

Original Article

Comparison of Self-Control and Early Maladaptive Schemas in Athletes According to Sports and Demographic Characteristics

Alireza Aghababa¹, Zahede Rahmanian², Hasan Abdollahzadeh³, Seyedeh Afrouz Mousavi^{4*}

¹Department of Sports Psychology, Sport Sciences Research Institute, Tehran, Iran.

²Department of Psychology and Counselling, Farhangian University, Tehran, Iran.

³Department of Psychology, Payame Noor University, Tehran, Iran.

⁴Department of psychology, Kooshyar institute of higher education, Rasht, Iran.

Received: 04 Nov 2024; Revised: 19 Nov 2024; Accepted: 03 Dec 2024

Background and Aim: This study was designed to compare self-control and early maladaptive schemas in athletes based on sports and demographic characteristics.

Materials and Methods: This study's statistical population included all male and female swimming athletes in the country. Of them, 256 swimming athletes from clubs in various cities of Iran were selected using an available sampling method. The research utilized Yang's schema questionnaire (2005) and a self-control questionnaire.

Results: The analysis of variance revealed no significant differences between women and men in the schemas of entitlement/secretary and emotional inhibition ($p < 0.05$). However, significant differences were found in the overall schema and the following schemas: abandonment/instability, distrust/misbehavior, emotional deprivation, deficiency/shame, social isolation/alienation, autonomy, impaired performance (dependency/incompetence, vulnerability to harm/disease, untransformed self, failure), impaired limitations (insufficient self-restraint and self-discipline), other orientation (obedience, sacrifice), and stubborn standards/extreme fault-finding ($p < 0.05$). Furthermore, substantial differences were observed in types of early maladaptive schemas, except for autonomy and failure, among swimmers at different levels of sports performance. There were also significant differences in schemas and self-control based on sports levels, employment, level of medals won, position, gender, education, and marital status ($p < 0.01$).

Conclusion: Self-control and early maladaptive schemas in swimming athletes can be differentiated by gender, sports performance levels, level of medals won, position, employment, education, and marital status.

Keywords: Self-Control, Schema, Demographic, Athlete, Swimming

***Corresponding Author:** Seyedeh Afrouz Mousavi, Kooshyar institute of higher education, Department of psychology, Rasht, Iran.
Email: afrooz2d1386@yahoo.com
ORCID:0000-0003-0384-5933

Please cite this article as:

Aghababa, A., Rahmanian, Z., Abdollahzadeh, H., Mousavi, S. A. Comparison of Self-Control and Early Maladaptive Schemas in Athletes According to Sports and Demographic Characteristics. *Int. J. Appl. Behav. Sci.* 2024;11(4):45-57.

Introduction

Psychologists define the schema as a broad and comprehensive construct encompassing emotions, memories, and self-knowledge or interpersonal relationships, which develops during childhood or adolescence (1). A schema is a cognitive framework formed from reality or experience, helping individuals make sense of their lives. It serves as an abstract representation of the defining characteristics of events; in other words, it outlines the salient elements of an experience.

According to Young, primary maladaptive schemas are deep-rooted and pervasive patterns that emerge during childhood or adolescence, persist throughout life, and significantly influence an individual's relationship with themselves and others. These schemas are often highly dysfunctional (2).

In his conceptual framework, Young (2005) identified five domains relevant to early maladaptive schemas: 1) cut-off and rejection, 2) impaired self-regulation and performance, 3) dysfunctional limitations, 4) other orientation, and 5) hypervigilance and inhibition. He described fifteen specific schemas within these domains, including: 1) emotional deprivation, 2) rejection/abandonment, 3) distrust/mistreatment, 4) social isolation, 5) defect/shame, 6) failure, 7) dependence/incompetence, 8) vulnerability to harm or disease, 9) entrapment/entanglement, 10) obedience, 11) sacrifice, 12) emotional inhibition, 13) inflexible criteria, 14) entitlement, and 15) insufficient self-control and self-discipline (2).

Dysfunctional schemas can gradually permeate adult life, manifesting in maladaptive behaviors such as addiction, job performance issues, and personality disorders (3). Athletes, like others, are influenced by these schemas. Research indicates that winning athletes tend to possess fewer primary maladaptive schemas, whereas team athletes often exhibit more of these schemas (4).

In bodybuilding, studies have shown that the predominant schema among bodybuilders is autonomy coupled with impaired performance. Factors such as height, gender, levels of sports performance, and achievements in competitions interact with these primary maladaptive schemas (5).

Similarly, in volleyball, athletes display autonomy and impaired performance as dominant schemas, with marital status, gender, education level, and performance metrics playing a role in their interaction with maladaptive schemas (6). Furthermore, a negative correlation has been observed between maladaptive schemas and athletes' self-concept (7).

Primary maladaptive schemas are entrenched beliefs regarding oneself and others that can distort the process of external information (8-9).

In addition to schemas, self-control emerges as a critical psychological phenomenon influencing individual and social well-being, as well as mental health. Self-control refers to the ability to regulate emotions, behaviors, and desires to achieve specific rewards and avoid punishments. It involves contemplating choices and potential outcomes before making decisions (10).

Individuals with low self-control often exhibit impulsive behavior, reliance on physical force rather than verbal problem-solving, risk-taking, short-sightedness, and non-verbal tendencies. In contrast, strong self-control allows individuals to resist the lure of immediate gratification associated with deviant behaviors. Self-control is recognized as an informal trait that varies among individuals, and empirical evidence underscores the significance of individual differences in self-control capacity.

Effective self-control mitigates impulsive actions and aids in coping with frustration but also enhances athletes' abilities to manage their emotions and behaviors, ultimately facilitating better decision-making. This cognitive skill is crucial in navigating challenging situations and preventing undesirable decisions (10). Research has demonstrated that early maladaptive schemas can predict cognitive distortions (12).

In examining the relationship between self-control and schemas, Peshangian *et al.* (2022) demonstrated that group therapy utilizing schema therapy is effective in enhancing self-control among adolescents with disruptive mood disorders (13). Similarly, Tabbakuchian *et al.* (2021) found that schema therapy has a significant and stable effect on increasing self-control in women experiencing marital boredom. Notably, the schema therapy approach proved more effective than emotion-focused therapy in improving self-control in this population (14).

In a case study, Buter et al. (2022) illustrated that schema therapy by reducing primary maladaptive schemas and dysfunctional schema states led to improvements in personality disorders, substance use disorders, and various cognitive issues associated with cerebrovascular diseases, including loneliness, low self-esteem, sleep disturbances, situational psychological distress, and difficulties with anger management (15). Additionally, Bertrams (2021) found a negative relationship between perceived self-control effort and the schema of mental vitality (16). In another study, Bertrams (2021) noted that processes diminishing self-control following an irrelevant self-control task are linked to activating the fatigue/decreased vitality schema. This schema is triggered by behavioral and physiological changes related to self-control actions, which can motivate individuals to conserve energy, thus reducing effort and performance in subsequent self-control tasks. Factors such as energy supply may influence the activation or deactivation of the fatigue/depletion schema and its associated effects (17). Furthermore, Bertrams (2020) suggested that self-control effort and the diminished vitality schema are interconnected within a cognitive framework, with the association between self-control activity and decreased vitality occurring independently of immediate feelings of self-control, effort, and evaluator burnout (18).

Addressing the relationship between self-control, schemas, and gender, Shrivastava and Sharma (2022) examined the influence of parenting on maladaptive schemas and emotion regulation in adolescents exhibiting self-injurious behavior at a tertiary care hospital in northern India. They emphasized that parenting is a crucial factor in developing cognitive and emotional patterns regarding self-perception, perceptions of others, and worldviews. Their findings indicated that parenting significantly predicts emotion regulation and early maladaptive schemas, which influence fixed gender roles and socially endorsed ideals (19).

Exploring the relationship between self-control, schemas, and sports performance, Rankin et al. (20) examined the potential effects of initial maladaptive schemas and implicit self-esteem on sport dependence in Australian cyclists. Their study revealed that initial maladaptive schemas, particularly the domains of

"Other orientation" and "impaired limitations," account for a considerable portion of the variance in self-reported symptoms of sports addiction. Notably, a significant segment of this group, irrespective of socio-demographic characteristics, exhibited addiction symptoms (20).

These results suggest that individuals overly focused on the needs of others or those unable to establish appropriate internal boundaries may be at greater risk of developing exercise dependence compared to individuals with lower levels of early maladaptive schemas. Understanding the interplay between early maladaptive schemas and sports dependence may inform intervention strategies to address sports dependence in athletes, particularly rugby and handball. Research indicates that athletes must possess certain psychological traits, often encapsulated by early maladaptive schemas, to achieve higher performance levels (21). Successfully navigating sports performance sometimes requires stepping beyond one's comfort zone while managing needs related to self-protection, obedience, and sacrifice — factors often intertwined with anxiety and fear (22). Additionally, athletes competing at a national level tend to exhibit higher averages of initial maladaptive schemas, with youth athletes showing elevated schema levels as well (23). Finally, regarding the relationship between self-control, schemas, and education, there is broad consensus in the literature that self-control is a critical element of human self-regulation, enabling individuals to achieve long-term goals such as academic success and overall health (24). Tyler et al. (2020) indicated that external support and events frequently associated with the resistance process—such as job or educational opportunities, social relationships, and the responsibilities of parenthood—can foster an internal locus of control, facilitating social responses (25).

Regarding the relationship between self-control and schemas in the context of marital status, Karakosh (2023) examined how childhood trauma, dissociative experiences, and early maladaptive schemas influence single students' attitudes toward choosing a spouse. The study found that other limitations significantly impacted this attitude, explaining 7% of the variance in spouse selection (26). Sujeta et al. (2023) identified that the domains of interruption and rejection, along with impaired limitations, were significant predictors of

victimization in cases of family violence. Furthermore, maladaptive beliefs regarding interpersonal relationships—specifically, the perception that they are unstable and insecure and the risk of humiliation and harm—are associated with a heightened risk of intimate partner violence (27).

Shariati *et al.* (2022) explored primary maladaptive schemas and personality factors in unfaithful and injured spouses, revealing a positive and significant relationship between primary maladaptive schemas and all personality factors in unfaithful partners. Additionally, there was a significant relationship between discordant schemas and all personality factors except for self-destructive, schizotypal, and borderline disorders. Both early maladaptive schemas and personality factors were able to predict marital infidelity in the groups identified as traumatized and unfaithful. Notably, significant differences were found between the three groups of unfaithful, injured, and normal individuals concerning primary maladaptive schemas and personality factors, with the betrayed and injured groups exhibiting higher levels of maladaptive schemas and personality factors compared to the normal group (28).

Understanding psychological diagnoses through the lens of maladaptive schemas can enhance the differentiation of mental health risk factors, enabling psychologists to tailor their therapeutic approaches to meet the specific needs of athletes (29). Investigating the schemas and self-control of athletes can facilitate the optimization of their sports performance. However, research on athlete schemas, particularly among swimmers, remains limited. The literature review reveals that primary maladaptive schemas have primarily attracted interest from clinical and psychotherapy perspectives in non-sporting populations, focusing on the impact of these schemas on sports vulnerability largely unaddressed.

Self-control is crucial in reducing impulsive behaviors and managing frustration, serving as a cognitive skill that helps athletes regulate their emotions and make sound decisions. Consequently, one of the key questions in the current research is whether athletes' self-control is influenced by their schemas. Given the scarcity of resources on athlete schemas, the findings of this study could provide valuable insights. Previous research has indicated that early maladaptive schemas

may act as a potential mechanism linking irrational beliefs and psychological distress among athletes (9).

Due to the limited number of studies in this area, particularly those comparing the athletes' initial maladaptive schemas and self-control across different sports contexts, this research seeks to address these gaps. Specifically, it aims to explore differences in schemas among athletes with varying sports and personal characteristics and the relationship between schemas and self-control within this population. Thus, the objective of the present study is to compare initial maladaptive schemas and self-control among athletes based on different sports positions and demographic characteristics.

Materials and methods

This study is applied in nature and employs a descriptive-causal comparative design. The research sample consisted of 256 male and female athletes from swimming clubs across various cities in Iran selected through the convenience sampling method. After contacting the club officials and obtaining consent from the athletes to participate in the research, the questionnaires were sent to them electronically. Detailed explanations regarding the research objectives, how to respond to the questions, and ethical considerations, including the confidentiality of the information provided, were communicated to the participants.

Statistical Population

The statistical population of this study includes all male and female swimmers in the country aged 17 years or older.

Sample Size and Selection Method

The sample size for this research was determined to be 250 individuals based on Morgan's table. To increase validity and to account for potential attrition, 256 swimmers from clubs in all provinces of Iran were selected in 2023 using convenience sampling. The sample consisted of 19% male (50 participants) and 78% female (203 participants), with an average weight of 64 kg (mean: 35-114 kg) and an average height of 166 cm (± 14 cm). Participants had an average of 7 years of experience in swimming; their educational backgrounds included 14% with a high school diploma

(37 participants), 18% with an associate degree (47 participants), 48% with a bachelor's degree (124 participants), 14% with a master's degree (36 participants), and 4% with a doctoral degree (12 participants) (Table 1).

In terms of marital status, 25% were married (66 participants), 70% were single (182 participants), 1% were engaged (4 participants), and 1% were divorced (4 participants). Regarding employment status, 1% were unable to work (2 participants), 4% were unemployed but seeking work (12 participants), 4% were homemakers (12 participants), 7% were self-employed (20 participants), 49% were students (126 participants), 16% were employed part-time (42 participants), and 15% were employed full-time (41 participants) (Table 1).

In the sample, the distribution of swimmers by role was as follows: athletes (200 individuals) accounted for 77%, coaches (28 individuals) represented 10%,

referees (2 individuals) made up 1%, athlete-coaches (11 individuals) constituted 4%, a combination of athlete, coach, and referee (6 individuals) comprised 2%, and sports managers (9 individuals) constituted 3% (Table 2).

Regarding their athletic performance levels, 50% of the participants engage in sports solely for health reasons or serve as referees or managers (130 individuals). Additionally, 28% are amateur athletes (73 individuals), 14% are semi-professional athletes (36 individuals), and 6% are professional athletes, referees, or managers (17 individuals) (Table 2).

As for competitive achievements within the sample, 49% reported having no placements (127 individuals), 17% achieved local placements (45 individuals), 23% attained provincial placements (61 individuals), 7% reached national placements (20 individuals), and 1% earned international placements (3 individuals) (Table 2).

Table 1. Demographic Characteristics of the Research Sample Swimmers

Gender	Frequency	Percentage	Education	Frequency	Percentage	Marital Status	Frequency	Percentage	Employment Status	Frequency	Percentage
Female	203	78.0	High School	37	14.0	Single	182	70.0	Unable to work	2	0.0
Male	50	19.0	Associate Degree	47	18.0	Married	66	25.0	Unemployed but seeking work	12	4.0
Prefer not to say	4	1.0	Bachelor's Degree	124	48.0	Engaged	4	1.0	Homemaker	12	4.0
			Master's Degree	36	14.0	Divorced/ Others	4	1.0	Student	126	49.0
			Doctorate	12	4.0				Self-employed	20	7.0
									Employed part-time	42	16.0
									Employed full-time	41	15.0
									Retired	1	0.0

Table 2. Athletic Characteristics of the Research Sample Swimmers

Role	Frequency	Percent age	Athletic Level	Frequency	Percentage	Achievements (Medals)	Frequency	Percentage
Athlete	200	78.0	I engage in sports solely for health reasons, or as a referee or manager.	130	50.0	No placement	127	49.0
Coach	28	10.0	Amateur athlete (not including the two categories above)	73	28.0	County	45	17.0
Referee	2	0.0	Semi-professional athlete (participating in provincial teams and national leagues 2 and 3)	36	14.0	Provincial	61	23.0
Athlete and Coach	11	4.0	Professional athlete, referee, or manager (participating in league 1 and above)	17	6.0	National	20	7.0
Athlete, Coach, Referee	6	2.0				International	3	1.0
Sports Manager	9	3.0						

Inclusion and Exclusion Criteria: A minimum of one year of experience in swimming and at least a secondary education level were required for participation.

Measurement Tools

1. **Demographic Questionnaire:** This included questions about age, gender, education level, duration of sports practice, and type of athletic activity.
2. **Young Schema Questionnaire Short Form (YSQ-SF):** This 75-item short form was developed to measure 15 early maladaptive schemas (Young, 2005) based on the original version. The long form has 205 items, while the short form contains 75 items. Each question is scored on a 6-point Likert scale (1 = Completely False, 2 = Mostly False, 3 = More True than False, 4 = Slightly True, 5 = Mostly True, 6 = Completely True). In the short form, each schema is assessed using five items. Higher scores indicate greater levels of early maladaptive schemas. This study utilized the short form to evaluate 15 early maladaptive schemas across five domains:

- Disconnection and Rejection (1. Abandonment/Instability, 2. Mistrust/Abuse, 3. Emotional Deprivation, 4. Defect/Shame, 5. Social Isolation/Alienation)
 - Impaired Autonomy and Performance (6. Dependence/Incompetence, 7. Vulnerability to Harm/Disease, 8. Enmeshment/Undeveloped Self, 9. Failure)
 - Impaired Limits (10. Entitlement/Grandiosity, 11. Insufficient Self-Control/Self-Discipline)
 - Other-Orientation (12. Subjugation, 13. Self-Sacrifice)
 - Over-vigilance and Inhibition (14. Emotional Inhibition, 15. Unrelenting Standards/Hypercriticalness) (30). Madahi, Jafari, and Ghodsi (2022) confirmed the factor structure and construct validity of this questionnaire, with a Cronbach's alpha reliability coefficient of 0.96 and domain reliability ranging from 0.67 to 0.86 (31).
3. **Self-Control Questionnaire:** Developed by Tangney et al. (2004), this questionnaire contains 13 items to measure individuals' self-control. The response scale is a Likert-type (1 = Never, 2 = Rarely, 3 = Occasionally, 4 = Often, 5 = Very Often). However, scoring questions 2, 3, 4, 5, 7, 9, 10, 12, and 13 are reversed. The total score is

obtained by summing the scores of all items, with a maximum score of 65 and a minimum score of 13. A higher score indicates greater self-control (32). The validity and reliability of this questionnaire were confirmed in a study by Mousavi-Moghaddam *et al.* (2015) (33). In Tangney *et al.* (2018), the validity of the scale was supported through correlations with measures of academic performance, adaptability, positive relationships, and interpersonal skills. Reliability coefficients were reported at 0.83 and 0.85 using Cronbach's alpha across two samples (32).

Implementation Method

Volunteers who met the inclusion criteria were invited to complete the demographic, self-control scale, and Young Schema questionnaire online (via various platforms) until 256 participants were reached.

Ethical Considerations

At the beginning of the study, the aims and content of the research were explained to the participants, and their informed consent was obtained. Participants were assured that they could withdraw from the study whenever they wished. The questionnaires were then provided for completion. In case of any ambiguities, researchers were available to answer participants'

questions. Overall, ethical principles were upheld throughout the study, including the responsible use of resources, accuracy in citations, acknowledgment of contributions from others, adherence to moral values in data collection, and respect for the privacy of sampled individuals. This research is based on an original proposal with the ethical code IR.SSRI.REC.1401.1868.

Data Analysis

Descriptive statistical methods (mean and standard deviation) were used to analyze demographic data, and inferential statistical methods included the Shapiro-Wilk test, multiple analysis of variance (MANOVA), and one-way analysis of variance (ANOVA). In addition, the research data were analyzed using SPSS software, with a significance level set at 0.05 for this study.

Results

The Kolmogorov-Smirnov test, along with skewness and kurtosis, indicated that the data were normally distributed. The mean and standard deviation of early maladaptive schemas, broken down by gender, are presented in Table 3.

Table 3. Mean and Standard Deviation of Primary Maladaptive Schema Constructs

Variable	Women Mean	Women Standard Deviation	Men Mean	Men Standard Deviation	Overall Mean	Overall Standard Deviation
Overall Schema	4.00	0.001	4.00	0.001	4.00	0.001
Disconnection and Rejection	4.00	0.001	4.00	0.001	4.00	0.001
Autonomy	5.04	0.001	5.04	0.001	5.04	0.001
Impaired Limitations	4.00	0.001	4.07	0.001	4.00	0.001
Other Orientation	3.00	1.06	3.00	0.001	3.00	1.04
Hyper-Vigilance	4.00	0.001	4.00	0.001	4.00	0.001
Abandonment	4.00	1.06	4.00	0.01	4.00	1.09
Distrust	4.00	0.01	4.00	0.01	4.00	0.01
Emotional Deprivation	4.00	0.001	4.00	0.001	4.00	0.001
Defect/Shame	5.00	0.001	5.09	0.001	5.00	0.001
Social Isolation	5.00	1.02	5.00	0.001	5.00	1.02
Dependency	5.04	0.001	5.00	1.01	5.00	0.001
Vulnerability to Harm	5.04	0.001	5.00	0.001	5.07	0.001
Undeveloped Self	5.01	1.03	4.00	1.02	4.00	0.001
Failure	4.00	0.001	4.00	0.001	4.00	0.001
Entitlement/Grandiosity	4.00	1.08	4.06	1.02	4.00	1.08
Insufficient Self-Discipline	4.00	0.001	4.08	0.01	4.00	0.001
Obedience	3.00	0.01	3.00	0.001	3.00	0.01
Altruism	3.00	0.01	3.00	0.01	3.00	0.01
Emotional Inhibition	4.00	0.01	4.00	0.001	4.00	1.09
Rigid Standards	3.00	0.001	4.00	0.001	4.05	0.001

As shown in Table 3, the dominant schema among swimmers (both male and female) is "autonomy and impaired functioning," which received an average score of 5-6 among the five general types of schemas. Among the 15 specific types of schemas, the dominant schemas for swimmers (both male and female) that also received an average score of 5-6 include defect/shame, social isolation/alienation, dependency/incompetence, and vulnerability to harm/disease. Additionally, the schema of the undeveloped self has also reached the threshold of dominance among women.

In the comparison between female and male swimmers, Levene's test confirmed the homogeneity of variances. The analysis of variance indicated no significant difference between women and men regarding the schema of entitlement/grandiosity and emotional inhibition ($p > 0.05$). However, significant differences were observed between genders in the overall schema and other subcomponents of primary maladaptive schemas ($p < 0.05$).

Furthermore, significant differences in types of primary maladaptive schemas, except for autonomy and failure, were found among swimmers at different performance levels.

Regarding the levels of medals won, a significant difference was observed among types of primary maladaptive schemas, except for distrust/maltreatment and obedience ($p < 0.05$). Additionally, significant differences in primary maladaptive schemas were found among swimmers at different educational levels, except for other orientations, defect/shame, social isolation/alienation, and rigid standards/harsh criticism ($p < 0.01$).

Among married and single swimmers, significant differences were observed in the overall schema and other subcomponents of primary maladaptive schemas, except for social isolation/alienation ($p < 0.0001$). (Table 4)

The results of the Sheffe test revealed significant differences between all pairs of groups concerning gender, performance level, medals won, education, and marital status regarding primary maladaptive schemas and self-control ($p < 0.01$).

Table 5 shows significant differences in schema, self-control, and the relationship between schema and self-control, considering sports levels, employment, level of medals won, position, gender, education, and marital status ($p < 0.01$).

(Table 5)

Table 4. Comparison of Primary Maladaptive Schemas of Swimmers Based on Gender, Performance Level, Medals Won, Education, Employment, and Marital Status

Variable	Gender	Performance Level	Medals Won	Education	Marital Status
	ANOVA	Significance	ANOVA	Significance	ANOVA
Overall Schema	0.0001	0.0001	0.00	0.0001	0.0001
Disconnection and Rejection	0.0001	0.0001	0.07	0.0700	0.0001
Autonomy	0.0001	0.0001	0.00	0.0820	0.0001
Impaired Limitations	0.00	0.0001	0.0001	0.0001	0.00
Other Orientation	0.0340	0.0001	0.0001	0.0001	0.0960
Excessive Vigilance	0.00	0.0001	0.0001	0.0001	0.0001
Abandonment	0.0010	0.0001	0.09	0.0001	0.00
Distrust	0.0010	0.0001	0.00	0.0001	0.00
Emotional Deprivation	0.0001	0.0001	0.00	0.0001	0.0001
Defect/Shame	0.0001	0.0001	0.00	0.0170	0.0001
Social Isolation	0.0010	0.0001	0.00	0.0400	0.0780
Dependency	0.0001	0.0001	0.00	0.0180	0.0001
Vulnerability to Harm	0.0010	0.0001	0.00	0.0001	0.0001
Undeveloped Self	0.0001	0.0001	0.0001	0.0001	0.0001
Failure	0.0001	0.0001	0.08	0.0690	0.0001
Entitlement/Grandiosity	0.00	0.0720	0.0001	0.0001	0.00
Insufficient Self-Discipline	1.0850	0.0001	0.0001	0.0001	0.00
Obedience	0.0090	0.0001	0.0001	0.0001	0.00
Altruism	0.0001	0.0001	0.0001	0.0001	0.00
Emotional Inhibition	0.00	0.0860	0.0001	0.0001	0.0001
Rigid Standards	0.00	0.0060	0.0001	0.0001	0.00

Table 5. Comparison of self-control and schema according to sports levels, employment, level of medals won, position, gender, education, and marriage

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Sport performance level						
Model corrected	308.000a	249	1.000	2.000	.000	.000
Intercept	526.000	1	526.000	1053.000	.000	.000
Schema	200.094	156	1.000	2.000	.000	.000
Self-control	45.000	38	1.000	2.000	.000	.000
Schema * Self-control	57.000	52	1.000	2.000	.000	.000
Winning medals level						
Intercept	613.000	1	613.000	1228.000	.000	.000
Schema	175.000	156	1.000	.000	.000	.000
Self-control	31.000	38	.000	.000	.000	.000
Schema * Self-control	66.000	52	1.000	1.000	.000	.000
Gender						
Intercept	249.000	1	249.000	1090.000	.000	.000
Schema	29.076	156	.000	1.018	.000	.000
Self-control	7.000	38	.000	1.000	.000	.000
Schema * Self-control	9.000	52	.000	2.000	.000	.000
Employment						
Intercept	3650.000	1	3650.000	1405.000	.000	.000
Schema	332.000	156	2.000	1.000	.000	.000
Self-control	85.000	38	2.000	1.000	.000	.000
Schema * Self-control	93.052	52	1.000	1.000	.000	.000
Marriage						
Intercept	300.000	1	300.000	1102.000	.000	.000
Schema	54.000	156	.000	.000	.000	.000
Self-control	12.051	38	.000	.000	.000	.000
Schema * Self-control	19.000	52	.000	4.000	.031	.000
Studies level						
Intercept	1201.000	1	1201.000	1737.000	.000	.000
Schema	166.000	156	1.065	1.000	.000	.000
Self-control	29.000	38	.000	.000	.000	.000
Schema * Self-control	47.000	52	.000	1.000	.000	.000
Sports side						
Intercept	351.000	1	351.000	336.000	.000	.000
Schema	278.000	156	1.000	1.000	.015	.000
Self-control	39.000	38	1.045	.000	.000	.000
Schema * Self-control	54.000	52	1.049	1.000	.000	.000

Discussion

Based on demographic characteristics, the present study aimed to compare self-control and maladaptive schemas in athletes. According to the results of descriptive findings, among the 15 types of schemas, the predominant schemas of swimmers (male and female) that scored an average of 5-6 were defect/shame, social isolation/alienation, dependence/incompetence, and vulnerability to harm/illness. Additionally, the self-developed schema also reached the threshold of being predominant

among women. These findings are consistent with the research by Aghababai and Rahmanian (in press) on volleyball and bodybuilding athletes (5-6).

Based on the results of multivariate analysis of variance, there were significant differences between maladaptive schemas and self-control based on sports levels, employment, level of medals won, position, gender, education, and marital status. The results of this study align with the findings of Ebrahimi, Zamani, and Baghari (2024), which showed that maladaptive schemas have a direct relationship with the tendency toward anabolic steroid use in athletes, which is somewhat related to self-control. Furthermore, the schemas of failure, emotional deprivation, and

defect/shame have an indirect effect through the mediating role of muscle dysmorphia in attitudes toward the use of anabolic steroids (34). It can be explained by the relationship between self-regulation, goal-oriented behavior, and performance, leading to a connection between maladaptive schemas and lack of self-control (addictive behaviors) in both clinical and healthy populations (35).

Some studies indicated significant differences between the schemas of women and men, with women scoring higher in schemas such as self-sacrifice (36). In the swimmer athletes, according to the findings of this research, this difference is observed in the overall schema but not in the schemas of entitlement, grandiosity, and emotional inhibition. It can be attributed to the impact of the environment on the formation of maladaptive schemas and emotional regulation (the root of self-control), which affects established gender roles and socially approved ideals (19). One reason for the lack of difference between female and male athletes in some schemas is due to the nature of professional sports, which enhances the mental resilience of athletes, and female athletes, by becoming stronger on the path to the championship, approach the personality traits of male athletes. Additionally, the differences in some schemas between male and female swimmers can be explained by the fact that female athletes have reported more issues related to depression, anxiety, and turmoil in many studies, and mental health factors can be influenced by schemas as well (37).

Moreover, the results of the present study indicated significant differences in types of maladaptive schemas, except for autonomy and failure, among swimmers at different levels of athletic performance. There was also a significant difference in the types of maladaptive schemas based on levels of medals won, except for mistrust/misbehavior and obedience among swimmers. This finding suggests that as athletic performance increases, the types of schemas also change. It seems that some schemas are prominent at lower performance while others become evident at higher levels. Further studies are needed in other athlete groups to explore this area more accurately. The results of the Shapiro-Wilk test also indicated significant differences among all performance groups in types of maladaptive schemas, except for other

orientations. When comparing the homogeneity of the mean maladaptive schemas across subsets, it was found that the maladaptive schemas of the professional group differed significantly from the other groups in most constructs. However, in the group that engages in sports solely for health, the predominant schemas include autonomy and dysfunctional performance, vulnerability to harm/illness, and failure. In the amateur group, the predominant schema is disconnection and rejection. In the semi-professional group, autonomy and dysfunctional performance, emotional deprivation. In the professional group, social isolation/alienation, dependency/incompetence, and self-sacrifice. This finding, conducted with swimmers, is consistent with Gargishan's (2015) findings that rugby and handball athletes require certain psychological traits to achieve higher performance and that these traits are covered by maladaptive schemas (21). In addition, studies by other researchers (38-39) have found a significant relationship between maladaptive schemas and athletic performance. In other words, an athlete's performance may be influenced by these schemas. Athletic performance requires going beyond one's comfort zone without satisfying needs for self-protection, obedience, and self-sacrifice, which are associated with pleasure derived from self-harm and perfectionism, as well as significant anxiety and fear (22).

The characteristics of maladaptive schemas are such that they are deep and pervasive patterns or themes. They consist of memories, emotions, cognitive words, and bodily sensations about oneself and one's relationships with others. They form during childhood or adolescence, persist throughout life, and are highly dysfunctional. Generally, maladaptive schemas are self-destructive emotional and cognitive patterns that develop early in life and are repeated throughout life (30). Athletes also encounter these emotional and cognitive patterns during their professional sports journey and life cycle. Few studies have investigated maladaptive schemas in athletes. One study indicated that maladaptive schemas in team athletes were higher than in individual athletes (40), indicating that the nature of the sport affects the level of maladaptive schemas.

Additionally, the present study demonstrated significant differences among all levels of medals won in types of maladaptive schemas. In comparing the

homogeneity of the mean maladaptive schemas across subsets, we found that the maladaptive schemas of the group with national medals differed significantly from the other groups in most constructs. This finding aligns with the research by Rankin *et al.* (20), which showed that maladaptive schemas and implicit self-esteem affect dependence on sport in a group of Australian cyclists (20). Moreover, Salehian and Garsooi (2020) found significant differences in maladaptive schemas among female athletes with competitive levels (41). In other words, athletes at the national competitive level exhibited more maladaptive schemas. In addition, adolescent athletes had more maladaptive schemas. Competitive level, athletic performance, and age impact the extent of maladaptive schemas, which is consistent with the present study. National competitive athletes have a higher average of maladaptive schemas, and athletes in the youth age group have a higher average level of schemas (41).

It seems that the professionalism of athletes is more related to the activation of schemas such as social isolation and incompetence. Given their competitive nature and social reputation, they are more likely to experience negative emotional patterns associated with feelings of alienation and incompetence. In contrast, amateur athletes predominantly experience a sense of disconnection and rejection, likely due to their concerns about maintaining their positions in the sports environment. These results indicate that recognizing and understanding athletes' schemas is crucial for enhancing their athletic performance. The issues of winning and losing and the medals obtained can play a significant role in the development and persistence of maladaptive schemas due to their close relationship with all aspects of athletes' lives.

Additionally, the present study showed significant differences in self-control and types of maladaptive schemas, except for other orientations, defect/shame, social isolation/alienation, and rigid criteria/excessive criticism, among swimmers at different educational levels. This finding aligns with the results of Duckworth and Seligman (2017) and Tyler *et al.* (2020) (24-25). According to social-cognitive theory, self-control is context-dependent; thus, it is not a general trait or solely based on developmental level but is relatively context-specific (42).

Tangney *et al.* (2018) reported that students with high self-control exhibit better psychological adjustment, interpersonal relationships, and performance in academic and advancement-related matters (32). Therefore, education can also influence self-control and schemas in athletes.

The present research indicated significant differences in self-control, overall schema, and other subcomponents of maladaptive schemas between married and single swimmers, except for social isolation/alienation. These findings are consistent with the works of Karakush (2023) and Shariati *et al.* (2022) (26,28).

Moreover, Gargishan (2015) demonstrated that while there are similarities between the maladaptive schemas in rugby and handball, there are also significant differences (21). One characteristic of maladaptive schemas is that they are activated only through specific situations related to a particular schema, leading to negative emotional experiences, communication problems, psychological distress, and mental health disorders (43-45). Furthermore, we can state that maladaptive beliefs regarding unstable and insecure interpersonal relationships, exposed to the risks of humiliation and harm, can lead to a higher risk of lack of self-control (such as intimate partner violence) (27). Thus, marital status and the nature of marital relationships influence maladaptive schemas and self-control.

Therefore, the differing nature of sports regarding athletic performance, competitive levels, and sports positions, along with variations in demographic characteristics such as gender, marital status, and occupation, can impact athletes' psychological traits. It also applies to maladaptive schemas, as these differences can cause changes in athletes' maladaptive schemas over time. This study demonstrated that sports and certain demographic differences can influence the level of schemas, leading to their increase or decrease. Considering that this research was conducted on a wide range of swimmers with diverse characteristics, it is suggested that future studies should focus on schemas and self-control in athletes from other sports at national and Olympic levels, conducting comparative and educational research to improve athletic performance. By preventing and treating maladaptive schemas, athletes can achieve better self-control.

Code of Ethics

This research is derived from an original research project with the ethical code IR.SSRI.REC.1401.1868.

Conflict of Interest

The authors declare no conflict of interest.

References

- 1- Sohrabi F, Darabi A, Rastgoo N, Azami Y. Mediating role of early maladaptive schemas in relation to attachment styles and depression in students. *Couns Cult Psychother*. 2016;7(25):91-110. (In Persian)
- 2- Young JE, Klosko JS, Weishaar ME. *Schema therapy: A practitioner's guide*. New York: Guilford Press; 2005.
- 3- Martin R, Young J. Schema therapy. In: Dobson KS, editor. *Handbook of cognitive-behavioral therapies*. New York: Guilford Press; 2010. p. 317-346.
- 4- Diba Zaki E, Salehian MH. Comparison of win and loss effects on early maladaptive schemas of female team and individual sports athletes. *Mind Mov Behav*. 2023;2(1):155-171. (In Persian)
- 5- Aghababa A, Rahmanian Z. Identifying dominant early maladaptive schemas in bodybuilding athletes. *Sport Psychol Stud*. In press. (In Persian)
- 6- Aghababa A, Rahmanian Z. Determination of dominant primary maladaptive schemas in volleyball athletes. *J Clin Sport Neuropsychol*. In press. (In Persian)
- 7- Poorabed H, Bahrami F. Relationship between early maladaptive schemas and social anxiety among athletes: The mediating role of physical self-concept. *Sport Psychol Stud*. 2022;10(38):157-168. (In Persian)
- 8- Thimm JC. Incremental validity of maladaptive schemas over five-factor model facets in the prediction of personality disorder symptoms. *Personal Individ Differ*. 2011;50(6):777-782.
- 9- Turner MJ, Aspin G, Gillman J. Maladaptive schemas as a potential mechanism through which irrational beliefs relate to psychological distress in athletes. *Psychol Sport Exerc*. 2019;44:9-16.
- 10- Achtziger A, Hubert M, Kenning P, Raab G, Reisch L. Debt out of control: The links between self-control, compulsive buying, and real debts. *J Econ Psychol*. 2015;49:141-149.
- 11- Swing EL, Gentile DA, Anderson CA, Walsh DA. Television and video game exposure and the development of attention problems. *Pediatrics*. 2010;126(2):214-221.
- 12- Lorzangeneh S, Esazadegan A. The role of early maladaptive schema domains and childhood trauma in predicting cognitive distortions. *J Res Psychopathol*. 2022;3(8):1-8.
- 13- Pashangian N, Keykhosrovani M, Amini N, Abbasi M. Intervention in impulsivity and self-control of adolescents with disruptive mood dysregulation disorder: Effectiveness of schema modes therapy and impulse control training. *J School Psychol*. 2022;11(2):21-38 (In Persian)
- 14- Tanbakouchian R, Zanganeh F, Bayat MR. Compare the effectiveness of emotion-focused and schema therapy approaches on ambiguity resilience and self-control of women with marital burnout. *RBS*. 2021;19(1):1-12. (In Persian)
- 15- Botter L, Gerritsen DL, Oude Voshaar RC. Schema therapy in the nursing home setting: A case study of a cognitively impaired patient. *Clin Case Stud*. 2022;21(6):552-570.
- 16- Bertrams A. Perceived self-control effort, subjective vitality, and general affect in an associative structure. *Front Psychol*. 2021;12:575357.
- 17- Bertrams A. The cognitive association between effortful self-control and decreased vitality. *Front Psychol*. 2021;12:631914.
- 18- Bertrams A. A schema-activation approach to failure and success in self-control. *Front Psychol, Sect Theor Philosoph Psychol*. 2020;11:2256.
- 19- Shrivastava O, Sharma P. Influence of parenting on maladaptive schemas and emotion regulation in adolescents presenting with self-injurious behavior in a tertiary care hospital of North India. *J Indian Assoc Child Adolesc Ment Health*. 2022;18(2):167-175.
- 20- Rankin RM, Read PA, Walker BR, Rankin PM. Other directedness and impaired limits: The impact of early maladaptive schema on exercise dependence. *Curr Psychol*. 2021;40:2161-2173.
- 21- Gherghişan AI. The analysis of early maladaptive schemas that facilitate high performance in women handball and rugby players. *Sport Sci Rev*. 2015;24(3-4):145-170.
- 22- Reyhan S, Gür Y, Salehian MH. Effect of losing on early maladaptive schemata of individual male athletes. *Afr Educ Res J*. 2020;8(1):78-82.
- 23- Salehian MH, Gursoy R. The effect of winning on early maladaptive schema of female athletes. *Afr Educ Res J*. 2020;8(2):227-232.
- 24- Duckworth AL, Seligman ME. The science and practice of self-control. *Perspect Psychol Sci*. 2017;12:715-718.
- 25- Tyler N, Heffernan R, Fortune CA. Reorienting locus of control in individuals who have offended through strengths-based interventions: Personal agency and the Good Lives Model. *Front Psychol*. 2020;11:553240.
- 26- Karakuş Z. The investigation of the relationship between childhood trauma, dissociative experiences, early maladaptive schemas, and mate selection attitudes of single university students [dissertation]. Istanbul: Istanbul Sabahattin Zaim University; 2023.
- 27- Sójta K, Margulská A, Józwiak-Majchrzak W, Grażka A, Grzelczak K, Strzelecki D. Cognitive-affective risk factors of female intimate partner violence victimization: The role of early maladaptive schemas and strategic emotional intelligence. *Brain Sci*. 2023;13(7):1118.
- 28- Shariati V, Taheri E, Garivani G. Studying early maladaptive schemas and personality factors in betraying and injured spouses. *Soc Determ Health*. 2022;8(1):1-10..
- 29- Słysz A, Urbańska J. Psychological consequences of experiencing the COVID-19 coronavirus pandemic: Early maladaptive schemas and mental health and quality of life. *Psychol Health Med*. 2023;28(9):2660-2671.
- 30- Young JE. *The Young Schema Questionnaire: Short form*. Cognitive therapy and research. 2005.
- 31- Madahi MI, Jafari RM, Qudsi P. Comparing the effectiveness of the schema therapy approach with therapy based on acceptance and commitment to the self-control of married women and men with extramarital relationships. *Islam Lifestyle Center Health*. 2023;7(2):49-58. (In Persian)
- 32- Tangney JP, Boone AL, Baumeister RF. High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. In: *Self-regulation and self-control*. New York: Routledge; 2018. p. 173-212.
- 33- Mousavimoghdam SR, Hourri S, Omid A, Zahirikhah N. Evaluation of the relationship between intellectual intelligence and self-control, and defense mechanisms in third-year secondary school girls. *Med Sci*. 2015;25(1):59-64. (In Persian)
- 34- Ebrahimi M, Zamani Z, Bagheri E. Early maladaptive schemas, cognitive fusion, and anabolic-androgenic steroid use attitudes: The

- mediating role of muscle dysmorphia in Iran. *J Clin Sport Psychol*. 2024;1(aop):1-18.
- 35- Vieira C, Kuss DJ, Griffiths MD. Early maladaptive schemas and behavioral addictions: A systematic literature review. *Clin Psychol Rev*. 2023;102340.
- 36- Janson DL, Harms CA, Hollett RC, Segal RD. Differences between men and women regarding early maladaptive schemas in an Australian adult alcohol dependent clinical sample. *Subst Use Misuse*. 2019;54(2):177-184.
- 37- Kew ME, Dave U, Marmor W, Olsen R, Jivanelli B, Tsai L, et al. Sex differences in mental health symptoms in elite athletes: A systematic review and meta-analysis. *Sports Health*. 2024;14:19417381241264491.
- 38- Gallagher BV, Gardner FL. An examination of the relationship between early maladaptive schemas, coping, and emotional response to athletic injury. *J Clin Sport Psychol*. 2007;1(1):47-67.
- 39- Collum J. Maladaptive schemas as a predictor of residential treatment outcomes in females with eating disorders [thesis]. Logan, Utah: Utah State University; 2009.
- 40- Shundi M, Karbalai Mohammad Migouni A, Thabit M. Comparison of anxiety levels, psychological adjustment, and initial maladaptive schemas in professional and non-professional athletes. In: *Proceedings of the second international research conference in engineering, science, and technology*; 2014. (In Persian)
- 41- Salehian MH, Gursoy R. The effect of winning on early maladaptive schema of individual female athletes. *Afr Educ Res J*. 2020;8(2):227-232.
- 42- Nokelainen P, Tirri K, Merenti-Välimäki HL. Investigating the influence of attribution styles on the development of mathematical talent. *Gifted Child*. 2007;51(1):64-81.
- 43- Barazandeh H, Kissane DW, Saeedi N, Gordon M. A systematic review of the relationship between early maladaptive schemas and borderline personality disorder/traits. *Pers Individ Differ*. 2016;94:130-139.
- 44- Flink N, Sinikallio S, Kuittinen M, Karkkola P, Honkalampi K. Associations between early maladaptive schemas and mindful attention-awareness. *Mindfulness*. 2018;9(3):1216-1223.
- 45- Kunst H, Lobbestael J, Candel I, Batink T. Early maladaptive schemas and their relation to personality disorders: A correlational examination in a clinical population. *Clin Psychol Psychother*. 2020;27(6):837-846.