

Assessing mental health and the relation with variables of demographic and clinical in Crohn's disease patients; 2016-2017

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ABSTRACT

Background: Crohn's disease is a group of special diseases that are considered in psychiatric studies because there is a contrast between the physical and psychological diseases among the affected patients. **Aim:** The aim of this study was assessing mental health and the relation with variables of demographic and clinical in Crohn's disease patients. **Methods:** In this epidemiological study, 96 patients with Crohn's disease who referred to educational hospitals in Ahvaz during 2016–2017 were evaluated by demographic and clinical questionnaires and SCL-90 questionnaires for mental health, and the information was analyzed by SPSS software version 22. **Results:** The mean physical complaints in subjects was 24.63 ± 4.08 and the mean mental health was calculated to be 187.75 ± 25.17 . Multivariate analysis of mental health showed that steroid consumption (P value < 0.001) and nonsmoking (P value = 0.038) were associated with higher mental health in the individuals. **Conclusions:** Crohn's patients suffered from decreased mental parameters in dimensions such as physical complaints, obsession–compulsion behavior, sensitivity to interactions, depression, anxiety, aggression, phobia, psychosis, and paranoid thoughts.

Keywords: Crohn's disease, inflammatory bowel disease, mental health

Introduction

Inflammatory bowel disease (IBD) involves two Crohn's disease and ulcerative colitis, a chronic inflammatory state of intestinal immunity that is frequently manifested by abdominal pain.^[1,2] Crohn's disease is a group of special diseases that are considered in psychiatric studies^[3] because there is a contrast between the physical and psychological diseases among the affected patients.^[4] The interesting psychiatric characteristics in these patients are obligatory obsessive–compulsive behaviors, neurological disorders, dependency, anxiety, and absence of anger control.^[5] Nearly, 1.4 million Americans are affected by IBD, and this number is increasing worldwide.^[1] Every year, nearly 71

out of 100,000 children and teenagers are diagnosed with IBD, and they experience unpredictable and uncontrolled periods of exacerbation of illness.^[4] Depression and anxiety are common in IBD patients. Stress in important life events and severe depression increase the risk of Crohn's disease and ulcerative colitis.^[5]

In contrast, there are various factors increasing the risk of depression in IBD patients^[3] so that the prevalence of severe depression is about 30% and the prevalence of anxiety is much higher,^[6] which indicates that depression is associated with a direct effect on inflammation in the brain.^[3]

Also, not only in these patients but also in other chronic disease, psychological problems play important roles in the processes of diseases and one of the important effects comes

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from depression.^[7-12] The presence of depression symptoms among IBD patients with low levels of quality of life who do not consume their medication has a considerable concern and increases the risk of high-risk behaviors such as suicide. In its studies, the Crohn's disease mortality center reported an increase in suicide in women.^[4] A set of performed studies show that there is a direct relationship between Crohn's disease activity and anxiety and depression in children,^[13] and in teenagers with IBD, the prevalence of these two agents is higher than that of other chronic diseases.^[14] Psychological factors such as depressed mood, anxiety, and stress cause the disease flare, disease progression, as well as decrease in the quality of life. Depression also reduces the medical effects of infliximab in treating the disease.^[15] Cigarette is one of the environmental factors associated with the progression of Crohn's disease. The previous studies show the association between smoking and the location of the disease, the buildup of stenosis, the formation of fistula, hospitalization, the removal of the patient's bowel, and the type of treatment. The higher prevalence of ileum involvement, the increased stenosis, and the need for a higher dose of immunosuppressive medication and faster recurrence after removing the damaged part of the patient's intestine and low quality of life are associated with tobacco and smoking.^[16] Psychological studies on chronic diseases report the important consequences of the quality of life during the disease in children and adults. Quality of life affects the rate of mortality and hospitalization in terms of demographic characteristics (age, gender, and socio-economic status). It has been observed that the quality of life in patients with myocardial ischemia (MI) weakens the response to treatment even after controlling depression.^[7] The opposite point is that in some centers, the use of some drug such as opioids to reduce pain in Crohn's disease has decreased the quality of life.^[2] Researches have shown that most patients need to continue treatment and long-term follow-up. Life expectancy in IBD patients increases with more advanced therapies. Their life expectancy is the same in terms of age and gender, and many of them can have normal social and family life.^[8] Given the limited studies on psychiatric disorders in Crohn's patients performed in Iran, this study tries to investigate the relationships between mental health in Crohn's patients and the demographic and clinical variables in order to eliminate or reduce the factors affecting them.

Materials and Methods

After obtaining permission from the ethics committee of Ahvaz Jundishapur University of Medical Sciences, in an epidemiologic--analytic study, 96 patients over 18 years of age with a diagnosis of Crohn's disease based on the opinion of the gastroenterologist who referred to clinics and educational hospitals of Ahvaz Jundishapur University of Medical Sciences were included in the study. After clearly explaining the purposes of the study and obtaining the patients' informed consent to participate in the study, the patients were given the mental health questionnaire. It should be noted that exclusion criteria in this study included patients with a history of mental disease, patients with severe cognitive impairment, patients consuming psychiatric drugs, and the ones with drug use.

Data were collected using a two-part questionnaire including demographic characteristics of patients (age, gender, marital status, etc.) and the mental health questionnaire (SCL90-R) that was given to the participants. This questionnaire consists of 90 questions for evaluating mental symptoms reported by the respondent.

Each of the test questions contains a five level scale of discomfort rate ranged from 0--4 (strictly). The test questions have nine different dimensions: 1) physical complaints, 2) obsession and compulsion, 3) sensitivity to interactions, 4) depression, 5) anxiety, 6) aggression, 7) phobia, 8) paranoid thoughts, and 9) psychosis).

In addition, to describe the data, the mean and standard deviation were used in quantitative variables and the frequency and percentages were used in qualitative variables. T-test and ANOVA were employed for analyzing the data as single variables. For multivariate data analysis, linear regression was used. The variables with a less than 0.2 *P* value in their single-variable test were included in the multivariate analysis. All analyses were performed using SPSS software v. 22.

Results

In this study, 96 patients with Crohn's disease were studied using SCL-90 test. The age of the patients showed that 14 were less than 30 years old, 61 were between 30 and 50 years old, and 21 were over 50 years old. In addition, 34 men and 62 women were included in this study. In terms of the duration of the disease, 37 patients were with this disease less than 10 years, 45 were involved in the disease between 10 and 20 years, and 14 patients had experienced Crohn's disease for more than 20 years. Forty six people used steroids and 50 people did not use them. Nineteen people consumed opium and 77 were nonconsumers. Nineteen patients had undergone surgery and 77 had not undergone surgery. There were 32 high end-stage renal disease (ESRD) in terms of age and gender and 64 low ESRs. Forty five people were illiterate, 26 had elementary education up to a diploma, and 25 had university degrees. Thirty seven of the included persons were single and 59 were married. In terms of income, 15 had high incomes, 56 had moderate income, and 25 had low incomes.

The mean of evaluated variables in SCL-90 questionnaire in individual studies

In this questionnaire, the test variables were assessed in the studies and showed that the mean physical complaints in subjects was 24.63 ± 4.08 , the mean obsessive--compulsive state was 21.08 ± 3.46 , mean sensitivity in mutual interactions was 18.91 ± 5.50 , mean depression was 29.82 ± 5.50 , the mean anxiety state was 18.42 ± 3.36 , the mean aggression was 12.58 ± 2.09 , the mean phobia state was 14.78 ± 2.57 , the mean paranoid thought was 12.48 ± 2.13 , and the mean psychosis status is 20.34 ± 3.79 .

In this test, the mean mental health was calculated to be 187.75 ± 25.17 .

Table 1: Single-variable analysis of mental health

	Level	Mean±SD	P
Age	<30	45/28±93/191	377/0
	≤30-50<	61/23±05/189	
	≥50	35/27±19/181	
Gender	Male	95/24±85/187	977/0
	Female	49/25±69/187	
Disease Duratio	<10	47/28±65/182	213/0
	≤10-20<	06/21±53/192	
	≥50	96/26±86/185	
Steroid intake	Yes	15/17±65/199	001/0<
	No	51/26±80/176	
Opioid intake	Yes	40/25±53/182	315/0
	No	11/25±04/189	
History of Surgery	Yes	64/27±95/184	591/0
	No	67/24±44/188	
ESR	High	29/21±59/188	818/0
	Low	05/27±33/187	
Education	Illiterate	93/23±13/184	002/0
	High school	59/22±04/202	
	University	64/24±40/179	
Marriage	Single	77/25±185	399/0
	Married	85/24±47/189	
Income	High	24/22±93/187	987/0
	Middle	49/27±41/187	
	Low	06/22±40/188	
Smoking	Yes	90/25±50/178	037/0
	No	32/24±83/190	

Table 2: Multivariate analysis of mental health

Variable	B	SE	Beta	P
Steroid intake	281/20-	922/4	405/0-	0.001
Smoking	081/11	262/5	192/0	0.038
Education	020/1-	596/5	020/0-	0.856
	826/8	848/6	157/0	0.201
	846/9-	669/5	196/0-	0.086

Single-variable analysis of mental health showed that the disease duration was not in a significant relationship with mental health (*P* value = 0.213). There was a significant relationship between the use of steroids and mental health status (*P*-value = 0.001) and steroid users has a higher mental health compared with the nonusers of steroids. The results obtained from the questionnaire indicate that individuals with primary education up to diploma degree had a better mental health level compared with illiterates and those with a university degree (*P*-value = 0.002) and (*P* value = 0.01). Finally, according to the statistics, smoking was in a relationship with the mental health (*P* value = 0.037).

In addition, multivariate analysis of mental health showed that steroid consumption (*P* value <0.001) and nonsmoking (*P* value = 0.038) were associated with higher mental health in the individuals. The education level of persons was not significantly related to mental health compared with the other two variables. *P* value was 0.856, 0.201, and 0.086, respectively.

In the following, after evaluating the results of one-to-one variables with nine dimensions, all variables that were significant in each dimension were separately evaluated in the same dimension after the test (multivariate analysis), the results are as follows [Tables 1 and 2].

Each of the consumption of steroids, smoking, and education level had a significant relationship with sensitivity to interactions.

In this study, the steroids use has a significant relationship with the sensitivity to interactions compared with the two other variables, so that using this drug increases the sensitivity to interactions (*P* value = 0.001).

In the performed research, the education level is in relationship with the sensitivity to interactions, so that this relationship is significant at the level of elementary education up to the diploma compared with the university degree (*P* value = 0.033) and illiterate compared with the elementary level (*P* value = 0.001), whereas in the illiterate people, no increase in the sensitivity to interactions was observed compared with the people with a university degree (*P* = 0.471).

According to the presented data, using steroids, smoking, and education level were associated with depression, and using steroids in patients was associated with lower depression (*P* value = 0.005). Illiterate people had lower depression level than the ones with an elementary education level (*P* value 0.016).

What was cleared is that the steroid use, smoking, and education level were in relationship with anxiety levels. The steroids use was associated with lesser anxiety than not using it (*P* value = 0.003). Also in terms of education, the anxiety level is lower in illiterates compared with that of the elementary ones (*P* value = 0.054). In this review, gender and steroid use as well as smoking and the level of education and income were compared with each other in relation to the physical complaints status. Men had less physical complaints compared with women (*P*-value = 0.032). Steroids users had a lower physical complaint (*P* value = 0.001). Nonsmoking was associated with a lower physical complaint (*P* value = 0.026). In the performed study, the rate of steroid and opioid use, smoking, and education were evaluated in terms of obsessive--compulsive disorder. Steroid use was associated with lower obsession--compulsion than other two variables (*P* value = 0.002). The steroids use, marital status, smoking, duration of disease and education were compared with each other in terms of aggression. The steroid users showed less aggression (*P* value = 0.005). Surgery, smoking, age, and education level were compared with each other in terms of psychosis disorder dimension. Subjects with an elementary education had a higher psychosis level compared with the illiterates (*P* value = 0.024), whereas this relation was lower in people with a university degree (*P* value = 0.642) and the ones with elementary degree compared with the subjects with a university degree (*P* Value = 0.134) was not significant. Steroid use, smoking, and education have been compared

with each other in the test in terms of paranoid thoughts. Steroid use was associated with a reduction in paranoid thoughts (P value = 0.007). Not smoking was associated with lower paranoid thoughts (P value = 0.018).

Discussion and Conclusion

As shown in the Results section, three variables of steroid use, smoking, and education level were related to the mental health status of the participants in the test. The three variables have been compared with each other. It was concluded that using steroids with P value <0.001 and nonsmoking with P value of 0.038 in people with Crohn's disease are associated with higher mental health. It should be noted that mental health status in Crohn's patients cannot be achieved by this study alone, and this results should be analyzed along with the findings from another study. By reviewing other similar studies and comparing their results with the result of the current study, it has been tried to better understand the mental health status of Crohn's patients. For instance, in the study conducted by Severs *et al.*,^[17] the effect of smoking on the duration of ulcerative colitis and Crohn's disease as well as the relationship between smoking and extraintestinal symptoms in IBD patients were studied. It was concluded that there is a relationship between the increase in the rate of smoking and the incidence of more extraintestinal symptoms in patients with ulcerative colitis and Crohn's disease; by stopping smoking, these symptoms are significantly reduced. As in the present study, the role of smoking has been posed as a factor on the decline in mental health status in the Crohn's patients. Compared with this study, in addition to the role of steroids in improving mental health status, in the study conducted by Wei H *et al.*,^[18] osteoporosis has been proposed as an early manifestation with an unknown cause in Crohn's patients, and using steroids and biologic drugs could improve backache and increase the bone marrow density to an acceptable level. In the study performed by Jakobsson *et al.*,^[19] the relationship between occupational mental stress, life health, personal life, and IBD in patients referred to Dr. Shariati Gastroenterology and Liver Institute in Tehran was investigated based on Codron Mental Pressure Questionnaire. Statistical data showed in the field of personal life as a source of psychology, which includes factors such as emotional issues and interpersonal relationships with primary family members, spouses, and children that IBD patients have more problems than nonpatients examined in this study. The study of Pace *et al.* has investigated the quality of life in these patients using the SCL-90 test pattern in IBD and IBS patients.^[20] Psychiatric symptoms did not show a significant difference between IBD and IBS patients, but it was specified that the IBS patients were more stressed in life than IBD. A nine-dimensional study in both studies allowed the approach to be close to the method. The result of this study has assessed the quality of life; however, in similarity with the present study, it shows that Crohn's disease also influences the psychological parameters of patients and requires more support for patients for psychological care. The study performed by Maconi *et al.*^[21] examined the psychiatric symptoms in Crohn's patients in the inactive period of the disease with perianal manifestations. In

this study, patients were evaluated through standardized questions based on demographic characteristics and clinical manifestations for 1 month, and the anxiety and depression characteristics of the patients were evaluated. Anxiety symptoms with or without depression were in a significant relationship with female gender, perianal manifestations, and perianal surgery. In the present study, according to statistics, the steroid use and education level (illiterate compared with elementary school degree) are associated with a lower level of depression and anxiety. Sarid *et al.*^[22] also examined physical and psychological problems in Crohn's patients using demographic, clinical, and sociopsychosocial questionnaires, and the result showed that the main problems in the early stages of the disease, increased mental stress in patients, increase in disease activity, decrease in the quality of life, as well as the low subsistence level in patients require psychiatric treatment. Along with these studies and the current study that examine the mental health status, some researches have also been performed to treat the mental and psychological state of patients, as Tarricone *et al.*^[23] studied the role of psychiatric treatments in IBD patients. During a systematic review, 43 researches were studied and it was concluded that although psychoactive drugs are used in the treatment of IBD patients, nevertheless, a small proportion of patients refer to psychiatric care centers. Psychiatric treatments in these patients play a critical role in improving the quality of life, reducing the patients' stress, depression and anxiety, and antidepressants are used in order to improve disease activity, intestinal symptoms, anxiety, and depression.

In general, the results obtained from this study and others indicate that Crohn's patients suffered from decreased mental parameters in dimensions such as physical complaints, obsession--compulsion behavior, sensitivity to interactions, depression, anxiety, aggression, phobia, psychosis, and paranoid thoughts. This reduction is in relation with the demographic and clinical dimensions in the study, such as the amount of steroid use, opioid use, smoking, the marital status, and education level, and it is present in all groups of patients.

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Conflicts of interest

There are no conflicts of interest.

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