment, the score HAQ diminished in all groups, except group M (normal adaptative health anxiety), demonstrating that health anxiety is a "sensitive to change" dimension and that the HAQ is a valid instrument to assess the evolution of health anxiety. The HAQ 2 in the non somatoform groups (P and D) is comparable with that in group M. The increased level of HA in panic disorder group (and the slightly high level of HA in depression) at the first evaluation was due to the specific psychopathology of panic or depression, and therefore it returns to a baseline when the treatment resolved the principal clinical condition.

The significant diminution of HA in all the psychiatric groups after 6 months of treatment sustain the efficacy of antidepressants/anxiolytics in diminishing pathological health anxiety.

The higher HA in somatoform patients at 6 months (compared to the return at baseline in depressive and panic patients) recommends HA as a persistent dimension in somatoform disorders.

The positive correlation of HAQ 1 with the HAQ 2, especially for the group H (R=0.729) and S (R=0.676) may lead us to regard the initial HA as a predictor of a more severe evolution in somatoform disorders. ❑

CONCLUSION

The high level of HA in hypochondriacal patients compared to all groups is an argument to classify hypochondriasis as a "health anxiety disorder".

The high level of HA in group S, contrasting with the depressive group and the panic group is an argument for nonhypochondriacal somatoform disorders as a distinct category in psychiatric classifications (qualitatively different from depression and anxiety) and for a health anxiety based psychopathological model in somatoform disorders.

The decrease in HA after 6 months of treatment in somatoform patients revealed the sensitivity to change of the Romanian version of the HAQ which made it a reliable instrument in assessing the evolution of somatoform disorders.

More than 50% diminution of HAQ scores in somatoform disorders showed that the antidepressant therapy in somatoform disorders was effective (also confirmed by literature (24, 25).

The persistence of a higher level of HA in somatoform patients compared with non somatoform patients after 6 months of treatment supports the hypothesis of a "trait" value of health anxiety in somatoform disorders.

As a "trait", health anxiety may be paralleled to the personality spectrum of psychopathology demanding a more complex therapeutic approach, adding psychotherapy to pharmacotherapy.

A high initial level of health anxiety in somatoform disorders may be used as a predictor of evolution severity and should recommend the patient for a more complex therapy and follow up. ❑

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