



# Comparing Alexithymia, Anxiety and Perceived Stress in Patients with Irritable Bowel Syndrome (IBS) and Healthy Individuals

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**Abstract:** *The purpose of this study was to compare alexithymia, anxiety and perceived stress in patients with irritable bowel syndrome and healthy individuals. This study used a causal-comparative research design. The study population consisted of all male and female patients referred to the treatment centers in Tabriz, Iran, during the second six months of 2016. Among the patients who met the inclusion criteria, 50 subjects were selected using purposeful sampling. In addition, a sample of general population (N= 50) was selected for comparison with healthy individuals. After describing the procedures and purposes of the study, written informed consents were obtained. Each subject was asked to complete Toronto Alexithymia Scale, Beck Anxiety Inventory (BAI), and Perceived Stress Scale (PSS). Data were analyzed using one-way analysis of variance. The results revealed a significant difference between the mean scores of alexithymia, anxiety and perceived stress in the experimental groups compared with healthy subjects. Given the scientific evidence for the role of psychological factors in developing, intensifying or reducing irritable bowel syndrome (IBS) symptoms, it seems that not all the therapeutic strategies for these patients can be successfully implemented without regard to the mediating role of these factors.*

**Keywords:** *Alexithymia, Anxiety, Perceived Stress, Irritable Bowel Syndrome (IBS)*

## INTRODUCTION

To explain the psychological causes of gastrointestinal disorders entails developing a detailed understating and discussion of the role of psychological factors in the development of gastrointestinal disorders. In this regard, personality plays a pivotal role in the adaptation of individuals and their mental health (Zomorodi & Rasoulzadeh Tabatabaee, 2013). Data of scientific literature show that alexithymia is one of the psychological causes associated with gastrointestinal diseases. It encompasses difficulties identifying feelings (DIF), difficulties describing feelings (DDF) and externally oriented thinking (EOT). Further, it has been suggested that common psychological disorders such as depression and anxiety may contribute to the symptomatology and exacerbation of gastrointestinal symptoms. Several studies have reported high prevalence of co-morbid psychiatric disorders, especially anxiety with chronic physical diseases (Wafaei & Golabie, 2010). Several research studies show that exacerbation of psychological symptoms such as anxiety, mood disorders, depression and stress caused by nerve stimulation can result in increased gastrointestinal symptoms (Mahvi Shirazi et al., 2008). Functional gastrointestinal disorders (FGIDs) comprise a remarkable percentage of

digestive diseases and there are studies suggesting increased prevalence of psychiatric disorders in individuals with gastrointestinal diseases. Irritable bowel syndrome (IBS) is the most common, costly, and disabling among the gastrointestinal disorders. Clinical studies suggest that personality traits can contribute to the symptomatology of IBS by influencing mental health, anxiety, and interpersonal conflicts. As a result, the role of psychological factors in the disease has been highlighted and it has received considerable attention in the research community. Therefore, the present study aimed to compare alexithymia, anxiety and perceived stress in patients with irritable bowel syndrome and healthy individuals.

## **Review of literature**

### **Irritable bowel syndrome**

Irritable bowel syndrome (IBS) is one of the most common functional disorders of the large intestine. The prevalence rate of irritable bowel syndrome, as reported by Golubovic et al. (2010), Videlock, and Chang (2007), ranges between of 5% to 23% in the general population and 40% to 70% of referrals to gastroenterologist involve patients with IBS. It was reported that in Iran, the prevalence of IBS is in the range of 2.4% to 18.4% (Solati Dehkordi et al. 2009). Irritable bowel syndrome (IBS) is a common functional gastrointestinal disease characterized by recurrent abdominal pain and altered bowel habits with no recognized underlying pathological or organic etiology. IBS patients are known to have an impaired quality of life depending on the severity of the symptoms, so that a significant proportion of these patients have a higher rate of absenteeism, avoid sexual intercourse and may refuse to participate in social activities because of concerns about symptoms. The precise pathophysiology of irritable bowel syndrome is not well understood; although motor abnormalities of the gastrointestinal tract, central nervous system impairment, psychological disorders and stress have been reported. Clinical research suggests that personality traits can contribute to the symptomatology of IBS by influencing mental health, anxiety, and interpersonal conflicts.

### **Alexithymia**

Alexithymia represents a deficit in the cognitive processing and regulation of emotions. Alexithymia is a multifaceted construct comprising (a); difficulty in identifying feelings (b); difficulty in describing feelings; and (c) externally-oriented thinking. These characteristics are thought to reflect deficits in cognitive processing and emotion regulation. Likewise, impairment of emotional processing ability and emotional regulation based on alexithymia represent a potential risk factor for the development of a variety of medical and psychological disorders, including psychotic disorders (Alizadeh, 2015). From the point of view of contemporary cognitive science, emotions are regarded as a handful of word designs based on cognitive information processing and include symbolic and non-symbolic processes and embodiments.

Diminished emotional expression essentially reflects a kind of deficiency or emotion dysregulation. In other words, impairment of emotional processing ability and emotional regulation based on alexithymia represent a potential risk factor for the development of a variety of medical and psychological disorders, including psychotic disorders. The core characteristics of alexithymia are marked dysfunction or the subclinical inability to distinguish between emotions, having extreme limitations and great difficulty in articulating a precise description of emotion feelings. This emotional breakdown of self and lack of emotional communication with others not only leads to the development of defective or faulty interpersonal relationships between these individuals but also reduces their life satisfaction.

### **Anxiety**

Anxiety is characterized by an emotional, vague and unpleasant sensation associated with external manifestations, apprehension and distress occurring due to a threat and failure to properly cope with it. Anxiety can be either conscious or unconscious, giving rise to a sense of conflict; it makes the person feels frustrated and not being able to cope with the anxiety (Rosenhan & Seligman, 2007). However, this feeling of frustration generates strong anxiety and stress, depending on the expected consequences; because anxiety is

most commonly triggered by the stress in human behavior, and stimulates the person to lower his/her stress levels. Countless research studies have reported the relationship between depression and anxiety disorders and the incidence of gastric ulcer (PUD) disease (Alizadeh Fard, 2012). In addition, recent studies have shown that anger mediated the relationship between stomach ulcer disease and alexithymia. That is, alexithymia causes anger and anger causes gastric ulcer (PUD) disease (Alizadeh Fard, 2012).

### **Perceived Stress**

The concept of perceived stress was derived from Lazarus and Folkman (1984) theory of the role of appraisal in the stress process. According to the findings of Lazarus (1999), Lazarus and Folkman (1984), the stress process is generated by interpreting a stressful event imposed on the individual. This interpretation of a stressful event reflects an appraisal, which determines whether the stressor poses a threat, or not. Furthermore, the perceived stress is a psychological state or process through which individuals perceive threat to their physical and psychological well-being. In fact, perceived stress may depend on how a person perceives the situation or understands the events. It is possible that a situation will be perceived as a safe state by one person while the same situation may be perceived as a threat by another person. Holmes and Rahe (1967) believe that any change whether desirable or undesirable can be stressful. The evidence from numerous studies using the SRRS suggest that people who have experienced events totaling more than 300 life change units over a period of 1 year are more at risk for a wide range of physical and mental illnesses. These illnesses include heart attacks, diabetes, TB, anxiety and depression. Stressful or life-threatening events can contribute to the risk of developing dangerous and deadly diseases including cancer. In irritable bowel syndrome, psychological distress frequently precedes the onset and exacerbation of symptoms and most patients report it as a complaint and concern along with somatic symptoms. In this regard, the results of the studies showed that in patients with severe IBS symptoms associated with anxiety and depression, antidepressants could significantly reduce the symptoms of the disease. Antidepressants are the most effective treatment for the improvement of IBS symptoms. According to Foolex reports (2014), an estimated 20 to 60 percent of those with IBS have a stress related psychological disorders such as anxiety or depression. In addition, there is some evidence suggesting that psychological stress and the history of abuse and traumatic factors significantly contribute to the onset and perpetuation of IBS symptoms.

### **Method**

This ex post facto (causal-comparative) research was performed on two groups of subjects with irritable bowel syndrome and healthy individuals. The study population consisted of male and female patients with irritable bowel syndrome referred to the treatment centers in Tabriz, Iran, during the second six months of 2016 and had a medical record. Then, among the patients who met the inclusion criteria, 50 subjects were selected using purposeful sampling. In addition, a sample of general population (N= 50) was selected for comparison with healthy individuals. Three questionnaires including Toronto Alexithymia Scale (TAS-20), Beck Anxiety Inventory (BAI), and Perceived Stress Scale (PSS) were used to gather the data. Data were also analyzed using multivariate analysis of variance (MANOVA) for the first hypothesis and one-way analysis of variance (ANOVA) for the second and third hypotheses, respectively.

### **Hypotheses**

1. There is a difference between patients with irritable bowel syndrome and healthy individuals in terms of alexithymia level.
2. There is a difference between patients with irritable bowel syndrome and healthy people in terms of anxiety level.
3. There is a difference between people with irritable bowel syndrome and healthy individuals in terms of perceived stress level.

**Data analysis**

**First hypothesis:** There is a difference between patients with irritable bowel syndrome and healthy individuals in terms of alexithymia level.

**Table 1:** Levene's test for analyzing the equality (homogeneity) of error variances

Resource	F	Degree of freedom 1	Degree of freedom 2	Significance level
Difficulties in identifying feelings (DIF)	0.122	1	98	0.620
Difficulties in describing feelings (DDF)	0.014	1	98	0.840
Externally oriented thinking	0.020	1	98	0.763

According to the data in Table (1), the significant levels for all variables indicate that the assumption of homogeneity of variances has not been violated.

**Table 2:** Results of inter-group effects test for the variables studied

Resource	Dependent variables	Sum of squares	Degrees of freedom	Mean squares	F	Significance level
Group	Difficulties in identifying feelings (DIF)	153.421	1	153.421	8.468	0.002
	Difficulties in describing feelings (DDF)	74.316	1	74.316	5.724	0.001
	Externally oriented thinking	0.687	1	0.687	3.017	0.001

As can be seen from Table 2, there was a statistically significant difference between the mean score of difficulty in identifying feelings (DIF) in subjects with irritable bowel syndrome (M = 13.40) and healthy individuals (M = 11.22) (F (1) = 8.468, P <0.05). In addition, a statistically significant difference was found between the mean score of difficulty in describing feelings (DDF) in subjects with irritable bowel syndrome (M = 12.04) and healthy individuals (M = 10.33) (F (1) = 5.724, P <0.05). There was also a statistically significant difference between the mean score of externally oriented thinking variable in subjects with irritable bowel syndrome (M = 19.14) and healthy individuals (M = 16.33) (F (1) = 3.017, P <0.05).

**Second hypothesis:** There is a difference between patients with irritable bowel syndrome and healthy individuals in terms of anxiety level.

**Table 3:** Results of inter-group effects test for the variables studied

Resource	F	Degree of freedom 1	Degree of freedom 2	Significance level
Anxiety	2.639	1	98	0.084

According to the data in Table (3), the significant levels for anxiety variable indicate that the assumption of homogeneity of variances has not been violated.

**Table 4:** Results of inter-group effects test for the variables studied

Resource	Dependent variables	Sum of squares	Degree of freedom	Mean squares	F	Significance level
Group	Anxiety	112.219	1	112.219	13.375	0.001

P <0.05

As shown in Table (4), there was a statistically significant difference between the mean score of anxiety level in subjects with irritable bowel syndrome (M = 44.22) and healthy individuals (M = 24.20) (F (1) = 13.375, P <0.05).

**Third hypothesis:** There is a difference between people with irritable bowel syndrome and healthy individuals in terms of perceived stress level.

**Table 5:** Levene's test for analyzing the equality (homogeneity) of error variances

Resource	F	Degree of freedom 1	Degree of freedom 2	Significance level
Perceived stress level	2.264	1	98	0.643

According to the data in Table (5), the significant levels for perceived stress variable indicate that the assumption of homogeneity of variances has not been violated.

**Table 6:** Results of inter-group effects test for the variables studied

Resource	Dependent variables	Sum of squares	Degree of freedom	Mean squares	F	Significance level
Group	Perceived stress level	232.420	1	232.420	31.45	0.001

P <0.05

As can be seen from Table 6, there was a statistically significant difference between the mean score of perceived stress level in subjects with irritable bowel syndrome (M = 28.13) and healthy individuals (M = 16.46) (F (1) = 31.45, P <0.05).

## Discussion and Conclusion

### First hypothesis

The evident from this study suggest that there was a statistically significant difference between the mean scores of difficulty in identifying feelings (DIF), difficulties in describing feelings (DDF) and externally oriented thinking in subjects with irritable bowel syndrome and healthy individuals. This finding is consistent with those obtained from other studies by Pressley and Todorloo (2007) and Davoodi et al. (2010). An implication of this is the possibility that when exposed to a stressful event or a traumatic event, people with alexithymia may experience emotional disturbances because of their inability to exert cognitive process of emotions and difficulties in emotion regulation and management. In these circumstances, the person uses defensive mechanisms such as denial and repression for their emotions suppressing their feelings. In fact, alexithymia is a disorder of the regulatory mechanism of the emotion resulting from stressful conditions; however, the suppression of feelings and absence of self-expression may lead to the loss of feeling of pleasure and happiness resulting in decreased satisfaction levels. This in turn exacerbates psychological distress (Mazaheri et al., 2010). Another possible explanation for this is that personality may affect individual's health or illness through internal physiology or external behaviors.

### Second hypothesis

The findings of this study show that there was a statistically significant difference between the mean score of anxiety level in subjects with irritable bowel syndrome and healthy individuals. This finding is congruent with the results of previous studies by Mayer et al. (2001); Nicole et al. (2008); Poussrood et al. (2009); and Soltani Dehkordi et al. (2009), suggesting lowered mental health and the prevalence of psychological disorders including anxiety in patients with gastrointestinal disorders, especially those with irritable bowel syndrome. Consistent with the above finding, some studies indicate that in 85% of IBS patients, psychological distress

factors precede or correspond with gastrointestinal symptoms and only in 15% of patients, these symptoms develop prior to the onset of psychological distress factors.

In addition, 70% to 90% of IBS patients have reported experiencing psychological abnormalities, which the most common being anxiety and depression and somatic disorder.

### **Third hypothesis**

The results of the analysis of the above hypothesis suggest a statistically significant difference between the mean score of perceived stress level in subjects with irritable bowel syndrome and healthy individuals. This finding is in agreement with the findings of other studies by Foolex (2014); Comano et al. (2014) and Ghorbanie Taghliabad and Tasbihsazan Mashhadi (2016). In irritable bowel syndrome, psychological distress frequently precedes the onset and exacerbation of symptoms and most patients report it as a complaint and concern along with somatic symptoms. In this regard, antidepressants could significantly reduce symptoms severity associated with mental disorders like depression or anxiety.

### **Suggestions**

The findings of this study have a number of important implications for future practice.

- The health care system, especially the gastroenterologists, should pay particular attention to the treatment process of alexithymia as an effective factor in the treatment of patients with irritable bowel syndrome and, if necessary, these patients should be referred to other relevant specialists, including psychiatrists and clinical psychologists, to benefit from the effective pharmacological and non-pharmacological treatment.
- It is suggested to use modern therapeutic techniques and interventions such as emotion-focused therapy as a complementary therapy, which considers alexithymia as a contributing factor in the development and maintenance of irritable bowel syndrome.
- Given the high levels of anxiety and perceived stress in patients with irritable bowel syndrome, it is recommended to utilize clinical psychological interventions such as cognitive-behavioral therapies, whose effectiveness has been confirmed by numerous studies, in addition to pharmacotherapy.

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