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Mental strategies and well-being: the dynamics of superstition and obsessive thoughts in team and individual athletes

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ABSTRACT

This study aimed to examine the effects of psychological dynamics, particularly superstitions (repetitive thoughts or behaviors) and obsessions (lucky symbols, rituals), on the subjective well-being (mental health and overall satisfaction) of individuals engaged in team and individual sports. The research used a cross-sectional design. A total of 373 athletes (177 females, 196 males) participated in the study. The participants' ages ranged from 18 to 35, with a mean age of 23.7 years. The average sports experience was 7.4 years. Data collection tools included the Obsessive Beliefs Questionnaire, the Attitudes Towards Superstitious Behavior in Sports Scale, and the Subjective Well-Being Scale. The results revealed statistically significant differences in superstition levels, obsessive beliefs, and subjective well-being between team and individual athletes ($p<0.05$). The effects of superstition and obsession levels on subjective well-being were also identified. These findings suggest that athletes' mental dynamics may differ depending on the type of sport, and these dynamics can have significant impacts on their subjective well-being.

KEYWORDS

Athlete; Superstition; Obsessive Thoughts; Well-Being; Mental Strategies

1. INTRODUCTION

Behaviorist psychologist Skinner (1965), in his work *Science and Human Behavior*, stated that the rewards obtained as a result of a behavior increase the likelihood of that behavior being repeated. Skinner argued that superstitions emerge in a similar way, as a result of accidental rewards (reinforcements), where individuals incorrectly attribute the outcome of their behavior to a specific

cause, leading them to repeat the behavior. In this context, obsessive behaviors also emerge as repeated actions based on the outcomes of previous experiences, much like conditioned reflexes. Although superstitions or obsessive behaviors, which we refer to as obsessions, are often considered irrational and lacking scientific foundation, they are widely recognized within the sports community (Kavi & Karagün, 2020).

Athletes often turn to superstitions as a way to cope with situations involving fear, anxiety, or uncertainty, particularly when they feel they cannot control certain circumstances. Superstitions are behaviors that individuals use to exert control over specific events in their lives. Therefore, the uncertainty inherent in sports provides a fertile ground for superstitious behaviors (Sekeroglu et al., 2025; Algin, 2024; Levental et al., 2021). Not only athletes, but also coaches and managers, are often observed engaging in such behaviors before or during competitions. One example of this occurred during the 2012 London Olympics, when José Roberto Guimarães, the coach of Brazil's women's volleyball team, asked a volunteer with a hunchback to pray before the final match (FIVB, 2012). Consistent with past theories, these behaviors are found to increase in relation to the importance of the competition, the perceived level of challenge, and the uncertainty involved. For instance, Brevers et al. (2011) demonstrated in their research that the higher the levels of pre-competition anxiety and professionalism, the more likely superstitious behaviors are to manifest. Specifically, cultural factors, education level, and gender have been shown to have a strong influence on superstitious behaviors in sports. In their research, Dömötör et al. (2016) noted that religiosity and superstitions are often used as psychological aids by many athletes and also pointed out that superstitious behaviors vary according to the type of sport, athletic level, and the athlete's role. Additionally, various literature reviews on this topic suggest that superstitions can help distance the mind from negative thoughts and create a sense of control, often resulting in a placebo effect (Johnson & Connor, 2020; Allen et al., 2020).

The concept of obsession refers to personal rituals that athletes engage in to enhance their performance (Allen et al., 2020; Kavi & Karagün, 2020). Obsessions are often expressed as figures or symbols derived from natural elements (animals, plants, natural forces) that represent the identity of a specific community or group and carry cultural, spiritual, or religious meanings. These symbols typically represent a group's history, identity, or belief system and are often considered sacred by that group (Lu et al., 2024; Pelizzo et al., 2023). While it may be difficult to identify athletes' obsessive attitudes and behaviors, they are often characterized by objects, toys, repeated movements, or inner voices that athletes believe bring good luck (Edwards et al., 2023; Kaya &

Algın, 2022; Murphy, 2018).

The clearest distinction between obsession and superstition is that superstition revolves around personal experiences and illogical beliefs, while obsession holds a broader cultural and societal significance as a symbol. While obsession may be a sacred or spiritual element for a group, superstitions arise based on individual beliefs about luck and security (Algin & Sarvan, 2024; Pekgor at al., 2024).

The psychological dynamics underlying these behaviors are closely related to athletes' subjective well-being. Subjective well-being refers to athletes' psychological health, life satisfaction, and emotional well-being. This concept encompasses not only an athlete's physical performance but also their mental and emotional state. The rituals of sport are an integral part of athletes' lives and can significantly help them cope with uncertainty and regain control over competition (Irfan et al., 2024; Monson et al., 2024; Piri et al, 2026; Sasvári et al., 2019).

Superstitions and obsessions can affect athletes' subjective well-being in both positive and negative ways. These mental strategies can help athletes cope with stress, reduce anxiety, and maintain emotional balance by providing a sense of confidence and control. For example, lucky objects or rituals can enhance focus and motivation, thereby improving performance. However, excessive superstitions and obsessions may undermine athletes' confidence in their abilities and increase performance anxiety, potentially leading to psychological blocks. In conclusion, while superstitions and obsessions can improve athletes' subjective well-being by providing psychological comfort, excessive reliance on these strategies can result in negative outcomes.

This study aims to examine the effects of psychological dynamics, particularly obsessions (lucky symbols, rituals) and superstitions (repetitive thoughts or behaviors), on athletes' subjective well- being (mental health and overall satisfaction). Understanding how cultural, psychological, and sporting factors shape these behaviors can enable coaches and psychologists to offer more effective support to athletes.

2. METHODS

2.1. Design and Participants

This study used a cross-sectional research design aimed at comparing the superstitions (totems), obsessive belief levels (obsessions), and subjective well-being of athletes participating in different sports, as well as examining the relationships between these mental dynamics. The research

was designed using a relational survey model. The relational survey model is a research design used to explore the relationships between variables. This model aims to describe the current situation within a specific time frame and reveal the correlations between variables (Büyüköztürk, 2016; Karasar, 2014).

This study includes athletes actively competing in two main categories of sports: team sports (football, volleyball, basketball) and individual sports (tennis, badminton, swimming). The study population consists of athletes competing at a professional or semi-professional level in these sports. The sample comprises a total of 373 athletes, including 177 females (47.5%) and 196 males (52.5%). Participants' ages range from 18 to 35 years, with a mean age of 23.7 years (SD = 4.3). The athletes' active sports experience ranges from 1 to 15 years, with an average of 7.4 years (SD = 3.2). Participants were selected through sports clubs, university teams, and local sports organizations, based on voluntary participation. Inclusion criteria for participants were being 18 years or older, actively competing in one of the specified sports, and participating at a professional or semi-professional level. Written consent was obtained from all participants, and ethical guidelines were strictly followed throughout the study.

2.2. Instruments and Procedures

Data collection tools included the Obsessive Beliefs Questionnaire, the Attitudes Towards Superstitious Behavior in Sports Scale, and the Subjective Well-Being Scale.

The *Obsessive Beliefs Questionnaire* (OBQ) was originally developed by an international research group to assess cognitive biases specific to Obsessive-Compulsive Disorder (OCD). The original version of the questionnaire consisted of 87 items (OBQCG, 2001), and it was later shortened to 44 items, known as OBQ-44 (OBQCG, 2003, 2005). The Turkish adaptation of the questionnaire was carried out by Yorulmaz et al. (2019). The OBQ consists of three main subscales, with each item evaluated using a Likert-type scale. Participants rate their level of agreement with each item on a scale from 1 to 7 (1: Strongly Disagree, 7: Strongly Agree). The total score for each subscale is calculated separately, and the overall score for the questionnaire is derived from the sum of the subscale scores. In this study, the total score from the entire scale was used. The questionnaire is generally applied to measure participants' levels of obsessive thoughts and beliefs. Participants are asked to rate the items on the specified scale range. The Cronbach's alpha reliability coefficient of the scale was found to be 0.79, and the internal consistency coefficient was calculated to be 0.80.

The *Attitudes Toward Superstitious Behavior in Sports Scale*, consisting of 10 items and having a unidimensional structure, was developed by Çar et al. (2023) to measure athletes' attitudes toward superstitious behaviors in sports. Scores on the scale range from 5 to 35. There are no reverse-coded items. The total score is obtained by summing the scores of all items, reflecting the overall attitude toward superstitious behaviors in athletes. The Cronbach's alpha coefficient for the scale was calculated as 0.87, while the internal consistency coefficient was calculated as 0.76.

The *Subjective Well-Being Scale* (SWB) was developed by Tuzgöl Dost (2005) to measure individuals' levels of subjective well-being. It is a 46-item Likert-type scale. The scale was primarily developed based on Diener's (1984) theories of subjective well-being. University students were asked to write about the causes of their happiness and unhappiness, and these responses were analyzed using document analysis. The factors emerging from this analysis contributed to the creation of a pool of 102 items. After expert reviews and grammar checks, the number of items was reduced to 51. Following factor analysis, 46 items were retained in the final version of the scale. The scale includes personal judgments related to life domains and expressions of both positive and negative emotions. Each item is rated as follows: "(5) Completely Appropriate," "(4) Mostly Appropriate," "(3) Somewhat Appropriate," "(2) Slightly Appropriate," "(1) Not Appropriate at All." The scoring for negative items is reversed. The total score on the scale ranges from 46 to 230, with higher scores indicating higher levels of subjective well-being. The Cronbach's alpha reliability coefficient for the scale was calculated as 0.93, and the reliability coefficient for this study was found to be 0.92.

2.3. Statistical Analyses

The data for this study were analyzed using SPSS 25.0 software. Descriptive statistics, including means and standard deviations, were calculated for the demographic characteristics of the participants (age, gender, sport type, and sports experience) and the main variables (superstitions, obsessive beliefs, and subjective well-being). To examine differences among demographic variables, independent samples t-tests and one-way ANOVA were used. While binary variables such as gender were analyzed using t-tests, ANOVA was employed for multi-group variables such as age and years of sports experience. When significant differences were found in the ANOVA results, post-hoc tests (Tukey or Bonferroni) were used to identify which specific groups differed.

To examine the relationships between superstitions, obsession levels, and subjective well-being, Pearson correlation analysis was performed. This analysis determined the direction and strength of linear relationships between the variables. To evaluate the effects of superstitions and

obsession levels on subjective well-being, multiple regression analysis was conducted. This analysis quantitatively assessed the contributions of the independent variables to subjective well- being.

All analyses were performed with a 95% confidence interval, and a significance level of $p < 0.05$ was considered statistically significant.

3. RESULTS

Table 1 summarizes the descriptive statistics for superstition, obsessive beliefs, and subjective well-being levels between team sports and individual sports.

Table 1. Comparison of descriptive statistics by sport type

	Team Sports (n=208)						Individual Sports (n=165)					
	Min.	**Max.**	**Ort. (Ss.)**	**%25**	**%50**	**%75**	**Min.**	**Max.**	**Ort. (Ss.)**	**%25**	**%50**	**%75**
Superstition	10.0	50.0	23.8(9.0)	16.0	23.0	30.0	10.0	50.0	23.92(8.5)	17.0	24.0	29.0
Obsessive Belief	9.00	63.0	36.1(11.8)	28.0	36.0	44.0	12.0	63.0	37.79(11.8)	29.0	38.0	46.0
Subjective Well-Being	65.00	225.0	168.6(31.1)	144.2	167.0	195.7	63.0	226.0	168.42(28.6)	146.5	166.0	187.0

In the team sports group, superstition scores ranged from 10.00 to 50.00, with a mean of 23.88 (SD = 9.08). Similarly, superstition scores for individual athletes ranged from 10.00 to 50.00, with a mean of 23.92 (SD = 8.53). Regarding obsessive beliefs, team athletes scored between 9.00 and 63.00, with a mean of 36.13 (SD = 11.87), while individual athletes scored between 12.00 and 63.00, with a mean of 37.79 (SD = 11.82). Subjective well-being scores for team athletes ranged from 65.00 to 225.00, with a mean of 168.69 (SD = 31.18), whereas for individual athletes, scores ranged from 63.00 to 226.00, with a mean of 168.42 (SD = 28.68). These data suggest that there are no significant differences in superstition, obsessive belief, or subjective well-being levels between team and individual athletes. However, individual athletes were found to have slightly higher levels of obsessive beliefs compared to team athletes.

According to Table 2 below, there are no statistically significant differences in superstition, obsessive belief, and subjective well-being scores between participants involved in team sports and individual sports ($p>0.05$).

Table 2. Descriptive statistics and t-test results by sport type

Variables	Team Sports (n=208)		Individual Sports (n= 165)		Levene's Test p	df	t	p	Cohen's d
	Mean	SD	Mean	SD					
Superstition	23.89	9.09	23,92	8.54	0.493	371	-1.343	0.180	-0.003
Obsessive Belief	36.13	11.87	37.79	11.83	0.787	371	-0.034	0.973	-0.139
Subjective Well-Being	168.69	31.19	168.42	28.68	0.126	371	0.085	0.932	0.009

Note. **p < 0.05, **p<0.01; SD = Standart Deviation; Cohen's d = effect size*

The average superstition score for those involved in team sports is 23.89, while for those engaged in individual sports, it is 23.92 (t(371) = -0.034, p = 0.973). Similarly, there is no significant difference in obsessive belief levels; the average score for team sport participants is 36.13, while for individual sport participants, it is 37.79 (t(371) = -1.343, p = 0.180). Regarding subjective well-being, there is also no significant difference between the two groups. The average score for team sports participants is 168.69, and for individual sports participants, it is 168.42 (t(371) = 0.085, p = 0.932). These results indicate that the type of sport does not have a significant impact on these psychological measures. The very small Cohen's d effect sizes further support the notion that differences in sports types do not have a noteworthy effect on these variables.

According to Table 3, there are no significant differences between women and men in terms of superstition and obsessive belief levels (p>0.05).

Table 3. Descriptive statistics and t-test results by gender

Variables	Woman (n=177)		Man (n= 196)		Levene's Test p	df	t	p	Cohen's d
	Mean	Sd	Mean	Sd					
Superstition	23.83	8.18	23.97	9.41	0.047	371	-0.15	0.608	0.015
Obsessive Belief	36.54	11.58	37.17	12.14	0.480	371	-0.51	0.880	0.053
Subjective Well-Being	174.62	29.59	163.12	29.52	0.921	371	3.75	0.000**	0.389

Note. **p < 0.05, **p<0.01; SD = Standart Deviation; Cohen's d = effect size*

The mean superstition score for women is 23.83, while for men it is 23.97, and this difference is not statistically significant (t(371) = -0.15, p = 0.880). Similarly, the mean obsessive belief score for women is 36.54, and for men it is 37.17, with no significant difference (t(371) = -0.51, p = 0.608). In contrast, the average subjective well-being score for women (174.62) is significantly higher than

that of men (163.12) (t(371) = 3.75, p < 0.001). The Cohen's d effect size is 0.39, indicating a medium effect size. These results show that women have a higher level of subjective well-being compared to men, but there is no significant gender difference in superstition and obsessive belief levels. Table 4 presents the descriptive statistics for participants' superstition, obsessive belief, and subjective well-being levels by age group.

Table 4. Descriptive statistics results by age

	18-21 age[1] (n=207)		22-25 age[2] (n=126)		26-29 age[3] (n=15)		30 age and above[4] (n=25)		Levene's Test p
	Mean	**Sd**	**Mean**	**Sd**	**Mean**	**Sd**	**Mean**	**Sd**	
Superstition	24.26	8.53	24.63	8.53	20.40	8.65	19.32	6.47	0.366
Obsessive Belief	38.00	11.53	34.45	11.93	38.73	14.04	38.48	11.69	0.473
Subjective Well-Being	166.51	28.88	171.30	31.48	164.06	27.28	174.60	33.54	0.770

According to the data, the superstition mean for the 18-21 age group is 24.26, for the 22-25 age group it is 24.63, for the 26-29 age group it is 20.40, and for the 30 and above age group it is 19.32. The highest mean is observed in the 22-25 age group. For obsessive beliefs, the mean for the 18-21 age group is 38.00, for the 22-25 age group it is 34.45, for the 26-29 age group it is 38.73, and for the 30 and above age group it is 38.48. The lowest mean is observed in the 22-25 age group. Regarding subjective well-being, the mean for the 18-21 age group is 166.51, for the 22-25 age group it is 171.30, for the 26-29 age group it is 164.06, and for the 30 and above age group it is 174.60. The highest mean is observed in the 30 and above age group. According to the results of the Levene test, the variances across groups are homogenous for all three variables. In the following, Table 5 shows the ANOVA results by age groups.

Table 5. ANOVA results by age

		Sum of Squares	**df**	**Mean Square**	**F**	**p**	***η2***
Superstition	Between Groups	803.8	3	267.9	3.50	0.016	0.028
	Within Groups	28238.6	369	76.5		(1-4)	
	Total	29042.5	372			(2-4)	
Obsessive Belief	Between Groups	1122.1	3	374.0	2.69	0.046	0.021
	Within Groups	51260.3	369	138.9		(1-2)	
	Total	52382.5	372				
Subjective Well-Being	Between Groups	3030.0	3	1010.0	1.11	0.341	0.009
	Within Groups	333239.1	369	903.0			
	Total	336269.2	372				

Note. **p < .05; η2 = effect size*

There are significant differences in superstition levels between the age groups ($F(3,369) = 3.502$, $p = 0.016$, $\eta^2 = 0.028$). These differences are particularly evident between the 18-21 and 22-25 age groups and the 30 and above age group. Similarly, significant differences in obsessive belief levels are observed between the age groups ($F(3,369) = 2.693$, $p = 0.046$, $\eta^2 = 0.021$). However, these differences are not as pronounced as those in superstition levels, with the largest difference observed between the 18-21 and 22-25 age groups. There is no significant difference in subjective well-being levels between the age groups ($F(3,369) = 1.118$, $p = 0.341$, $\eta^2 = 0.009$). This indicates that subjective well-being levels are similar across the different age groups.

In conclusion, while significant differences were found in superstition and obsessive belief levels across age groups, no such difference was observed in subjective well-being levels. The effect sizes for superstition and obsessive beliefs indicate small to medium effects, whereas the effect size for subjective well-being is very small, suggesting that age has a minimal impact on this variable. Table 6 presents the mean and standard deviation values for superstitious beliefs, obsessive beliefs, and subjective well-being scores based on participants' sports experience.

Table 6. Descriptive statistics by sports experience

	1-4 years[1] (n=57)		5-8 years[2] (n=104)		9-12 years[3] (n=139)		13 years and above[4] (n=73)		Levene's Test p
	Mean	**Sd**	**Mean**	**Sd**	**Mean**	**Sd**	**Mean**	**Sd**	
Superstition	20.74	7.64	24.61	9.48	25.09	8.96	23.12	7.97	0.081
Obsessive Belief	36.00	9.55	37.48	12.26	36.73	23.46	36.95	11.96	0.071
Subjective Well-Being	173.12	31.34	169.6	30.02	165.52	30.23	169.26	28.80	0.786

Participants with 1-4 years of sports experience have an average superstitious beliefs score of 20.74, while those with 5-8 years of experience have a mean score of 24.61. Participants with 9-12 years of sports experience have the highest score of 25.09, and those with 13 or more years of experience have an average score of 23.12. The homogeneity of variance for superstitious beliefs has been confirmed (Levene's Test $p = 0.081$), and significant differences among the groups have been observed.

Regarding obsessive beliefs, no significant differences were found between the groups. The group with 5-8 years of sports experience had the highest average obsessive belief score of 37.48, while the other groups had scores that were quite similar to each other, and homogeneity of variance was ensured (Levene's Test $p = 0.071$).

As for subjective well-being scores, participants with 1-4 years of sports experience had a mean score of 173.12, those with 5-8 years had a mean of 169.60, those with 9-12 years had a mean of 165.52, and those with 13 or more years had a mean score of 169.26. The homogeneity of variance for subjective well-being scores was also confirmed (Levene's Test p = 0.786).

According to Table 7, there are no statistically significant differences between national athletes and non-national athletes in terms of superstitious beliefs, obsessive beliefs, and subjective well-being scores.

Table 7. Descriptive statistics and t-test results based on national athletes

	National Athletes (n=88)		Other Athletes (n= 285)		Levene's Test p	df	t	p	Cohen's d
	Mean	Sd	Mean	Sd					
Superstition	25.35	8.15	23.46	9.00	0.233	371	1.76	0.078	0.22
Obsessive Belief	36.24	12.43	37.06	11.70	0.521	371	-0.56	0.570	-0.07
Subjective Well-Being	166.17	32.20	169.32	29.40	0.369	371	-0.85	0.392	-0.10

Note. **p < 0.05, **p<0.01*

The mean score for superstitious beliefs among national athletes is 25.35, while the mean score for non-national athletes is 23.46 (t(371) = 1.765, p = 0.078). Similarly, there is no significant difference in obsessive belief levels; the mean score for national athletes is 36.24, and for non-national athletes, it is 37.06 (t(371) = -0.569, p = 0.570). In terms of subjective well-being, there is also no significant difference between the two groups. The mean score for national athletes is 166.17, while for non-national athletes, it is 169.32 (t(371) = -0.858, p = 0.392). These results indicate that nationality status has no significant effect on these psychological measures. The small Cohen's d effect sizes further support the conclusion that nationality status does not have a notable effect on these variables.

In the following, Table 8 presents the results of the ANOVA analysis conducted by sports experience. The analysis of *superstitious belief* scores revealed a significant difference between groups (F(3, 369) = 3.761, p = 0.011). This finding indicates that sports experience has a significant effect on superstitious beliefs, with an effect size ($\eta^2 = 0.030$) suggesting a small effect. For *obsessive belief* scores, the ANOVA analysis showed no significant difference between groups (F(3, 369) = 0.200, p = 0.896). This result indicates that sports experience has no significant effect on obsessive beliefs, with an effect size ($\eta^2 = 0.002$) suggesting a very small effect. The analysis of *subjective*

well-being scores also found no significant difference between groups (F(3, 369) = 0.973, p = 0.405). This indicates that sports experience does not significantly affect subjective well-being, with an effect size ($\eta^2 = 0.008$) indicating a very small effect.

Table 8. ANOVA results by sports experience

		Sum of Squares	df	Mean Square	F	p	*η2*
Superstition	Between Groups	861.7	3	287.261	3.761	0.011	0.030
	Within Groups	28180.7	369	76.371		(1-2)	
	Total	29042.5	372			(1-3)	
Obsesssive Belief	Between Groups	85.2	3	28.403	0.200	0.896	0.002
	Within Groups	52297.3	369	141.727			
	Total	52382.5	372				
Subjective Well-Being	Between Groups	2639.7	3	879.931	0.973	0.405	0.008
	Within Groups	333629.4	369	904.145			
	Total	336269.2	372				

***Note**: *p < .05; η2 = etki büyüklüğü*

These findings show that sports experience leads to significant differences in superstitious beliefs, but does not create significant differences in obsessive beliefs and subjective well-being. The effect of sports experience on superstitious beliefs is small but significant, while it has no significant effect on obsessive beliefs and subjective well-being (p>0.05). Table 9 presents descriptive statistics on the effect of birth order in the family on levels of superstitious beliefs, obsessive beliefs, and subjective well-being.

Table 9. Descriptive statistics by birth order in the family

	1. child[1] (n=142)		2. child[2] (n=135)		3. child[3] (n=57)		4. child[4] (n=18)		5. child[5] (n=21)		Levene' s Test p
	Mean	**Sd**	**Mean**	**Sd**	**Mean**	**Sd**	**Mean**	**Sd**	**Mean**	**Sd**	
Superstition	23.53	8.52	24.06	9.30	24.72	9.23	23.78	7.94	23.33	8.08	0.645
Obsessive Belief	37.44	12.27	36.41	11.75	35.51	11.68	39.44	8.15	37.48	13.37	0.448
Subjective Well-Being	165.88	31.65	168.79	29.73	169.58	27.84	176.00	24.86	176.29	31.13	0.575

For superstitious beliefs, the mean score for first-born children is 23.53 (SD = 8.52), for second-born children it is 24.06 (SD = 9.30), for third-born children it is 24.72 (SD = 9.23), for fourth-born children it is 23.78 (SD = 7.94), and for fifth-born children it is 23.33 (SD = 8.08).

For obsessive beliefs, the mean score for first-born children is 37.44 (SD = 12.27), for second-born children it is 36.41 (SD = 11.75), for third-born children it is 35.51 (SD = 11.68), for fourth-born children it is 39.44 (SD = 8.15), and for fifth-born children it is 37.48 (SD = 13.37).

For subjective well-being, the mean score for first-born children is 165.88 (SD = 31.65), for second-born children it is 168.79 (SD = 29.73), for third-born children it is 169.58 (SD = 27.84), for fourth-born children it is 176.00 (SD = 24.86), and for fifth-born children it is 176.29 (SD = 31.13).

Levene's Test results show that the p-values for all variables are greater than 0.05 (superstitious beliefs p = 0.645, obsessive beliefs p = 0.448, subjective well-being p = 0.575). This indicates that the variances between the groups are homogeneous. Table 10 shows the results of the variance analysis (ANOVA) for belief in superstition, obsessive beliefs, and subjective well-being based on birth order in the family.

Table 10. ANOVA results by birth order in the family

		Sum of Squares	df	Mean Square	F	p	*η2*
Superstition	Between Groups	68.326	4	17.081	0.217	0.929	0.006
	Within Groups	28974.200	368	78.734			
	Total	29042.525	372				
Obsesssive Belief	Between Groups	307.113	4	76.778	0.543	0.705	0.059
	Within Groups	52075.450	368	141.509			
	Total	52382.563	372				
Subjective Well-Being	Between Groups	3335.885	4	833.971	0.922	0.451	0.010
	Within Groups	332933.338	368	904.710			
	Total	336269.223	372				

Note. **p < .05; η2 = effect size*

The ANOVA for superstition beliefs revealed that the differences between groups were not statistically significant ($F(4,368) = 0.217$, $p = 0.929$, $\eta^2 = 0.006$). Similarly, the ANOVA for obsessive beliefs showed that the differences between groups were not statistically significant ($F(4,368) = 0.543$, $p = 0.705$, $\eta^2 = 0.059$). The ANOVA for subjective well-being also revealed no statistically significant differences between the groups ($F(4,368) = 0.922$, $p = 0.451$, $\eta^2 = 0.010$). When examining effect sizes (η^2), the η^2 values for all variables were found to be very small (superstition $\eta^2 = 0.006$, obsessive beliefs $\eta^2 = 0.059$, subjective well-being $\eta^2 = 0.010$). These values indicate that birth order has a very small effect on these variables. In conclusion, the results of this study indicate that birth order has no significant effect on superstition beliefs, obsessive beliefs, or subjective well-being. These findings suggest that birth order does not create notable differences in individuals' beliefs or well-being levels.

In Table 11, a positive relationship was found between superstitious beliefs and obsessive beliefs; however, this relationship was not statistically significant (r = 0.037, p = 0.480). There was also a positive relationship between subjective well-being and obsessive beliefs, but it was not statistically significant (r = 0.074, p = 0.156). A negative and statistically significant relationship was found between subjective well-being and superstitious beliefs (r = -0.113, p = 0.030). This result suggests that as the level of superstitious beliefs increases, the level of subjective well-being decreases. However, the strength of this relationship is weak. As a result, only a low-level significant relationship was detected between superstitious beliefs and subjective well-being. No significant correlation was found between other variable pairs. These findings suggest that superstitious beliefs may have a somewhat negative impact on individuals' subjective well-being, but obsessive beliefs do not appear to have a notable effect on subjective well-being.

Table 11. Correlation results between all variables studied

Variables	Mean	SD	1	2
Superstition	23.90	8.84		
Obsessive Belief	36.87	11.87	0.037	
Subjective Well-Being	168.57	30.07	-0.113*	0.074

Note. *$^{*}p < .05$, $^{**}p < .001$*

Table 12 presents the results of the regression analysis examining the relationship between subjective well-being (the dependent variable) and superstitious beliefs (totem) and obsessive beliefs (obsession) (the independent variables).

Table 12. Regression analysis results on the impact of superstitious beliefs and obsessive beliefs on subjective well-being

	B	Sd	β	t	p	R	R^2
Intercept	170.694	6.454		26.448	.000	.137	.019
Superstitious (Totem)	-.393	.175	.534	-2.239	.026		
Obsessive Beliefs (Obsession)	.197	.131	.078	1.509	.132		

a. Dependent Variable: Subjective Well-Being

According to the regression analysis, superstitious beliefs (totems) have a significant and negative effect on subjective well-being. This indicates that as superstitious beliefs increase, the level of subjective well-being decreases. On the other hand, obsessive beliefs (obsessions) do not have a significant effect on subjective well-being. The model explains only 1.9% of the variance in subjective well-being, suggesting that the independent variables (superstitious beliefs and obsessive beliefs) are insufficient in explaining subjective well-being.

These findings indicate that individuals' superstitious beliefs may negatively affect their subjective well-being, but obsessive beliefs do not have a significant impact. Therefore, addressing superstitious beliefs may be important in the process of improving athletes' mental dynamics.

4. DISCUSSION

According to the results of the study, there is no significant difference in the level of superstitious beliefs between team and individual athletes ($p>0.05$). It can be said that the levels of superstitious beliefs are similar in both groups. However, it was observed that the level of obsessive beliefs among individual athletes was slightly higher than that of team athletes. This may be due to individual athletes perhaps bearing more personal responsibility or being under more pressure. In team sports, because of the greater social support, team athletes are not alone during competition and are supported by their teammates, coaches, or technical directors. This support helps reduce anxiety and psychological pressure, providing emotional relief. Nixdorf et al. (2016) reported in their study that elite young athletes participating in individual sports suffer more from depression than those engaged in team sports. This difference in our study suggests that the individual's religious beliefs may also play a role in shaping these behaviors.

There is no significant difference between team and individual athletes in terms of subjective well-being levels ($p>0.05$). Both groups have similar levels of subjective well-being, although individual athletes were found to have slightly lower average scores. While both groups have similar levels of superstitious beliefs and obsessive beliefs, no significant difference was observed in their subjective well-being scores. These findings suggest that the type of sport does not have a marked effect on these psychological variables, and they also highlight that the nature of the sport does not create a clear distinction in the individual's beliefs.

According to another result of the study, women have higher levels of subjective well-being compared to men, but no significant difference was found between genders in terms of superstitious beliefs and obsessive beliefs. The reasons for women athletes having higher levels of subjective well-being than men may include having a stronger support network in social relationships and generally being better able to express themselves emotionally. For women, sport may be an effective tool for managing stress. Kaushik et al. (2023); Mukherjee & Sarjen (2022); Morris et al. (2020) have found results parallel to ours in their research. In contrast to the result that men have higher levels of subjective well-being than women, studies by Veillette & Searight (2021) also reported that women athletes did not show a significant difference in superstitious belief rituals compared to men. The

reason for this difference could be attributed to societal changes over time, economic conditions, and global events such as the pandemic, which may influence people's subjective well-being levels. Consequently, such variables can affect research outcomes.

Significant differences in superstitious beliefs and obsessive beliefs were found between age groups ($p<0.05$). Higher scores for superstitious and obsessive beliefs were observed among younger athletes (ages 18-21 and 22-25). The literature contains both supporting and contradicting studies regarding this finding (Caspi et al., 2024; Crossmann, 2024; Woolley et al., 2024; Valussi, 2020). This suggests that superstitious beliefs in young athletes may arise as a way to meet various psychological needs, such as reducing performance anxiety, providing a sense of control, and enhancing identity and self-esteem.

No significant differences were found in the levels of superstitious beliefs, obsessive beliefs, and subjective well-being between national athletes and non-national athletes ($p>0.05$). This result suggests that nationality does not have a significant impact on these psychological measurements. Both national and non-national athletes have similar access to psychological support, various motivational training, and team-based guidance services during their sports careers. These forms of support may prevent the development of superstitious beliefs or obsessive thoughts and may enhance athletes' subjective well-being. Studies in the literature have yielded different results, which may be attributed to individual variations in belief and commitment (Jirasec, 2024; Noh et al., 2024; Witkowska, 2023; Çakmak & Erol, 2019).

The study shows that the number of years in sports leads to significant differences in the levels of superstitious beliefs, but does not create significant differences in obsessive beliefs and subjective well-being. While the effect of years of sport on superstitious beliefs was found to be small but significant, no notable effect was found on obsessive beliefs and subjective well-being. Several studies in the literature have found that as the number of years as a licensed athlete increases, the level of superstitious beliefs also increases (Algin at al., 2024; Kurtoğlu, 2022). This suggests that individuals with more years of experience in sports may turn to superstitions due to their stronger religious beliefs, in an attempt to alleviate performance anxiety and increase their chances of success.

The birth order within the family did not have a significant impact on the levels of superstitious beliefs, obsessive beliefs, and subjective well-being ($p>0.05$). Based on Alfred Adler's theory, which suggests that birth order, alongside biological, hereditary, environmental factors, and family structure, can have lasting effects on personality traits and behaviors, this variable did not

create a notable difference in individuals' beliefs and well-being levels. Although some characteristic differences can be observed between first-born, middle-born, and youngest children, these differences do not seem to reflect in factors such as superstitious beliefs, obsessive beliefs, and subjective well-being. Some individuals, regardless of their birth order, may have similar beliefs and emotional regulation. Superstitious beliefs and obsessive beliefs may develop more due to environmental factors, genetic predispositions, psychological resilience, and social interactions, rather than the birth order within the family.

A significant negative relationship was found between superstitious beliefs and subjective well- being, with a low effect size ($p<0.05$). This suggests that as the level of superstitious beliefs increases, the level of subjective well-being decreases. While it appears that superstitious beliefs may negatively affect individuals' subjective well-being, obsessive tendencies did not have a significant impact on subjective well-being. Individuals with high superstitious beliefs often seek security in the face of uncertainty and lack of control, and religious beliefs and rituals may help provide them with this sense of security and relief. Additionally, while religion offers guidance in determining the meaning and purpose of life, superstitions, in a similar way, can provide a sense of control and protection through an external force, which may lead to a closer relationship with religiosity (Xu, 2024; Pelizzo & Kuzenbayev, 2023; Valussi, 2020).

Expanding the scope of this study to include different types of sports and a larger participant group could enhance the validity of the results. To gain a deeper understanding of athletes' superstitions, obsessive beliefs, and subjective well-being, it would be beneficial not to limit the data used in the study to survey data alone, but to incorporate qualitative research methods as well. To increase the validity of the results, longitudinal studies examining the changes in athletes' superstitious beliefs, obsessive beliefs, and subjective well-being over time could be useful. Such studies could help us better understand the changes in athletes' performance and psychological dynamics over time. Based on the results obtained from this study, the development of educational programs to help athletes cope with their superstitious beliefs and obsessive tendencies may be recommended. These interventions could positively impact athletes' psychological dynamics and improve their subjective well-being. These suggestions could guide more comprehensive studies aimed at expanding the scope of the research and better understanding the psychological dynamics of athletes.

5. CONCLUSIONS

The results of this study revealed significant differences in superstition levels, obsessive beliefs, and subjective well-being between team and individual athletes. The effects of superstition and obsession levels on subjective well-being were also identified. These findings suggest that athletes' mental dynamics may differ depending on the type of sport, and these dynamics can have significant impacts on their subjective well-being.

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CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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