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The relationship between self-efficacy and life satisfaction: Mediating role of emotion dysregulation

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Abstract

Introduction: Nowadays, life satisfaction has become one of the most important necessities in human life, and low scales of it can lead to numerous problems. This study assessed the relationship between self-efficacy and life satisfaction and the mediating role of emotion dysregulation.

Materials and Methods: The statistical population of this descriptive-correlation study in 2021 included adults from Mashhad, from whom 402 individuals (136 males and 266 females) were selected by the convenient sampling method. The participants fulfilled General Self-efficacy Scale (GSES), Difficulties in Emotion Regulation Scale (DERS), and Satisfaction with Life Scale (SWLS). Data analyzed using Pearson Correlation coefficient, and Route Analysis.

Results: The results of Route Analysis showed that emotion dysregulation has a mediating role in the relationship between self-efficacy and life satisfaction. The model also had an eligible direct paths from self-efficacy to life satisfaction ($P < 0.01$, $\beta = 0.10$), emotion dysregulation to life satisfaction ($P < 0.01$, $\beta = -0.36$), self-efficacy to emotion dysregulation ($P < 0.01$, $\beta = -0.40$), was statistically significant. So that self-efficacy and emotion dysregulation could predict life satisfaction. Also, indirect effects were examined and showed that self-efficacy positively predicts life satisfaction through emotion dysregulation ($P < 0.01$, $\beta = 0.14$).

Conclusion: It seems that self-efficacy can predict life satisfaction through the mediating role of emotion dysregulation. Therefore, awareness programs about the importance of self-efficacy and emotion regulation can be considered to increase people's life satisfaction.

Keywords: Emotion dysregulation, Life satisfaction, Self-efficacy

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Introduction

Attending to life satisfaction is an inseparable part of human needs. Forasmuch as without life satisfaction, humans cannot obtain a peaceful and prosperous life, this matter is essential in stressful life (1). Life satisfaction causes positive emotions to overcome negative emotions in one's life and represents high quality in different aspects of their individual and social life, like high self-esteem (2), optimism, self-control, and positive affect (3). Furthermore, life satisfaction shows individuals' cognitive evaluation of their lives, which has been proposed as a comprehensive indicator of well-being (4), and it is obtained by comparing individuals' ambitions with real achievements (5). It is also worth mentioning that decreased life satisfaction can lead to psychological distress (2,6) and loneliness (7) due to its connection to physical and mental health in various areas of human life. In general, life satisfaction is a comprehensive concept that can be related to variables such as living standards (8), mental health (9), self-efficacy (10), and psychological well-being (11). One of the variables related to life satisfaction is self-efficacy (10,12). Results of studies have shown that high rates of self-efficacy in individuals generally predict satisfaction with life (13) because self-efficacy is a predictor of quality of life, well-being, happiness, or overall adaptation and health in individuals (14). Albert Bandura, the psychologist, defines self-efficacy as the most important mechanism of human talent and one's belief to succeed in achieving a specific desired result (15). Furthermore, recent studies have shown that people's self-efficacy positively predicts independence motivation, and individuals' independence motivation is a predictor of high satisfaction with life (16). The results of one study on students, as samples, indicate that a student's effort to attain personal goals, i.e., an aspect of self-efficacy, causes them to experience a higher level of life satisfaction (13). Among the adolescent samples, the results show that self-efficacy is a source related to adolescents' experiences with life satisfaction, which is consistent with the theory of self-efficacy and shows that people with high self-efficacy are more realistic and positive in evaluating their resources and practical competence. Furthermore, as a result, they

experience more life satisfaction (17). Therefore, it seems that among the various components related to life satisfaction, self-efficacy and source of control play a key role in the life satisfaction experience. Another variable that can be associated with life satisfaction is emotion dysregulation. Although the direct relationship between these two variables has been less discussed in studies, recent research has shown that emotion regulation can be an important indicator of life satisfaction (18). It has also been shown that cognitive reappraisal as one of the emotion regulation strategies can be positively associated with good health outcomes, such as life satisfaction (19,20). Emotion regulation includes all the conscious and unconscious strategies people use to increase, maintain, or decrease one or more components of emotional responses. Gross defines one of the models of the emotion regulation process (21). So, it has been shown in many studies that people who have high emotional intelligence and better emotion regulation experience more satisfaction with life as they are much more flexible and satisfied with their families (22,23). Emotion regulation is often a potential effective factor for psychological well-being, such that in these modern days and despite the frequent and often unavoidable events in different areas of life, emotion regulation is considered an important mechanism in maintaining higher levels of psychological well-being (24). In another recent research, the relationship between emotion regulation strategies, active coping, and social behavior with life satisfaction was studied. The results showed that using adaptive emotion regulation strategies, such as problem-solving and seeking social support, are likely to predict high psychological well-being and life satisfaction (25). In addition, recent findings show that people with a high level of self-efficacy have a better understanding of their skills and talents, and as a result, not only can they easily regulate their emotions (26), but they also experience less emotional distress in a variety of situations (27-29). Therefore, self-efficacy can be said to have a significant relationship with emotional distress and its components, such as depression, anxiety, and stress through emotion regulation (27); since the more people's self-efficacy increases, the more their emotional performance improves (30). As

life satisfaction these days has become a severe mental health issue all around the world (1), and since each of the variables of self-efficacy and emotion dysregulation can play a decisive role in life satisfaction, more studies on emotion regulation strategies as well as their interaction with self-efficacy associated with life satisfaction are needed. Indeed, these strategies, used properly, would be of great help to people in order to experience satisfaction with life. Also, the researchers' disquisition of the present study shows that the interactive effect of self-efficacy and emotion regulation in predicting life satisfaction has not been studied in any of Iranian and foreign studies. Therefore, in the present study, these variables have been put together to answer the question of how self-efficacy will interact with life satisfaction through emotion regulation.

Materials and Methods

The statistical population of this descriptive-correlational study included Iranian adults. Based on the type of statistical method used and calculating 25% of loss and effect size of 0.15 and test power of 0.95 through G-power software, the minimum sample size was determined as 300 people; however, to increase the similarity of the present sample with the target population and to improve the test power and increase the generalizability of the results, 402 people were selected as samples by the convenient method. Also, because this study was conducted during the coronavirus outbreak and for the lack of face-to-face access to individuals, sampling was done through an online questionnaire.

Research instruments

A) Demographic Checklist: In this section, personal information was collected from individuals, including gender, age, level of education, marital status, and ways to re-access them, to send research findings.

B) General Self-Efficacy Scale (GSES): Sherer et al. developed this scale in 1982 to measure general self-efficacy (31). This scale has 17 items based on a five-point Likert from "strongly disagree" to "strongly agree". The total score of this scale indicates the level of self-efficacy, which is between 17 and 85, and the average score is 51. If the scores are between 17

and 34, the level of self-efficacy is poor, and if the scores of the questionnaire are between 34 and 51, the level of self-efficacy is moderate, and if the scores are above 51, the level of self-efficacy is very high. There was a negative correlation between the scores of the self-efficacy scale and Rotter's internal-external control scale and a positive correlation between the Marlowe-Crown social scale and the self-efficacy scale (31). In 1993, Woodruff and Kashman confirmed the validity and reliability of this scale. The internal consistency coefficient is 0.83, and for studying the criterion validity, its correlation with "Rotter's internal restraint position" is equal to $r = 0.342$, which is significant at the level of $P < 0.05$ (32). Hayati et al. reported Cronbach's alpha questionnaire as 0.86 (33). In 2007, Asgharnejad et al. evaluated the validity and reliability of this questionnaire in Iran (32).

C) Life Satisfaction Questionnaire or Subjective Well-being Scale (SWLS): Diener et al. developed it to measure the overall judgment of life satisfaction in 1985, and the subject evaluates life satisfaction based on comparing their living conditions with a series of predetermined criteria and standards (34).

This scale has five questions, based on a seven-point Likert from "strongly disagree" (1) to "strongly agree" (7). A total score in the range of 5 to 35 indicates life satisfaction. Diener et al. reported a Cronbach's alpha coefficient of 0.87 and a retest correlation coefficient of 0.82 after two months (34). This scale has also been used in many studies in Iran; for example, Bayani et al. used Cronbach's alpha coefficient to determine the internal consistency, and the coefficient was 0.83. Also, it was calculated as 0.69 through a one-month retest, and this scale had acceptable validity and reliability (35).

D) Difficulties in Emotion Regulation Scale (DERS): The Emotion Regulation Difficulty Questionnaire was designed and validated in 2004 by Gratz and Roemer (36). The initial version of this questionnaire consists of 41 items developed to assess the difficulty in regulating emotion. This questionnaire contains 36 answer pack items based on a five-point Likert scale. Each item has five options, and the respondent must choose one of the sentences that best describes him/her. This questionnaire has six

components: 1- non-acceptance of emotional responses, 2- difficulties engaging in goal-directed behaviors, 3- impulse control difficulties, 4- lack of emotional awareness, 5- limited access to emotional regulation strategies, and 6- lack of emotional clarity (36). Factor analysis showed the existence of 6 factors. The results indicate that this scale has a high internal consistency of 0.93 and all six scales have Cronbach's alpha above 0.80 (36). Also, this questionnaire significantly correlates with the acceptance and practice questionnaire (37). Besharat and Bazazian confirmed the psychometric properties of the Persian version of this scale in clinical and non-clinical samples. Cronbach's alpha coefficients for questions of non-acceptance of emotional responses ranged from 0.73 to 0.88, for difficulties engaging in goal-directed behaviors from 0.72 to 0.89, for difficulty in controlling impulses from 0.75 to 0.90, for limited access to emotion regulation strategies from 0.76 to 0.85, for emotional lack of clarity from 0.70 to 0.90 and the overall scale score from 0.79 to 0.92. These coefficients confirm the internal consistency of this questionnaire. Also, the reliability of retesting this questionnaire for questions of non-acceptance of negative emotions from 0.70 to 0.83, for difficulties engaging in goal-directed behaviors from 0.70 to 0.85, for difficulty in controlling impulses from 0.72 to 0.86, for limited access to emotional regulation strategies from 0.69 to 0.78, for lack of emotional awareness from 0.68 to 0.80, for lack of emotional clarity from 0.73 to 0.85 and the whole scale from 0.71 to 0.87 was obtained (38). The data of the present study were collected from December 2021 to April 2022 among all adults who were interested and volunteered to participate in the research through an online questionnaire (Google form between January and March 2021) under the supervision of professors at Ferdowsi University of Mashhad; while it is not related to dissertation or research under university supervision and is merely research apart from the university.

The inclusion criteria in the study included having a minimum middle school diploma, not having acute medical and psychiatric problems based on the self-declaration of individuals not to use psychiatric medications, and willingness

to participate in the study. On the other hand, exclusion criteria included dissatisfaction with cooperation, psychiatric and physical disorders, and incomplete questionnaires. Therefore, the research link address was sent to the people who expressed their desire and had the necessary criteria to participate in the research and complete the questionnaire whenever they had the opportunity. This questionnaire took an average of 10 to 15 minutes to be answered by the participants. Then the collected information was inserted into statistical software, and descriptive statistical methods including mean, frequency and standard deviation, minimum and maximum score, and Pearson correlation were used to analyze the research data. In addition, route analysis was used to analyze the research hypotheses. Data were analyzed using SPSS software version 26 and AMOS version 24. To maintain the principle of confidentiality, the information obtained from the questionnaires was collected without the names and addresses of the samples so that their identities were preserved and only at the disposal of those involved in this research. Also, gaining the trust and confidence of the individuals to participate in the research and being free to answer the questionnaires were among the other considerations that this study tried to observe.

Results

The demographic characteristics are shown in Table 1.

Table 1. Demographic data of participants

Variables	Frequencies	Percentage
Gender	Male	136
	Female	266
Marital status	Single	297
	Married	105
Education	Lower Diploma and Diploma	113
	Bachelor	203
	Master	70
	Ph.D.	16
Age (Years)	Less than 20	49
	20-30	284
	30-40	46
	40-50	15
	More than 50	8

The number of participants was 402, and the final analysis was performed on this sample. As Table 1 shows, 33.8% of the participants were male, and 66.2% were female. 26.1% of them were married, and 73.9% were single. Most

participants were between 20 and 30 years old (70.6%). The majority of the participants had a Bachelor's degree (50.5%). The matrix of the correlation coefficient of research variables is presented in Table 2.

Table 2. Correlation coefficient matrix between variables

	1	2	3	4	5	6	7	8	9
1. Self-efficacy (total score)	1								
2. Non-acceptance of emotional responses	-0.30**	1							
3. Difficulty engaging in goal-directed behavior	-0.30**	0.50**	1						
4. Impulse control difficulties	-0.25**	0.63**	0.56**	1					
5. Lack of emotional awareness	-0.29**	-0.01	0.11*	0.15**	1				
6. Limited access to emotion regulation strategies	-0.32**	0.65**	0.64**	0.69**	0.16**	1			
7. Lack of emotional clarity	-0.25**	0.44**	0.31**	0.49**	0.20**	0.46**	1		
8. Difficulties in emotion regulation (total score)	-0.40**	0.79**	0.73**	0.83**	0.34**	0.88**	0.64**	1	
9. Life satisfaction (total score)	0.24**	-0.29**	-0.36**	-0.32**	0.04	-0.44**	-0.21**	-0.40**	1

** $P < 0.01$, * $P < 0.05$

As Table 2 shows, there was a significant negative correlation between life satisfaction and subscales of difficulty in emotion regulation, i.e., non-acceptance of emotional responses ($r = -0.29$), difficulty engaging in goal-directed behavior ($r = -0.36$), impulse control difficulties ($r = -0.32$), limited access to emotion regulation strategies ($r = -0.44$), lack of emotional clarity ($r = -0.21$), and the total score of difficulty in emotion regulating emotion ($r = -0.40$), there is a negative and significant correlation. There is also a positive and significant correlation between self-efficacy and life satisfaction ($r = 0.24$). In addition, there was a significant positive correlation between the total score of emotion dysregulation and self-efficacy ($r = -0.40$). Before presenting the results of route analysis, the assumptions were examined. First, the normality of the univariate distribution was

evaluated by skewness and kurtosis and the assumption of multicollinearity of variables using tolerance statistics and variance inflation factor.

The results showed no multicollinearity between the variables, and the assumption of normality distributed between ± 1 can be said to be valid. Furthermore, the Mahalanobis distance to study the normal distribution of multivariate also indicated the normality of the data distribution. Therefore, route analysis was used. Figure 1 shows the final model, and Table 3 shows the results of the route analysis assumptions. To examine the independence of the residues, the Durbin-Watson statistic was used, the value of which was 0.82. Figure 1 presents the output model mediated the emotion dysregulation in the relationship between self-efficacy and life satisfaction.

Table 3. Results descriptive analysis and the normality of the variables

Variables	Mean	SD	Skewness	Kurtosis	Tolerance statistics	Variance inflation factor
Self-efficacy	45.83	6.84	-0.44	-0.44	0.83	1.19
Non-acceptance of emotional responses	13.58	5.90	0.53	-0.56		
Difficulty engaging in goal-directed behavior	15.06	4.05	0.09	-0.32		
Impulse control difficulties	15.27	4.79	0.32	-0.66		
Lack of emotional awareness	22.08	4.38	-0.69	0.37		
Limited access to emotion regulation strategies	20.33	6.63	0.08	-0.27		
Lack of emotional clarity	14.15	3.21	0.71	0.33		
Difficulties in emotion regulation	100.49	21.10	-0.01	-0.35	0.83	1.19
Life satisfaction	15.44	3.94	-0.005	-0.19	-	-

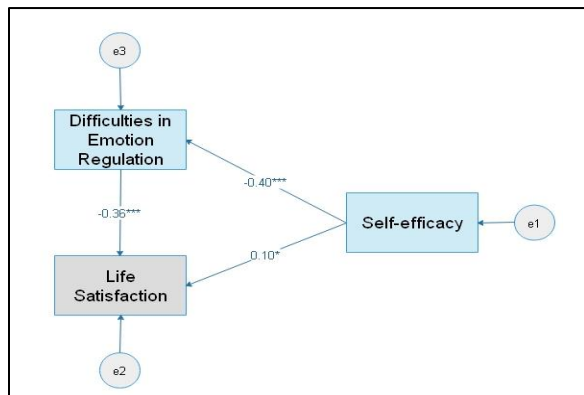


Figure 1. Output model mediated the emotion dysregulation in the relationship between self-efficacy and life satisfaction

All paths were significant at less than $P < 0.001$ and $P < 0.05$. Table 4 shows that the fit indices of the final model include Chi-square /degree of freedom (Chi square/df= 3.84), and the Goodness of Fit-Index (GFI= 0.99), Adjusted Goodness of Fit Index (AGFI= 0.96), Comparative Fit Index (CFI= 0.99), Incremental fit Index (IFI= 0.98), and the Root Mean Square of Error Approximation (RMSEA= 0.08) indicates the optimal fit of the final model. All paths were significant. Therefore, the model in Figure 1 has a good fit. The direct, indirect, and total effects of the paths are presented in Table 5.

Table 4. Fitness indicators of the final model

Fit indices	χ^2	df	χ^2/df	RMSEA	SRMR	GFI	AGFI	IFI	NNFI	CFI	NFI
Acceptable Fit			$3 \leq$	≤ 0.08	≤ 0.08	≥ 0.9	≥ 0.9	≥ 0.9	≥ 0.9	≥ 0.9	≥ 0.9
Model Estimation value	3.84	1	3.84	0.08	0.03	0.99	0.96	0.98	0.94	0.98	0.97

* $P < 0.05$

Table 5. Parameters measuring direct, indirect, and total effects in the model

Paths	Direct	Indirect	Total
Self-efficacy to life satisfaction	0.10*	0.14***	0.24***
Emotion dysregulation to life satisfaction	-0.36***	-	-0.36***
Self-efficacy to difficulties in emotion regulation	-0.40***	-	-0.40***
R2 Difficulties in emotion regulation	0.16		
R2 Life satisfaction	0.17		

* $P < 0.05$, *** $P < 0.001$

As can be seen in Table 5, direct pathways from self-efficacy to life satisfaction ($P < 0.001$, $\beta = 0.10$), difficulty in regulating emotion to life satisfaction ($P < 0.001$, $\beta = -0.36$), self-efficacy with emotion dysregulation ($P < 0.001$, $\beta = -0.40$) were statistically significant. Thus, self-efficacy and difficulty in regulating emotion could predict life satisfaction. Indirect effects were also investigated, showing that self-efficacy positively predicts life satisfaction through emotion dysregulation ($P < 0.001$, $\beta = 0.14$). In other words, with increasing individuals' scores on self-efficacy, their scores in the variable of difficulty in regulating emotion decrease significantly, and following this decrease, life satisfaction scores also increase.

The variables of self-efficacy and difficulty in regulating emotion were able to explain 17% of the variance of life satisfaction, and self-efficacy were able to explain 16% of the variance of

difficulty in regulating emotion. Therefore, according to the theoretical model results, the role of a problematic mediator in emotion regulation in explaining the relationship between self-efficacy and life satisfaction was confirmed with a 95% probability. In other words, difficulty regulating emotion played a significant mediating role in the relationship between self-efficacy and life satisfaction, and part of the variance of self-efficacy was applied to life satisfaction through difficulty in regulating emotion.

Discussion

This study aimed to determine the mediating role of emotion dysregulation in the relationship between self-efficacy and life satisfaction, and as the results are shown, this model has a good fit. The findings show a significant relationship between self-efficacy and difficulties regulating

emotion and life satisfaction. Also, there is a significant positive relationship between emotion dysregulation and life satisfaction. In this study, the variables of self-efficacy and emotion dysregulation could predict life satisfaction directly, and self-efficacy through emotion dysregulation positively predicts life satisfaction.

The results of the present study showed that there is a significant relationship between self-efficacy and life satisfaction. This finding is in alignment with many of the previous studies; for example, the result of a study on 174 immigrants in China, has shown that increasing social self-efficacy helps to start, maintain and develop social relationships and at that rate, individuals who have higher self-efficacy, experience more satisfaction with life and are happier (39). Longitudinal results of Burger's research on the role of perceived stress and self-efficacy on life satisfaction that was conducted on 5126 compulsory-school leavers, using the Pearson correlation method and the data from the Transitions from Education to Employment (TREE) project, also showed that having a basic level of self-efficacy reduces the negative effect of stress on life satisfaction and determines the path to increased life satisfaction in the transition from adolescence to adulthood (40). Also, a study was conducted with a sample of 755 patients with cardiovascular problems by using correlation analysis and the Self-Regulatory Treatment Questionnaire (TSRQ), the Self-Efficacy Scale for Adherence to the Mediterranean Diet (SESAME), and the Life Satisfaction Scale (SWLS), showed that self-efficacy, motivation, and life satisfaction have a positive relationship pattern, such that the results of route analysis showed that with more increase in self-efficacy, an individual becomes more motivated in life and experiences more life satisfaction (16). Another cross-sectional research included 1816 high school students using the Adolescent Stress Scale (ASQ-N), the General Self-Efficacy Scale (GSE), and the Life Satisfaction Scale (SWLS) also showed that although factors such as age, perceived economic status in the family, parents' job status and stressful experiences affect their life satisfaction, self-efficacy with a moderating role that has on educational and interpersonal

stressors is an influential factor in adolescent life satisfaction (41). Also, according to one research conducted on 200 nursing students, which was done in the descriptive-analytical method and by using the Diener life satisfaction and Sherer self-efficacy questionnaire, it can be said that since there is a significant positive relationship between self-efficacy and life satisfaction, self-efficacy training workshops can increase life satisfaction (12).

The results of the present study also showed that emotion dysregulation is related to life satisfaction, and this finding is in alignment with previous research. For example, a study on 407 people aged 18 to 60 years, using the Pearson correlation method and route analysis found that people who were more aware of their emotions and used appropriate emotion regulation strategies had higher life satisfaction (23). Furthermore, more recent studies, of the structural equation model, on a sample of 748 Chinese adults using the Wong Law Emotional Intelligence Scale (WLEIS), Multidimensional Perceived Social Support Scale, and the Life Satisfaction Scale (SWLS) show that there is a positive relationship between cognitive reappraisal and life satisfaction as well as a negative relationship between expressive suppression and life satisfaction, because people with high emotional intelligence may experience greater life satisfaction due to the social and emotional support they receive (42). To clarify this finding, we can say that emotion regulation strategies (cognitive reassessment and expressive suppression) affect individuals' life satisfaction differently. In a way that when they suppress their emotions, they experience more depression and fatigue, less self-esteem and acceptance, and as a result, more distance from others, which leads to less satisfaction with their lives (43).

The results also showed that self-efficacy was associated with emotion dysregulation. This finding of the present research aligns with the results of previous studies. For example, the results of Indregard's two-stage hierarchical regression analysis on 937 samples who were social and health caregivers, through emotion dysregulating, fatigue, mental anxiety, self-efficacy, and control variables questionnaires showed that health and social workers with lower

self-efficacy beliefs were more sensitive to the degree of emotional maladaptation and experienced higher levels of burnout and mental distress (44).

Furthermore, the results of three questionnaires of Academic Emotion Questionnaire (AEQ), metacognitive learning strategies, and academic self-efficacy questionnaire, filled out by 279 students, in structural relationship modeling show that students' self-efficacy affects their learning-related emotions, metacognitive learning strategies, and students' academic performance, so it can be expected that when students believe in their ability to perform their duties successfully, they will enjoy the learning process better and experience more satisfaction. So, it is rational that they experience more emotions such as hope and pride than those students with low self-efficacy (45). Other studies suggest that self-efficacy in emotion regulation can explain up to 35% of the changes in emotional levels such as depression, anxiety, and stress. Therefore improving self-efficacy has a particular role in regulating emotions such as anxiety and stress. Emotion regulations of these kinds, being self-efficient, increase people's well-being by 43% because self-efficacy increases positive emotions, a meaningful sense of life, and well-being by regulating emotions such as frustration and positive effects related to improving interactions and success (46). However, the important finding of the present study was the mediating role of emotion dysregulation in the relationship between self-efficacy and life satisfaction. It can be explained that since emotion dysregulation is associated with life dissatisfaction (43) and also high self-efficacy in individuals can be a good predictor of both high emotion regulation (26) and life satisfaction (13); when the level of self-efficacy increases, the emotional dysregulation decreases and as a result of the interaction of the two, the level of life satisfaction will increase.

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Also, as research has shown, individuals' self-efficacy beliefs can affect their mental health (such as reduced life satisfaction) by regulating avoidance-based emotions (47). Its limitations should always be considered to generalize the findings of this research. One of the limitations was the increasing prevalence of coronavirus in Iran; thus, the researchers were forced to conduct electronic questionnaires. As a result, people who did not have access to the Internet were not included in the study. Another limitation was the use of self-reporting tools, which always raises the concern about the level of honesty and accuracy in responses, as there is a possibility of bias in this situation. The results of the present study which indicated the significant relationship between self-efficacy and emotion dysregulation and the interactive role of these two variables in predicting life satisfaction are worth considering and require more extensive research.

Conclusion

The present study predicts life satisfaction by showing the mediating role of emotion dysregulation in self-efficacy. Therefore, interventions based on introducing programs to increase people's self-efficacy as well as informing them about the use of adaptive emotion management strategies in their lives and the positive results they will bring about, related to increasing their life satisfaction. They can be used as prevention programs to help people overcome the overall dissatisfaction experienced in life.

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