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Modeling the Relationship of Need-Supportive and Need-Thwarting Behaviors with Subjective Vitality among Iraqi and Iranian Athletes: The Mediating Role of Psychological Well-Being

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A B S T R A C T

Objective: This study aimed to model the relationships of need-supportive and need-thwarting behaviors with subjective vitality among Iraqi and Iranian athletes, considering the mediating role of psychological well-being.

Methods and Materials: This applied quantitative study employed a correlational structural equation modeling design. The participants were 148 volleyball players from Karbala, Iraq, and Tabriz, Iran, selected through purposive and convenience sampling. Data were collected using questionnaires assessing basic need satisfaction in sport, basic need thwarting in sport, psychological well-being, and subjective vitality. Data were analyzed using structural equation modeling, the Sobel test, and independent-samples t-tests in SPSS version 23 and SmartPLS version 3.1.1. The significance level was set at .05.

Findings: Need-supportive behavior had significant positive relationships with subjective vitality and psychological well-being, whereas need-thwarting behavior had significant negative relationships with both variables ($p < .05$). Psychological well-being was positively and significantly associated with subjective vitality ($p = .001$). Moreover, psychological well-being significantly mediated the relationship between need-supportive behavior and subjective vitality by strengthening this positive association, while it mediated the relationship between need-thwarting behavior and subjective vitality by reducing its adverse association ($p = .001$). Independent-samples t-test results showed no significant differences between Iraqi and Iranian athletes in need-supportive behaviors, subjective vitality, or psychological well-being ($p > .05$).

Conclusion: The findings indicate that athletes' subjective vitality is closely associated with the extent to which their basic psychological needs are supported or thwarted, both directly and indirectly through psychological well-being. Therefore, volleyball training environments should emphasize the satisfaction of athletes' basic psychological needs while fostering positive psychological functioning, positive

thinking, and constructive interpersonal relationships to promote greater psychological well-being and subjective vitality.
Keywords: *Need Support, Need Thwarting, Subjective Vitality, Psychological Well-Being, Athletes, Volleyball.*

1. Introduction

Athletic performance is shaped not only by physical preparation, technical competence, and tactical proficiency but also by psychological processes that influence how athletes interpret training demands, interpersonal interactions, success, failure, and competitive pressure. Contemporary sport psychology increasingly emphasizes mental well-being as a central component of sustainable performance, particularly because athletes may experience substantial stress associated with evaluation, competition, injury risk, selection uncertainty, and expectations from coaches, teammates, families, and sporting organizations. Psychological well-being is therefore no longer viewed merely as the absence of psychological distress; rather, it is recognized as a multidimensional condition that contributes to effective functioning, persistence, adaptive coping, and optimal engagement in sport. Recent evidence has further highlighted the importance of targeted psychological interventions for protecting and enhancing the mental well-being of athletes, especially at higher levels of competition where performance demands are intensified (Wang et al., 2025). The growing attention to athlete mental health has consequently encouraged researchers to identify the motivational and interpersonal mechanisms through which sport environments may either promote or undermine positive psychological functioning.

One of the most influential theoretical frameworks for explaining motivation and well-being in sport is self-determination theory. This theory proposes that the quality of human motivation and psychological functioning depends substantially on the extent to which three basic psychological needs—autonomy, competence, and relatedness—are satisfied or thwarted (Deci & Ryan, 2012). Autonomy refers to experiencing one's actions as volitional and self-endorsed, competence concerns feeling effective and capable of meeting environmental challenges, and relatedness reflects experiencing meaningful connection, acceptance, and belonging with others. Satisfaction of these needs is considered essential for optimal development, psychological integration, intrinsic motivation, and well-being. In contrast, persistent obstruction or active frustration of these needs can contribute to controlled motivation, disengagement, emotional difficulties, and maladaptive behavioral outcomes. Thus, the motivational climate surrounding athletes is particularly important because coaches, trainers, and other influential figures can either facilitate basic psychological need satisfaction or create conditions that undermine these needs.

Need-supportive behavior represents interpersonal conduct that facilitates athletes' experiences of autonomy, competence, and relatedness. In sport settings, such behavior can include providing meaningful choices, acknowledging athletes' perspectives, offering constructive informational feedback, explaining the rationale for training activities, demonstrating respect, promoting mastery, and creating a sense of interpersonal involvement. These behaviors are likely to increase athletes' perceptions that they have control over their participation, are capable of achieving valued goals, and belong within the sporting environment. Research on athlete engagement has shown that positive motivational experiences are closely related to confidence, dedication, vigor, and enthusiasm in sport (Lonsdale et al., 2007). Accordingly, need-supportive sporting environments may have implications beyond immediate motivation, contributing to broader indicators of psychological adjustment and adaptive functioning.

The beneficial effects of need support have also been demonstrated in exercise and physical activity contexts beyond competitive sport. For example, an autonomy-supportive exercise instructional style has been shown to contribute to favorable motivational outcomes, greater psychological well-being, and more consistent exercise participation (Moustaka et al., 2012). Similarly, motivational processes based on self-determination theory have been linked with well-being in rehabilitation contexts, suggesting that supporting basic psychological needs can promote more adaptive emotional and behavioral responses even among individuals facing substantial health-related challenges (Rahman et al., 2015). These findings reinforce the proposition that need-supportive environments are not merely motivationally desirable but may constitute a significant psychological resource for maintaining well-being across diverse forms of physical activity.

In contrast to need support, need-thwarting behavior involves interpersonal actions that actively obstruct autonomy, competence, or relatedness. Such behaviors may include controlling language, coercive pressure, excessive criticism, conditional regard, rejection, intimidation, or

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practices that make athletes feel ineffective, powerless, or socially excluded. The distinction between low need support and active need thwarting is important. A sporting environment may fail to adequately support an athlete without necessarily frustrating basic needs; however, when coaches or other influential individuals behave in ways that directly undermine these needs, more severe psychological consequences may emerge. Bartholomew et al. conceptualized psychological need thwarting as the "darker side" of the athletic experience and demonstrated that the frustration of basic needs is associated with maladaptive outcomes in sport (Bartholomew et al., 2011). This perspective is highly relevant to competitive environments in which authoritarian coaching, performance pressure, or punitive motivational strategies may remain common.

Evidence from adolescent sport also indicates that satisfaction and thwarting of basic psychological needs are linked with motivational quality, affective responses, and behavioral intentions. In educational sport environments, need satisfaction has been associated with more autonomous motivation and favorable affective outcomes, whereas need thwarting has been related to less adaptive motivational experiences (Ahmadi & Eskandarnejad, 2021). Similarly, research on high school student-athletes has demonstrated significant associations between basic psychological needs and mental health, while also suggesting that these relationships may vary according to individual characteristics such as gender (Turgeon et al., 2024). Such findings imply that the consequences of need-related experiences extend beyond athletic participation itself and are closely connected with broader mental health and well-being.

Studies conducted among athletes have further supported the mediating role of self-determination-related processes in the relationship between personality or motivational factors and important sporting outcomes. Research among athletes has shown that self-determination processes are relevant to explaining the relationships among perfectionism, burnout, and engagement (Samienia et al., 2019). Comparable findings have been reported among elite athletes with physical disabilities, suggesting that basic psychological need processes remain important across different athlete populations and may influence both positive engagement and maladaptive outcomes (Samienia et al., 2022). These studies indicate that need-related experiences may operate as mechanisms through which the sporting environment and individual dispositions ultimately shape athletes' psychological functioning.

Psychological well-being is one of the most important potential outcomes of a supportive motivational environment. Ryff's multidimensional conceptualization defines psychological well-being through six major dimensions: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance (Ryff & Singer, 2006). This eudaimonic perspective emphasizes positive functioning and the realization of human potential rather than simply positive mood or life satisfaction. An individual with high psychological well-being is therefore characterized not only by pleasant emotional experiences but also by effective environmental management, meaningful goals, positive interpersonal relationships, self-respect, personal development, and the capacity to function autonomously.

This multidimensional conception is especially relevant to sport because athletes constantly encounter situations requiring self-regulation, persistence, adaptation, interpersonal cooperation, and personal development. Psychological well-being may enable athletes to interpret competitive demands as manageable challenges rather than overwhelming threats, maintain constructive relationships with coaches and teammates, preserve a sense of purpose, and integrate both success and failure into a coherent developmental process. Research has demonstrated that psychological well-being can be predicted by psychosocial resources such as self-efficacy, psychological hardiness, and perceived social support (Najd et al., 2014). These findings suggest that well-being is responsive to both intrapersonal and interpersonal resources and may therefore be strongly influenced by the motivational atmosphere in sport.

Intervention studies also demonstrate that psychological well-being can be enhanced through structured psychological and behavioral programs. Positive psychology and Gestalt-based group counseling have been shown to improve psychological well-being among individuals experiencing serious health-related stressors (Dustkafi et al., 2019). Exercise interventions have also been associated with favorable psychological outcomes. For instance, workplace exercise programs may improve both physical and mental health (Gerodimos et al., 2022), while physical exercise has been linked with higher psychological well-being among young adults (Granero-Jiménez et al., 2022). Likewise, mind-body exercise such as Tai Chi has demonstrated beneficial effects on psychological well-being in adults with cardiovascular disease (Taylor-Piliae & Finley, 2020). Collectively, these findings underscore the

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responsiveness of psychological well-being to both psychosocial and physical activity-related conditions.

The connection between physical activity and mental well-being is also supported by research conducted following the COVID-19 pandemic. Physical activity has been associated with mental well-being through psychological mechanisms including self-compassion and self-esteem (Wong et al., 2023). This reinforces the view that participation in physical activity does not automatically guarantee positive psychological outcomes; rather, the psychological meaning and interpersonal conditions surrounding participation may determine whether exercise contributes to well-being. In sport, therefore, the manner in which athletes' needs are supported or thwarted may be particularly consequential for whether their participation becomes a source of psychological growth or psychological strain.

The theoretical relationship between basic psychological needs and well-being has been further clarified by research suggesting that need satisfaction may constitute a common psychological core connecting eudaimonic and subjective conceptions of well-being (Martela & Sheldon, 2019). From this perspective, satisfaction of autonomy, competence, and relatedness is not simply one predictor among many but a fundamental mechanism underlying several forms of positive functioning. Recent work in educational contexts likewise emphasizes that basic psychological needs contribute significantly to emotional well-being alongside other self-related resources such as self-concept (Gómez et al., 2025). Thus, examining psychological well-being as a potential intermediary between need-related behaviors and other indicators of positive functioning may offer a theoretically coherent explanation of how social environments influence athletes' psychological experiences.

A second central variable in the present study is subjective vitality. Subjective vitality refers to the conscious experience of possessing energy, aliveness, enthusiasm, and psychological vigor. It differs from temporary physiological activation because it reflects an internally experienced sense of available energy and positive functioning. Individuals with high subjective vitality tend to experience themselves as energetic, active, and psychologically alive, whereas reduced vitality may manifest as fatigue, depletion, or diminished enthusiasm. Subjective vitality has become an important construct in positive psychology because it reflects a dynamic aspect of well-being that is particularly relevant to environments requiring sustained effort and self-regulation.

Within the broader literature on well-being, subjective vitality is closely aligned with positive affective and experiential dimensions of optimal functioning. Contemporary subjective well-being research emphasizes that well-being encompasses multiple domains and should be understood through both evaluative and experiential indicators (Diener et al., 2018). In sports and exercise settings, vitality may be particularly meaningful because successful participation requires continuous mobilization of psychological and physical resources. Research has shown that exercise experiences are associated with positive affect, life satisfaction, self-esteem, and vitality, indicating that subjective vitality is embedded within a broader network of positive psychological outcomes related to physical activity (Rodrigues et al., 2022).

Basic psychological needs appear to play an important role in subjective vitality. When individuals experience autonomy, competence, and relatedness, they are more likely to perceive their activities as self-endorsed, effective, and socially meaningful, thereby preserving rather than depleting psychological energy. Research among older adults has shown a significant relationship between satisfaction of basic psychological needs and subjective vitality (Arabzadeh, 2017). Similar patterns have been reported in educational populations. Students' subjective vitality can be predicted by their goal orientations and basic psychological needs, highlighting the relevance of need satisfaction for maintaining psychological energy in achievement contexts (Sheikholeslami & Daftarchi, 2015). Furthermore, a sense of connectedness and adaptive achievement goals have been associated with subjective vitality among students, suggesting that social belonging and motivational orientation may contribute importantly to feelings of vigor and aliveness (Sharifi et al., 2018).

Subjective vitality may also be understood as one expression of broader psychosocial adjustment. Earlier work on adolescent subjective well-being has emphasized that psychosocial factors can substantially influence individuals' positive psychological functioning (Basson, 2008). In athletes, these psychosocial factors may include perceived support, interpersonal relationships, motivational climate, perceived competence, autonomy, and social inclusion. Accordingly, need-supportive behavior may increase vitality by creating an environment in which athletes feel psychologically nourished, whereas need-thwarting behavior may diminish vitality by generating pressure, inadequacy, alienation, or motivational depletion.

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Psychological well-being may provide a crucial explanatory link between these need-related experiences and subjective vitality. Athletes whose psychological needs are supported may develop stronger self-acceptance, more positive relationships, greater autonomy, enhanced environmental mastery, continued personal growth, and clearer purpose in life. These dimensions of psychological well-being may in turn increase subjective vitality by strengthening athletes' psychological resources and promoting a more integrated experience of sport participation. Conversely, need-thwarting environments may weaken psychological well-being, thereby reducing the psychological energy available to athletes. The possibility of such an indirect pathway is consistent with self-determination theory, which assumes that social-contextual factors affect positive functioning through their impact on basic psychological needs and internal psychological processes (Deci & Ryan, 2012).

The potential importance of psychological well-being as a mediator is also supported by intervention research demonstrating that enhanced well-being can coincide with improvements in positive psychological states such as spiritual vitality, self-esteem, and adaptive functioning (Abuzari et al., 2023). Although such findings have emerged in populations outside sport, they indicate that psychological well-being may serve as a central mechanism through which broader positive psychological experiences are strengthened. Within athletic settings, this possibility warrants direct examination because athletes' sense of vitality may not be determined solely by immediate need-supportive or need-thwarting interactions but also by the more enduring level of psychological well-being that develops in response to those experiences.

The cultural context of sport must also be considered. Athletes from different countries may participate in sporting environments characterized by differences in coaching traditions, communication patterns, expectations regarding authority, social relationships, and interpretations of autonomy and support. At the same time, self-determination theory proposes that basic psychological needs are universal, suggesting that autonomy, competence, and relatedness should remain psychologically important across cultures (Deci & Ryan, 2012). Comparing athletes from Iran and Iraq therefore provides an opportunity to examine whether need-supportive and need-thwarting behaviors, psychological well-being, and subjective vitality demonstrate comparable patterns across two neighboring cultural contexts. Such comparison is particularly relevant in volleyball, a highly interactive team sport in which communication, social cohesion, coach-athlete relationships, competence feedback, and coordinated performance are central aspects of the athletic experience.

Despite accumulating evidence regarding basic psychological needs, well-being, and vitality, several gaps remain. Much of the existing literature has examined need satisfaction or need thwarting independently, focused primarily on motivation or burnout outcomes, or investigated general physical activity rather than competitive athletes. Other studies have addressed subjective vitality or psychological well-being separately, leaving the mechanism linking interpersonal need-related behaviors to vitality insufficiently explained. Furthermore, fewer studies have simultaneously modeled both supportive and thwarting behaviors and examined psychological well-being as a mediator of their relationships with subjective vitality. The comparative examination of Iranian and Iraqi athletes may also contribute to understanding whether these motivational and psychological processes operate similarly across distinct national groups.

Accordingly, the aim of the present study was to model the relationships of need-supportive and need-thwarting behaviors with subjective vitality among Iranian and Iraqi volleyball athletes, with psychological well-being as a mediating variable.

2. Methods and Materials

2.1. Study Design and Participants

The present study was applied in terms of its objective, quantitative in terms of the type of data, and descriptive-correlational in terms of the method of data collection.

The statistical population of this study consisted of volleyball athletes in Karbala, Iraq, and Tabriz, Iran. The required sample size was determined using GPower software. Based on the parameters entered into GPower, including an error probability of .01, statistical power of .99, a medium effect size (.15), and six variables, the appropriate sample size for the present study was calculated as 148 participants.

2.2. Instruments

Data were collected using library-based and survey methods. The library method was employed to obtain information regarding the theoretical foundations and research background, whereas the survey method was used

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to collect data on the study variables through standardized questionnaires. The first section of the questionnaire package included participants' demographic information, and the second section consisted of four standardized questionnaires. Data on need-supportive behavior were collected using the questionnaire developed by Lonsdale et al. (2007). This questionnaire consists of 20 items scored on a 5-point Likert scale and contains no reverse-scored items. In the studies conducted by Samienia et al. (2022) and Samienia et al. (2019), the reliability of this questionnaire was confirmed using Cronbach's alpha, with a coefficient of .90. Data on need-thwarting behaviors were collected using the questionnaire developed by Bartholomew et al. (2011). This questionnaire contains 12 items scored on a 5-point Likert scale and has no reverse-scored items. In the studies by Samienia et al. (2022) and Samienia et al. (2019), its reliability was confirmed using Cronbach's alpha, with a coefficient of .80. Psychological well-being was assessed using the short, 18-item version of Ryff's Psychological Well-Being Scale, originally developed by Ryff and Singer in 1989 and revised in 2002 (Ryff & Singer, 2006). This version comprises six dimensions: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. The sum of the scores across these six dimensions is calculated as the overall psychological well-being score. Correlations between the short version of Ryff's Psychological Well-Being Scale and the original scale have ranged from .70 to .89 (Ryff & Singer, 2006). Subjective vitality was assessed using the Subjective Vitality Scale developed by Ryan and Frederick (1997). This unidimensional questionnaire contains seven items, and its validity and reliability were confirmed in the study by Arabzadeh (2017).

2.3. Data analysis

In the present study, while information related to the theoretical foundations and research background was being collected, the questionnaires were distributed among the participants. After completion and collection of the questionnaires, the data were entered into SPSS version 23 and SmartPLS version 3.1.1 and subsequently analyzed. All ethical considerations were observed throughout the study, and the research ethics code was IR.TABRIZU.REC.1404.109. For data analysis, after examining and describing the general characteristics of the respondents, inferential statistical procedures were employed, including the Kolmogorov–Smirnov test to assess the normality of data distributions, structural equation modeling, the Sobel test, and the independent-samples t test. All statistical analyses were conducted using SPSS version 23 and SmartPLS version 3.1.1, with the significance level set at .05.

3. Findings and Results

In this section, descriptive findings regarding the participants' demographic characteristics are presented in Table 1, while descriptive statistics for the study variables are reported in Table 2.

Table 1

Descriptive Statistics for Participants' Demographic Characteristics

Variable	Category	Frequency	Percentage
Age (years)	20 years or younger	19	12.8
	20–25 years	69	46.7
	25–30 years	44	29.7
	Older than 30 years	16	10.8
	Total	148	100.0
Nationality	Iranian	74	50.0
	Iraqi	74	50.0
	Total	148	100.0
Athletic experience	3 years or less	20	13.5
	3–5 years	41	27.7
	5–7 years	38	25.7

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	7–10 years	38	25.7
	More than 10 years	11	7.4
	Total	148	100.0

Table 2

Descriptive Statistics for the Study Variables

Variable	N	M	SD	Minimum	Maximum
Need support	148	3.62	0.73	1.90	5.00
Need thwarting	148	3.64	0.82	2.00	5.00
Psychological well-being	148	3.68	0.87	1.89	5.00
Subjective vitality	148	3.69	0.90	1.29	5.00

For data analysis in this section, structural equation modeling and, more specifically, confirmatory factor analysis using the partial least squares (PLS) approach were conducted in SmartPLS version 3.1.1. Three criteria were used to assess the fit of the reflective measurement model in PLS: indicator reliability, convergent validity, and discriminant validity. Indicator reliability was evaluated using three criteria: (1) factor loadings, (2) Cronbach's alpha, and (3) composite reliability. Figure 1 presents the factor loading results.

An examination of the factor loadings of the questionnaire items, as presented in Figure 1, indicates that the factor loading of every item was greater than .40. Therefore, all items were retained in the research model. Furthermore, Cronbach's alpha and composite reliability were used to assess reliability, which reflects internal consistency and measurement precision. Table 3 reports Cronbach's alpha and composite reliability coefficients for all study variables.

Table 3

Cronbach's Alpha, Composite Reliability, Average Variance Extracted, and Variance Inflation Factor Values

Variable	AVE	VIF	Composite Reliability	Cronbach's α
Need support	.638	1.136	.946	.906
Need thwarting	.586	1.425	.957	.914
Psychological well-being	.635	1.368	.959	.907
Subjective vitality	.576	1.147	.987	.939

According to the results presented in Table 3, both Cronbach's alpha and composite reliability coefficients exceeded .70 for all variables, indicating satisfactory reliability of the research instruments and adequate model fit. Table 3 also presents the results for convergent validity, assessed using the average variance extracted (AVE), and the variance inflation factor (VIF). All AVE values were greater than .50, and all VIF values were below 5.00. Therefore, both indices were within acceptable ranges and supported the adequate fit of the model. Discriminant validity constitutes another criterion for evaluating the fit of measurement models. The Fornell–Larcker matrix was used to assess discriminant validity. In this approach, the correlation of a construct with its own indicators is compared with its correlations with other constructs. Table 4 presents the Fornell–Larcker matrix for the present study.

Table 4

Fornell–Larcker Matrix

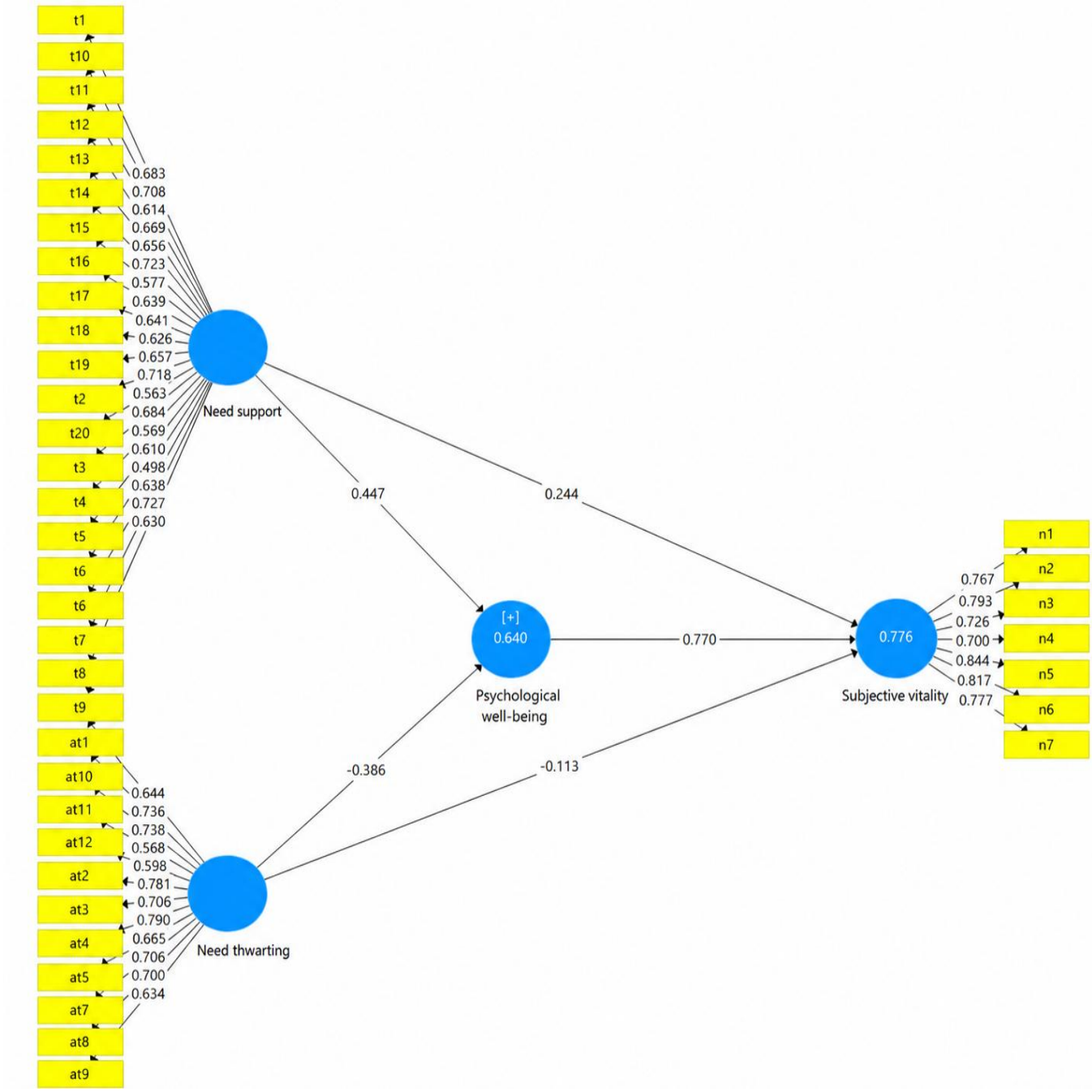
Variable	Need Support	Need Thwarting	Psychological Well-Being	Subjective Vitality
Need support	.937			
Need thwarting	.661	.942		
Psychological well-being	.638	.628	.846	
Subjective vitality	.559	.611	.559	.826

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According to the matrix presented above, the square root of the AVE for all first-order variables was greater than the correlations among the corresponding constructs, indicating satisfactory discriminant validity and adequate fit of the measurement models. Subsequently, after evaluating the fit of the measurement models, the different paths of the research model and several research hypotheses were examined based on models containing *t*-values and factor loadings and the results presented in Table 5.

Figure 1

Model with t-Values and Path Coefficients



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Figure 2

Model with Factor Loadings

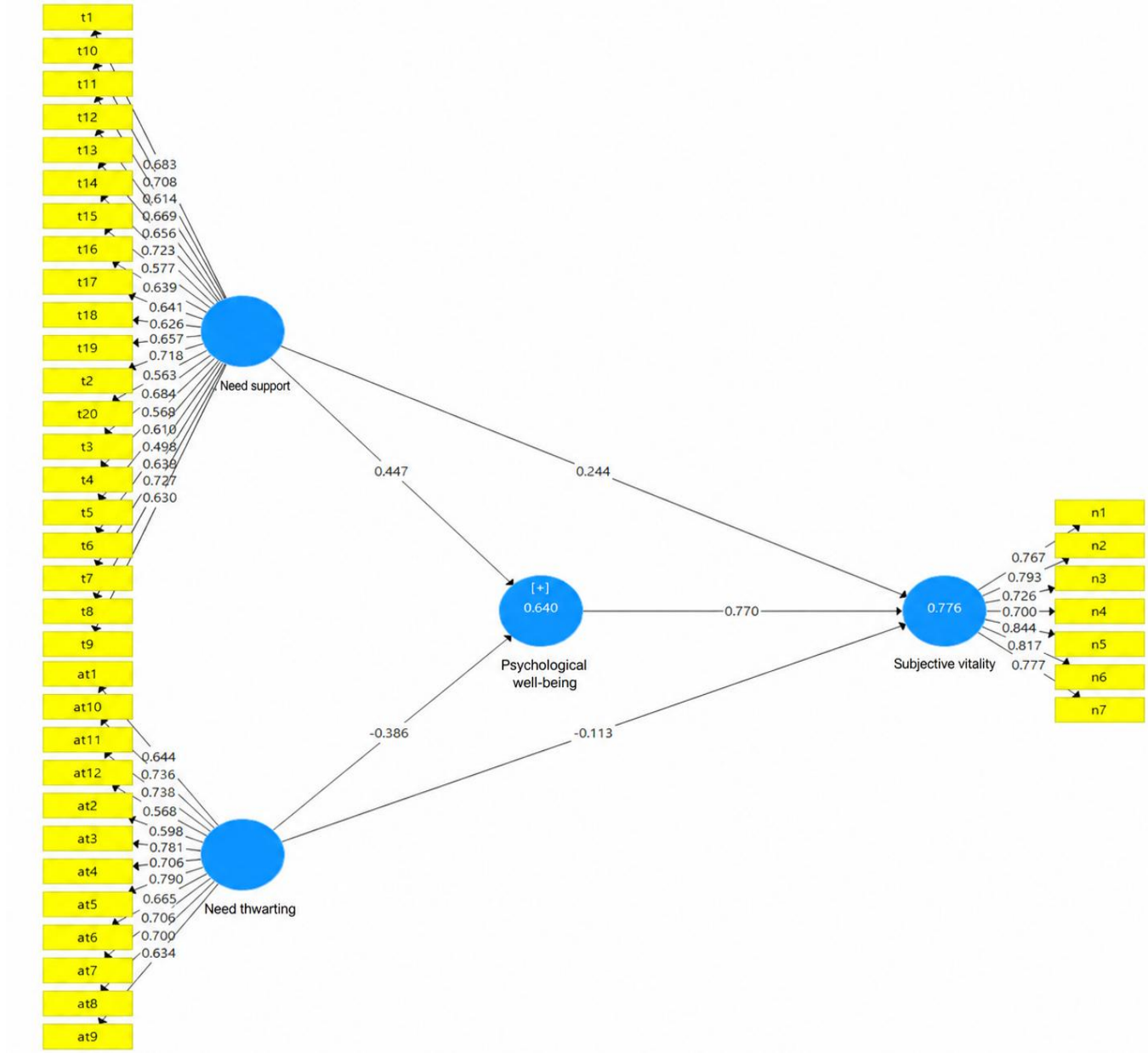


Table 5

Examination of the Paths in the Research Model

Path	Path Coefficient	t	p
Need support → Subjective vitality	.244	2.696	.007
Need support → Psychological well-being	.447	4.104	.001
Need thwarting → Subjective vitality	−.113	2.894	.002
Need thwarting → Psychological well-being	−.386	3.072	.002
Psychological well-being → Subjective vitality	.770	10.009	.001

At the 95% confidence level, based on the results presented in Table 5, the *t* statistic for all paths exceeded 1.96 and their associated significance levels were below .05. Therefore, the research model was considered acceptable and all proposed paths were supported. The results presented in Table 5 further indicated that both dimensions of need-

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related behaviors were significantly associated with subjective vitality among Iraqi and Iranian athletes ($p < .05$). Based on the obtained path coefficients, need support had a positive relationship with subjective vitality (β = .244), whereas need thwarting had a negative relationship with subjective vitality (β = −.113). Moreover, both dimensions were significantly associated with psychological well-being among Iraqi and Iranian athletes ($p < .05$). Need support was positively associated with psychological well-being (β = .447), whereas need thwarting was negatively associated with psychological well-being (β = −.386). Psychological well-being was also significantly associated with subjective vitality among Iraqi and Iranian athletes ($p = .001$), and the obtained path coefficient (β = .770) indicated a positive relationship between psychological well-being and subjective vitality.

Subsequently, the Sobel test was used to examine the mediating role of psychological well-being in the relationships between need-related behaviors and subjective vitality. The Sobel test was calculated using the path coefficient between the independent variable and mediator (a), the path coefficient between the mediator and dependent variable (b), the standard error of the relationship between the independent variable and mediator (S_a), and the standard error of the relationship between the mediator and dependent variable (S_β. After substituting the corresponding values into the Sobel formula, the results presented in Table 6 were obtained.

Table 6

Sobel Test Results

Path	Sobel z	Standard Error	p
Need support × Psychological well-being → Subjective vitality	6.973	.05	.001
Need thwarting × Psychological well-being → Subjective vitality	−6.591	.03	.001

At the 95% confidence level, according to the results presented in Table 6, the absolute Sobel statistics for the mediating role of psychological well-being in the relationships of need support ($z = 6.973$) and need thwarting ($z = −6.591$) with subjective vitality exceeded 1.96, and their significance levels were below .05 ($p = .001$). Therefore, psychological well-being played a significant mediating role in the relationships between need-related behaviors and subjective vitality among Iraqi and Iranian athletes. Based on the obtained Sobel statistics, psychological well-being functioned as an enhancing mediator in the relationship between need support and subjective vitality among Iraqi and Iranian athletes and as an attenuating mediator in the relationship between need thwarting and subjective vitality.

In this section of the findings, an independent-samples t test was used to compare the mean scores of the study variables, including need-supportive behaviors, need-thwarting behaviors, psychological well-being, and subjective vitality, between Iraqi and Iranian athletes. The results are presented in Table 7.

Table 7

Results of the Independent-Samples t Test

Variable	Levene's F	Levene's p	t	df	p
Need support	1.223	.271	−0.531	146	.596
Need thwarting	0.469	.495	0.717	146	.475
Psychological well-being	0.434	.511	0.311	146	.756
Subjective vitality	0.031	.861	−0.254	146	.800

As shown in Table 7, Levene's test was initially used to assess the homogeneity of variances between the two study groups, namely Iraqi and Iranian volleyball players. Based on the obtained results, the variances of all study variables were homogeneous across the two groups ($p > .05$). The independent-samples t test results presented in Table 7 also demonstrated that none of the study variables differed significantly between Iraqi and Iranian volleyball players ($p > .05$).

4. Discussion

The present study examined the relationships of need-supportive and need-thwarting behaviors with subjective vitality among Iranian and Iraqi volleyball athletes and

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investigated the mediating role of psychological well-being. The findings showed that need-supportive behavior was positively and significantly associated with subjective vitality, whereas need-thwarting behavior had a significant negative relationship with subjective vitality. In addition, need-supportive behavior was positively associated with psychological well-being, while need-thwarting behavior was negatively associated with psychological well-being. Psychological well-being itself had a strong positive relationship with subjective vitality. The mediation analysis further indicated that psychological well-being significantly mediated the relationships between both forms of need-related behavior and subjective vitality. Specifically, psychological well-being strengthened the positive association between need support and subjective vitality and attenuated the negative association between need thwarting and subjective vitality. Finally, no significant differences were observed between Iranian and Iraqi volleyball athletes in need support, need thwarting, psychological well-being, or subjective vitality.

The positive association between need-supportive behavior and subjective vitality is consistent with the theoretical propositions of self-determination theory. According to this framework, social environments that support autonomy, competence, and relatedness facilitate more autonomous forms of motivation, enhance internal psychological resources, and promote optimal functioning (Deci & Ryan, 2012). When athletes experience coaches and significant others as supportive of their choices, respectful of their perspectives, responsive to their need for competence, and attentive to their interpersonal connectedness, sport participation is more likely to be experienced as psychologically energizing. Such environments can reduce unnecessary internal conflict and preserve psychological energy, thereby contributing to a stronger sense of aliveness, enthusiasm, and subjective vitality. This interpretation also accords with evidence showing that motivationally supportive sport environments are associated with adaptive forms of athlete engagement, including vigor, dedication, confidence, and enthusiasm (Lonsdale et al., 2007).

The present finding is also aligned with previous research emphasizing the relationship between basic psychological needs and subjective vitality. Arabzadeh demonstrated that satisfaction of basic psychological needs was significantly related to subjective vitality, indicating that individuals who experience greater autonomy, competence, and relatedness tend to report greater psychological energy and vitality (Arabzadeh, 2017). Similar findings have been reported among students, where fulfillment of basic psychological needs was identified as an important predictor of subjective vitality (Sheikholeslami & Daftarchi, 2015). Moreover, the relationship between adaptive achievement-related experiences, social connectedness, and subjective vitality reported by Sharifi et al. provides additional support for the idea that motivational and interpersonal experiences contribute to the experience of psychological energy (Sharifi et al., 2018). In athletic contexts, where training and competition require sustained physical and mental effort, such psychological energy may be particularly important.

The negative relationship between need-thwarting behavior and subjective vitality also deserves attention. Need thwarting is qualitatively different from merely low need support because it reflects active obstruction of psychological needs. Athletes exposed to controlling behavior, excessive criticism, coercive pressure, rejection, or repeated experiences of incompetence may not simply fail to benefit from their sporting environment; they may actively experience depletion of psychological resources. Bartholomew et al. described this process as the darker side of sport participation and showed that psychological need thwarting is associated with maladaptive psychological outcomes (Bartholomew et al., 2011). The present findings extend this line of evidence by suggesting that need thwarting may also directly undermine subjective vitality. When athletes feel controlled, ineffective, or disconnected from others, their sport participation may become psychologically exhausting rather than energizing.

These results are further supported by studies examining need satisfaction and need thwarting in sport and exercise settings. Ahmadi and Eskandarnejad found that satisfaction and thwarting of basic psychological needs were significantly related to autonomous motivation, affective outcomes, and behavioral intentions in adolescent sport environments (Ahmadi & Eskandarnejad, 2021). Similarly, studies among athletes have demonstrated that self-determination-related processes are involved in explaining important outcomes such as engagement and burnout (Samienia et al., 2019). Comparable patterns have also been reported among elite athletes with physical disabilities, where motivational processes related to self-determination played an important role in adaptive and maladaptive sporting outcomes (Samienia et al., 2022). Collectively, these findings suggest that need-related interpersonal experiences exert broad effects on athletes' emotional and

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psychological functioning, including the experience of vitality.

Another important finding of the present study was the significant positive relationship between need-supportive behavior and psychological well-being. This result is consistent with self-determination theory, which proposes that satisfaction of basic psychological needs constitutes a central mechanism through which social environments influence well-being (Deci & Ryan, 2012). Athletes who receive autonomy support, competence-enhancing feedback, and interpersonal involvement are more likely to feel capable, connected, and self-directed. These experiences correspond closely with several dimensions of psychological well-being, particularly autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance (Ryff & Singer, 2006). Consequently, a sport environment that supports athletes' basic needs can be expected to strengthen broader psychological functioning beyond immediate motivation.

The result also accords with evidence from exercise and health-related settings. Moustaka et al. showed that an autonomy-supportive instructional style was associated with more favorable psychological well-being and exercise-related outcomes (Moustaka et al., 2012). Similarly, Rahman et al. demonstrated that motivational processes derived from self-determination theory were related to well-being in cardiac rehabilitation (Rahman et al., 2015). More broadly, Martela and Sheldon argued that psychological need satisfaction may represent a common core connecting subjective and eudaimonic forms of well-being (Martela & Sheldon, 2019). This interpretation is highly relevant to the present findings because psychological well-being was conceptualized in its eudaimonic form, emphasizing growth, purpose, positive relationships, autonomy, and effective functioning.

The negative relationship between need-thwarting behavior and psychological well-being similarly supports the proposition that active frustration of psychological needs can disrupt adaptive functioning. Persistent exposure to interpersonal environments characterized by pressure, criticism, rejection, or incompetence may weaken an athlete's sense of autonomy, reduce environmental mastery, impair positive relationships, and undermine self-acceptance. Such processes are consistent with the adverse consequences of need thwarting reported by Bartholomew et al. (Bartholomew et al., 2011). The findings of Turgeon et al. also demonstrate that basic psychological needs are meaningfully related to mental health among student-athletes, reinforcing the view that need-related experiences constitute an important foundation for psychological adjustment in sport (Turgeon et al., 2024).

The strong positive relationship found between psychological well-being and subjective vitality also corresponds with existing conceptual and empirical evidence. Psychological well-being reflects effective psychological functioning and includes positive relationships, autonomy, purposefulness, self-acceptance, environmental mastery, and personal growth (Ryff & Singer, 2006). Individuals who function effectively in these domains are more likely to experience themselves as psychologically energetic and engaged. From this perspective, subjective vitality can be understood as an experiential manifestation of broader psychological well-being. Diener et al. emphasized that well-being is multidimensional and includes both evaluative and experiential components of positive functioning (Diener et al., 2018). Although psychological well-being and subjective vitality are conceptually distinct, both reflect positive psychological functioning and are therefore expected to be strongly related.

The findings are also consistent with research demonstrating associations between physical activity, positive affective states, life satisfaction, self-esteem, and vitality. Rodrigues et al. reported that exercise-related experiences were linked with subjective vitality alongside several indicators of positive psychological functioning (Rodrigues et al., 2022). In addition, research has shown that physical activity may contribute to mental well-being through psychological mechanisms such as self-esteem and self-compassion (Wong et al., 2023). These findings support the idea that vitality is not generated solely through physical exertion but also depends on how individuals psychologically experience and interpret their participation. In athletes, psychological well-being may provide the internal resources needed to transform demanding training and competition into experiences of energy and engagement rather than exhaustion and depletion.

The mediation results constitute one of the most important contributions of the present study. Psychological well-being significantly mediated the positive relationship between need support and subjective vitality. This suggests that need-supportive behavior may enhance subjective vitality not only directly but also indirectly by strengthening athletes' psychological well-being. When athletes experience support for autonomy, competence, and relatedness, they may develop stronger self-acceptance, more positive relationships, a greater sense of purpose, and

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more effective environmental mastery. These dimensions of psychological well-being may subsequently increase their sense of vitality. Such an explanation is consistent with Martela and Sheldon's proposition that basic psychological need satisfaction provides a central pathway to both eudaimonic and subjective well-being (Martela & Sheldon, 2019). It also corresponds with evidence showing that positive psychological interventions and supportive psychological conditions can improve psychological well-being and related positive states (Abuzari et al., 2023; Dustkafi et al., 2019).

Psychological well-being also mediated the negative association between need thwarting and subjective vitality. This finding suggests that need-thwarting behavior may reduce vitality partly by undermining athletes' psychological well-being. Repeated experiences of control, rejection, pressure, and incompetence may progressively weaken positive psychological functioning, which in turn may reduce subjective energy and enthusiasm. This indirect pathway provides a more comprehensive explanation than a simple direct association. It indicates that the consequences of need-thwarting environments may accumulate through their impact on deeper psychological functioning. Such a process is compatible with evidence that poor satisfaction of psychological needs is associated with maladaptive affective and motivational outcomes (Ahmadi & Eskandarnejad, 2021; Bartholomew et al., 2011).

The importance of psychological well-being as a mediating mechanism may also be understood in light of evidence concerning the malleability of well-being. Studies have shown that physical exercise programs can improve psychological well-being in different populations (Gerodimos et al., 2022; Granero-Jiménez et al., 2022). Similarly, Tai Chi and other structured physical activity interventions have been associated with improved psychological well-being in clinical populations (Taylor-Piliae & Finley, 2020). These findings imply that psychological well-being can change in response to both behavioral and contextual conditions. Therefore, in sport environments, need-supportive and need-thwarting interpersonal behaviors may represent important contextual factors that shape well-being and, through it, subjective vitality.

The absence of significant differences between Iranian and Iraqi athletes in need support, need thwarting, psychological well-being, and subjective vitality is also noteworthy. Although sport is embedded within cultural contexts, the similarity between the two groups may reflect the universality of basic psychological needs proposed by self-determination theory (Deci & Ryan, 2012). Autonomy, competence, and relatedness are considered fundamental psychological requirements across cultural contexts, even though the ways in which they are expressed or supported may vary. Thus, athletes in both Iran and Iraq may respond similarly to supportive or thwarting interpersonal environments because the underlying psychological mechanisms are shared. Recent evidence regarding basic psychological needs and emotional well-being further supports the broad relevance of need satisfaction across developmental and social settings (Gómez et al., 2025).

The lack of between-country differences may also be partly attributable to common features of competitive volleyball. Volleyball is a highly interactive team sport in which athletes operate under comparable demands involving repeated training, performance evaluation, cooperation, communication, coach-athlete interaction, and collective achievement goals. These shared characteristics may reduce the impact of national differences on the principal psychological variables investigated in this study. Moreover, psychosocial factors are known to exert substantial effects on well-being regardless of context (Basson, 2008). Therefore, similarities in sporting conditions and interpersonal structures may have contributed to comparable levels of psychological well-being and vitality in both national groups.

5. Conclusion

Overall, the findings reinforce contemporary efforts to place athlete mental well-being at the center of sport psychology. Recent systematic evidence indicates that psychological interventions can meaningfully improve mental well-being among elite athletes (Wang et al., 2025). The current findings complement this intervention-focused literature by highlighting the importance of everyday interpersonal behavior within the athletic environment. Psychological well-being may not depend solely on formal psychological programs; it may also be continuously shaped by whether coaches and sport systems support or thwart athletes' fundamental psychological needs. Therefore, enhancing athlete vitality and well-being requires attention not only to individual-level interventions but also to the motivational climate embedded in routine training and competition.

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6. Limitations & Suggestions

The present study has several limitations that should be considered when interpreting the findings. First, the correlational and cross-sectional nature of the design limits causal inference, and therefore the observed relationships should not be interpreted as definitive evidence that need-supportive or need-thwarting behaviors cause changes in psychological well-being or subjective vitality. Second, the study relied exclusively on self-report questionnaires, which may be affected by social desirability, response tendencies, and common-method variance. Third, the participants were volleyball athletes from only two cities, Karbala and Tabriz, which restricts the generalizability of the findings to athletes from other sports, competitive levels, age groups, or geographical regions. Fourth, convenience and purposive sampling may have introduced selection bias. Fifth, although Iranian and Iraqi athletes were compared, potentially important cultural, socioeconomic, coaching, and organizational variables were not directly assessed. Finally, the study did not examine potentially relevant moderators such as gender, competitive level, training intensity, coach-athlete relationship quality, personality characteristics, or duration of participation in sport.

Future studies are recommended to employ longitudinal and experimental designs to clarify the temporal and causal relationships among need-supportive behavior, need thwarting, psychological well-being, and subjective vitality. Researchers could investigate whether changes in coaching style over a competitive season predict subsequent changes in psychological well-being and vitality. Multilevel designs would also be valuable because athletes are nested within teams and coaches, making it possible to distinguish individual perceptions from team-level motivational climates. Future research should include athletes from multiple individual and team sports, different competitive levels, broader age ranges, and more diverse geographical and cultural settings. It would also be useful to examine additional mediators, such as autonomous motivation, self-esteem, resilience, emotion regulation, perceived competence, or social connectedness, as well as moderators such as gender, athletic experience, type of sport, and competitive level. Mixed-method studies combining quantitative modeling with qualitative interviews could further clarify how athletes interpret supportive and thwarting interpersonal behaviors in different cultural contexts. Cross-cultural measurement invariance should also be examined before making stronger comparisons between national groups.

The findings have several practical implications for coaches, sport psychologists, trainers, and sport organizations. Coaching practices should be designed to support athletes' autonomy by providing meaningful choices, explaining the rationale for training demands, acknowledging athletes' perspectives, and avoiding unnecessarily controlling communication. Athletes' competence should be strengthened through realistic goal setting, individualized feedback, recognition of progress, and appropriately challenging training tasks. Relatedness can be promoted by developing respectful coach-athlete relationships, encouraging constructive teammate interactions, and creating an inclusive team climate. Coaches should minimize behaviors that may thwart psychological needs, including humiliation, intimidation, excessive criticism, conditional acceptance, coercive pressure, and public comparison. Sport organizations may benefit from incorporating need-supportive coaching principles into coach education and professional development programs. Regular psychological screening can also help identify athletes experiencing low well-being or reduced vitality. Finally, interventions designed to enhance positive relationships, self-acceptance, purpose in life, personal growth, and psychological coping may further strengthen athletes' psychological well-being and consequently support greater subjective vitality and sustainable engagement in sport.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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