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The Role of Traumatic Childhood Experiences in Predicting Affective Control and Object Relations in Patients with Irritable Bowel Syndrome

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Abstract

Background
The purpose of this study was to investigate the role of traumatic childhood experiences in predicting emotion regulation and object relations in patients with irritable bowel syndrome.

Materials and Methods
The research method was descriptive-correlational that was performed on 135 patients with irritable bowel syndrome, including 58 men and 77 women, who were selected by convenience sampling method from those referred to the gastroenterologist. Participants completed the childhood trauma, emotion regulation, and Object Relations questionnaire. Data were analyzed by Pearson correlation coefficient and simple regression statistical methods.

Results
The results of the study showed that the total score of childhood trauma significantly predicts poor emotion regulation in the subscales of depression ($P < 0.01$), and anxiety ($P < 0.05$), as well as the subscales of object relations including egocentrism ($P < 0.01$), alienation ($P < 0.01$), incompetency ($P < 0.01$), and attachment ($P < 0.05$).

Conclusion
It can be inferred from the research findings that traumatic childhood experiences, especially emotional experiences, play a decisive role in emotion regulation and object relations of patients with irritable bowel syndrome. Therefore, special attention should be paid to the prevention and treatment programs of these patients.

Key Words: Irritable Bowel Syndrome, Emotion Regulation, Traumatic Childhood Experiences, Object Relations

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1- INTRODUCTION

Irritable bowel syndrome is one of the most common functional diseases of the gastrointestinal tract, which is defined by chronic or recurrent abdominal pain, changes in bowel habits (constipation, diarrhea, or both) or discomfort in the absence of other gastrointestinal diseases (1). The symptoms of this syndrome usually appear from time to time and then disappear. The severity of its symptoms varies. Its impact on various aspects of patients' lives is very wide and can severely impair the quality of their lives (2). The chronicity of this disease causes great economic and social costs and significantly affects the quality of patients' lives (3). The global prevalence of this disease is estimated at over eleven percent (4). However, there is evidence of an increase in the prevalence of this syndrome in recent decades (5). It can be said that irritable bowel syndrome is a global health problem today (6).

This disease occurs in the absence of any organ dysfunction and is considered as a functional disorder because it relates to how the gut functions and not to the abnormalities in the body structure. Regarding the etiology of irritable bowel syndrome, clinical, laboratory and epidemiological findings show that irritable bowel syndrome is a multifactorial disease and despite the widespread prevalence of this disease and the many studies that have been done in this subject, there is still little knowledge about its pathophysiology (7). Research has shown that various biological, social, neuro-immunological factors are involved in the occurrence or recurrence of this disease (8), and the role of psychological factors in the etiology of this disease is very important and complex and has always been of special interest to researchers (9). Given the importance of the brain-gut axis role, it seems that any psychological issue that affects a person can increase the risk of Irritable Bowel Syndrome (IBS). Studies have shown that the symptoms of this disease may be exacerbated by depressed mood, anger, anxiety and negative effects (10). More than 50% of patients with irritable bowel syndrome suffer from psychological problems co-morbidly, especially mood and emotional distress, and mood disorders such as major depression and bipolar disorder have considerable comorbidity with this disease and as the rate of mood disorders increases, IBS symptoms also increase (11, 12). However, many IBS patients may not have complete diagnostic criteria for psychiatric classification, but it can be said that the disease has always been associated with difficulty in processing and regulating affects (13). Affective control is known through the four dimensions of positive affect, anxiety, anger, and depressed mood, and expresses the type of effects that people often experience and when and how they express it (14). The ability to control effects is essential for coping with stressful life experiences (5, 15).

The background of existing research shows that the role of affective control has always been considered more in irritable bowel syndrome than other internal diseases and patients with this disease have a weakness in identifying, controlling and expressing their effects and have difficulty distinguishing their effects from their physical emotions (5, 16). Chang et al. (2006) in a study showed that IBS patients have more anger than healthy patients (17) and negative effects such as anger are significantly associated with decreased bowel activity in IBS patients (18). In Raesi and Kashkoli's research (2016), the mediating role of affective control in the relationship between neurotic personality traits and symptoms of IBS has been confirmed (5). In addition to the fact that people with irritable bowel syndrome have poor affective control and react more than

others to emotional and psychological stress, they also experience strong dependence in interpersonal relationships, are very sensitive and irritable, and are constantly worried and anxious because of the feeling of insecurity in their interpersonal relationships, in their relationships with others, they behave based on the type of attachment they have, which is usually insecure, and they always have the anxiety of failure in close relationships (19, 20). They are dutiful in their role but unable to express their feelings. The findings of Hyphantis, Guthrie and Tomenson (2009) show that improving interpersonal and relationship problems plays a very important role in the health status of patients with irritable bowel syndrome (21). Therefore, another issue that should always be considered in the etiology of irritable bowel syndrome is the capacity of individuals to establish human relationships, which is considered as object relations in the research literature and is formed in the first years of life (22).

Given the difficulties that patients with IBS have in controlling and expressing their effects as well as their object relations, identifying the predictors and underlying factors of these two subjects is of special importance and can help to clarify the relationships between the underlying variables and enrich the existing psychological therapies. One of the components that can effect emotion regulation and object relations is traumatic childhood experiences. In addition to having harmful effects on a child's developmental, cognitive, emotional, and behavioral domains, childhood traumas also threaten a person's physical and psychological health in adulthood. Many studies show that there is a strong relationship between the incidence of IBS in adulthood and traumatic experiences in the early years of life (23). Child traumas have two dimensions: abuse and neglect. Abuse includes emotional, sexual, and physical abuse, and neglect includes emotional and physical neglect. Physical abuse is the intentional injury or physical assault to a child under the age of 18 by an adult so that there is a risk of death, injury, loss of limb or health. Emotional abuse occurs when it is instilled in a child that he/she is worthless, defective, unwanted, and dangerous, and his or her existential value depends only on meeting the expectations and needs of others. Child sexual abuse is also related to sexual intercourse between a child and an adult or two children, when one of them is clearly older or has used force. Physical neglect refers to exclusionary actions during which the child is deprived of facilities such as security, nutrition, clothing, shelter, medical care, etc., and his basic needs are not met. Emotional neglect also refers to exclusionary actions in which the child does not receive adequate emotional care and support such as love, attention, affection and kindness (23, 24). Traumatic life experiences, especially physical, sexual and emotional abuses that unfortunately occur frequently, have always been recognized as an important risk factor for gastrointestinal diseases, including irritable bowel syndrome (25).

The available research findings show that the history of childhood traumatic experiences is more prevalent among IBS patients compared to the healthy group (26), and more than 50.8% of IBS patients had traumatic experiences in childhood (27). Research has shown that a history of abuse in patients with irritable bowel syndrome is associated with more pain, poorer daily function, and extra intestinal symptoms such as fatigue, headache, and palpitations. Childhood abuse experiences put people with gastrointestinal illnesses at risk for psychiatric illnesses such as major depressive disorder, generalized anxiety disorder, and post-traumatic stress disorder (28).

Since biological and medical models have not yet provided a convincing explanation for the cause of irritable bowel syndrome, the use of a bio-psychological model is the best tool for predicting this syndrome (5). Most studies have focused on the effects of the disease on the quality of life and psychological characteristics of patients, and studies that have examined the role of psychological factors in the development or the severity of IBS symptoms are very rare, and the relationship between variables in predicting the symptoms of IBS still requires further research. The purpose of this study was to investigate the role of childhood traumatic experiences in predicting affective control and object relations in IBS patients. The results of the study can help clarify the relationships between variables in the etiology of this disease and better and more effective planning in preventing the onset or recurrence of irritable bowel syndrome symptoms.

2- MATERIALS AND METHODS

2-1. Study design and population

The present study was a descriptive-correlational study. The statistical population of the study was all patients who referred to internal physicians in Mashhad from April 2018 to November 2019 and after being referred to the internal gastroenterologist, 135 people were diagnosed with irritable bowel syndrome. After diagnosing these patients based on Rome II criteria (5), examination and clinical trials, these patients were referred to two psychologists who provided patients with research questionnaires, after interviewing and communicating with them. It should be noted that all participants in the study were assured that their answers are completely confidential and for research purposes only.

2-2. Measuring tools

Demographic characteristics checklist: In this checklist, demographic characteristics such as age, sex, level of education were examined and evaluated.

2-2-1. Bell Object Relations and Reality Testing Inventory: This scale, which Bell (1995) designed to measure object relations in the form of four subscales of egocentrism, alienation, insecure attachment, and social incompetence, consists of 45 true or false questions. The egocentrism subscale shows low empathy and a desire to protect oneself in relationships, control others, and to profit from them. Alienation refers to a lack of fundamental trust, feelings of alienation, and difficulty in intimate relationships, and incompetency is an indicator of shyness, discomfort in group, and difficulty in making friends. A high score on each subscale indicates a defect in that subscale. Bell (1995) reported that the correlation between the subscales of this questionnaire and most subscales of the Symptom Checklist 90 was significant and ranged from 0.26 to 0.58. Also, the internal consistency of this instrument based on Cronbach's alpha coefficient was 0.78 to 0.90 (29). In Iran, Mesgarian, Azad Fallah, Farahani and Ghorbani (2018) evaluated the psychometric properties of Object Relations Questionnaire as desirable. In their study, the internal consistency of this scale with Cronbach's alpha coefficient was 0.84. Its reliability was reported between 0.60 and 0.77 for subscales by split-half method. Also, the convergent validity of this tool was measured by the Defense Styles Questionnaire and the results of Pearson correlation coefficient were between 0.07 and 0.53 (22).

2-2-2. Affective Control Scale: This questionnaire was developed by Williams and Chambles in 1997 to assess the ability to control anger, anxiety, depressed mood and positive emotions. This scale has 42 questions. The questions of this questionnaire are answered in the Likert

scale from 1 (completely disagree) to 7 (completely agree). The minimum score obtained in this questionnaire is 42 and the maximum score is 294. Williams and Chambles (1997) reported the validity of this scale in the range of 0.72 to 0.94 and its reliability in the range of 0.64 to 0.77 (30). The Persian version of this scale has a suitable validity of 0.77 to 0.89 and a reliability of 0.68 to 0.81 (5).

2-2-3. Child Trauma Questionnaire: In the present study, the short form of Child Trauma Questionnaire has been used. This tool has 28 questions (25 clinical questions and 3 validation questions), and 5 subscales and is applicable for ages 12 and up. This questionnaire was designed in 1994 by Bernstein. The subscales of this questionnaire include physical abuse, sexual abuse, emotional abuse, physical neglect and emotional neglect (24, 31, 32). Scores range from 5 to 25 for the subscales and from 25 to 125 for the whole questionnaire. In Iran, Ebrahimi et al. (2012) estimated Cronbach's alpha for the short form from 0.81 to 0.98 (33). The construct validity of this scale has also been confirmed in Rezaei et al.'s study (2016), (23). The collected data and obtained information were analyzed using descriptive statistics indicators including average and standard deviation. In examining the normality of research variables using Kalmogorov-Smirnov test, the results showed that the variables of Traumatic Childhood Experiences, Emotion Regulation and Object Relations were normal ($p>0.05$); Therefore, Pearson correlation was used to examine the relationship between research variables, and statistical inference indicators of Pearson correlation coefficient and simple regression analysis by SPSS software version 26.0 to predict emotion regulation and object relations through childhood traumatic experiences.

2-3. Inclusion and exclusion criteria

Inclusion criteria were: Adolescent 15 to 19 years old, patient satisfaction to participate in the study, diagnosis of irritable bowel syndrome by a gastroenterologist and not having other chronic diseases at the same time. Exclusion criteria included the presence of acute physical illness, the presence of a major psychiatric disorder diagnosed by a clinical psychologist, and drugs and alcohol addicted.

2-4. Data Analyses

The data were analyzed by descriptive statistics, including frequency, percentage, mean, standard deviation, Pearson correlation and inferential statistics including the regression analysis using the SPSS software version 26.0.

2-5. Ethical considerations

At the beginning of the study, participants completed an informed consent form and the privacy of the participants was respected.

3- RESULTS

In this study, which aimed to investigate the predictive role of childhood traumatic experiences on the affective control and object relations of IBS patients, out of 128 patients who answered the questionnaires completely. Demographic data of the participants are presented in **Table.1**.

Table-1: Participants' characteristics.

Characteristics		Frequency	Percentage
Gender	Boy	51	39.8
	Girl	77	60.2
Education	First high school	22	22.7
	Secondary high school	99	77.3

As the results in **Table.2** shows, the most common trauma experienced by IBS patients are emotional abuse and emotional neglect, respectively. As can be seen, there is a significant positive correlation between childhood trauma, object relations subscales, and affective control. Among the object relations variables, the highest correlation is related to the relationship between childhood trauma and alienation, and among the affective control components, the highest correlation is between child trauma and depressed mood.

Given that childhood trauma has a significant positive correlation with object relations and affective control variables, simple regression analysis was used to investigate the predictive effect of child trauma. For this purpose, the independence of errors was first examined using the Durbin-Watson test. As shown in Table 2, the test values range from 1.83 to 2.29, indicating the reliability of the regression analysis results. The results of regression analysis are presented in the table below.

Table-2: Mean, standard deviation and correlation coefficients of object relations & affective control components with childhood trauma (n = 128).

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Egocentrism	6.21	3.40	1												
2. Alienation	5.17	2.48	0.56**	1											
3. Attachment	6.70	2.75	0.53**	0.48**	1										
4. Incompetence	3.11	2.15	0.62**	0.53**	0.57**	1									
5. Anger	32.98	6.57	0.26**	0.34**	0.48**	0.36**	1								
6. Mood	33.29	7.53	0.48**	0.38**	0.50**	0.37**	0.47**	1							
7. Anxiety	50.94	9.98	0.43**	0.43**	0.51**	0.39**	0.61**	0.59**	1						
8. Positive Emotion	45.18	6.69	0.43**	0.41**	0.44**	0.46**	0.47**	0.38**	0.64**	1					
9. Physical Abuse	6.64	2.77	0.27**	0.19*	0.01	0.08	-0.06	0.12	0.02	-0.08	1				
10. Sexual Abuse	5.51	1.33	0.09	0.11	0.17	0.11	0.24**	0.15	0.18*	0.06	0.33**	1			
11.Emotional Neglect	8.67	4.02	0.18*	0.25**	0.17	0.18	0.09	0.37**	0.21*	0.08	0.58**	0.38**	1		
12.Physical Neglect	7.96	3.45	0.16	0.22*	0.35**	0.28**	0.15	0.37**	0.20*	0.10	0.46**	0.41**	0.75**	1	
13.Emotional Abuse	8.36	4.45	0.19*	0.24**	0.08	0.21*	0.17*	0.36**	0.24**	0.12	0.58**	0.31**	0.82**	0.62**	1
14.Total Trauma	37.17	13.33	0.23**	0.26**	0.19*	0.22**	0.13	0.37**	0.22*	0.08	0.73**	0.49**	0.93**	0.83**	0.89**

*P<0.05 **P<0.01, SD: Standard deviation.

Based on the **Table.3**, the total score in the Child Trauma Questionnaire was 0.05% of the egocentrism subscale variance, 0.07% of the alienation, 0.03% of the attachment and 0.05% of the incompetence of the object relations subscales. All these values are statistically significant (P<0.01). Also, the total score of child trauma can significantly predict anger (P<0.05), and depression subscales (P<0.001) among the subscales of affective control.

Table-3: Characteristics of regression analysis of predicting object relations and affective control based on child trauma.

Criterion Variables	Predictive Variable	R	R^2	df	F	B	Beta	t	Durbin-Watson
Egocentrism	Childhood Trauma	0.23	0.05	(126,1)	7.05**	0.05	0.23	2.65**	2.29
Alienation	Childhood Trauma	0.26	0.07	(126,1)	9.77**	0.05	0.26	3.12**	1.94
Attachment	Childhood Trauma	0.19	0.03	(126,1)	4.80*	0.04	0.19	2.19**	1.83
Incompetence	Childhood Trauma	0.22	0.05	(126,1)	6.98**	0.03	0.22	2.64**	1.97
Anger	Childhood Trauma	0.13	0.01	(126,1)	2.44	0.06	0.13	1.56	1.94
Anxiety	Childhood Trauma	0.22	0.04	(126,1)	6.52*	0.16	0.22	2.55*	1.89
Depression	Childhood Trauma	0.37	0.14	(126,1)	20.54***	0.21	0.37	4.53***	1.98
Positive Emotion	Childhood Trauma	0.08	0.00	(126,1)	0.89	0.04	0.08	0.94	2.21

*P<0.05 **P<0.01, ***P<0.001, R: Correlation Coefficient, R2: Coefficient of Determination, df: Degree of freedom, F: F value, B: unstandardized beta, Beta: beta coefficient, t: t-value.

4- DISCUSSION

The purpose of this study was to investigate the role of traumatic childhood experiences in predicting affective control and object relations in patients with irritable bowel syndrome. Findings of this study showed that the experience of traumatic events in childhood significantly predicts poor affective control in the depressed mood and anxiety subscales and object relations in patients with irritable bowel syndrome. The more traumatic experiences a person with IBS has, the more difficult it is to control depression and anxiety. In the subscales, a significant positive relationship was found between emotional and physical neglect and emotional abuse with poor control of depressed mood in patients with irritable bowel syndrome, which is consistent with the results of similar studies [Berens et al. (2020); Kerker et al. (2015); and Post et al. (2013)], (11, 34, 35). In a study by Connor et al. (2016) that studied the relationship between childhood trauma and IBS (25), a strong association was found between traumatic childhood experiences and the severity of irritable bowel syndrome symptoms and the experience of depressed mood (25). In this regard, it can be said that the role of childhood traumas in increasing the risk of depression in later stages of development has always been considered and many studies have shown that the more traumatic the childhood is, the more chronic the depression will be which is a result of that (36). According to the research of Kerker et al. (2015), and Post et al. (2013), traumatic childhood experiences are an important risk factor for psychiatric disorders, especially depression. Among the unfavorable childhood experiences, child abuse is an important risk factor for depressed mood in adulthood. Research has shown that any sense of threat in childhood is associated with an increase in depression in adolescence and doubles the risk of depression. Meanwhile, sexual abuse has always attracted the most attention (34, 35). But similarly, in a meta-analytic study which, like the present study used the

research-based CTQ questionnaire and extensively examined the relationship between childhood abuse and depression by reviewing 192 studies, the results showed that all types of abuse were associated with an increased risk of major depressive disorder. Moreover, according to research findings consistent with this study, emotional abuse and emotional neglect were most relevant to depression and there is a weaker association between sexual and physical abuse with depression. In Mandelli, Petrelli and Serretti's research (2015), similarly, the highest association was between emotional abuse and emotional neglect with depression. This finding is consistent with experimental evidence and theoretical knowledge in this regard. Rose and Abramson (1992) explained this relationship by saying that emotional abuse causes people to develop a negative cognitive style that increases the risk of depression. According to this formulation, affected children seek to discover the causes of the traumatic event. Initially, they use unstable and specific external explanations and documents.

But when abuse is repeated, children develop a style of internal, consistent, and general documentation (a depressive cognitive style) that is depressing. In this context, emotional abuse may be more damaging to children's cognitive style; because usually the person who abuses the child labels the child and names the child. This has been confirmed by experimental research by Steinberg, Gabe, Aloe, and Abramson (2003) (37). Exposure to emotional abuse is associated with negative self-referential processing. The present study, similar to Humphreys et al.'s research (2020), showed that emotional abuse and emotional neglect have a similar harmful role. Thus, the depressive cognitive style is rooted not only in emotional abuse and negative interactions, but also in the lack of emotional support such as what happens in emotional neglect. Therefore, it can be said that the experience of emotional abuse and emotional neglect in childhood leads to the formation of depressive cognitive style in IBS patients. The results also showed that sexual and emotional abuse as well as emotional and physical neglect have a significant positive relationship with the experience of more anxiety in patients with irritable bowel syndrome. These results are consistent with studies which indicate that the prevalence of traumatic childhood experiences in the IBS group is higher than normal individuals and is associated with an increased incidence of anxiety symptoms in these patients (38). In this regard, the study of Berens et al. (2020), also showed that there is a significant positive relationship between exposure to traumatic events in childhood and increased anxiety experience in IBS patients (11). The results of the study by Raesi et al. (2016), also showed that 18% of the variance in IBS symptoms is explained by neuroticism, extraversion, agreement and weakness in emotion regulation (5).

Although the pathophysiological basis of the relationship between traumatic childhood experiences and the experience of anxiety in IBS patients is not yet clear and no accurate explanation can be given for this finding, there is enough evidence that confirms the association of traumatic childhood events with incidence of anxiety in these patients. It is assumed that exposure to threatening events alters the body's fear and perception systems and increases sensitivity to physical symptoms in people who experienced a traumatic childhood event. This finding is consistent with studies that have confirmed the comorbidity of hypochondriasis and anxiety with IBS (11). Another possible reason for this finding is the formation of cognitive beliefs and negative coping strategies that are caused by traumatic childhood events and are more common in

IBS patients than in healthy individuals. Another finding of the present study was a significant positive correlation between sexual and emotional abuse and poor anger management. This finding is consistent with the results of a study by Chang et al. (2006) which showed that IBS patients have more anger than healthy individuals (17). In explaining this finding, it can be said that as the results of Welgan's study (2000) shows, stress and negative emotional states such as anger caused by traumatic childhood experiences cause changes in bowel function, which have been confirmed in patients with IBS (18).

Another finding of the present study is the significant association between trauma and object relations in patients with irritable bowel syndrome. The results of this study showed that the experience of physical abuse, emotional abuse, physical neglect and emotional neglect are significantly associated with defects in object relations and interfere with the establishment and continuation of satisfactory object relations. Zarrati, Bermas and Sabet's research (2020) on the correlation between childhood trauma and object relations showed that there is a significant positive relationship between the total trauma score and Bell object relations subscales in a sample of 371 students of Islamic Azad University of Tehran (39). In another study, Koochaki, Ravandi et al. (2015) evaluated the role of attachment styles, object relations, and ego power in predicting IBS symptoms. In this study, 150 patients with IBS and 150 healthy individuals were compared. The results showed that there was a significant positive correlation between insecure attachment style and IBS and a significant negative correlation between ego strength and IBS. Also, the results of Koochaki's study, inconsistent with the results of the present study, showed that there is no significant relationship between object relations and IBS (2). According to object relations, physical and emotional security is very important in the early years of life (2). People grow up by interacting with the real people around them and representations of these experiences are formed within them, and the nature of these relationships strongly influences the Id, ego and super ego constructs (40). Our ability to cope with the life's pressures depends on the ability of the ego as the construct that manages the mental system. According to Globovik et al. (2005), the experience of tension and stress and the loss of love in the early stages of life play an important role in the development and exacerbation of IBS symptoms (2). According to studies and theoretical basis, it can be explained that the ego construct in people with irritable bowel syndrome does not have the capacity to manage negative emotional states and situational stresses in life, because in addition to the intestinal system, their cognitive system is also impaired. Eventually, their immune and defense systems are weakened, causing them to malfunction (41).

4-1. Study Limitations

The findings of the present study confirmed the predictive role of traumatic childhood experiences on affective control and object relations disorders in adolescents with irritable bowel syndrome. Among the limitations of the present study, we can mention the small volume of research sample, which did not get better due to the small number of clients who met the criteria for entering the research, despite months of effort. Another limitation in this study is self-report and retrospective tools used to examine traumatic childhood experiences. Although these tools have high psychometric properties, in the case of self-report tool, there is always the concern that the answers are not accurate and honest, and also the retrospective tool has caused more or less estimation of childhood traumas by participants; while considering the

confirmation of the relationship between traumatic childhood experiences and poor affective control and object relations in the present study, the next step is to identify the exact mechanisms in this regard.

5- CONCLUSION

Overall, the results of the present study highlight the importance of planning and goal setting on reducing childhood traumas and its harmful effects. Interventions and prevention methods that reduce the childhood traumatic experiences, such as holding parenting workshops and on the other hand paying more attention to the negative effects of childhood traumas and the use of psychological therapies that focus on solving childhood problems can have many positive effects on the physical and mental health of patients in the treatment of irritable bowel syndrome. Researchers should pay close attention to emotional misbehaviors, including emotional abuse and emotional neglect, as effective factors in the onset and recurrence of IBS symptoms, and the semi-structured interview method should be used in future research, to increase the validity of the results related to the childhood traumatic experiences.

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