

Disturbance of Symbolic Thinking in Somatizing Chronic Pain Patients

O. Shaheen, Fatma Moussa A. Hashem, and M.R. Raslan

A group of 58 somatizing chronic low-back pain patients was compared to an age- and sex-matched group of 42 patients with low-back pain of adequate organic cause. The main hypothesis was that somatizing patients had reduced symbolic thinking that correlated with the intensity of pain and aspects of abnormal illness behavior. Both groups were examined by a structured psychiatric interview. Psychometric testing aimed at the quantitative assessment of symbolic thinking, the intensity of pain, degree of depression and aspects of abnormal illness behavior. 58.7 % of somatizers had a depressive disorder. The results showed that only female somatizers had a reduction in symbolic thinking that correlated with the intensity of pain but not with abnormal illness behavior. In male patients only, somatizers were significantly more depressed than the corresponding sex in the control group. In both sexes, depression did not correlate with the intensity of pain. It was concluded that the pathogenesis of somatization is different in the two sexes.

(Egypt.J.Psychiat., 1998, 21 :201 - 210).

INTRODUCTION

Chronic pain of psychogenic origin poses a great diagnostic controversy. As a symptom, its differential diagnosis covers most of the psychiatric disorders. Depressive syndromes, anxiety syndromes and somatoform disorders are the most common diagnoses given to such patients (Bond, 1978; Merskey, 1980; Mathew et al., 1981; Sadek et al., 1982; Hudson et al., 1985; Katon et al., 1985; American Psychiatric Association, 1994). In research as well as in pain clinics, chronic pain is considered as a syndrome. This reflects a belief that

chronic pain patients, regardless of their comorbid diagnosis, share common clinical, dynamic, cognitive, social and behavioral similarities (Walters, 1969; Black, 1975; Blumer, 1978; Blumer and Heilbronn, 1982).

Alexithymia was the concept that was introduced to describe the inability to recognize and express emotions (Lesser, 1981). Alexithymia was considered as a predisposing factor for somatization (Shipko, 1982). Central to alexithymia was impoverishment of fantasy life, due to reduction in the ability to use symbolic thinking (Sifneos, 1973). Cohen et al. (1983) introduced the Standardized Archetypal Test with nine elements SAT9 to assess symbolic thinking. It was a projective test that examined the ability to use nine essential symbolic elements in expressing anxiety and basic modes of defense against a threatening danger. The test was found to be valid and reliable.

Omar Saheen, Prof. of Psychiatry, Faculty of Medicine, Cairo University.

Fatma Mousa, Prof. of Psychiatry, Faculty of Medicine, Cairo University.

Abdelhamid Hashem, Assist. Prof. of Psychiatry, Faculty of Medicine, Cairo University.

Mostafa R. Raslan, Assist. Prof. of Psychiatry, Faculty of Medicine, Cairo University.

Hypothesis

The authors hypothesize that somatizing chronic low-back pain patients show reduction of symbolic thinking. A disturbance that is related to the intensity of pain and to abnormality in attitude towards illness.

SUBJECTS AND METHODS

Subjects were recruited from the Psychiatry and Rheumatology Out-Patient Clinics of Kasr El-Aini Hospital. Both groups had low-back pain for at least six months. A senior staff member from the Department of Rheumatology and Rehabilitation assessed all cases by physical examination and investigations. From the psychiatric group of patients, cases who had an organic explanation for their pain were excluded. Rheumatology cases were included if they had adequate evidence of lumbar spondylosis. Cases of rheumatoid arthritis were excluded due to the psychosomatic nature of this disorder. Cases with major medical disorders, mental retardation, substance abuse, organic mental disorders and psychotic symptoms were excluded from both groups. Both sexes were included. Age ranged from 20 to 45 years.

Both groups were psychiatrically assessed using the Structured Clinical Interview of DSM-III-R SCID (Spitzer et al., 1990). Assessment was done by two staff members from the Psychiatry Department, faculty of Medicine, Cairo University. All patients were subjected to the following:

a. Numeric Rating Scale NRS, for the measurement of the intensity of pain (Chapman and Syrjala, 1990).

b. Standardized Archetypal Test of Nine Elements SAT9, for measurement of symbolic thinking (Cohen et al., 1983).

c. Illness Behavior Questionnaire IBQ (Pilowsky and Spence, 1975).

d. Hamilton Rating Scale for Depression HRSD (Hamilton, 1960).

Pilowsky (1978) defined abnormal illness behaviors persistence of inappropriate mode of perceiving and acting to illness, despite explanation given by a health professional after adequate assessment. The IBQ was a self-report questionnaire used to assess the patient's attitudes and beliefs towards illness. Seven scales and two second order factors were obtained. The scales were General Hypochondriasis GH, Disease Conviction DC, Psychological versus Somatic Focusing Illness P/S, Affective Inhibition AI, Affective Disturbance AD, Denial D, and Irritability I. Second order factors were Affective State AS and Diseases Affirmation DA. The test proved to be of high validity and reliability (Pilowsky et al., 1977). High score on GH scale pointed to a phobic attitude to illness with a high level of arousal. DC scale measured the belief that physical illness existed despite reassurance by a physician. High score on P/S scale indicated the acceptance of the psychological nature of illness, a low score pointed to the tendency to somatize. High score on AI indicated difficulty in expressing negative feelings towards others. High score on AD indicated a feeling of anxiety or depression. Patients with high score on D scale tended to deny life problems and to attribute them to physical illness. High score on I scale indicated feelings of anger and awareness of interpersonal difficulties.

Statistical analysis was performed using the computer program Statistica for Windows - Release 4.5 B - Copyright (c) StatSoft, Inc. 1993.

RESULTS

The somatizing psychiatric group of patients included 58 patients (28 male and 30 female). The rheumatology group comprised 42 patients (21 male and 21 female). The mean age was 29.60 ± 8.37 and 30.31 ± 7.14 years respectively. The difference in age and sex distribution was not statistically significant. As shown in table 1, both groups were matched for occupation and marital status. More rheumatology patients were illiterates and more somatizing patients completed preparatory education.

As seen in table 2, 19 % of somatizing patients and 11.9 % of rheumatology patients had major depression. The difference between the two groups did not reach statistical significance ($t = 0.989$, $p > 0.10$). Somatizing patients had significantly dysthymia more frequently than rheumatology patients (39.7 % and 16.7 % respectively, $t = 2.667$, $p < 0.01$). Somatizing patients had their pain for a longer duration and of a greater intensity than the rheumatology group (table 3).

Psychometric Assessment

Tables 4-7 show the results of the applied psychometric tests. No statistically significant difference was observed between the two clinical groups, and between male and female rheumatology patients regarding the SAT9. Among somatizing patients, females had significantly lower SAT9 mean score than male patients (mean score $\pm$ SD = 52.15 ± 32.19 and 110.18 ± 57.20 respectively). Adopting the cut-off point of 65 on SAT9, 76.7 % of female somatizing patients compared to 21.4 % of male patients in the same group were considered alexithymic. The difference reached statistical significance.

Somatizers scored statistically higher on HDRS than the rheumatology patients

(mean score $\pm$ SD = 27.83 ± 11.87 and 20.07 ± 11.25 respectively). No significant difference was observed between female patients in both groups. Male somatizers scored significantly higher more than male rheumatology patients (mean score $\pm$ SD = 26.61 ± 12.66 and 17.33 ± 11.37 respectively).

Somatizers had significantly higher mean scores than rheumatology patients on GH, P/S and As scales of IBQ. Female somatizers had significantly higher mean score than female rheumatology patients on GH and P/S of IBQ. They had a lower mean score on D scale. No statistically significant difference was observed between male patients in both groups regarding score on IBQ.

CORRELATION STUDIES

The correlation coefficients between symbolic thinking on one side and the results on NRS, HDRS and IBQ on the other side, were calculated in somatizing patients. In female somatizers, a statistically significant negative correlation was found between SAT9 scores and both NRS and AI scale of IBQ ($r = -0.43$ and -0.37 respectively, $p < 0.05$). In male somatizers, no significant correlation was found between SAT9 and NRS ($r = -0.07$, $p > 0.05$). SAT9 correlated positively with AI ($r = +0.39$, $p < 0.05$). No significant correlation was found between NRS and HDRS in male and female somatizers ($r = -0.06$ and -0.01 respectively, $p > 0.05$).

Table 1
Demographic Data.

	Somatizing Group (n = 58)		Rheumatology group (n = 42)	
	No	%	No	%
Education*				
Illiterate	0	0	11	26.2
Can read and write	28	48.3	21	50.0
Completed preparatory education	30	51.7	7	16.7
Completed secondary education	0	0	3	7.1
Occupation**				
Unemployed	4	6.9	1	2.4
Manual worker	26	44.8	20	47.4
Clerk	8	13.8	8	19.0
Housewife	20	34.5	13	31.0
Marital Status***				
Single	18	31.0	13	31.0
Married	36	62.1	19	45.2
Divorced	3	5.2	7	16.7
Widow (er)	1	1.7	3	7.1
* $X^2 = 27.440$, $P < 0.001$ ** $X^2 = 1.547$, $P > 0.10$ *** $X^2 = 6.261$, $P > 0.05$				

Table 2
Psychiatric Dianosis

Psychiatric Diagnosis	Somatizing Group (n = 58)		Rheumatology group (n = 42)	
	No	%	No	%
Mood Disorders				
Major Depression	11	19.0	5	11.9
Dysthymia	23	39.7	7	16.7
Somatoform Disorders				
Conversion Disorder	1	1.7	0	0
Somatoform Pain Disorder	2	3.4	0	0
Somatization disorder	3	5.2	1	2.4
Anxiety Disorders				
Generalized Anxiety Disorder	10	17.2	4	9.5
Posttraumatic Stress Disorder	1	1.7	0	0
Adjustment Disorder	7	12.1	14	33.3
No Psyciatric Disorder	0	0	11	26.2

Table 3
Duration and Intensity of Pain

	Somatizing Group (n = 58) Mean± SD	Rheumatology group (n = 42) Mean± SD
Duration of Pain (inyrars)	4.68±2.75	2.13±1.77
Score on NRS	7.29±1.73	4.67±1.62
*p<0.001		

Table 4
Results of Psychometric Tests in Somatizing and Rheumatology Groups

	Somatizing Group (n = 58) Mean± SD	Rheumatology group (n = 42) Mean± SD	t
SAT9			0.34*
HDRS	80.16± 54.15	83.63±44.60	3.30***
IBQ	27.83±11.87	20.07±11.25	
General Hypochondriasis GH	5.59±1.87	4.45±2.17	2.80***
Disease Conviction DC	3.84±1.50	3.74±1.77	0.33*
Psychological/Somatic P/S	2.16±0.87	1.74±1.21	2.00**
Affective Inhibition AI	2.97±1.44	3.05±1.65	0.26*
Affective Disturbance AD	3.79±1.10	3.48±1.61	1.17*
Denial D	2.22±1.48	2.71±1.89	1.46*
Irritability I	4.24±1.27	3.81±1.58	1.51*
Affective State AS	13.62±3.42	11.74±4.59	2.35**
Disease Affirmation DA	6.69±1.70	7.00±1.82	0.87*
*P<0.10 **P<0.05 ***P<0.01			

Table 5
Results of Psychometric Tests in Male Patients in Both Groups

	Somatizing Group (n = 28) Mean± SD	Rheumatology group (n = 21) Mean± SD	t
NRS			5.62***
SAT9			1.34*
HDRS	110.18±57.20	89.38±48.46	2.65**
IBQ	26.61±12.66	17.33±11.37	
General Hypochondriasis GH	5.68±1.81	4.67±2.03	1.84*
Disease Conviction DC	3.89±1.64	3.67±1.91	0.45*
Psychological/Somatic P/S	1.96±0.92	1.86±1.20	0.35*
Affective Inhibition AI	2.96±1.48	3.33±1.68	0.82*
Affective Disturbance AD	3.75±1.21	3.48±1.66	0.67*
Denial D	2.79±1.40	2.62±1.91	0.35*
Irritability I	4.29±1.41	3.81±1.50	1.14*
Affective State AS	13.71±3.42	11.95±4.63	1.53*
Disease Affirmation DA	6.93±1.90	6.81±1.94	0.21*
*P<0.05 **P<0.05 ***P<0.001			

Table 6
Results of Psychometric Tests in Female Patients in Both Groups

	Somatizing Group (n = 30)	Rheumatology group (n = 21)	t
NRS	Mean± SD 7.13±1.72	Mean± SD 4.67±1.59	5.20***
SAT9	52.15±32.19	77.88±40.73	2.52**
HDRS	28.97±11.16	22.81±10.70	1.92*
IBQ			
General Hypochondriasis GH	5.50±1.96	4.24±2.32	2.10**
Disease Conviction DC	3.80±1.37	3.81±1.66	0.02*
Psychological/Somatic P/S	2.33±0.80	1.62±1.24	2.49**
Affective Inhibition AI	2.97±1.43	2.76±1.61	0.48*
Affective Disturbance AD	3.83±1.02	3.48±1.60	0.97*
Denial D	1.70±1.37	2.81±1.91	2.42**
Irritability I	4.20±1.16	3.81±1.69	0.98*
Affective State AS	13.53±3.47	11.52±4.65	1.77*
Disease Affirmation DA	6.47±1.48	7.19±1.72	1.61*
*P<0.05 **P<0.05 ***P<0.001			

Table 7
Results of SAT9 in Somatizing Group According to Sex.

	Male patients (n = 28)		Female patients (n = 30)		t
	No	%	No	%	
Alexithymic	6	21.4	23	76.7	5.06*
Non-Alexithymic	22	74.6	7	23.3	
Mean + SD	110.18+57.20		52.15+32.19		4.80*
*p<0.001					

DISCUSSION

A group of somatizing chronic low-back pain patients was compared to an age- and sex-matched group of patients with low back pain of adequate organic pathology. The percentages of depressive disorders in the two groups were 58.7 % and 38.6 % respectively. Significantly, more somatizing patients had dysthymia (39.7 % and 16.7 % respectively). In the study of Hashem (1987), the percentages were 30 % and 11.5 % respectively for depressive neurosis. These findings agreed with many previous reports linking chronic pain and depression reciprocally (Reich et al., 1983; Hudson et al., 1985; Katon et al., 1985).

Somatizers had a longer duration and a greater intensity of pain than the rheumatology group. It was not clear whether psychiatric illness made pain more resistant to treatment or vice versa. No significant correlation was found between the intensity of pain and depression score. Previous studies gave contradictory results concerning the mutual effect of depression and chronic low-back pain on the duration of illness (Kramlinger et al., 1983; France et al., 1986; Love 1987; Atkinson et al., 1988). In those studies, the samples included chronic low-back patients with no attempt at separating somatizers from true rheumatology patients.

Results in this study pointed that somatization had different pathogenesis in both sexes. Female somatizers showed a reduced ability of symbolic thinking compared to male somatizers and to female rheumatology patients. No difference was observed between male patients in the two groups. Mean score on HDRS in male somatizers was higher than in male rheumatology patients. No difference was observed in female pa-

tients in both groups. Results on IBQ scales yielded more differences between both sexes. Compared to female rheumatology patients, female somatizers had higher score on GH, P/S and D scales. No difference was observed between male patients in the two groups. The difference between sexes in this regard was not studied in previous reports. More research is needed to clarify this finding.

Reduced ability of symbolic thinking correlated significantly with the intensity of pain in female, but not in male somatizing patients. No significant correlation was observed between reduced symbolic thinking and HDRS scores in both sexes. This finding agreed with earlier reports stating that alexithymia was a clinical construct that was independent from any previously known psychological phenomena including anxiety and depression (Blanchard et al., 1981).

To sum up, reduced symbolic thinking was evident in female but not in male somatizers. It correlated with the intensity of pain and with some scales of Illness Behavior Questionnaire in female somatizers only. It did not correlate with score of depression in either sexes.

REFERENCES

- American Psychiatric Association (1994). Diagnostic and Statistical Manual of Mental Disorders ed. 4. DSM-IV. Washington DC: American Psychiatric Association.
- Atkinson, JH, Kremer, EF, Risch, SC and Jankowsky DS (1986). Basal and post-dexamethazone cortisol and prolactin concentrations in depressed and non-depressed patients with chronic pain syndromes. *Pain*, 25: 23-24.

- Black, RG (1975). The chronic pain syndrome. *Surgical Clinics of North America*, 55 (4): 999-1011.
- Blanchard, EB, Arena, JG and Pallmeyer, TP (1981). Psychometric properties of a scale to measure alexithymia. *Psychother. Psychosom.*, 35: 64-71.
- Blumer, D (1978). Psychiatric and psychological aspects of chronic pain. *Clinical Neurosurgery*, 25: 25: 276-283.
- Blumer, D and Heilbronn, M (1982). Chronic pain as a variant of depressive disease: The pain-prone disorder. *The Journal of Nervous and Mental Disease*, 170 (7): 381-406.
- Bond, MR (1978). Psychological and Psychiatric aspects of pain. *Anaesthesia*, 33: 355-61.
- Chapman, CR and Syrjala KL (1990). Measurement of pain. In: Bonica, JJ (Ed) *The Management of Pain*. Pp. 580-594. Philadelphia: Lea & Febiger.
- Cohen, KR, Demers-Desrosiers, LA and Catchlove, RFH (1983). The SAT9 test as a measure of symbolic function central to alexithymic presentation. *Psychother. Psychosom.*, 39: 77-88.
- France Rd, Houpt JL, Skott A, Krishnan KRR and Varia IM (1986). Depression as a psychopathological disorder in chronic low back pain patients. *J. Psychosom. Res.*, 30: 127-133.
- Hamilton, M (1960). A rating scale for depression. *J. Neurol. Neurosurg. Psychiat.*, 23: 53-62.
- Hashem, A (1987). Some Psychiatric Aspects of Arthralgia. Unpublished M.D. Thesis. Cairo: Cairo University.
- Hudson, JI, Hudson, MS, Lillian FP, Goldenberg, DL and Pope HG (1985). Fibromyalgia and major affective disorder: a controlled phenomenology and family history study. *Am. J. Psychiat.*, 142 (4): 441-446.
- Katon, W, Egan, K and Miller, D (1985). Chronic pain: lifetime psychiatric diagnoses and family history. *Am. J. Psychiat.*, 142 (10): 1156-1160.
- Kramlinger, KG, Swanson, DW and Maruta, T (1983). Are patients with chronic pain depressed? *Am. J. Psychiat.*, 140 (6): 747-749.
- Lesser, IM (1981). A review of the alexithymia concept. *Psychosom. Med.*, 43 (6): 531-543.
- Love, AW (1987). Depression in chronic low back pain patients: diagnostic efficiency of three self-report questionnaires. *J. Clin. Psychol.*, 43: 84-89.
- Mathew, RJ, Weinman ML and Mirabi, M (1981). Physical symptoms of depression. *Brit. J. Psychiat.*, 139: 293-296.
- Merskey, H (1980). The role of the psychiatrist in the investigation and treatment of pain. In: Bonica, JJ (Ed). *Pain Research Publications: Association for Research in Nervous and Mental Disease - Volume 58*. Pp. 249-260. New York: Raven Press.
- Pilowsky, I (1978). A general classification of abnormal illness behaviours. *Br. J. Med. Psychol.*, 51: 131-137.
- Pilowsky, I and Spence ND (1975). *Manual for the Illness Behavior Questionnaire*. 2nd Ed. Adelaide: University of Adelaide.
- Pilowsky, I, Chapman CR and Bonica JJ (1977). Pain, depression, and illness behaviour in a pain clinic population. *Pain*, 4: 183-192.
- Reich, J, Tupin, JP and Abramovitz SI (1983). DSM-III diagnosis of chronic pain patients. *Am. J. Psychiat.*, 140: 1495-1498.
- Sadek, A, Okasha, A, Al-Sherbini, O, Refaat, M and Lotaif F (1982). Clinical study of the interrelationship between complaint of pain and depressive illnesses. *Egypt. J. Psychiat.*, 5: 195-213.

- Shipko S (1982). Alexithymia and somatization. *Psychother. Psychosom.*, 37 (4): 193-201.
- Sifneos, PE (1973). The prevalence of alexithymic racteristics in psychosomatic patients. *Psychother. Psychosom.*, 22: 255-262.
- Spitzer, RL, Williams, JBW, Gibbon M and First MB (1990). *Structured Clinical Interview for DSM-III-R (SCID)*. Washington DC: American Psychiatric Association Press.
- Walters, A (1969). Psychogenic regional sensory and motor disorders alias hysteria. *Canadian Psychiatric Association Journal*, 14 (6): 573-590.

اضطراب التفكير الرمزي في مرضى الأكم المزمن ذو المنشأ النفسي

يفترض هذا البحث أن مرضى التبدن النفسي يعانون من ضعف التفكير الرمزي ويرتبط هذا الضعف بشدة الأكم وكذلك بالسلوك المرضي غير الطبيعي.

من أجل فحص هذه الفرضية تم إجراء البحث على مجموعتين. تكونت المجموعة الأولى من ثمانية وخمسين مريضاً نفسياً يعانون من الأكم أسفل الظهر ذو المنشأ النفسي. تكونت المجموعة الثانية من اثنين وأربعين مريضاً عضوياً يعانون من الأكم أسفل الظهر نتيجة أسباب عضوية مختلفة.

تم فحص المجموعتين من خلال المقابلة النفسية الاكلينيكية وكذلك من خلال مجموعة من القياسات النفسية التي استهدفت قياس كمية الاكتئاب وكذلك شدة الأكم وقياس السلوك المرضي الغير طبيعي وأخيراً قياس التفكير الرمزي.

أظهرت النتائج أن ٥٨,٧% من المرضى النفسيين الذين يعانون من التبدن هم من مرضى الاكتئاب.

أظهرت النتائج أيضاً أن الإناث من المجموعة النفسية فقط هم اللاني يعانون من ضعف التفكير الرمزي وقد ارتبط الضعف على التفكير الرمزي ارتباطاً وثيقاً بالنتائج على مقياس شدة الأكم ولكنه لم يرتبط بالنتائج على مقياس السلوك المرضي الغير طبيعي.

أظهرت النتائج أن الذكور الذين يعانون من التبدن أكثر اكتئاباً من الإناث الذين يعانون من التبدن.

لم يرتبط شدة الاكتئاب في كل من الذكور والإناث بشدة الأكم.

توصل البحث في النهاية أن المنشأ النفسي لظاهرة التبدن تختلف في الذكور عن الإناث.