

## Psychological disorders in patients with chronic constipation

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### ABSTRACT

**Aim:** The aim of present study was to screen two categories of psychiatric disorders in chronic functional constipation.

**Background:** It has been established that the prevalence of mood and anxiety disorders among patients with functional gastrointestinal disorders is higher than in the general population.

**Patients and methods:** Fifty four constipated patients were recruited from patients referred to the motility disorder department of Research Center for Gastroenterology and Liver Diseases, and screened for psychiatric disorders using HADS (Hospital Anxiety and Depression Scale) and MINI (Mini International Neuropsychiatric Interview).

**Results:** The results showed a relatively high prevalence of anxiety and depression both in HADS (33.3% and 22.2% respectively) and MINI (33.3% and 31.5% respectively).

**Conclusion:** Based on our results the prevalence of mood and anxiety disorders in constipated patients is much higher than general population and in order to reduce health care costs for constipated patients, we need to have an intervention program for comorbid psychological dysfunctions which affect the course of gastrointestinal disorders.

**Keywords:** Functional Gastrointestinal Disorder, Rome III criteria, psychiatric disorders.

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### Introduction

It is well established that co-morbidity of mood and anxiety disorders in Functional Gastrointestinal Disorder (FGD) patients is higher than in the general population (1) with rates up to 50% or even more, depending on the population studied (2,3).

Functional constipation (FC) is a functional bowel disorder that presents as persistently difficult, infrequent, or seemingly incomplete defecation that does not fulfill irritable bowel syndrome (IBS) criteria (4). Subjective and objective definitions of constipation include (1)

straining, hard stools or scybala (hard, inspissated stool), unproductive calls ("want to but cannot"), infrequent stools, or incomplete evacuation; (2) < 3 bowel movements per week, daily stool weight < 35 g/day, or straining > 25% of the time; and (3) prolonged whole gut or colonic transit. Stool frequency correlates poorly with colonic transit (5).

In Iran, the prevalence of FC remains uncertain, but studies have reported a prevalence of between 3.1- 28% in certain populations (6, 7). The studies that are concerned with this topic can be conveniently divided into two categories: childhood constipation and adult constipation.

Van Dijk et al. (8) has reviewed different studies about the role of psychological and

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parenting factors such as stubbornness (9), parents' inability to set limits (10), toilet phobia (11, 12) in the development and maintenance of childhood constipation. Barnes and Maddocks (2002) showed that 40% of 87 primary school children in South Wales would never use the school toilet to defecate and a significant proportion of children were bullied or teased at the toilets (11). Vernon et al. assessed 394 children's experiences of school toilets in England and 157 children in Sweden. Children from both countries experienced school toilets unpleasant, dirty, smelly and frightening (12).

Studies on constipation in adults have confirmed the important role of psychological factors (13). A study, by Chattat et al, showed that constipated patients had higher psychological distress than healthy subjects (14). Nehra et al. (2000) found a 65% rate of psychological impairment in constipated patients; among all psychological disorders; anxiety, depression and pain disorders were the most prevalent (15). Furthermore social dysfunction and somatization in constipated patients has also been reported in other studies (16).

Many studies on Functional Gastrointestinal Disorders (FGD) have shown that psychosocial factors affect FBD (17). Anxiety, depression, panic, posttraumatic stress and somatization disorders frequently precede or occur simultaneously with FGD (18).

Psychological factors are a major factor affecting the onset, development and maintenance of these disorders. In this study we are going to screen psychological disorders in chronic constipated patients.

## Patients and Methods

Patients were recruited from the Motility Disorder Department of Research Center for Gastroenterology and Liver Diseases, and had

been diagnosed with chronic constipation, according to the Rome III criteria (19).

The patients who had other chronic diseases such as diabetes mellitus, multiple sclerosis, etc. were excluded from the study. Fifty four patients (40 female, 14 male) were randomly selected and included in the study. Patients were screened for depression using the Mini International Neuropsychiatric Interview and Hospital Anxiety and Depression Scale (HADS)

*Mini International Neuropsychiatric Interview (MINI):* MINI is an abbreviated psychiatric structured interview that takes approximately 15-20 minutes to administer. It uses decision tree logic to assess the major adult Axis I disorders in DSM-IV and ICD-10 (20). In this project we used the parts for diagnosing mood and anxiety disorders.

*Hospital Anxiety and Depression Scale (HADS):* The HADS contains 14 items and consists of two subscales: anxiety and depression. Each item is rated on a four-point scale, giving maximum scores of 21 for anxiety and depression. Scores of 11 or more on either subscale are considered to be a significant 'case' of psychological morbidity, while scores of 8-10 represents 'borderline' and 0-7 'normal' (15). It consists of statement such as "I feel tense or wound up", "I still enjoy the things I used to enjoy". Montazeri et al. in their study showed that the internal consistency of the HADS as measured by the Cronbach's alpha coefficient has been found to be 0.78 for the anxiety subscale and 0.86 for the depression subscale indicating a satisfactory reliability. Furthermore, in this study HADS showed a satisfactory convergent validity (16).

After being diagnosed as a chronic constipated patient, each one interviewed with MINI for about 40 minutes and then answered to the 14-item HADS scale, individually. The patients who were in a poor physical condition or weren't able to participate in the project or didn't have enough education to read the scale were excluded from the

study. All the participating signed their written consents for being involved in the study.

The data of both measures (HADS and MINI) has been analyzed using descriptive statistics. Mean and frequencies of each disorders and HADS subscales has been computed with SPSS software.

## Results

The subjects were between 15-60 years old (Mean age= 34 years, Standard Deviation =12 years), and most of them were married (68.5% married, 31.5% single). The education level of our sample ranged from primary education (9.3%) to junior high (1.9%), high school graduates (51.9%), and university educated (37%).

The results of both anxiety and depression subscales of HADS are reported in table 1. 33 % of constipated patients had an anxiety level which can be seen as clinical disturbance and 15% had a borderline anxiety. Based on our results, 52 % didn't have any remarkable anxiety level.

Most of the patients (65%) had depression scores lower than 8, with a normal anxiety level. 22% have a severe depression and 13% have borderline depression levels (table 1).

**Table 1.** The results of anxiety and depression subscales of HADS (n= 54)

|                      | Anxiety    | Depression |
|----------------------|------------|------------|
| Normal               | 28 (51.9)* | 35 (64.8)  |
| Borderline           | 8 (14.8)   | 7 (13.0)   |
| Clinical disturbance | 18 (33.3)  | 12 (22.2)  |

\*Parentheses represent percent.

As it is shown in table 2, the most prevalent disorder in constipated patients is major depression (or Mood Depressive Disorder) (33%). The second prevalent disorder was Generalized Anxiety Disorder (GAD) (31.5%). Hypomania was another prevalent disorder in constipated patients (22%). Many of the patients had several

diagnoses; major depression and hypomania (n=11), major depression and suicidal ideas (n=10), major depression and GAD (n=12). Suicidal ideas and obsessive-compulsive disorder has a high prevalence rate, as well. As it is displayed in table 2, each of these two clinical features was seen in about 14% of the sample population.

**Table 2.** The results of MINI (n=54)

|                                | Frequency (%) |
|--------------------------------|---------------|
| Major Depression               | 18 (33.3)     |
| Dysthymia                      | 5 (9.3)       |
| Suicidal ideas                 | 8 (14.8)      |
| Hypomania                      | 12 (22.2)     |
| Panic attack                   | 2 (3.7)       |
| Agoraphobia                    | 3 (5.6)       |
| Social phobia                  | 2 (3.7)       |
| Obsessive-Compulsive Disorder  | 8 (14.8)      |
| Generalized Anxiety Disorder   | 17 (31.5)     |
| Post-Traumatic Stress Disorder | 1 (1.9)       |

## Discussion

As it is shown in this study, anxiety and depression have a prevalence rate of 34.6% and 23.5% in patients with chronic constipation, based upon the HADS and MINI questionnaire and screening tools. These results can be compared with the prevalence of common psychiatric disorders in the general population. Mohammadi et al. (17) showed that mood and anxiety disorders have a prevalence rate of 4.35%, and 8.31% respectively in the Iranian general population. Therefore, it is clear that constipated patients have a higher rate of both mood and anxiety disorders compared to general population. Mohammadi et al. in their study compulsive disorder (21) and suicide (22) in Iran, evidenced a rate of 1.8% and 1.4%, respectively for these two disorders. Therefore, constipated patients were about 14 times more probable to be diagnosed with these two disorders based on our results.

Health problems are associated with psychological morbidity. Hansen et al. (18) showed that depression was among the most prevalent disorders among general medical inpatients, with the rate of 8.3%, which is a much lower rate in comparison with the prevalence rate of major depression in constipated patients in the present study (33.3%).

Another interesting result of present study is the high prevalence rate of other psychiatric features like suicidal ideas and OCD.

Among the studies which investigated the psychological disorders in gastrointestinal patients, Nehra et al. (11) retrospectively reviewed the medical records of patients with rectal evacuation disorders referred for biofeedback retraining at a tertiary referral center. They screened their sample for psychological disorders based on DSM-IV criteria. Their results showed that psychological impairment was identified in 65% of the patients with evacuation disorder and constipation in a tertiary care practice, and has a significant negative impact on the outcome of behavioral treatment and the most prevalent disorders in their sample were anxiety and depression. Mason et al. (12) studied psychological morbidity in women with idiopathic constipation. They measured psychological disturbances with GHQ-28 (General Health Questionnaire) and concluded that constipated patients had a significantly higher levels of anxiety, depression and social dysfunction ( $p < .022$ ) compared to healthy subjects.

As it is clear, our results showed the prevalence of anxiety and depression in constipated patients is consistent with the above mentioned studies.

Based on recent psychodynamic models like Davanloo's Intensive Short-Terms Dynamic Psychotherapy (23) there are three different channels for expressing anxiety: striated muscles, smooth muscles and cognitive/perceptual distortions. Based on this conceptualization disease which is manifested through smooth

muscle dysfunctions like diarrhea, constipation, IBS, shortness of breath etc could be representative of underlying anxiety that is so strong that it inhibits striated muscles function. According to this theory, a patient that shows smooth muscle-related disorders in response to anxiety-provoking situations more problems with his adaptation to stressful situations (or in a psychodynamic terminology has lower ego strength). Thus, helping constipated patients manage and express their emotions especially stress management techniques, or helping them resolve their anxiety through experiential psychotherapeutic methods, can reduce the severity of constipation symptoms.

Our study suggests an association between constipation and psychiatric disorders especially anxiety and depression, but because our research project is a correlation study, we cannot assign a causal relationship between these two conditions. Furthermore, age and sex are some confounding factors. Despite these reservations, our data suggest a high degree of psychological morbidity among patients with chronic constipation, in an Iranian population, keeping with studies performed in other countries.

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