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Psychological Well-Being, Happiness, and Life Satisfaction Across Age Groups of Athletes and Non-athletes

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Abstract

Background and Objectives: The present study examined psychological well-being, life satisfaction, and happiness among athletes and non-athletes across different age groups.

Methods: A causal-comparative design was employed in 2022 - 2023 with 610 participants from Chaharmahal and Bakhtiari province. Participants were selected using proportional stratified cluster sampling. Psychological well-being, life satisfaction, and happiness were assessed using Ryff's Psychological Well-Being Scale (PWS), Diener's Satisfaction with Life Scale (SWLS), and Lyubomirsky and Lepper's Subjective Happiness Scale (SHS). Data were analyzed using multivariate analysis of variance (MANOVA) in SPSS 26.

Results: The findings revealed a significant difference between athletes and non-athletes in psychological well-being, happiness, and life satisfaction ($P < 0.001$).

Conclusions: Regular sports participation is associated with higher psychological well-being, life satisfaction, and happiness. Policymakers should encourage physical activity through accessible programs to improve both mental and physical health.

Keywords: Psychological Well-being, Happiness, Life Satisfaction, Exercise

1. Background

Regular physical activity plays a vital role in maintaining both physical and mental health, reducing stress and anxiety, and promoting psychological well-being and social connectedness (1-6). Psychological well-being — a multidimensional construct encompassing emotional, social, and cognitive functioning — is increasingly recognized as a key determinant of quality of life in the 21st century (7-10). Previous studies have shown that regular exercise enhances psychological well-being by strengthening resilience, improving social relationships, and increasing self-esteem (11-18).

Life satisfaction, another important indicator of mental health, refers to individuals' cognitive evaluations of their overall quality of life (19-23). Participation in physical and sports activities has been shown to improve self-esteem and leisure satisfaction, which consequently enhance life satisfaction (24, 25). Athletes often report higher levels of life satisfaction due to positive social interactions, teamwork, and supportive networks developed through sports participation (20-26). Similarly, happiness — a subjective component of individual and social well-being — is strongly associated with exercise. Empirical evidence indicates that regular engagement in sports promotes physical health, facilitates socialization, and builds self-confidence, all of which contribute to higher levels of happiness (27-35).

Chaharmahal and Bakhtiari province, characterized by its diverse ethnic composition — including Bakhtiari, Qashqai Turk, and Fars groups — and an active lifestyle, offers a distinctive setting for studying the psychological effects of physical activity. Although numerous studies have explored the relationship between exercise and mental health, limited research has examined psychological well-being, life satisfaction,

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and happiness across different age groups of athletes and non-athletes in the Iranian cultural context.

2. Objectives

To address this gap, the present study aimed to compare these psychological indicators among athletes and non-athletes across various age groups in Chaharmahal and Bakhtiari province.

3. Methods

This study employed a causal-comparative design. The statistical population consisted of all men and women aged 18 to 75 years residing in Chaharmahal and Bakhtiari province during 2022 - 2023. According to the latest census, this population included approximately 600,446 individuals. Based on official data from the Provincial Department of Sports and Youth, about 35,000 individuals were registered as organized athletes. The minimum sample size was estimated using Cochran's formula, indicating a requirement of at least 384 participants. Additionally, a power analysis was performed to ensure sufficient statistical power for between-group comparisons (athletes vs. non-athletes) using an independent samples *t*-test. Assuming a small effect size (Cohen's d = 0.25), a significance level of α = 0.05, and a statistical power of 0.80, the required sample size was approximately 306 participants per group (total ≈ 612), calculated using the pwr package in R (36). To enhance representativeness, 620 questionnaires were distributed, and after excluding 10 with more than 20% missing responses, data from 610 participants were included in the final analyses.

A stratified proportional cluster sampling method was employed, with clusters corresponding to the six county centers of the province. Participants were recruited from sports clubs, public areas (e.g., parks, markets), mosques, and residential neighborhoods. Inclusion criteria were: (A) residency in Chaharmahal and Bakhtiari province; (B) willingness to participate; (C) sufficient literacy to complete the questionnaire; and (D) age of 18 years or older, as approved by the Provincial Sports and Youth Department's Planning Council. Participants with more than 20% incomplete responses were excluded.

All ethical considerations were observed. Participants were informed about the study objectives and procedures, their right to withdraw at any time, and the confidentiality of their data. Questionnaires were administered only after obtaining written informed consent. Data analysis was conducted using multivariate analysis of variance (MANOVA) in SPSS version 26.

3.1. Instruments

3.1.1. Ryff's Psychological Well-Being Scale

The 18-item Psychological Well-Being Scale (PWS, Ryff, 1989) assesses six dimensions of well-being — autonomy, environmental mastery, personal growth, positive relations, purpose in life, and self-acceptance — on a 6-point Likert scale. Total scores range from 18 to 108, with higher scores indicating greater psychological well-being. Reported reliability coefficients range from 0.81 to 0.93 (37). The Persian version validated by Khanjani et al. showed Cronbach's α = 0.71 (38), and α = 0.73 in the present study.

3.1.2. Satisfaction with Life Scale

The Satisfaction with Life Scale (SWLS, Diener et al., 1985) includes five items rated on a 5-point Likert scale, yielding total scores between 5 and 25; higher scores reflect greater life satisfaction. Reported reliability exceeds 0.80 (39). The Persian adaptation by Bayani et al. demonstrated α = 0.83 (40), and α = 0.86 in this study.

3.1.3. Subjective Happiness Scale

The Subjective Happiness Scale (SHS, Lyubomirsky and Lepper, 1999) comprises four items rated on a 7-point scale, producing total scores from 4 to 28. Reported reliability ranges from 0.79 to 0.94 (41). The Persian version validated by Aghababaei and Farahani showed α = 0.76 (42), and α = 0.74 in this study.

3.1.4. Operational Definition of "Athlete"

Following Araujo and Scharhag, an athlete was defined as an individual who: (A) trains regularly to improve performance, (B) participates in official competitions, (C) is formally registered with a sports federation, and (D) devotes substantial daily time to training. Individuals engaging in physical activity solely for recreation or health purposes were classified as non-athletes (43).

4. Results

4.1. Participants' Characteristics and Statistical Analysis

The final sample consisted of 610 participants, including 305 athletes and 305 non-athletes, with an

equal gender distribution (50% female, 50% male). Age groups were distributed as follows: 20 - 30 years (31%), 30 - 40 years (26%), 40 - 50 years (19%), 50 - 60 years (14%), and 60 - 70 years (10%). Overall, 66.1% of participants were married, and 43.8% held a bachelor's degree. The MANOVA was employed to compare psychological well-being, life satisfaction, and happiness across age groups.

As shown in Table 1, all study variables exhibited a normal distribution across age groups and participant types (athletes and non-athletes), as indicated by the Jarque-Bera test ($P > 0.05$). Moreover, Levene's test confirmed the homogeneity of error variances across groups ($P > 0.05$), and Box's M test supported the assumption of homogeneity of covariance matrices ($P > 0.05$). Table 2 also presents the results of the MANOVA.

Table 1. Test of Normality for the Study Variables by Age Group (Athletes and Non-athletes)

Variables and Age Groups	Mean ± SD	χ^2	df	P-Value
Psychological well-being				
18 - 30		3.30	2	0.192
Athletes	72.20 ± 9.27			
Non-athletes	67.75 ± 10.18			
30 - 40		2.82	2	0.240
Athletes	72.75 ± 8.59			
Non-athletes	70.56 ± 9.93			
40 - 50		2.18	2	0.340
Athletes	74.36 ± 10.23			
Non-athletes	70.30 ± 10.22			
> 50		1.97	2	0.370
Athletes	68.61 ± 13.58			
Non-athletes	69.12 ± 9.78			
Happiness				
18 - 30		3.42	2	0.180
Athletes	18.11 ± 4.99			
Non-athletes	14.73 ± 4.87			
30 - 40		2.68	2	0.260
Athletes	16.51 ± 5.49			
Non-athletes	14.74 ± 5.29			
40 - 50		1.11	2	0.570
Athletes	18.52 ± 4.78			
Non-athletes	15.88 ± 5.83			
> 50		3.98	2	0.140
Athletes	17.38 ± 4.70			
Non-athletes	14.70 ± 4.73			
Life satisfaction				
18 - 30		3.36	2	0.190
Athletes	23.29 ± 6.39			
Non-athletes	18.44 ± 7.34			
30 - 40		3.09	2	0.210
Athletes	22.45 ± 7.81			
Non-athletes	19.89 ± 7.35			
40 - 50		1.51	2	0.470
Athletes	23.94 ± 7.80			
Non-athletes	20.55 ± 7.56			
> 50		2.53	2	0.280
Athletes	22.89 ± 6.85			
Non-athletes	19.32 ± 7.18			

As shown in Table 2, the obtained F-value was 69.745, and Wilks' Lambda was 0.743, which was statistically significant at $P < 0.001$. Therefore, the effect of the grouping factor was significant. In other words, it can be inferred that there is a significant difference between athletes and non-athletes in at least one of the dependent variables under study.

As shown in Table 3, the F-values for psychological well-being, happiness, and life satisfaction were 109.349, 141.941, and 127.641, respectively, all of which were significant at $P < 0.001$. These findings indicate that there are significant differences between athletes and non-athletes in terms of psychological well-being, happiness, and life satisfaction. Moreover, the calculated effect sizes ($\eta^2 = 0.152$, 0.189, and 0.173, respectively) suggest that these differences are not only statistically significant but also large in magnitude, based on Cohen's (1988) criteria.

5. Discussion

This study demonstrates that athletes report higher psychological well-being, life satisfaction, and happiness compared with non-athletes. Although age-related differences were not statistically significant, the gap between athletes and non-athletes was more pronounced in younger adults (18 - 30 years), suggesting that early adulthood may be a period of greater psychological benefit from sports participation.

Higher psychological well-being among athletes aligns with prior findings (14-18). Sports participation fosters personal growth, resilience, self-awareness, social competence, self-esteem, and effective stress management. The structured and social nature of sports supports coping with everyday stressors, contributing to overall well-being.

Greater life satisfaction among athletes reflects improved physical health, social connectedness, self-esteem, and a sense of achievement and belonging (20-26). Similarly, higher happiness corroborates previous evidence linking sports participation to vitality, emotional balance, and social integration (32-35). Sports fulfill fundamental psychological needs for competence, relatedness, and autonomy, which underpin subjective well-being. Overall, these findings emphasize the importance of regular physical activity for mental health and highlight the value of promoting sports participation across populations.

5.1. Conclusions

Athletes demonstrated significantly higher psychological well-being, life satisfaction, and happiness than non-athletes across all age groups. Younger athletes appeared to derive the greatest psychological benefit. Future research should employ longitudinal or experimental designs to clarify causal relationships, investigate underlying mechanisms, and examine long-term effects. Policies and programs promoting inclusive and accessible sports participation

Table 2. Multivariate Tests

Effect	Tests	Value	F	df Effect	df Error	P-Value
Grouping	Wilks' lambda	0.275	69.745	3.000	606.000	0.001
	Hotelling's trace	0.743	69.745	3.000	606.000	0.001
	Pillai's trace	0.345	69.745	3.000	606.000	0.001
	Roy's largest root	0.345	69.745	34.000	606.000	0.001

Table 3. ANOVA Results for Dependent Variables

Source of Variation	Dependent Variables	Sum of Squares	df	Mean Square	F	η^2	P-Value
Group	Psychological well-being	10484.985	1	10484.985	109.349	0.152	0.000
	Happiness	3263.805	1	3263.805	141.941	0.189	0.000
	Life satisfaction	5862.100	1	5862.100	127.641	0.173	0.000

may enhance population-level mental health and quality of life.

5.2. Limitations

The causal-comparative design limits causal inference. Reliance on self-reported measures may introduce bias. The regional sample restricts generalizability. Future studies should include multi-method assessments and broader, more diverse populations.

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Footnotes

Authors' Contribution: Z. K. was responsible for the conceptualization and design of the article, data analysis, writing the manuscript, as well as submitting, tracking the manuscript, and conducting all revisions and overall refinement of the article. P. R. participated in the data collection for this study.

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Data Availability: All data generated or analyzed during this study will be available from the corresponding author on reasonable request.

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