



# The Role of Positive Personality Traits in Emotion Regulation of Patients with Irritable Bowel Syndrome (IBS)

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## Abstract

**Background:** Personality traits and emotion regulation processes play an important role in human health. The purpose of this study was to investigate the role of positive personality traits (psychological hardiness and interpersonal forgiveness) in emotion regulation of patients with Irritable Bowel Syndrome.

**Methods:** The research was a cross-sectional study. Statistical population included all of IBS patients referred to the Subspecialty Center of Psychiatry in Isfahan in 2013. Overall, 123 subjects (100 women, 83.3%, and 30 men, 16.7%) were selected by census method, according to criteria of research and during a particular period. To collect data, the Difficulties in Emotion Regulation Scale (DERS), Lang and Goulet Hardiness Scale (LGHS) and Interpersonal forgiveness Inventory (IFI) were used. Data was analyzed using Pearson's correlation coefficient and Multivariate and Binary Logistic regression analyses.

**Results:** Mean age of patients was  $33.82 \pm 10.45$  years and 83.3% (100) of them were female. Regression analyses showed that both personality traits of hardiness and forgiveness were as protective factors for emotional dysregulation with OR, 95% CI: 0.93 and 0.96 sequentially, with adjusting demographic variables (age, gender, and education level and disease duration).

**Conclusion:** Patients who are more hardy and forgiving toward others, are likely more successful at adaptive emotion regulation. It emphasizes the positive and beneficial role of the personality traits in *regulating of emotional problems* of IBS patients. Hence, these variables should be considered as effective factors in the treatment process of the patients.

**Keywords:** Emotional regulation, Psychological hardiness, Interpersonal forgiveness, Irritable bowel syndrome

## Introduction

“Irritable bowel syndrome (IBS) is the most prevalent of functional gastrointestinal disorder” (1). It is exhibited with abdominal pain or discomfort associated with disturbance in defecation and intestinal habits, in the absence of an organic cause that justifies the signs (2). About 54% to 100% of patients with IBS may be associated with psychiatric disorders (such as emotional disorders) and personality pathology (3). Inasmuch, stress, anxie-

ty and depression are prevalent in IBS patients and they are related to onset and severity of symptoms (4), affective and emotional symptoms should be considered as specific and inseparable symptoms of the syndrome (5). There are significant differences between the patients and healthy individuals in terms of anxiety, neuroticism and extraversion. Hence, the patients with irritable bowel syndrome who seek medical help because

of their intestinal symptoms, demonstrate emotional problems such as depression and anxiety and neurotic personality characteristics (3).

*Process* of emotion regulation is *the process* to moderate negative emotions (6). It is beneficial to remember that optimal emotion regulation (or emotion dysregulation) may vary for different individuals, in different situations and with different goals. Due to emotion regulation involved heterogeneous developmental processes, individual differences in emotion regulation likely happen along multiple dimensions rather than on a single axis. For example, Individuals seemingly differ in their knowledge of the need for emotion regulation, awareness of alternative strategies, flexibility in applying different regulatory strategies, and other components of emotion regulation (7).

The relationships between personality traits and processes of emotion regulation have been confirmed in several studies. Some factorial models have acquired the consistent evidence for the relation between affect and personality (8). In addition, personality plays a role in emotional changes (9). Behavioral characteristics (e.g. attention, sociability, stability or reactivity in response to frustration) are as internal sources of individual differences in emotion regulation (10). The relationships between 5 big traits and difficulties in emotion regulation have also been indicated (11). Extraversion was positively correlated with emotion regulation, and neuroticism negatively (12). Openness to experience was correlated with the ability to recognize emotions (13) and agreeableness has been related to how a person expresses his/her negative emotions (14). In principle, the relations between personality and emotion regulation strategies are indirect, considering that personality causes individuals to become more vulnerable toward certain emotions (15).

Hardiness as a personality trait is a configuration of attitudes and skills that motivate the individuals to do strategic and hard actions in face to stressful circumstances, and also, to activate tenaciously to cope with the conditions. Hence, it can help individuals to turn stressful circumstances from potential disasters into growth opportunities (16). The components of mental health, including so-

matization, anxiety, social dysfunction, hostility, avoidance of stressful thoughts and depression, are negatively related to hardiness (17, 18).

So, hardiness is positively correlated with emotional stability (19). Findings of previous studies regarding the effects of hardiness on stress and health are inconsistent, possibly due to neglect (failure to approve) the influence of variables such as negative affectivity. Klag & Bradley's study examined the main, moderating and mediating effects of hardiness. In the study, controlling for negative affectivity, enough evidence was not obtained for the direct effects of hardiness on stress and illness (20). Hardiness has a significant impact on adaptive and maladaptive emotion regulation strategies (21). In fact, cognitive hardiness moderate the effects of emotional coping on psychological distress (22).

Forgiveness is another trait whereby individual who has been annoyed (insult or betrayal) to inhibit relationship-destructive responses and to behave constructively toward someone who has behaved destructively toward him/her. In fact, forgiving is a motivational transformation, namely, one becomes decreasingly motivated to avenge an insulting behavior, and vice versa, increasingly motivated to compromise with offender, despite the offender's hurtful actions (23). Forgiveness not only reduces negative emotions such as anger, hate, hostility, and also thought and behaviors associated with them, but also increases empathy, kindness and compassion toward the offender contemporarily (24, 25). The trait is positively correlated with life satisfaction, positive affect and emotional-focused coping (26- 28) and negatively with anxiety, depression, neuroticism, stress, anger and hostility (26-29).

Agreeableness is the strongest predictor of forgiveness, however, two characteristics related to neuroticism (irritability and temperamentalness) prevents forgiveness. These characteristics of neuroticism may lead to the re-experience of negative emotions toward a transgressor and thus postpone the development of positive emotions (30). Therefore, the association between forgiveness and health may be mediated by stress and negative

emotions (31). Forgiveness can indirectly improve health by stress reduction (32, 33).

Considering the literature of the study, positive personality traits are likely to affect emotion regulation and ability of individuals emotionally, but researches are not enough about the role of the traits in emotion dysregulation and its factors, and also any study has investigated the role of such abilities in digestive patients. Hence, the purpose of this study was to determine the relationship between personality traits (forgiveness and hardiness) and emotion dysregulation in IBS.

## **Method and Materials**

### ***Subjects***

The research was a cross-sectional study among the patients with Irritable Bowel Syndrome who were referred to the Psychosomatic Disorders Clinic of Isfahan in 2013. Overall, 123 patients were selected by census method, according to criteria of research and during a particular period (10 months). Study criteria included: satisfaction from participating in the study, age range of 18–70 years, lack of acute psychiatric disorders, and the diagnosis of IBS on the basis of ROME III criteria by gastroenterologists.

### ***Instruments***

After assuring to patients about the confidentiality of the information, data on demographic characteristics, emotional dysregulation and personality traits were collected by self-administered questionnaires.

### ***Demographic characteristics***

Demographic characteristics applied in this study were age, sex as male and female, educational level and disease duration.

### ***The Difficulties in Emotion Regulation Scale (DERS)***

The scale is a self-report measure developed by Gratz & Roemer (34) to assess difficulties in emotion regulation. The DERS can distinguish adaptive emotion regulation from emotional avoidance and expressive control. The scale is composed of 6 factors, including, Non-Acceptance of Emo-

tional Responses (Non-Acceptance), Difficulties Engaging in Goal-Directed Behavior (Goal), Impulse Control Difficulties (Impulse), Lack of Emotional Awareness (Awareness), Limited Access to Emotion Regulation Strategies (Strategy), and Lack of Emotional Clarity (Clarity). The DERS has 36 items that are rated on a five-point Likert scale, ranging from 1 (almost never) to 5 (almost always), and are recoded so that higher scores in every case indicate greater difficulties in emotion regulation (i.e., greater emotion dysregulation). The scale has high internal consistency, Cronbach's  $\alpha=0.93$  for total DERS & Cronbach's  $\alpha>.80$  for each factors (34). In an Iranian normal sample, internal consistency of the scale using Cronbach's  $\alpha$  ranged from 0.66 to 0.88 for all factors (35).

### ***Lang and Goulet Hardiness Scale (LGHS)***

The LGHS is a 45-item self-report instrument designed to measure psychological hardiness in stressful situations (35). Respondents rate each item on a 1 (strongly disagree) to 5 (strongly agree) scale. The scale has a good internal consistency based on Cronbach's  $\alpha$  (36). It was 0.82 in an Iranian normal sample (37).

### ***Interpersonal forgiveness Inventory (IFI-25)***

The IFI developed by Ehteshamzadeh et al. (38), consists of 25 items aimed at assessing a respondent's self-appraisal of his/her proneness to forgive interpersonal transgressions. The IFI-25 is rated on a four point Likert scale. Higher scores on this scale reflect higher levels of forgiveness. In the Iranian sample, internal consistency of the IFI based on Cronbach's  $\alpha$  was 0.80 (38).

### ***Statistical Analysis***

Descriptive analysis was expressed as mean & standard deviation. Pearson correlation coefficient was used to evaluate the correlation between emotional dysregulation and personality traits. Multivariate and Binary Logistic regression analyses were performed to determine the predictive ability of personality traits (hardiness and forgiveness). The dependent variable was personality traits and the independent variables

were emotional dysregulation and its factors. The Statistical Package for the Social Sciences version 15.0 (SPSS Inc., Chicago, IL, USA) was used for statistical analyses.

**Results**

A total of 123 IBS patients were recruited for the study (100 women, 83.3%, and 30 men, 16.7%). The mean age was 33.82±10.45 years with an age range of 18–70 yr. The results obtained for the IBS are illustrated as descriptive data in Table 1.

Mean scores of emotional dysregulation, psychological hardiness and interpersonal forgiveness were almost the same in both gender. Correlations between personality traits and emotional dysregulation and its subscales were computed. As showed in Table 2, psychological hardiness was negatively correlated with total emotional dysregulation and its subscales, except awareness. Besides, interpersonal forgiveness was negatively correlated with total emotional dysregulation and most of its subscales, except awareness and clarity.

**Table 1:** Mean and standard deviations scores of personality traits and emotional dysregulation

Variables	Hardiness		Forgiveness		Emotional Dysregulation	
	M	SD	M	SD	M	SD
Male	1.384E2	1.494E1	62.40E2	9.372	1.071E2	2.273 E1
Female	1.423E2	1.405E1	62.22E2	9.846	1.027E2	1.888 E1
Total	1.392E2	14.801	62.368	9.417	1.063E2	22.059

**Table 2:** Pearson’s correlation coefficients between personality traits and emotional dysregulation and its subscales

Variables	Hardiness	Forgiveness
	r	r
Total DERS	0.28**-	0.29**-
DERS -Non-Accept	0.23*-	0.23*-
DERS -Goal	0.37**-	0.36**-
DERS -Impulse	0.32**-	0.41**-
DERS -Awareness	0.13-	0.087
DERS -Strategy	0.31**-	0.35**-
DERS -Clarity	0.18*-	0.05-

\*\* P≤ 0. 01, \* P≤ 0.05

Multivariate regression analyses were used for evaluating the predictive ability of psychological hardiness and interpersonal forgiveness. The results showed that hardiness was a predictor of total emotional dysregulation and the subscales of non-acceptance, goals, impulse, strategy and clarity, and also ,forgiveness was a predictor of total emotional dysregulation and the subscales of non-acceptance, goals, impulse and strategy, with adjusting demographics characteristics (age, sex, educational level and disease duration). The results are shown in Table 3.

**Table 3:** The results of multivariate regression analyses between personality traits and emotional dysregulation and its subscales

Variables	Hardiness					Forgiveness				
	B	t	F	R2	P	B	t	F	R2	P
Total DERS	-0.63	-4.70	20.82	0.15	0.000	-0.63	-3.05	9.35	0.072	0.003
DERS -Non-Accept	-0.094	-2.45	6.02	.048	0.016	-0.147	-2.50	6.01	0.048	0.014
DERS -Goal	-0.12	-4.37	19.16	0.14	0.000	-0.17	-4.17	17.43	0.13	0.000
DERS -Impulse	-0.14	-4.09	17.90	0.13	0.000	-0.256	-4.87	22.10	0.156	0.000
DERS -Awareness	-0.049	-1.73	3.01	.025	0.085	0.043	.961	0.624	0.008	0.338
DERS -Strategy	-0.058	-4.22	17.79	0.13	0.000	-0.233	-4.33	18.78	0.135	0.000
DERS -Clarity	-0.144	-2.23	4.99	0.040	0.023	-0.019	-0.522	0.172	0.001	0.603

Model2: adjusted for demographic characteristics (age, sex, educational level and disease duration)

In addition, the results of a binary logistic regression showed (Table 4) that hardiness and forgiveness were protective factors for emotional dysregulation with OR, 95% CI: 0.93 (0.89,0.97), and 0.96(0.93,0.98) sequentially (in crude analysis), and with adjusting demographics characteristics (age, sex, educational level and disease duration) didn't show sensible changing in OR emotional dysregulation (in model1).

**Table 4:** Binary logistic regression analyses for variables of predicting emotional dysregulation<sup>n</sup>

Variables	Crude OR(95%CI)	Model1 OR(95%CI)
Hardiness	0.93(0.89,0.97)	0.94 (0.90,0.98)
Forgiveness	0.96(0.93,0.98)	0.96(0.93,0.98)

Model1: age, sex, educational level and disease duration adjusted OR (Odds Ratio), CI (Confidence Interval)

## Discussion

It seems that personality traits are related to emotion regulation. Hence, this research was conducted with the purpose of investigating the relationship between personality traits, psychological hardiness, interpersonal forgiveness and emotion dysregulation in patients with irritable bowel syndrome. Forgiveness and hardiness were significantly and negatively correlated with emotional dysregulation. Hardiness was a negative predictor of emotional dysregulation and most of its subscales. That is, individuals who acquire high score on hardiness measure, are more probably to accept their emotional responses and subsequently experience fewer negative emotions, to able to recognize their emotions, to control their behaviors and to accomplish tasks when experiencing negative emotions, and finally, to use adaptive strategies in problematic conditions. Thus, hardiness as a positive characteristic associated with less emotional dysregulation in irritable bowel syndrome. This finding is consistent with the results of other studies (21, 22, 39).

In explaining this finding it can be elucidated that hardy individuals assess unpleasant conditions as a

challenging rather than as a threatening, have a commitment to activities and their interpersonal relationships and to self, recognize their own values, goals and priorities in life, and believe that they can influence events and turn stressful circumstances from potential disasters into opportunities for personal growth. Furthermore, hardy individuals can maintain their mental health under unpleasant and unexpected circumstances, because of optimistic style, feeling of ability in the face with difficulties, using problem-solving coping, having positive expectations about consequences, and believing to dependency of outcome to action (40). Belief to change, variation, dynamism of life and to this attitude that any event does not necessarily mean a threat to human health, cause cognitive flexibility and tolerance with respect to stressful difficult events and ambiguous situations (41).

Hardiness as an internal source mediates the choice of emotion regulation strategies by altering the individuals' cognitive appraisal process, so that, the individuals can reframe or reinterpret adverse experiences. Consequently, it is expected that the levels of psychological distresses experienced by them to be reduced (21) and they encounter with fewer problems in their emotion regulation. In this regard, this study also showed that hardy persons tend to experience less negative emotions and get into less maladaptive coping strategies. Thus, it can such be assumed what produce a buffer in hardy people is to control negative affectivity against stress. According to past studies (20, 21), it seems negative affectivity plays a role of mediator between hardiness and stress. Hardiness affects stress and disease via impact on negative affectivity and emotion regulation strategies.

In addition, interpersonal forgiveness was significantly and negatively correlated with emotional dysregulation. Forgiveness was a negative predictor (a protective factor) of emotional dysregulation and some its subscales. This study showed that persons with characteristic of interpersonal forgiveness experience lower level of emotional dysregulation, due to they accept their emotional responses and able to do appropriate actions with concentration on them when experiencing nega-



tive emotion. Besides, they inhibit their impulsive behaviors and utilize more adaptive coping strategies. This finding is in line with Sansone et al. and Hirsch et al. (42, 43).

Individuals with borderline personality disorder (characterized by severe disturbances in emotion regulation) show lower forgiveness (42). The effect of self-forgiveness on suicidal behavior was indirect and it was mediated by depression. However, forgiveness of others was directly associated with suicidal behavior (43). Inconsistent with the current study, in another study with aim of assessing the role of forgiveness of self as well as forgiveness of others, lack of self-forgiveness was associated with engaging in self-destructive behaviors along with the greater longevity frequency of that for specific reasons related to emotions regulation and social functioning, namely to get rid of unwanted emotions, to feel something due to feeling numb or empty, and to communicate with others. But no relationship was found between forgiveness of others and self-destructive behaviors (44).

Unforgiveness has been defined as a set of delayed emotions toward a transgressor (45) and produces severe negative emotions (25). Instead, forgiveness not only reduce sun forgiveness through diminishing the negative thoughts, emotions, motivations, and behaviors toward the offender, but also increases positive emotions and perspectives such as empathy, hope, or compassion (45). Thus, since trait forgivingness was positively correlated with ability of empathy and agreeableness (46) and was negatively correlated with anger and vengeful rumination (47), the individuals who are more forgiveness in interpersonal relationships, experiences fewer anger and revenge and their motives are more altruistic. These individuals in the face with an annoying interpersonal situation can control their negative emotions faster and maintain their intimate relationships with giving an opportunity to trespasser to re-communicate (46).

Forgiving individuals alter their attributions toward causality and personality of transgressors. Hence, the impact of rumination reduces and negative emotions such as resentment, bitterness, dis-

gust, hostility, anger, fear are subsided (48, 49). Rumination has been recognized as a mediator between forgivingness and emotional outcomes (47). A structural equation model has been used to examine the relationship between forgiveness and mental and physical health. Its results indicated that the forgiveness-health relation was mediated by positive and negative affect, perceived stress, and the interrelationship between negative affect and stress. In other word, the results show that the relationship between forgiveness and health more is indirect and under other factors (49). Patients who had higher scores on forgiveness-related variables, reported lower levels of pain, anger, and psychological distress. Furthermore, anger largely mediated the association between forgiveness and psychological distress (50). Hence, according to the results of the present study, patients with irritable bowel syndrome who are more forgiving, tend to experience less emotion dysregulation and/or have probably more ability in their emotion regulation.

There are several limitations in this study. This is a cross-sectional analysis; therefore, we cannot determine causality. Other limitations are that variables scores were based on self-report measures and sampling was not based on simple random because limited statistical population. So, we should be cautious in generalizing the findings. Besides, other social factors that may affect the relationship between variables have been overlooked.

## Conclusion

Positive internal resources such as interpersonal forgiveness and psychological hardiness are as protective factors for emotional dysregulation in IBS patients. Thus, the patients who are more hardy and more forgiving toward others, are likely more successful at adaptive emotion regulation. It emphasizes the positive and beneficial role of the personality traits in *regulating of emotional problems* of IBS patients. Hence, these variables should be considered as effective factors in the treatment process of the patients. According to the findings of this study, it is recommended that intervention

programs based on positive psychology be implemented for patients in the Psychosomatic Disorders Clinics.

## Ethical considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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