

Original Article

# The Mediating Role of Emotion Regulation within the Relationship between Neuroticism and Participation Motivation

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**Abstract:** In this research, we investigated the mediating role of emotion regulation within the relationship between neuroticism and participation motivation. In this cross-sectional study, a total of 261 employees (98 males age<sub>range</sub> = 18-60 years) belonging to Iran Oil Company participated and completed questionnaires of big five factors of personality (Costa and McGree, 1989), cognitive emotion regulation (Garnowski and Craig, 2006) and participation motivation (Gill et al., 1983). Data were analyzed by structural equation modeling. The results indicate that neuroticism has indirect effects on participation motivation through adaptive emotion regulation and maladaptive emotion regulation strategies. The results suggest that emotion regulation strategies may be a significant mediator in the neuroticism- participation motivation link. One's difficulty in regulating emotions might be an underlying mechanism through which high neuroticism decreases the participation motivation and health behavior. The study implies that the assessment of emotion regulation strategies should be included in interventional programs aimed at achieving employees' sport participation.

**Keywords:** Emotion Regulation, Personality Traits, Sport Participation, Well-being;

## 1. Introduction

The industrialization of societies and consequently the lack of mobility and homogeneity in individuals have made the need for sports more apparent than before (Sachs, 2018). Promoting physical activity-based behaviors, including exercise, has become a global priority for health promotion and disease prevention (WHO, 2019). There is currently relatively good evidence of the benefits of exercise and the negative effects of physical inactivity (Anderson and Dorstein, 2019; Sachs, 2018). However, international and regional recommendations on physical activity behavior around the world are not well followed and the burden of inactivity is high (Sachs, 2018; World Health Organization, 2019). Therefore, it is very important to improve our understanding of how to promote acceptance and maintain physical activity. Participation motivations have been shown to be an important factor in understanding physical activity behavior (Walrand, 2007); and participation motivations refer to the content of the mental goal of sport and sport participation (Lee, 2020).

People have multiple motivations to participate in sports and training, which are different in championship and recreational sports (Molanorozi et al., 2015; Zandi and Mohebbi, 2016). Gill et al. (1983) identified progress/power grab, group orientation, health, energy depletion, situational factors, skills, friendships, and hedonism as the most important motivations for participating in sports. In addition, in the field of practice behavior, studies indicate that individuals practice to get rid of negative emotions and experience positive emotions (Bernstein et al., 2019; Zarei et al., 2021; Mohebbi and Zarei, 2021). Studies have shown that the motivation to participate in sports and training is a function of individual factors such as personality type (Bahrapour et al., 2022). Thus, the Neuroticism type may be the basis of individual differences in the motivational orientation of individuals.

Costa and McCray (2014) define neuroticism as an individual's response to a negative mood experience. Neuroticism is one of the five factors in the theory of five personality factors that is constant throughout life and includes six characteristics of anxiety, hostility, depression, self-awareness, impulsivity and vulnerability. This factor reflects individual differences in anxiety, depression, shame, anger, worry, and insecurity (Costa et al., 2019). Neuroticism is the exact opposite of emotional stability and implies the experience of negative emotions (Costa and McCree 1989). Among the high-level pathogens proposed through hierarchical

models, this factor is an important predictor of anxiety and depression (Kotov et al., 2007; Costa et al., 2019). In the field of sports, studies have shown that low neuroticism predicts the success of elite athletes (Piepiora, 2021; Zandi and Mohebbi, 2016). Regarding the relationship between this trait and the type of choice and participation in sports, it has been determined that people who participate in team sports are less likely to have neuroticism.

Impulsivity (a hallmark of neuroticism) is an important predictor of participation in high-risk, solitary sports (McEwan et al., 2019). Smith et al. (2017) showed that among the different personality factors, only neuroticism differed among different exercise groups. Kekäläinen et al. (2020) showed that neuroticism was negatively related to leisure physical activity in middle-aged women, but this result was not observed in older women. In another study, Sokhtezari et al. (2020) showed that athletes had less neuroticism than non-athletes. However, Safari et al. (2019) showed that neuroticism is a positive predictor of sports participation motivation in students. In the study of Box et al. (2019), no relationship was observed between neuroticism and behavioral settings in exercise. While neuroticism seems to be associated with sports participation, there is surprisingly little understanding of its underlying mechanisms (mediators) and one of the suggested pathways is from cognitive emotion regulation.

Emotion regulation refers to the ability to manage emotions and strategies that are used to reduce, increase, or maintain emotional experiences in a variety of situations (McRae and Gross, 2020). Emotion regulation involves adaptive cognitive strategies (focus on planning, acceptance, perspective development, positive refocus, and positive reassessment) and non-adaptive ones (self-blame, other blame, chewing, and magnification), each with its own consequences on emotion and behavior (Mohebbi et al., 2021). Beedie, Lane (2012) state that emotions motivate the individual to act and emotion regulation plays a central role in motivational and functional processes. Sukys et al. (2019) also state that high capacity in processing and regulating emotion is directly correlated with motivation to participate in sports.

In addition, Tamminen et al. (2016; 2021) showed that effective emotion regulation is associated with skill motivation, group orientation, pleasure, and sports commitment. Studies also show the predictive role of emotion regulation in athletes' performance at different skill levels (Ghadiri and Salehian, 2019; Maghsoudi et al., 2018). Inefficient emotion regulation, on the other hand, is associated with poor performance, an unfavorable motivational



atmosphere, and the experience of negative emotions (Robazza et al., 2022). Liu et al. (2020) in their study of motivational factors in sports activities showed that compared to those who enrolled in optional physical education class, those who did not enroll, had more social concerns, more dysfunctional emotion regulation and fewer positive emotions.

Kim and James (2019) in their study showed that compared to sedentary people, people who do physical activity in their spare time reported fewer negative emotions. In addition, studies have shown the mediating role of emotion regulation in increasing positive happiness emotion (one of the important indicators of participation motivation) (Cece et al., 2021; Mohebbi et al., 2021).

Regarding the relationship between neuroticism and emotion regulation, Muris et al. (2005) believe that people with a high score on the neuroticism scale tend to experience negative emotions which predispose them to repetitive and annoying cognitions to experience negative states. However, Mohebbi and Zarei (2019) showed that re-evaluation is an important cognitive strategy in reducing athletes' negative emotions. The results of a study on athletes showed that emotional stability has a positive correlation with effective emotion regulation strategies (tolerance and moderation), while neuroticism has a negative correlation with emotion tolerance strategy (Klatt et al., 2021). On the other hand, non-cognitive strategies such as emotional inhibition have been positively correlated with the characteristics of neuroticism (Siyaguna et al., 2019), and also it has been associated with motivational settings and poor performance in athletes (Wagstaff, 2014; Mohebbi et al., 2017). Likewise, neuroticism can weaken the adaptive cognitive strategy and prevent the person from adapting optimally and achieving positive results from sports participation. On the other hand, the higher the emotional stability, emotion regulation and motivation, the more likely a person is to achieve high levels of success (Pipiora, Et al., 2022; Zandi and Mohebbi, 2016; Mohebbi et al., 2016; Hallaji et al., 2018). Studies show that neuroticism is less associated with poor self-regulation and goal pursuit and team cohesion (Aeron, & Pathak, 2012; Bipp, & Kleinbeck, 2011; Robinson et al., 2010). Consequently, emotion regulation processes can be assumed to provide more information to understand how the neurotic trait interacts with participation motivation.

While the theoretical framework and results of previous studies suggest a potential link between neuroticism, emotion regulation, and participation motivation, the role of these three factors in a structural model has not yet been tested. Also, research evidence suggests emotion regulation as an

underlying mechanism that can demonstrate how neuroticism can affect the motivational orientation of people. Subsequently, testing the mediating role of emotion regulation in the neuropsychology-participation motivation model can play an important role in resolving the existing ambiguities and improve the understanding predictions of employee participation motivation that face inactivity problems due to long working hours (Chatripour et al., 2021; Momenan et al., 2012).

On the other hand, improving sports participation can lead to job satisfaction and productivity in this group by promoting physical and psychological health (Vafaei Najar et al., 2017; Panahi et al., 2020). Although employee sports participation is a concern (e.g., Baldi et al., 2020; 2021; Asareh et al., 2018), the lack of sufficient evidence on the effect of neuroticism and emotion regulation on employee participation motivation has led to no serious action in this regard. Therefore, the present study aims to investigate the effect of neuroticism and emotion regulation on employees' sports participation and tries to answer the questions whether emotion regulation strategies play a mediating role in relation to neuroticism and motivation of employees' sports participation?

## 2. Methods

The statistical population of this study included all employees of the oil company in Tehran, Iran, from which 261 employments (98 male; age<sub>range</sub> = 18-60 years) were selected by the convenience sampling method. In the study, due to the limitations of the coronary disease epidemic, data were directed to a URL where they could complete the questionnaire pack. after the coordination with the managers of the oil company the URL was distributed via e-mail, Telegram, and WhatsApp to the company's employees. Participants were informed about the aim of the study, and confidentiality, they gave their consent to participate in the study by checking the box that they accepted the consent form on the first page of the survey. Participants voluntarily answered a set of questionnaires that took approximately 20 min to complete. Ethical approval was provided by the Borujerd University Ethics Committee (ID= Ir. IAU.B. REC.1399.057).

Data were analyzed by using SPSS (version 24.0; IBM Corp., Armonk, NY) and AMOS (version 24.0; IBM Corp., Meadville, PA). Descriptive statistics were computed for all measures assessed. To evaluate the internal consistency of NEO Five-Factor Inventory, Cognitive Emotion Regulation Questionnaire, and Sports Participation Motivation Questionnaire, Cronbach's alpha coefficients were also examined. Intercorrelations were computed



among all variables, and structural equation modeling was conducted to examine a mediation model. All statistical significance levels ( $\alpha$ ) were set to .05.

## 2-1. Instruments

### 2-1-1. Personality inventory

To assess neuroticism trait, participants completed the Farsi version (Garousi et al., 2001) of the short form of the of NEO Five-Factor Inventory (NEO-FFI; Costa and McGree, 1989). The NEO-FFI is a 60-item that provides a quick, reliable, and accurate measure of the five domains of personality (Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness). We employed the neuroticism factor in the present study. Typical items for this factor are: "When I am under the pressure of very difficult situations, I sometimes feel like I'm going to collapse." and "I often feel inferior than others.". Items are scored on a 5-point Likert scale ranging from 0 ("strongly disagree") to 4 ("strongly agree"), with higher sum scores reflecting higher neuroticism. The construct validity and reliability of this inventory (Farsi version) have been confirmed in the Iranian population ( $\alpha > 0.86$ ; Garousi et al., 2001). Internal consistency coefficients in this study were high ( $\alpha = 0.94$ ).

### 2-1-2. Emotion Regulation Questionnaire

To assess cognitive emotion regulation, participants completed the Farsi version (Besharat and Bazzazian, 2014) of the short form of the Cognitive Emotion Regulation Questionnaire (CERQ-S; Garnefski et al., 2006). The CERQ-S is a 18 item selfreport measure of cognitive emotion regulation strategies used when responding to a stressful life event. There are nine two-item subscales with five of them assessing maladaptive (i.e., Self-blame, Other-blame, Rumination, and Catastrophizing) and adaptive (Putting into Perspective, Positive Refocusing, Acceptance, Planning, and Positive reappraisal) regulatory responses. Participants rate how often

statements apply to them on a 5-point Likert scale ranging from 1 "almost never", to 5 "almost always". Typical items for this factor are: "I feel that I am the one to blame for it." and "I think of pleasant things that have nothing to do with it". The construct validity and reliability of this questionnaire (Farsi version) have been confirmed in the Iranian population ( $\alpha > 0.70$ ; Besharat and Bazzazian, 2014). Internal consistency coefficients in this study were high (adaptive strategies:  $\alpha = 0.96$ ; maladaptive strategies:  $\alpha = 0.92$ ).

### 2-1-2. Sports Participation Motivation Questionnaire

To assess sport participation motivation, participants completed the Farsi version (Shafizadeh, 2007) of the Participation Motivation Questionnaire (PMQ; Gill et al., 1983)- a 30-item list of possible reasons employments have to participate in sport. A 5-point Likert scale was used. Respondents answered the stem "I participate in sport because ...", indicating their preferences from 1 ("not at all important") to 5 ("extremely important"). All items were enunciated so that to greater numerical answer, greater degree of motives. Results of the factor analysis of the PMQ revealed the factors of achievement/status, team atmosphere, fitness, energy release, skill development, friendship and fun as basic motives for involvement (Gill et al., 1983). Typical items for this questionnaire are: "I like the teamwork."; "I like to compete" and "I like being on a team". The construct validity and reliability of the Farsi version have been confirmed in the Iranian population ( $\alpha > 0.70$ ; and Bazzazian, 2014). Internal consistency coefficients in this study were high ( $\alpha = 0.99$ ).

## 3. Results

The employee sociodemographic profile is shown in Table 1. Most of employees were female (62.4%) and married (63.7%). The majority of employees has more than 10 years in the field (60%). The majority of employees has more than 36 years in the field (62%).



**Table 1.** Descriptive statistical overview of sociodemographic characteristics in participants

Variable	Group	<i>n</i>	%
Gender	Male	98	37.6
	Female	163	62.4
Marital status	Single	95	36.3
	Married	166	63.7
Age	18-25	47	18.1
	26-35	38	14.7
	36-45	82	31.3
	46-55	72	27.4
	>56	22	8.5
Educational level	High school	33	12.2
	Associate DegreeAA	163	37.6
	Bachelor	97	37.1
	MSc	70	26.6
	Ph.D.	21	12.4
Work experience (years)	<5	74	28.2
	5-10	29	11.3
	11-15	44	16.9
	16-20	39	14.9
	21-55	39	14.9
	>26	36	13.7

Notes MSc= Master of Science; Ph.D.=Doctor of Philosophy

The data were examined for missing values, univariate, and multivariate outliers prior to the main analyses. No missing values and outliers were found ( $Z < 3.29$ ). Both the skewness ( $< \pm 1$ ) and kurtosis ( $< \pm 1$ ) values of all scales indicated the data were approximately normally distributed (Hair et al., 2010). However, we identified four multivariate outliers (i.e., using a  $p < .001$  criterion for Mahalanobis  $D^2$ ). We deleted these four cases because outliers can have a significant impact on the outcomes of a Structural Equation Model (SEM) analysis (Zarei et al., 2022) thereby leaving 257 participants for the main analyses.

Before analyzing mediation, a Pearson correlation analysis was run to examine the relationships

between the variables (see Table 2). Neuroticism evidenced positive correlations with the maladaptive cognitive emotion regulation ( $r = 0.80$ ), and negative correlations with maladaptive cognitive emotion regulation ( $r = 0.79$ ) and participant motivation ( $r = -0.79$ ). Adaptive cognitive emotion regulation evidenced positive correlations with the participant motivation ( $r = 0.80$ ), and negative correlations with participant motivation ( $r = 0.85$ ). Descriptive statistics of each measured variable, such as means, SDs, minimum, and maximum are presented in Table 2. All scales presented acceptable reliability (Cronbach's  $\alpha \geq .70$ ).





**Table 2.** Descriptive Statistics of Study Sample (n = 257)

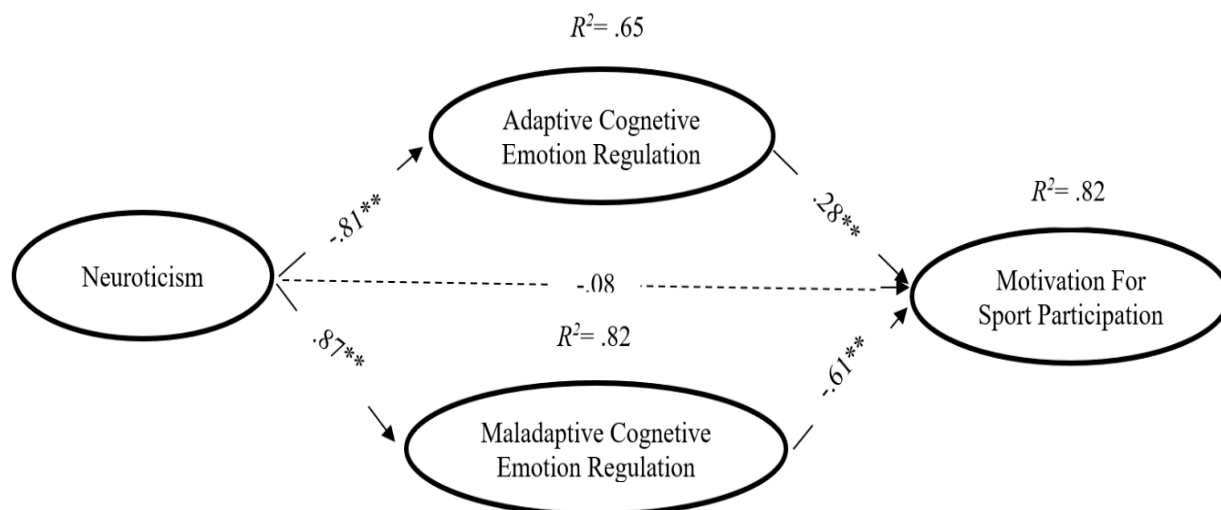
Variable	1	2	3	4
Neuroticism	1			
ACER	-.75**	1		
MCER	.80**	-.77**	1	
MSP	-.79	.79**	-.85**	1
Range	0-42	13-49	9-39	41-150
M	20.32	35.04	23.04	102.18
SD	10.28	9.87	8.73	33.21
$\alpha$	.94	.96	.92	.99

Note: ACER: Adaptive cognitive emotion regulation, MCER: maladaptive cognitive emotion regulation, PM: Participant Motivation, M: Mean, SD: Standard Deviation. \*\* $P \leq .001$

The model tested in the present study was composed of four latent variables: one exogenous variable (neuroticism) and three endogenous variables (adaptive/maladaptive emotion regulation, and participation motivation). The Structural Equation Model (SEM) testing the relations between neuroticism, adaptive cognitive emotion regulation, maladaptive cognitive emotion regulation, and participant motivation explained 82% of variance in participant motivation. In the relationship between

neuroticism and sports participation motivation, adaptive and maladaptive emotion regulation with coefficients of -0.21 and -0.53, respectively, had a perfect mediating role. All coefficients are significant at the level of 0.001. In sum the total effect of neuroticism on participation motivation was negative and very significant ( $\beta = -0.83$ ,  $p < 0.001$ ).

The model fit was good as indicated by a *RMSEA* of 0.05, 95%, a *CFI* of 0.93, a *IFI* of 0.93, and a *TLI* of 0.92. The  $\chi^2/df$  ratio was 1.76.

**Figure 1.** Structural equation model of the accepted model

Note: Continuous lines indicate significant predictions. \*\*  $P < 0.001$

#### 4. Discussion

The aim of this study was to investigate the mediating role of emotion regulation strategies in relation to neuroticism and employee motivation. To achieve this goal, based on theoretical and experimental literature, a conceptual model was proposed and tested using path analysis. The results of path analysis showed that the proposed model was able to significantly explain 82% of the variance of sports participation motivation. Thus, neuroticism

has an indirect effect on the motivation to participate, which was created by emotion regulation strategies. The results indicate that the dynamics and how the motivation of sports participation is formed among employees can be described based on the structural relationships between variables such as neuroticism and adaptive and maladaptive emotion regulation, meaning that the relationships of these variables can be better examined through the current research model.



Thus, the association of neuroticism with the motivation to participate in sports is not just a simple linear relationship, but also emotion regulation strategies play an important role in this regard. In other words, neuroticism reduces the motivation to participate in sports by increasing maladaptive emotion regulation as well as reducing adaptive emotion regulation. Although this finding is consistent with the results of studies (Pipura et al., 2022; Mohebbi et al., 2016) and inconsistent with the results of studies (McEwan et al., 2019; Safari et al., 2019), the reasons for this discrepancy may be that the sample studied by McEwan et al. (2019) were professional athletes and only impulsivity (a sub-factor of neuroticism) was examined.

In addition, in the present study, the mediating role of emotion regulation strategies has been tested. By adopting maladaptive emotion regulation strategies, it seems that people are constantly engaged in negative and non-constructive thoughts (about themselves, others, and situations) (Morris et al., 2005; Czarna et al., 2021) and also magnifying stressors and challenging situations and they experience a lot of negative emotions and interpersonal problems (Saeed et al., 2018; Yang et al., 2015). This may explain why neurotic people often lack emotional stability and are more easily influenced by environmental factors. By adopting inappropriate emotion management strategies, these people easily become vulnerable in stressful situations and experience negative emotions. This makes the sports environment unpleasant for them, as well as making the environment unfavorable for others.

In addition, in difficult sporting situations (such as functional errors) that involve shifting one's responsibility to external factors (Martin-Krumm et al., 2013), neuroticism may lead to interpersonal conflicts by stimulating thoughts with other content of blame (Irvin and Patack, 2012) and because these people do not accept their role in the negative event, they do not have the motivation to resolve conflicts and cultivate skills. The perspective strategy also strengthens the ability to adopt a new perspective on stressful situations (Garnowski and Craig, 2006). However, the neurotic has a negative evaluation of the environment (Poppelaars et al., 2019) and this may prevent him from adjusting to stressful situations and motivating him to progress. The neurotic person often experiences high levels of anxiety and worry (Altamura et al., 2019), while reassessment is a cognitive reconstruction process in

which the person focuses on the positive aspects of the situation and experiences positive emotions in stressful situations (Nowlan et al., 2015), therefore, neuroticism may activate the vulnerability of the individual to perceive exercise as threatening and unsafe instead of perceiving exercise as a suitable context for energy depletion. Neurotic people are also self-centered and have negative self-assessment (Uziel et al., 2020; Costa et al., 2020) while positive refocusing refers to focusing on the situation; therefore, instead of focusing on positive situations associated with positive emotional experiences (such as pride and happiness), neuroticism stimulates negative emotion of shame and embarrassment by limiting self-attention (Zarei et al., 2018).

In addition, these individuals do not succeed in group situations with social evaluation (Susnowska et al., 2010). Finally, in line with the results of studies (Bipp, & Kleinbeck, 2011), the impulsivity of the neurotic person prevents him/her from focusing on planning to solve problems that arise in skills development or even in relation to others. Therefore, skills training or group communication, which is a regular, planning process, may not be well pursued. Due to this, lack of motivation for sports participation in people with this type of personality trait is to be expected. The present study demonstrates the role of personality in sports behavior and especially the important role of individual differences in employee participation motivation. In addition, by examining the underlying processes of the link between neuroticism and participation motivation, it provides preliminary evidence that this personality factor predicts participation motivation in this group through emotion regulation processes. However, this study is cross-sectional and its results may not indicate accurate mediation between variables over time, so longitudinal studies are needed for further support. In addition, to infer causally from the results of this study, it is necessary that future studies use experimental designs. For example, trainings in the field of emotion regulation of employees should be done to determine to what extent optimizing emotion regulation facilitates their sports participation. Also in the present study, emotion regulation strategies were studied as adaptive and maladaptive strategies, so it is not clear which emotion regulation strategy each psychiatric agent uses to reduce sports participation and adaptation to sports situations.



## 5. Conclusion

Further studies in this field are necessary, in addition to examining other models of emotion regulation (e.g., Gross and Joon, 2002 process model), to contribute to a more comprehensive understanding of how personality traits interact with emotion regulation, and sports participation motivation. Finally, the sample size in this study was employees, which limits the generalization of the results to other communities. In order to better understand and generalize the results, it is necessary that further studies examine the model of this research in different samples. Overall, the appropriate fit of the model tested in the present study showed that the neuroticism factor indirectly has a large effect on participation motivation, which means that inefficiency in emotion regulation can show why

Neurotic people are less motivated to participate in sports or vice versa why this factor has no direct connection with sport motivation. Therefore, paying attention to the trait of neuroticism and teaching optimal emotion regulation skills can be important in selecting employees and maximizing their sports participation to reduce the likelihood of their resignation and ultimately have positive physical, psychological and social consequences.

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**Conflicts of Interest:** The authors declare that they have no competing interest.

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## نقش میانجی تنظیم هیجان در رابطه روان رنجوری و انگیزه مشارکت ورزشی

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**چکیده:** در این پژوهش نقش میانجی تنظیم هیجان در رابطه روان رنجورخویی و انگیزه مشارکت ورزشی بررسی شد. در این مطالعه مقطعی، ۲۶۱ نفر (۹۸ نفر مرد، رده سنی ۶۰-۱۸ سال) از کارکنان شرکت نفت ایران شرکت کردند و پرسشنامه های پرسشنامه های پنج عاملی بزرگ شخصیت (کاستا و مکگری، ۱۹۸۹)، تنظیم شناختی هیجان (گارفنسکی و کرایچ، ۲۰۰۶) و انگیزه مشارکت ورزشی (گیل و همکاران، ۱۹۸۳) را تکمیل کردند. داده ها با استفاده از مدل سازی معادلات ساختاری تجزیه و تحلیل شد. نتایج حاکی از آن است که روان رنجورخویی از طریق راهبردهای تنظیم هیجان سازگار و راهبردهای تنظیم هیجان ناسازگار بر انگیزه مشارکت تأثیر غیرمستقیم دارد. نتایج نشان می دهد که راهبردهای تنظیم هیجان ممکن است میانجی مهمی در ارتباط روان رنجورخویی - انگیزه مشارکت ورزشی داشته باشد. دشواری فرد در تنظیم هیجان ها ممکن است مکانیزم مهمی باشد که از طریق آن روان رنجوری بالا، انگیزه مشارکت ورزشی و رفتار سلامتی را کاهش می دهد. این مطالعه نشان می دهد که ارزیابی راهبردهای تنظیم هیجان باید در برنامه های آموزشی با هدف دستیابی بهینه به مشارکت ورزشی کارکنان گنجانده شود.

**واژه های کلیدی:** تنظیم هیجان؛ صفات شخصیتی؛ مشارکت ورزشی؛ بهزیستی؛

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این نماد به معنای مجوز استفاده از اثر با دو شرط است یکی استناد به نویسنده و دیگری استفاده برای مقاصد غیرتجاری.