

How knowledge time influenced anxiety, depression, stress and quality of life levels in patients suffering from Crohn disease: a cross-sectional multicenter study

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Abstract. *Background and aim of the work.* The diagnosis of Crohn Disease (CD) represents a turning point in the life of patients, which inevitably marks them. The present study represents a direct "feed-back" from patients suffering from Crohn disease, in order to reveal how the diagnosis of CD changed lifestyles and psychological conditions in their patients. Specifically, how patients change their smoking habits, their alcohol and drug assumptions and their eating habits, particularly in high sugar and fats intakes. Additionally, by considering years of knowledge of the CD, if the time can influence psychological conditions of these patients, like: anxiety, depression and stress conditions, too. *Methods.* An observational, cross sectional, online, snowball sampling study was conducted through participants suffered from CD and belonged to social networks and Facebook groups. For each participant, sampling characteristics, a series of lifestyle habits Before to After the diagnosis of CD and anxiety, depression, and stress conditions were investigated. *Results.* A total of 785 participants agreed to participate. As Participants underwent significant challenges in their lifestyles after the CD diagnosis ($p < 0.001$), specifically their reduced their smoking habits, alcohol and drugs intakes and also their diets both in high sugar and fatty compositions. Anxiety and stress levels were not statistical different among participants according to years of the knowledge of their CDs. Meanwhile, as regards depression condition, significantly higher levels were recorded among participants who knew their CD until 5 and 25 years, respectively ($p = 0.031$). *Conclusions.* From the study emerges several aspects of quality of life compromised, a fact supported by the analysis of psychophysical sequelae, which allowed to lay the groundwork for further studies, studying the comorbidity of this disease with other factors. Future randomized controlled trials should deepen the correlation between eating disorders and CD, a link little explored in the literature. (www.actabiomedica.it)

Key words: Anxiety; Crohn disease; Depression; Quality of Life; Stress.

Introduction

Inflammatory bowel diseases (IBD) are a specific group of chronic autoimmune diseases affecting the gastrointestinal system, including Crohn disease (CD). In North America, more than two million people are estimated to be suffering from IBD and their incidence might be projected to rise to four million by 2030 (1). In Europe, 1,3 million people suffer from IBD, equal to 0.2% of the European population (2). In Italy, the estimated incidence is around 3.7-4.2/1,000,000 per year, without considering gender differences, the prevalence is 50-54/100,000 (3). While the advent of new therapies has extended and improved the lives of IBD individuals, living with a chronic disease for a longer period will negatively impact a patient's quality of life, their work productivities and their contribution to the community, as these patients are at risk for the onset of common psychological diseases and somatization (4). Symptoms show marked inter-individual variability, mainly due to differences in location (mostly small intestine and/or colon), type (inflammatory lesions, intestinal strictures or fistula and abscess formation) and extent of lesions. Patients may present, in addition to abdominal pain, diarrhea, vomiting, asthenia, weight loss, fever, extraintestinal manifestations and signs or symptoms of malabsorption, fever, fatigue, accompanied by a series of clinical signs such as pallor, cachexia, fistulas or abscesses; with problems unrelated to the luminal gastrointestinal tract such as inflammation of the skin of the eyes and joints; anemia; functional limitations; emotional distress; dissatisfaction with body image and problems with sexual intercourse (5,6). The diagnosis of a chronic pathology, such as CD, represents a turning point in the life of patients, which inevitably marks them. Faced with a trauma, each of us reacts with defense mechanisms; some are functional and allow us to continue our lives peacefully, while others block us by paving the way for anxiety and depression. The suffering of the body is intertwined with that of the mind, leading to denying the disease and its chronic nature and this can significantly influence the quality of life, particularly affecting the private, work and social spheres, as also highlighted by a Saudi study, in which patients with CD compared with the healthy control

group had significantly lower health-related quality of life scores for physical functioning, physical role, emotional role, vitality, social functioning, body pain, and general health (7). A very important role in Crohn's disease is given by the negative effects that the mind is able to produce on the body. Within a biopsychosocial disease model, 70% of IBD patients believe that stress or one's personality is a major contributor, altered gut-brain axis can influence the course and development of the disease and lead to psychological symptoms, such as chronic abdominal pain, anxiety and depression (8). IBD individuals every day live with dictated limits due to the chronic pathology, and this affects their quality of life, with significant changes in lifestyle and causing a strong impact on their bio-psychosocial levels (7). A study conducted in Brazil has showed that moderate and severe active disease has a strong impact not only on quality of life, but also on work performance. Subjects perceive general and emotional health as poor, to which anxiety, depression, pain and discomfort are added to aggravate it, which inevitably lead to an increase in hospitalizations and surgical interventions (8). The prevalence of anxiety symptoms in IBD patients has found to be 32% and the prevalence of depressive symptoms nearly 25.2% (9). Patients with CD can also be concerned about a possible impairment of their daily activities, even during the phases of remission, which often leads them to give up work, relationships or leisure activities, leading to social isolation and a strong sense of guilt resulting from constant postponements. A Brazilian study shows impaired quality of life among CD people, with implications, like: reduced work time, absenteeism and presenteeism, and impairment of total work activity (8). In our study, particular attention is paid to the psychological sequelae that CD implies among suffering patients. The results of a Korean study, among 369 individuals affected by IBD, show that the predictors of high levels of depression are marital status, and the index of alcohol use and the working condition (9). Subjects with CD show higher levels of depression and anxiety, with influences on psychological distress and indirect repercussions in various domains such as health-related quality of life (HRQOL) (10,11). These aspects had already been highlighted in previous studies, where high rates of psychiatric comorbidity,

in particular depression and anxiety, are reported by patients with IBD (12-14). It therefore becomes of paramount importance to monitor the mental health of people with CD and provide them with appropriate psychiatric treatment. It is important to investigate this issue further, also considering the increase in suicide and suicidal ideation rates, as showing in a review of the literature (15). A literature review found that patients with IBD have a high prevalence of suicidal ideation and a significantly higher probability of suicide attempts and suicide deaths (16). Our study will represent, through direct “feed-back” from patients, by anonymously performing an important contribution in order to detect the quality of life of CD people.

Aim of the study

The present study aims to reveal how the diagnosis of CD changed lifestyles and psychological conditions in their patients. Specifically, how patients change their smoking habits, their alcohol and drug assumptions and their eating habits, particularly in high sugar and fats intakes. Additionally, by considering years of knowledge of the CD, if the time can influence psychological conditions of these patients, like: anxiety, depression and stress conditions, too.

Materials and methods

Study design

A multicenter, observational, cross-sectional study has been conducted online through social networks. In particular, through the Facebook groups “Crohn’s disease, ulcerative colitis, virtual community”; Crohn disease, intestinal wellness and nutrition”. Each participant, who is able to participate through a link to this study, posted on these groups, with the permission of those responsible.

Questionnaire

The questionnaire administered consists into three essential sections.

The first section of the questionnaire collects multiple sampling characteristics, specifically:

- gender, as female or male;
- age, divided in several subgroups of age;
- time of knowledge of the CD, divided in several sub groups of years;
- weight, expressed in kilograms, and the height, expressed in centimeters, in order to subsequently evaluate the body mass index (BMI) of the participants, successively divided into classes of BMI, that is: with BMI<16.5: Severe Thinness; 16.00<BMI>18.49: Underweight; 18.50<BMI>24.99: Normal Weight; 25.00<BMI>29.99: Overweight; BMI>30.00: Obesity;
- marital status, as: unmarried, married, divorced, separated, or widowed;
- educational level, as: junior high, high school diploma, college degree, post-graduate education, or none;
- employment status, including: student, home-maker, employee, government employee, freelancer, retiree, other not specifically mentioned above;
- whether the respondent engaged in sports activities;
- if after the diagnosis the participant had or had not noticed a weight loss and, if so, was asked to classify this decrease between 0-5 kilograms (kg), between 5-10kg, between 10-20kg or more than 20 kg.

In the second part of the questionnaire a series of lifestyle habits are listed trying to understand if these behaviors have changed from Before to After the diagnosis of CD. Specifically, the habits investigated are arbitrary included, by considering the above mentioned references (1-16) and concerns: smoking attitude, alcohol and drug assumption, dietary intakes, especially in high fat and sugar intakes.

In the third part of the questionnaire, it has been administered the “Depression Anxiety Stress Scales” (DASS-21) (17), which is a psychometric test that allows for an indication regarding levels of anxiety, depression, and stress. For each item, it was possible

to respond via a Likert scale from 1 to 4 (1=never, 4=always). The DASS-21 scale is a validated tool recognized all around the world as showing good psych properties and also in its validity and reliability, too (17).

Ethical considerations

Ethical concerns of the study have been stated within the presentation of the questionnaire. Participation in the study, being free and voluntary, is considered an expression of consent. Those interested in participating are presented with the opportunity to express informed consent and the confidentiality and anonymous nature of the information is guaranteed according to the Declaration of Helsinki principles. The present study has been approved by the Ethical Committee of Policlinic in Bari, Italy, with approval no. 7041/2021.

Data analysis

All data collected are presented as frequencies and percentages as referring all categorical variables. Then, *chi square tests* have been performed in order to highlight how patients change their smoking habits, their alcohol and drug assumptions and their eating habits, particularly in high sugar and fat intakes, before and after the Crohn disease diagnosis. Additionally, *chi square tests* adjusted thanks to *Bonferroni test corrections* were assessed, by considering years of knowledge of the Crohn disease and if the time could influence psychological conditions of these patients, like: anxiety, depression and stress conditions, too. All p-values less than 0.05 were considered as statistically significant.

Results

A total of 785 participants were enrolled in the study, 76.10% were females and most of them aged until 30 years (29.3%) and 40 years (28.4%), respectively. The 24.1% knew the Crohn disease from less than 5 years. The 61.8% of interviewees were normal weight, unmarried (50.4%), and most of them had a diploma (47.6%) or a degree (28.2%) and were employed in several fields as detailed showed in the Table 1. Additionally, most of the interviewees did not practice any physical activity

(62.7%), although the 78.6% lost over 20kg from the first diagnosis of the Crohn disease (Table 1).

As shown in the Table 2, participants underwent significant changes in their lifestyles after the Crohn disease diagnosis ($p < 0.001$), specifically their reduced smoking habits, alcohol and drug intakes and also their diets both in high sugar and fatty compositions.

Finally, as reported in the Table 3, anxiety and stress levels were not statistically different among participants according to years of the knowledge of their Crohn diseases. Meanwhile, as regards depression condition, significantly higher levels were recorded among participants who knew their Crohn disease until 5 and 25 years, respectively ($p = 0.031$).

Discussion

The present study aims to reveal how the diagnosis of CD changed lifestyles and psychological conditions in their patients. Additionally, by considering years of

Table 1. Socio-demographic characteristics (n=785).

Socio-demographic characteristics	n(%)
Gender:	
Female	597(76.10)
Male	188(23.90)
Age	
Until 18years	22(2.8)
Until 30 years	230(29.3)
Until 40 years	223(28.4)
Until 50 years	161(20.5)
Until 60 years	112(14.3)
Until 70 years	37(4.7)
Over 71 years	0(0)
Years of disease knowledge	
Until 1year	104(13.2)
Until 5 years	189(24.1)
Until 10 years	150(19.1)
Until 15years	114(14.5)
Until 20 years	78(9.9)
Until 25 years	59(7.5)
Until 30 years	35(4.5)
Over 31 years	56(7.1)
BMI levels:	
Severe Thinness (BMI > 16.5)	17(2.20)
Underweight (16.00 ≥ BMI ≤ 18.49)	89(11.30)
Normal weight (18.50 ≥ BMI ≤ 24.99)	485(61.80)
Overweight (25.00 ≥ BMI ≤ 29.99)	135(17.20)
Obesity (BM ≥ 30.00)	59(7.50)

Socio-demographic characteristics	n(%)
Marital status:	
Unmarried	396(50.40)
Married	312(39.70)
Divorced	39(5.00)
Separate	28(3.60)
Widower	10(1.30)
Educational level:	
Middle School	128(16.30)
Diploma	374(47.60)
Degree	221(28.20)
Postgraduate	58(7.40)
None	4(0.50)
Work employment:	
Student	8(1.00)
Housewife	15(1.90)
Subordinate Worker	731(93.10)
Public Employee	14(1.80)
Freelance	8(1.00)
Retired	7(0.90)
Other	2(0.30)
Do you practice sports?	
No	492(62.70)
1-2 hours / week	182(23.20)
Up to 5 hours 7 weeks	90(11.50)
Up to 7 hours / week	14(9.80)
Up to 10 hours / week	7(0.90)
Weight loss from the time of diagnosis of Crohn's disease	
None	40(5.10)
0-5 kg	57(7.30)
5-10 kg	53(6.80)
10-20 kg	18(2.30)
>20 kg	617(78.60)

knowledge of the CD, if the time can influence psychological conditions of these patients, like: anxiety, depression and stress conditions, too. In our sample, the use and abuse of smoking, alcohol, drug intake, a diet high in fat and sugar, were present both before and after the diagnosis, showing statistically significant associations, compromising the relative quality of life. From the literature, it emerges that smoking, alcohol intake, a diet rich in sugars and fats together with being overweight are to be considered (18) important risk factors for the onset of these pathologies, influencing the social aspects of the people who suffer from them they are affected. The two-way relationship between diet and IBD in most cases has negative impacts not only on symptoms, but also entails restrictions and sacrifices in the private, social and professional spheres. In an attempt to find solutions to dietary habits, wrong approaches are used, such as reduction in terms of quantity or frequency of consumption, contributing to the nutritional problems already present in IBD, including micronutrient deficiencies, malnutrition and overweight. The choice of food by the patient may vary depending on the main aim e.g. symptom control, social engagement, participation in cultural celebrations, enjoyment of food, often requiring constant planning (e.g. what to eat and access to toilet facilities), sometimes creating internal/external conflicts, with stress and anxiety, leading to a decrease in enjoyment of food and daily life (19). Smoking turns out to be not only a risk factor, but it affects the course

Table 2. Lifestyles Before and After the Diagnosis of Crohn's Disease.

Lifestyle	Before diagnosis n(%)	After diagnosis n(%)	p-value
Smoking habit			
Yes	468(59.6)	299(38.1)	>0.001*
No	317(40.4)	486(61.9)	
Alcohol intake			
Yes	373(47.5)	175(22.3)	>0.001*
No	412(52.5)	610(77.7)	
Drugs assumption			
Yes	101(12.9)	38(4.8)	>0.001*
No	684(87.1)	747(95.2)	
High-fats food intakes			
Yes	565(72)	300(38.2)	>0.001*
No	220(28)	485(61.8)	
High-sugar food intakes			
Yes	593(75.5)	328(41.8)	>0.001*
No	192(24.5)	457(58.2)	

*p<.05: statistical significant

Table 3. Anxiety, Stress, Depression levels according to years of knowledge disease (n=785).

Anxiety levels/ Years of disease knowledge	Extremely severe n(%)	Severe n(%)	Moderate n(%)	Mild n(%)	Absence n(%)	p-value
Until 1 year	41(5.2)a	10(1.3)a	21(2.7)a	5(0.6)a	27(3.4)a	0.064
Until 5 years	72(9.2)a	21(2.7)a	37(4.7)a	17(2.2)a	42(5.4)a	
Until 10 years	61(7.8)a	23(2.9)a	28(3.6)a	9(1.1)a	29(3.7)a	
Until 15 years	31(3.9)a	20(2.5)a	25(3.2)a	9(1.1)a	29(3.7)a	
Until 20 years	19(2.4)a	11(1.4)a	20(2.5)a	4(0.5)a	24(3.1)a	
Until 25 years	21(2.7)a	8(1)a	9(1.1)a	4(0.5)a	17(2.2)a	
Until 30 years	8(1)a	7(0.9)a	10(1.3)a	2(0.3)a	8(1)a	
Over 31 years	14(1.8)a	11(1.4)a,b	5(0.6)b	1(0.1)a,b	25(3.2)a,b	
Depression levels/ Years of disease knowledge	Extremely severe n(%)	Severe n(%)	Moderate n(%)	Mild n(%)	Absence n(%)	p-value
Until 1 year	32(4.1)a	18(2)a	16(2)a	14(1.8)a	24(3.1)a	0.0031*
Until 5 years	70(8.9)a	25(3.2)a,b	37(4.7)a,b	11(1.4)a,b	46(5.9)a,b	
Until 10 years	47(6)a	25(3.2)a	40(5.1)a	14(1.8)a	24(3.1)a	
Until 15 years	26(3.3)a	17(2.2)a	29(3.7)a	12(1.5)a	30(3.8)a	
Until 20 years	22(2.8)a	13(1.7)a	10(1.3)a	9(1.1)a	24(3.1)a	
Until 25 years	8(1)a	13(1.7)a,b	14(1.8)a,b	10(1.3)a,b	14(1.8)a,b	
Until 30 years	6(0.8)a	9(1.1)a	10(1.3)a	4(0.5)a	6(0.8)a	
Over 31 years	6(0.8)a	7(0.9)a	11(1.4)a	6(0.8)a	19(2.4)a	
Stress levels/ Years of disease knowledge	Extremely severe n(%)	Severe n(%)	Moderate n(%)	Mild n(%)	Absence n(%)	p-value
Until 1 year	22(2.8)a	28(3.6)a	23(2.9)a	19(2.4)a	12(1.5)a	0.061
Until 5 years	44(5.6)a	46(5.9)a	49(6.2)a	34(4.3)a	16(2)a	
Until 10 years	36(4.6)a	42(5.4)a	42(5.4)a	22(2.8)a	12(1.5)a	
Until 15 years	25(3.2)a	29(3.7)a	29(3.7)a	25(3.2)a	17(2.2)a	
Until 20 years	11(1.4)a	21(2.7)a	21(2.7)a	19(2.4)a	8(1)a	
Until 25 years	5(0.6)a	15(1.9)a	15(1.9)a	16(2)a	5(0.6)a	
Until 30 years	2(0.3)a	10(1.3)a	10(1.3)a	6(0.8)a	6(0.8)a	
Over 31 years	8(1.0)a	12(1.5)a	12(1.5)a	12(1.5)a	14(1.8)a	

Each subscript letter indicates a subset of DASS-21 sub dimension categories whose column portions are not very different from each other at level 0.05.
*p<.05: statistical significance

of the disease, as emerged in a study conducted in 2018, in which the impact of smoking on Crohn's disease was evaluated, finding in those who stopped smoking lower rates of surgery, use of immunosuppressants and biologics, compared with those who did not quit within 1 year of diagnosis (20). This result indicates the need to intervene in terms of health education, to increase knowledge and prevent complications (Table 2). Insufficient information or lack of support from health

professionals can lead the patient to feel "trapped in using a trial and error cycle as a preliminary coping strategy" (19). Patients with poor coping skills or poor social support may be predisposed to feeling frustrated or sad and to avoid social interactions (21). Stressful events, lower socio-economic status, ethnicity, states of constant anxiety and depression can lead to a sense of negative quality of life, such as to make patients with CD feel unsuitable and misunderstood, especially in the

female gender. One study found that quality of life is reduced in females compared with males with inflammatory bowel disease (IBD) and emotional lability. Psychosocial factors also play an important role in IBD. Women with IBD are more prone to anxiety and depression, with a negative impact of the disease on health-related quality of life (HRQoL) than men (9). Women with a higher level of depression and anxiety experienced more emotional distress, gut and systemic symptoms, and a lower overall HRQoL (22). However, some French (23) and German studies do not present the same gender difference, with the assumption that a lower health-related quality of life of women may explain the higher incidence of depression in other groups (24,25). The results of a study show that women with IBD are more prone to the negative impact of the disease on their quality of life than men. Women with a higher level of depression and anxiety experienced more emotional disturbances, gut and systemic symptoms, and a lower overall HRQoL (26). An interesting aspect emerges from our study; regarding the depression condition, significantly higher levels were recorded among participants who knew their Crohn disease until 5 and 25 years, respectively ($p=0.031$). In the first year after knowing the diagnosis, our study found extremely severe depression of 4.1% ($p=0.0031$), while it rose to 8.9% after 5 years; in a 2019 study, depression one year after diagnosis was 2.7%, reaching 10.8% after 6 years (26). This last aspect, little explored in the literature, is also reaffirmed in a study conducted in the UK, where significant associations emerge between depression and poor knowledge (15,16). A 2016 social survey showed that patients with MC sought more information support (41.1%) and emotional support (36.1%), in which the data exchanged included the management and remission of symptoms, experiences of extraintestinal manifestations and relational support. IBD patients with anxiety/depression symptoms have higher ESR levels, more frequency of corticosteroid use, more likely to undergo surgery, greater severity of autonomic symptoms, significantly lower quality of life and more likely to suffer from poor sleep and more prone to fatigue (21). Early recognition of anxiety and depression, and even psychiatric treatment are important for improving the prognosis of IBD (27). Some studies in the literature provide evidence on the need to routinely screen

some patients for anxiety and depression, with the aim of leading to greater symptom control and better acceptance and control of the disease (9) and therefore more knowledge. CD individuals are emotionally more vulnerable, tending to be upset because they are unable to reach an adequate resolution of their problems, this determines the presence of depressive states as well as other characteristics such as restlessness, irritability, impatience and the inability to remain inactive, confirming the hypothesis of the high levels of anxiety that characterize them. Predominant among IBD patients is the attachment style, which describes the type of bond that an individual has with others, in particular with reference people such as parents. Indeed, it would seem that parental attachment style leads to the current way in which the adult interacts with others. History of childhood abuse has been shown to be associated with adverse coping styles and insecure future attachment (27). In chronic diseases, a different way of activating attachment systems in patients can be found, leading them to constantly ask for help (secure attachment) or to rely only on their own strengths (insecure attachment). In the case of IBD, the chronic stress present seems to affect the mentalizing abilities of the patient, determining a shift towards attachment insecurity in affected patients. This trend was found in some CD patients who appear to have increased attachment-related anxiety ($d = 0.3$) and attachment-related avoidance ($d = 0.3$). The little controlled research in the medical field has highlighted the role played by the distancing attachment, particularly evident in pathologies such as idiopathic spastic torticollis, diffuse plaque psoriasis and inflammatory bowel diseases, such as ulcerative colitis and Crohn's disease (28). Studies have shown that individuals with a fearful and preoccupied attachment style have a negative view of themselves, resulting in high levels of dependence on important people and low self-esteem (8). From an American study, conducted on a sample of 2144 adults, high levels of depression emerge, so much so as to require hospitalization (29). Knowles and colleagues (30), within their study, highlighted how most of the people participating in the survey admitted to feeling worry and anxiety about the future. A chronic and disabling disease can severely test a human being, often leading him to implement defensive psychological solutions that greatly reduce the

chances of realizing himself as a subject. Building solid and lasting relationships over time is not an easy process, much less for a person suffering from IBD, especially if the latter is a teenager (preponderant age in which the first symptoms appear in most patients). Adolescents and young adults with IBD appear to be more psychologically anxious, with more severe depressive symptoms compared to other chronic diseases, as well as a reduced and compromised quality of life even compared to elderly adults with IBD, leading them to experience their condition as unpredictable and difficult to manage, even leading to the interruption of school attendance and social activities (21). Continuous pain, disabling symptoms and recurrences can force the young patient to spend long periods at home, precluding normal adolescent experiences, such as school and peer outings. Among the difficulties that have emerged that alter the quality of life are the condition of having to live with the need for continuous assistance, having to find medicines for one's own treatment, finding the best treatment centers, which leads to high levels of discomfort, which can be found in life daily (21). Such worries and discomforts have been especially evident during the covid-19 pandemic, as reported by a Chinese study that evaluated the psychosocial impacts of the pandemic, finding that more than the majority of participants reported some degree of mood changes, with moderate to severe psychological disorders, with concerns about the inability to receive intravenous infusions and the availability of physicians or facilities (22). For people with CD it is difficult to maintain emotional interpersonal relationships, due to the feelings of shame and strong discomfort caused by the disabling symptoms of nalaxia, an aspect that was accentuated especially during the lockdown, where high levels of anxiety and stress emerged (24). A study conducted in Spain during the first period of lockdown showed that 11% of patients with IBD showed significant levels of depression, 20% of anxiety and 18% of stress. A recent meta-analysis study confirmed that the high prevalence of anxiety and depression was found in patients with Crohn's disease and, in particular, in the active manifestations of chronic inflammatory bowel disease. It has been shown that the female sex is more predisposed to experience such symptoms. Furthermore, the study highlights how vulnerability is associated with the fear

of contracting the virus and with the lived experience linked to the symptoms experienced due to the disease (24). The pandemic has therefore worsened the disease condition in individuals with CD, in which stress and worries about the future have led to an increase of more than 40% in the symptoms of active CD (29). In the literature, Kjerstin Larsson et al. (30) state, through their qualitative descriptive phenomenological study, how stress accompanies CD patients on a daily basis (30). Different strategies can be implemented in order to support the person diagnosed with CD, among these the creation of listening groups, of particular benefit for the person in order to feel less alone and/or uncomfortable (22). Great importance by Chinese patients is also given to family support, where the family is considered the primary source of one's resilience, while social support scores were relatively low (32). In the treatment of this syndrome, there must be an effective relationship between the practitioner and the patient, as the latter must be encouraged to express his symptoms, but also his attitude towards them. Suicide and attempted suicide rates are steadily increasing. A study has shown that involvement of support organizations in IBD patients has had positive effects not only on disease acceptance but has brought excellent results on quality of life below the point physically, psychologically and socially (33). From a further qualitative study, it emerges how fundamental it is to analyze the coping strategies implemented by CD patients (28), to deal with the discomforts that the new condition of life implies and to prevent suicidal ideation, as per analysis of two Canadian national surveys in which 17% of IBD patients with depression had suicidal ideation in the past 12 months (34), up to extreme phenomena such as suicide and attempted suicide, in constant increase as emerges from a Swedish study, conducted on a large sample of people affected by IBD, an aspect that in Italy has not yet been investigated (33). From a review of the studies, considering the 28 included studies, it emerges that patients with IBD had a high prevalence of suicidal ideation and a significantly higher probability of suicide attempt (16). From a cohort study, on a population of 69,865 patients with IBD diagnosed in adulthood, an increase in suicides emerged among subjects with CD while an increased risk of suicide attempts was observed in all types of IBD (28 -30). An increased risk of suicide

attempts has been observed in all types of IBD, but suicide has been explicitly associated with CD and older-onset IBD greater than 60 years (35). A previous systematic review and meta-analysis of the incidence of suicide in IBD revealed the potentially devastating impact IBD has on the mental health of affected patients (36) and a higher risk tendency for suicidal ideation (95% CI, 9.5%–25.2%), as well as suicide attempts (relative risk [RR], 1.39; 95% CI, 1.08–1.79) and suicide deaths (RR : 1.25; 95% C.I.: 1.09–1.43) (16). Patients with subtypes CD, female IBD, pediatric-onset IBD, young adult IBD, short-term IBD, and a history of depression may be at particular risk for suicide. There are also several reports describing the occurrence of psychiatric symptoms related to treatment with the Crohn's disease treatment drug infliximab, such as suicidal behaviors in adult and elderly patients, as well as psychosis in an adolescent and suicide, which is why young people considered for infliximab treatment should be screened for pre-existing psychiatric disorders and suicidal behavior, or family history (37). Different strategies can be implemented in order to support the person diagnosed with CD, among these the creation of listening groups, of particular benefit for the person in order to feel less alone and/or uncomfortable (38). Interventi psicologici come la terapia cognitivo comportamentale possono rappresentare un modo adeguato per aumentare il grado di qualità della vita, as they target maladaptive perceptions of illness and coping strategies, affrontando paure e percezioni errate legate al virus. (39). This type of therapy falls under the Common Sense Model, which has demonstrated its applicability in IBD, in which it states that the impact of disease threats, such as IBD symptoms, is mediated by perceptions of the disease (beliefs about the cause, consequences) and individual coping styles (cognitive and behavioral strategies undertaken to manage stress) (39).

Conclusions

The aims of the study were to detect the quality of life of people with Crohn's disease and to analyze the related psychophysical sequelae. From the study emerges several aspects of quality of life compromised, a fact supported by the analysis of psychophysical

sequelae, which allowed to lay the groundwork for further studies, studying the comorbidity of this disease with other factors. The results of our study and those present in the literature indicate that there is a high risk of psychiatric morbidity and this highlights the need for psychological support both in the initial phase and during the course of the disease, as also evidenced by this study (40). It should not be forgotten that, given their chronicity and low mortality, the real challenge for health professionals will be to study trajectories on quality of life rather than its duration among CD patients.

The limitations of this survey are the sample, which is not representative of the entire Italian CD population.

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