

Investigating Factors Influencing Football Players' Quality of Life and Performance in Saudi Arabia

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Abstract: This study, with its promising findings, investigates the factors influencing the Quality of Life (QoL) and performance of football players in Saudi Arabia. Using a mixed-methods approach, data were collected from 200 participants across different leagues, including the Saudi Professional League (SPL) and the First Division League (FDL). The analysis of demographic information, playing experience, salary range, and QoL scores revealed intriguing correlations and significant differences. Descriptive statistics unveiled that players from the SPL had lower mean QoL scores compared to those from the FDL. Furthermore, a significant difference in QoL scores was observed among SPL players based on their salary range, with higher salary groups exhibiting higher QoL scores up to a specific range (700k-1.2m SAR). The application of structural Equation Modeling (SEM) analysis highlighted the significant impact of mental, physical, and financial factors on players' QoL, with mental factors showing the highest influence. And the positive significant correlation between the determinants variables themselves. The study also proposes exciting avenues for future research, such as exploring interventions to improve players' mental health and well-being, including the implementation of AI-driven monitoring systems and tailored training programs. This study, with its optimistic outlook, contributes significantly to our understanding of the complex interplay between various factors affecting football players' QoL and performance, providing valuable insights for coaches, team managers, and policymakers in Saudi Arabia and beyond.

Keywords: Professional Football players, Quality of life, Performance, Saudi Arabia, Structural Equation Modeling, Mental health, AI monitoring

I. INTRODUCTION

This study delves into the multifaceted impact of challenges faced by footballers on their quality of life (QoL) and performance. It aims to understand how professional football demands influence various aspects of players' well-being, including physical health, mental resilience, social dynamics, and financial aspects. By exploring these relationships, the study seeks to unravel the complex interplay between football players and their experienced QoL. It offers insights to inform strategies for enhancing player welfare and optimizing performance in football contexts.

Football, known as the "beautiful game," has transcended national and cultural barriers to become a significant cultural and economic force globally. With over 4 billion players and viewers worldwide, it stands as the most popular sport, fostering a sense of community and shared identity among fans. Moreover, football's economic impact, estimated at over \$600 billion, underscores its significance at both local and global levels. Major tournaments like the FIFA World Cup serve as unifying events, while football players often serve as role models, shaping values and influencing social movements.

QoL, a complex and evolving concept, is a central focus of this study. In the context of football, understanding how the pursuit of excellence impacts players' QoL is crucial. The research examines the dynamic relationship between QoL and performance among footballers in Saudi Leagues, shedding

light on the challenges and opportunities they face. By exploring technical, physical, psychological, social, and financial dimensions, the study offers insights that extend beyond the realm of sports science, contributing to a broader understanding of QoL in society.

Football players are often perceived as leading luxurious lifestyles, but this perception doesn't align with reality for most. While a few enjoy success, many face challenges that affect their quality of life (QoL) and career. Understanding the various factors affecting their QoL, including physical, emotional, social, and economic aspects, is crucial. This study aims to analyze these factors and fill the gap in our knowledge about football players' health and success. It's essential for players, the football community, sports organizations, and the industry as a whole.

- This research addresses the rising competition in global football, particularly in Saudi Arabia, driven by initiatives like KSA Vision 2030. It focuses on players' pivotal role and aims to:
- Analyze players' quality of life (QoL) comprehensively, covering physical, mental, social, and financial dimensions via a structured questionnaire.
- Identify challenges across these dimensions, unveiling trends and patterns, using SPSS and SmartPLS for analysis.
- Propose actionable measures to enhance players' QoL, directly impacting their performance.
- Offer recommendations to Football Authorities, such as the Saudi Football Federation, for the betterment of players' well-being and development in the region.

The hypotheses of this research are proposed to test the relationship between the various variables under study with respect to QoL. QoL is measured by four main factors, namely physical, mental, social, and financial factors. The research focuses on measuring the effect of these variables on players' QoL. Subsequently, it will examine the exclusive issues and challenges that pertain to a certain players' category. For instance, challenges that the players of First Division League (FDL) face where it's not significant for Saudi Pro League (SPL) players.

QoL is supposed to be measured through a comprehensive analysis of physical, mental, social, and financial factors which were assessed through a focused survey targeting football players. The following research questions and hypotheses were formulated accordingly:

Research Questions:

Does the player's playing division significantly influence the QoL score?

Does the player's annual salary significantly influence the QoL score?

Does the mental factor significantly influence the QoL score?

Are the determinants of QoL (financial, social, physical, and mental factors) significantly correlated with each other among football players?

Null Hypotheses:

H_{01} : There is no significant influence of the player's playing division on the QoL score.

H_{02} : There is no significant influence of the player's annual salary on the QoL score.

H_{03} : There is no significant influence of the mental factor on the QoL score.

H_{04} There is no significant correlation between the determinants of QoL (financial, social, physical, and mental factors) among football players.

Alternative Hypotheses:

H_{11} : The player's playing division has a significant influence on the QoL score.

H_{12} : The player's annual salary has a significant influence on the QoL score.

H_{13} : The mental factor has a significant influence on the QoL score.

H_{14} : There is a significant correlation between the determinants of QoL (financial, social, physical, and mental factors) among football players.

Recent literature notes a growing concern about football players' quality of life (QoL) amid the industry's expansion. This study aims to identify specific factors influencing players' QoL, guiding interventions to enhance well-being and performance. Additionally, findings may inform the creation of player welfare programs and contribute to sports science insights for football clubs.

The study evaluated QoL factors among Saudi Pro League (SPL) and First Division League (FDL) football players in Saudi Arabia. Data from a questionnaire distributed to 200 players covered demographics, physical well-being, mental health, social interactions, and finances. Analysis used SPSS and SmartPLS. A literature review contextualized QoL for footballers, guiding assessment considering their unique challenges.

II. LITERATURE REVIEW

QoL is shaped by individuals' perceptions within cultural contexts and influenced by physical health, mental well-being, social engagement, and environmental interactions (Peráčková et al., 2019). Cummins (1996) identifies seven domains of QoL. Addressing mental health issues is vital, especially in developed countries (Sixsmith & Cosco, 2024). Initiatives like Saudi Vision 2030's QoL Program aim to enhance lives through activities (KSA Vision 2030, 2017). Sports promote happiness and well-being through endorphin release (Ruiz Romero et al., 2024) and foster social connections, enriching overall QoL (Kotarska et al., 2019).

QoL for athletes relies on factors like physical condition and training environment (Nowak et al., 2021). Favorable conditions enhance performance, emphasizing the link between QoL and footballers' performance. Improving QoL fosters success and entertains fans (Omorou et al., 2013). Intense training can lead to mental exhaustion and reduced QoL (Simon & Docherty, 2016).

2.1 Physical Factors

Physical factors, such as injuries, fitness levels, and nutrition, significantly influence football players' QoL, performance, and well-being. Injuries, especially common in football due to its high-contact nature, notably affect players' careers and enjoyment for fans. Lower limb injuries, like muscle strains, are prevalent. The duration of absence from training and competition exacerbates the impact on players' well-being and performance (refer Table 1).

Table 1. Muscle Injury Severity in Relation to Absence from Practice

Severity levels	Days of absence
Slight/minimal	0-3 Days
Mild	4-7 Days
Moderate	8-28 Days
Severe	+28 Days

The increasing number of football players globally leads to a rise in injuries, mostly affecting the lower body. Common injuries include ACL tears, ankle sprains, and muscular strains. Factors contributing

to injuries include player contact, non-contact incidents, and interactions with equipment. Ankle injuries are particularly prevalent during practice and games.

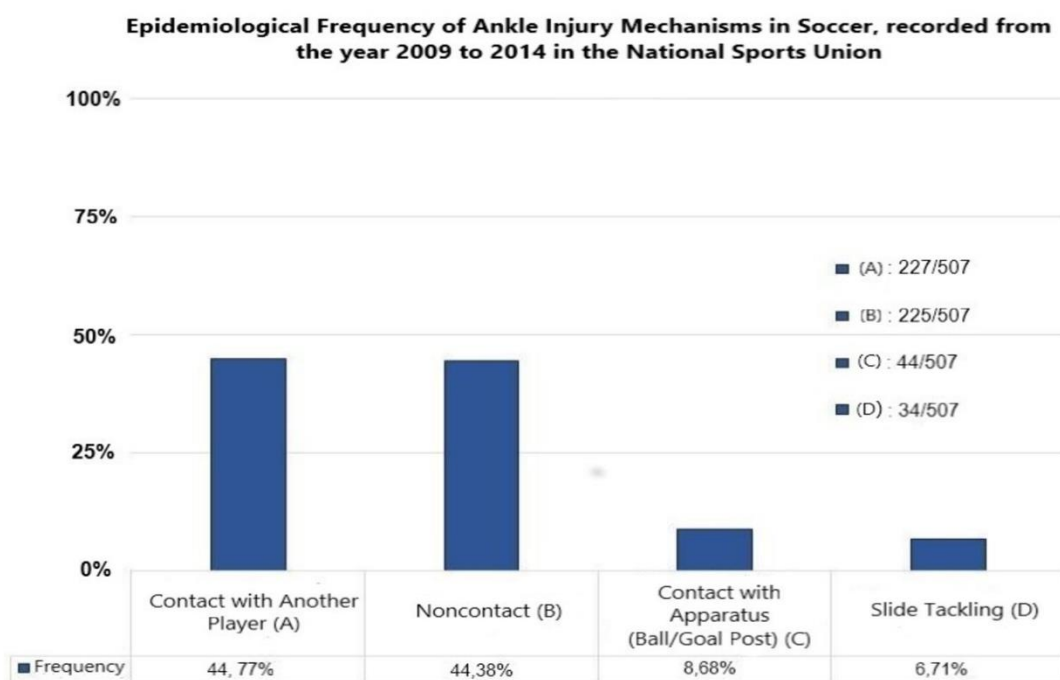


Figure 1 The epidemiological frequency of the injury mechanism, recorded from the year 2009 to 2014 in the NSU

The increase in football injuries is linked to the expanded number of games per season, especially among elite European teams in various tournaments. Players' engagement in an average of 1.6 to 2 matches per week leads to reduced recovery periods between games (Dellal et al., 2013). Muscle strains, notably hamstring strains, are prevalent due to the demanding schedule (Buckthorpe et al., 2019). Despite existing injury prevention programs, there's often a gap in their implementation by medical and fitness staff (Buckthorpe et al., 2019; Ekstrand et al., 2016). Injuries resulting in prolonged absences can significantly impact players' professional paths and overall quality of life.

2.2 Psychological Factors

Mental endurance is now as crucial to a player's performance as their technical skills. Factors like mental strength are gaining attention in elite sports, highlighting the importance of both mental health and physical fitness for success (Zeiger & Zeiger, 2018; Powell & Myers, 2017).

The connection between well-being and mental resilience is vital for overcoming challenges and fostering growth. Athletes need diverse psychological skills for competition success, impacting performance and development (Jones et al., 2007; Gerber et al., 2018). In football, strategies for skill management are influenced by factors like gender and age groups (Meggs et al., 2019). Mental resilience drives effort and emotional regulation, enhancing performance.

Intense physical activity among elite athletes can harm mental well-being due to factors like overtraining and injury (Wolanin et al., 2015). Despite the mental health benefits of physical activity, elite performance may pose risks (Junge et al., 2023). Stigma and fear of appearing weak deter athletes from seeking professional help (Wolanin et al., 2015). Unique stressors like media scrutiny and career-ending injuries affect mental health and performance (Kristiansen et al., 2012; Petrie et al., 2014). Strong social support networks are crucial in mitigating challenges and reducing harmful behaviors (Kristiansen et al., 2012).

Football players often encounter career-related stress, particularly during transitions from professional playing careers, affecting performance during and after retirement (Blake & Solberg, 2023; Drust, 2012). Challenges like injury or performance decline exacerbate emotional distress during these transitions, with young athletes especially vulnerable (Warriner & Lavalley, 2008; Brownrigg et al., 2012). Clear post-competition objectives can reduce depression levels among athletes, highlighting the importance of supporting players in transitioning to post-sports life and ensuring access to mental health care (Prinz et al., 2016).

Positive emotions like happiness and confidence aid athletes' success, while negative states hinder performance (González-García & Martinent, 2020). Psychological factors significantly affect athletic performance (Ebner, 2012). Goal-setting enhances resilience, focus, and motivation (Mahoney et al., 2014), leading to improved well-being (Murray et al., 2020). Effective training and coaching environments develop athletes' resilience and mental toughness, improving performance (Lin et al., 2017).

2.3 Social Factors

Sports psychology and management research focuses on coach leadership, athlete interactions, and team dynamics (Sjöblom et al., 2019; Malcolm & Scott, 2011). Strong relationships with coaches and teammates contribute to athlete development and success, reducing the risk of burnout (Larson et al., 2018; Ivarsson et al., 2015). Effective communication and teamwork are vital for achieving common goals in sports (Salcinovic et al., 2022).

Social and personal support significantly impact athletes' well-being (Pasyar et al., 2020). Lack of support can lead to frustration and hopelessness (Johnson et al., 2001), while increased support from friends and family may alleviate depression symptoms (Pehlivan et al., 2011; Ravindran & Devamani, 2016). Young athletes struggle with balancing sports commitments and maintaining relationships, often experiencing homesickness and adjustment difficulties during relocations (Tiesler, 2012). Moving disrupts routines and can cause physical symptoms like illness, sleep disturbances, and fatigue, exacerbating negative emotions (Smith et al., 2015).

2.4 Financial factors

Athletes' contract terms affect performance (Della Torre et al., 2017), with high salaries sometimes leading to financial stress (Hong & Coffee, 2017). Retirement challenges stem from financial unpreparedness and lack of transferable life skills (Barcza-Renner et al., 2020; McGillivray et al., 2005). Transition programs and financial literacy help athletes manage post-career life (Moolman, 2019).

Social support is vital for athletes' mental health and performance (Moreland et al., 2017; Gouttebauge & Kerkhoffs, 2018). Supportive environments enhance performance and motivation, while a lack of support can lead to mental health issues (Kaplánová, 2020). Self-perception and social support predict athletes' coping strategies under stress (Smeds et al., 2020; Kassim et al., 2018).

III. RESEARCH METHODOLOGY

3.1 Questionnaire design

The questionnaire design integrates insights from literature, player interviews, expert contributions, and the researcher's experience as a professional football player. It covers demographic information and evaluates factors impacting football players' Quality of Life (QoL), including technical, physical,

mental, social, financial, and overall QoL aspects. Tailored questions based on research and interviews aim to provide self-assessment for each factor. Detailed explanations follow in the subsequent section.

3.2 Study variables

The questionnaire starts with demographic details:

- Age range: 18-38 years, with options for below 18 or above 38.
- Nationality: Saudi or foreign, with a specification for foreign players' country of origin.
- Years of professional experience: 0-20 years.
- Current division: Saudi Pro League (SPL) or First Division League (FDL).
- Current team selection based on the division chosen.
- Player's position: goalkeeper, defense, midfield, or attacker.
- Annual salary range tailored to each division's salary ranges.

The scoring methodology inversely calculates the QoL score and determinants, aligning with the questionnaire's premise. It offers a comprehensive understanding of factors impacting players' welfare, allowing nuanced insights into their interplay with QoL outcomes.

The technical section evaluates the player's performance in the previous season. It includes questions on the number of games played as a starter, the number of coaches worked with, times selected in Team of the Week, average performance rating, and overall satisfaction with performance. Responses are converted into scales from 1 to 5, with a final score out of 25 indicating the impact on the technical factor.

The physical factor section evaluates the player's physical condition and injury history. It begins by asking if the player has experienced a muscle tear in the past 12 months, followed by specifying the muscle torn and rating the severity on a scale of 1 to 7. Next, it asks if the player has had a knee injury, specifically an ACL injury, and rates the duration of rehabilitation on a scale of 1 to 7. The frequency of using nutritional supplements and recovery techniques is then rated on a scale from 1 to 5, combined into one question during analysis. Finally, a final score out of 21 is calculated by summing up the scores from all questions in this section.

The mental factor section includes five questions rated from 1 to 7, assessing aspects like performance expectations, competition pressure, fear of re-injury, financial pressure, and media attention. A cumulative score out of 35 offers insight into the player's mental factor and its impact.

The social factor section comprises four questions rated on a scale of 1-7:

- Rate the resemblance of your current city to your hometown.
- Frequency of feeling socially isolated due to your profession.
- Amount of social support received from family, friends, and teammates.
- Level of anxiety about transitioning to other careers after football.
- A final score out of 28 clarifies the result of the social factor.

The financial factor section includes five questions:

1. Rate satisfaction with current contract terms and length.
2. Rate satisfaction with contract negotiation experience.

3. Likelihood of making large luxury purchases.
4. Financial readiness for retirement and future outside of football.

A final score out of 28 shows the negative impact on the financial factor..

The QoL section assesses players' life satisfaction and well-being, covering physical health, social relationships within the team, mental and emotional impact of football, career satisfaction, stress levels, and financial stability. Responses are on a scale from 1 to 7, with a total score ranging from 6 to 42.

3.3 Data collection procedures

The survey instrument was constructed on Google Forms website. The data collection approach primarily involved using various communication methods, such as phone calls, texts, and utilizing our network connections within the target football clubs, to spread the survey link to the football players. Several rounds of communication were conducted to maximize the number of responses collected. The welcoming message clearly stated that the inclusion of participants' names is not required, and it also emphasized that all responses would remain confidential. The data provided will only be used for research purposes.

3.4 Sampling

The sampling strategy focused on targeting football players, primarily from the Saudi Professional League (SPL) and First Division League (FDL), totaling 1020 players across 34 clubs due to resource limitations. A minimum sample size of 200 was deemed necessary for accurate conclusions, based on established guidelines. With a target population of 1020, a 20% response rate ($n = 204$) met the required minimum sample size.

3.5 Statistical analysis

Statistical analysis in this research encompassed descriptive statistics, parametric tests including the independent sample t-test and One-Way ANOVA, as well as Structural Equation Modeling (SEM) and hypothesis testing. Descriptive statistics were used to summarize demographic information and control variables. The independent t-test compared QoL scores between SPL and FDL players, while One-Way ANOVA examined differences in QoL scores among different salary groups. Structural Equation Modeling (SEM) was utilized to assess relationships between observable and latent variables, evaluating reliability, validity, and model fitness through path coefficients and various indices. This comprehensive approach aimed to elucidate the interrelationships among factors and their impact on QoL.

3.6 Descriptive statistics

In this study of 200 football players in Saudi Arabia, most players were aged 23-28 (36.7%), with the majority (67.8%) in the First Division League (FDL). Saudis comprised 95.0% of players. Experience-wise, 36.7% had 5-10 years, and positions varied: 21% attackers, 35% defenders, 10% goalkeepers, and 34% midfielders. Annual salary distributions differed: In FDL, 50% earned 100k-300k SAR, while in SPL, 45% earned 700k-1.2m SAR. Team-wise distributions are detailed in Figures 2 and 3. Descriptive statistics of all demographic information and salary distribution will be demonstrated in Table 2.

Age Group: The distribution of players' Age group is illustrated in Table 2.

Participants' Playing Team: The distribution of Participants' playing team in both (SPL) and (FDL) are illustrated in Figure 2 and Figure 3.

Table 2. Summary of Demographic and Salary Statistics for Football Players in SPL and FDL

Metric	Categories	Frequency	Percentage
Age Group	18-23	40	26%
	24-28	73	37%
	29-33	52	27%
	34-38	35	10%
Nationality	Saudi	190	95%
	Foreign	10	5%
Playing Division	SPL	65	32.2%
	FDL	135	67.8%
Years of Experience	0-5	52	26%
	6-10	73	36.7%
	11-15	52	27%
	16+	23	10.3%
Playing Position	Goalkeeper	20	10%
	Defender	70	35%
	Midfield	68	34%
	Attacker	42	21%
Annual Salary (SPL)	300k-700k SAR	15	10%
	700k-1.2m SAR	25	45%
	1.2m-4m SAR	15	36%
	4m+ SAR	10	9%
Annual Salary (FDL)	100k-300k SAR	65	50%
	300k-600k SAR	35	37%
	600k-1m SAR	30	11%
	1m+ SAR	5	2%

Current Team (SPL)

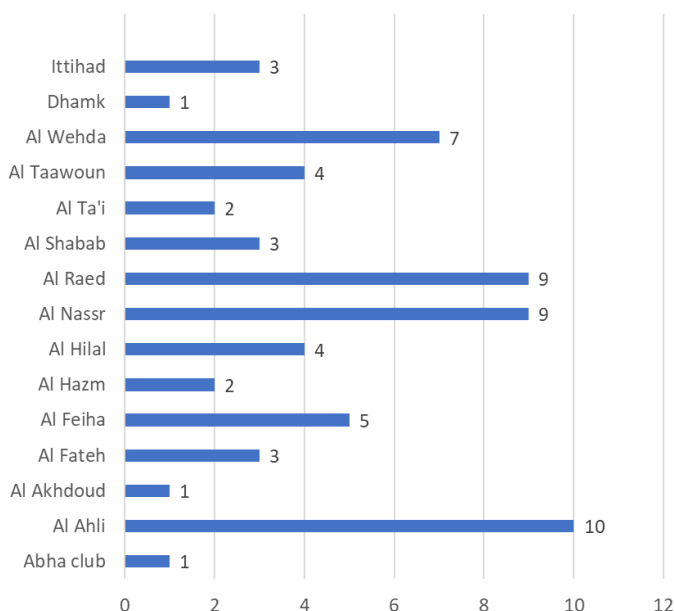


Figure 2. Playing Team (SPL)

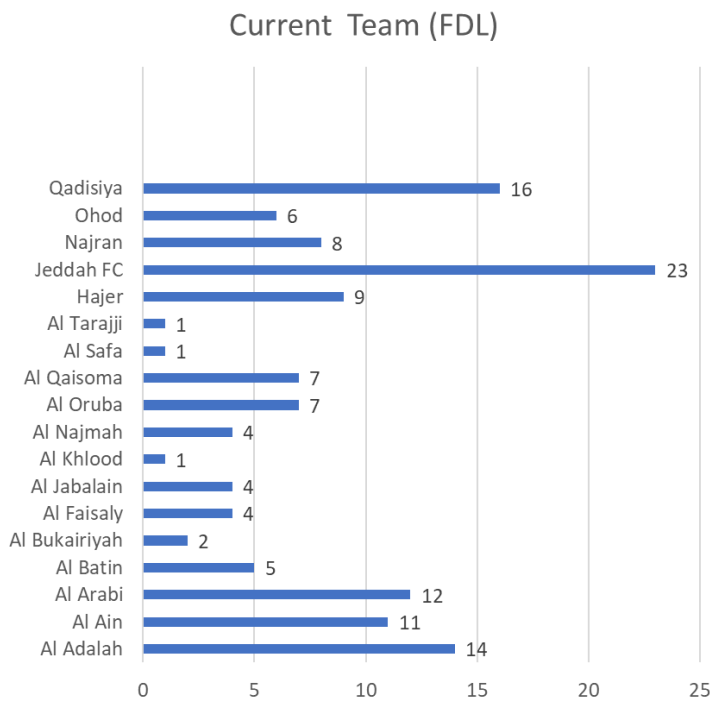


Figure 3. Playing Team (FDL)

Based on the descriptive statistics provided, we might better understand the dataset's primary characteristics and key features. Table 2 provides a summary of demographic and salary statistics for football players in SPL and FDL.

3.7 Multivariate Analysis

Two parametric tests have been applied to test several hypotheses in the study. It is worth mentioning the general rule we agreed about previously, which is that the higher the score in a certain factor, the more negatively impacted it is, as expressed in the scoring system. For instance, if the QoL score is higher in Group 1 than it is in Group 2, it means that Group 2 has a better QoL.

The findings of the measurement model analysis are displayed in Table 3. Reliability has been measured to assess the extent to which a set of items in the questionnaire measures the latent variables. And was assessed using Cronbach's alpha (CA) scores above 0.70 and composite reliability (CR) values exceeding 0.70 (Hier et al., 2019). Construct reliability was confirmed by ensuring that all latent variables had Cronbach's alpha values and CR values over 0.70. Convergent validity was assessed using an average variance extracted (AVE) value higher than 0.50 (Hier et al., 2019). The factor loading values exceeded 0.60, meeting the acceptable criteria. An AVE of 0.50 or higher suggests that the latent construct accounts for 50% or more of the variance in the observable variables, on average.

Table 3. Results of measurement model analysis

Latent variables	Items	FL	CA	CR	AVE
Financial	Financial 01	.849	0.842	0.845	0.578
	Financial 02	0.773			
	Financial03	0.715			
	Financial 04	0.694			
Mental	Mental 01	0.771	0.927	0.928	0.721
	Mental 02	0.891			
	Mental 03	0.862			
	Mental 04	0.879			

	Mental 05	0.836			
Social	Social_01	0.744	0.833	0.84	0.57
	Social_02	0.669			
	Social_03	0.807			
	Social_04	0.833			
Physical	Physical 01	0.820	0.809	0.811	0.59
	Physical 02	0.782			
	Physical 03	0.694			
QOL	QOL_01	0.642	0.894	0.897	0.607
	QOL_02	0.817			
	QOL_03	0.855			
	QOL_04	0.640			
	QOL_05	0.842			
	QOL_06	0.845			

Discriminant validity ensures that each latent variable is distinct and separate from other latent variables. Discriminant validity was assessed by comparing the correlation coefficients of the constructs with the square root of AVE values. Fornell & Larcker, (1981) said that for appropriate discriminant validity, the square root of the Average Variance Extracted (AVE) should exceed the correlations. The square root of AVE values (diagonal components in bold) in Table 4 were greater than the inter-construct correlation coefficients (off-diagonal elements).

Table 4. Results of discriminant validity – Furnell - Larcker criterion

	Financial	Mental	Physical	Social	QoL
Financial	0.76				
Mental	0.423	0.849			
Physical	0.177	0.317	0.768		
Social	0.619	0.52	0.24	0.755	
QOL	0.471	0.57	0.463	0.366	0.779

Note: Square roots of average variance extracted (AVE) are shown on the diagonal in bold.

An independent samples t-test was conducted to compare the QoL (QoL) scores between players from the Roshan League (SPL) and the Yelo League (FDL). This would greatly contribute to answering the research question: Does the player's playing division significantly influence the QoL score?

Descriptive statistics revealed that players from SPL (M = 17.63, SD = 9.939) had a lower (better) mean QOL score compared to players from FDL (M = 20.52, SD = 7.114).

Table 5. Group Statistics

Group Statistics					
	DivisionREC	N	Mean	Std. Deviation	Std. Error Mean
QOL	1	64	17.63	9.939	1.242
	2	135	20.52	7.114	.612

The assumption of equal variances was violated, as indicated by Levene's test for equality of variances (F = 19.276, p < .001). Therefore, the results of the t-test using equal variances not assumed are reported. When equal variances were not assumed, the difference remained statistically significant, $t(94.695) = -2.089$, $p = .039$, with players from FDL still having significantly higher (worse) QoL scores compared to players from SPL (M difference = -2.894, SE = 1.385, 95% CI [-5.643, -0.144]).

Table 6. Independent Samples Test

		Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means							95% Confidence Interval of the Difference	
		F	Sig.	t	df	Significance		Mean Difference	Std. Error Difference	Lower	Upper	
						One-Sided p	Two-Sided p					
QOL	Equal variances assumed	19.276	<.001	-2.347	197	.010	.020	-2.894	1.233	-5.325	-.462	
	Equal variances not assumed			-2.089	94.695	.020	.039	-2.894	1.385	-5.643	-.144	

Effect sizes were also calculated, with Cohen's d, Hedges' correction, and Glass's delta all indicating a moderate effect size.

Table 7. Independent Samples Effect Sizes

		Independent Samples Effect Sizes			
		Standardizer ^a	Point Estimate	95% Confidence Interval	
				Lower	Upper
QOL	Cohen's d	8.125	-.356	-.655	-.056
	Hedges' correction	8.156	-.355	-.653	-.056
	Glass's delta	7.114	-.407	-.707	-.105

a. The denominator used in estimating the effect sizes.
 Cohen's d uses the pooled standard deviation.
 Hedges' correction uses the pooled standard deviation, plus a correction factor.
 Glass's delta uses the sample standard deviation of the control (i.e., the second) group.

These results suggest that players from SPL report lower (better) QoL scores compared to players from FDL, regardless of the assumption of equal variances. Consequently, we reject the null hypothesis H_{01} , which states that there is no significant impact of the player's playing division on the QoL score. Instead, we accept the alternative hypothesis H_{11} , which states that the player's playing division does have a significant influence on the QoL score.

A One-Way ANOVA was conducted to compare QoL (QOL) scores among different salary groups of players from the SPL. Which would contribute greatly to answering the research questions: Does the player's annual salary significantly influence the QoL score? Descriptive statistics revealed that players were categorized into four salary groups: 300k - 700k (SAR), 700k - 1.2m (SAR), 1.2m - 4m SAR, and more than 4m SAR.

The mean QoL (QOL) scores varied across these salary groups: 26.33 (SD = 7.174) for 300k - 700k (SAR), 20.55 (SD = 9.605) for 700k - 1.2m (SAR), 12.74 (SD = 8.786) for 1.2m - 4m SAR, and 13.50 (SD = 8.118) for more than 4m SAR.

Table 8. Descriptives of Salary Group (SPL)

Descriptives								
QOL								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
300k - 700k (SAR)	6	26.33	7.174	2.929	18.80	33.86	20	40
700k - 1.2m (SAR)	29	20.55	9.605	1.784	16.90	24.21	6	35
1.2m - 4m SAR	23	12.74	8.786	1.832	8.94	16.54	6	36
more than 4m SAR	6	13.50	8.118	3.314	4.98	22.02	6	26
Total	64	17.63	9.939	1.242	15.14	20.11	6	40

Homogeneity of variance was assessed using Levene's Test, which yielded non-significant results across different methods of calculation ($p > .05$), indicating equal variances among the salary groups ($p = .586 - .678$).

Table 9. Test of Homogeneity of Variances

Tests of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
QOL	Based on Mean	.649	3	60	.586
	Based on Median	.509	3	60	.678
	Based on Median and with adjusted df	.509	3	57.118	.678
	Based on trimmed mean	.684	3	60	.566

The one-way ANOVA test revealed a significant difference in QOL scores among the salary groups ($F(3, 60) = 5.565, p = .002$), indicating that at least one salary group had a different mean QOL score compared to the others.

Table 10. ANOVA

ANOVA					
QOL					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1354.559	3	451.520	5.565	.002
Within Groups	4868.441	60	81.141		
Total	6223.000	63			

Post hoc comparisons using Dunnett t-tests were conducted to explore the differences between each salary group. The results indicated a significant mean difference in QOL scores between the 300k - 700k (SAR) and more than 4m SAR groups (Mean Difference = 12.833, SE = 5.201, $p = .038$), with the former group exhibiting higher QOL scores.

Table 11. Multiple Comparison

Multiple Comparisons

Dependent Variable: QOL
Dunnett t (2-sided)^a

(I) AnnualSalarySPL	(J) AnnualSalarySPL	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
300k - 700k (SAR)	more than 4m SAR	12.833*	5.201	.038	.61	25.06
700k - 1.2m (SAR)	more than 4m SAR	7.052	4.040	.177	-2.44	16.55
1.2m - 4m SAR	more than 4m SAR	-.761	4.129	.993	-10.47	8.94

*. The mean difference is significant at the 0.05 level.

a. Dunnett t-tests treat one group as a control, and compare all other groups against it.

In summary, the analysis suggests that there is a significant difference in QOL scores among players in the SPL division based on their salary groups. Specifically, players earning 300k - 700k (SAR) showed significantly higher (worse) QOL scores compared to those earning more than 4m SAR. However, no significant differences were found between other salary groups. Consequently, we reject the null hypothesis H_{02} , which states that there is no significant influence of the player's annual salary on the QoL score. Instead, we accept the alternative hypothesis H_{12} , which states the player's annual salary has a significant influence on the QoL score.

The one-way ANOVA conducted to examine the differences in QoL (QOL) scores among players in the FDL division across different salary groups revealed a statistically significant effect, $F(3, 127) = 15.645, p < .001$.

Table 12. ANOVA

ANOVA

QOL

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1812.210	3	604.070	15.645	<.001
Within Groups	4903.531	127	38.610		
Total	6715.740	130			

Descriptive statistics showed that players in the 100k - 300k (SAR) salary range had the highest (worse) mean QOL score ($M = 23.35, SD = 6.161$), followed by those in the 300K - 600k (SAR) group ($M = 19.31, SD = 6.996$), the 600k - 1m (SAR) group ($M = 12.47, SD = 2.973$), and finally, the more than 1m (SAR) group ($M = 9.50, SD = 3.536$).

Table 13. Descriptives of Salary Group (FDL)

Descriptives

QOL

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
100k - 300k (SAR)	66	23.35	6.161	.758	21.83	24.86	12	40
300K - 600k (SAR)	48	19.31	6.996	1.010	17.28	21.34	7	36
600k - 1m (SAR)	15	12.47	2.973	.768	10.82	14.11	9	18
more than 1m (SAR)	2	9.50	3.536	2.500	-22.27	41.27	7	12
Total	131	20.41	7.187	.628	19.17	21.65	7	40

The assumption of homogeneity of variances was violated, as indicated by the statistically significant Levene's test ($p = .012$).

Table 14. Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
QOL	Based on Mean	3.821	3	127	.012
	Based on Median	3.582	3	127	.016
	Based on Median and with adjusted df	3.582	3	117.955	.016
	Based on trimmed mean	3.925	3	127	.010

Post hoc tests using Dunnett's method revealed significant differences between several salary groups: Players in the 100k - 300k (SAR) group had significantly higher (worse) QOL scores compared to those in the 300K - 600k (SAR) group (mean difference = 4.036, $p = .011$) and the 600k - 1m (SAR) group (mean difference = 10.882, $p < .001$). Players in the 300K - 600k (SAR) group also had significantly higher (worse) QOL scores compared to those in the 600k - 1m (SAR) group (mean difference = 6.846, $p < .001$). However, no significant differences were found between players in the more than 1m (SAR) group and any other salary group ($p > .05$). These findings suggest that salary range significantly influences players' QoL scores in the FDL division, with higher salary groups generally associated with lower (better) QOL scores. Consequently, we reject the null hypothesis H_{02} , which states that there is no significant influence of the player's annual salary on the QoL score. Instead, we accept the alternative hypothesis H_{12} , which states that The player's annual salary has a significant influence on the QoL score.

Table 15. Multiple Comparison

Multiple Comparisons						
Dependent Variable: QOL						
Dunnett T3						
(I) AnnualSalaryFDL	(J) AnnualSalaryFDL	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
100k - 300k (SAR)	300K - 600k (SAR)	4.036*	1.263	.011	.65	7.43
	600k - 1m (SAR)	10.882*	1.079	<.001	7.92	13.84
	more than 1m (SAR)	13.848	2.612	.202	-31.76	59.46
300K - 600k (SAR)	100k - 300k (SAR)	-4.036*	1.263	.011	-7.43	-.65
	600k - 1m (SAR)	6.846*	1.268	<.001	3.39	10.30
	more than 1m (SAR)	9.813	2.696	.277	-26.92	46.54
600k - 1m (SAR)	100k - 300k (SAR)	-10.882*	1.079	<.001	-13.84	-7.92
	300K - 600k (SAR)	-6.846*	1.268	<.001	-10.30	-3.39
	more than 1m (SAR)	2.967	2.615	.811	-42.34	48.27
more than 1m (SAR)	100k - 300k (SAR)	-13.848	2.612	.202	-59.46	31.76
	300K - 600k (SAR)	-9.813	2.696	.277	-46.54	26.92
	600k - 1m (SAR)	-2.967	2.615	.811	-48.27	42.34

*. The mean difference is significant at the 0.05 level.

3.8 Analysis of the measurement model

The measurement model analysis identifies the connection between observable or measured variables and a latent variable in a specific study (Hair et al., 2019). Numerical data were acquired from study participants to evaluate the latent variables using various measuring items. The reliability and validity of the items need to be assessed. The suggested model was tested using the Covariance-based Structural Equation Modelling (CB-SEM) technique in SmartPLS version 4.0 (Ringle et al., 2022).

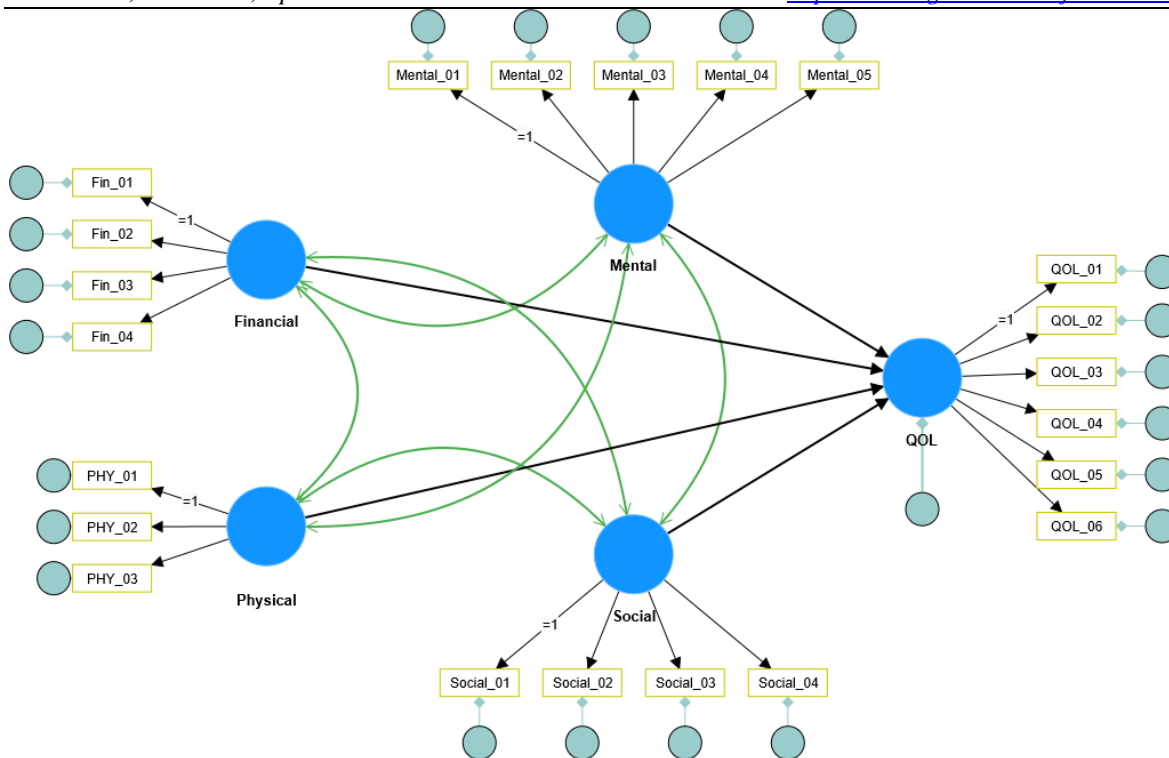


Figure 4. The Model Before Calculation

The CB-SEM analysis, conducted using SmartPLS version 4 software following Ringle et al. (2022), aimed to calculate path coefficients and evaluate proposed links. The model explained 47.6% of QoL variations, indicating significant impacts from mental, physical, social, and financial factors. For model fit, criteria included GFI, NFI, and CFI ≥ 0.90 , relative chi-square ≤ 5.0 , and RMSEA ≤ 0.08 . Results yielded CFI of 0.92, TLI of 0.90, GFI of 0.835, RMSEA of 0.074, and chi-square of 2.08, meeting acceptance criteria.

The results from the structural model, highlighted in Table 3, reveal statistically significant associations with all direct paths, evidenced by p-values < 0.001 . Notably, the Mental Factor exhibits the highest impact on QoL, with a beta coefficient of 0.395 and p-value of 0.001. This indicates that for every one unit change in Mental Factors, there is a corresponding 0.395 unit change in QoL. Thus, the null hypothesis H₀₃, suggesting no significant influence of the mental factor on QoL, is rejected in favor of the alternative hypothesis H₁₃, affirming the mental factor's significant influence on QoL.

1. The quantitative analysis of determinant variables—Physical, Mental, Social, and Financial—reveals significant positive correlations, as detailed below:
2. Physical and Mental ($\beta = 0.317$): Moderate relationship suggesting that improvements in physical health are linked to better mental well-being.
3. Physical and Social ($\beta = 0.240$): Positive correlation indicating that good physical condition may foster positive social interactions.
4. Physical and Financial ($\beta = 0.177$): Weaker relationship suggesting that better physical health modestly contributes to financial stability.
5. Mental and Social ($\beta = 0.520$): Strong correlation highlighting the role of mental health in enhancing social relationships.
6. Mental and Financial ($\beta = 0.423$): Robust correlation indicating that mental well-being significantly influences financial outcomes.

7. Social and Financial ($\beta = 0.619$): The strongest relationship was observed, suggesting that vibrant social networks are highly beneficial for financial success.

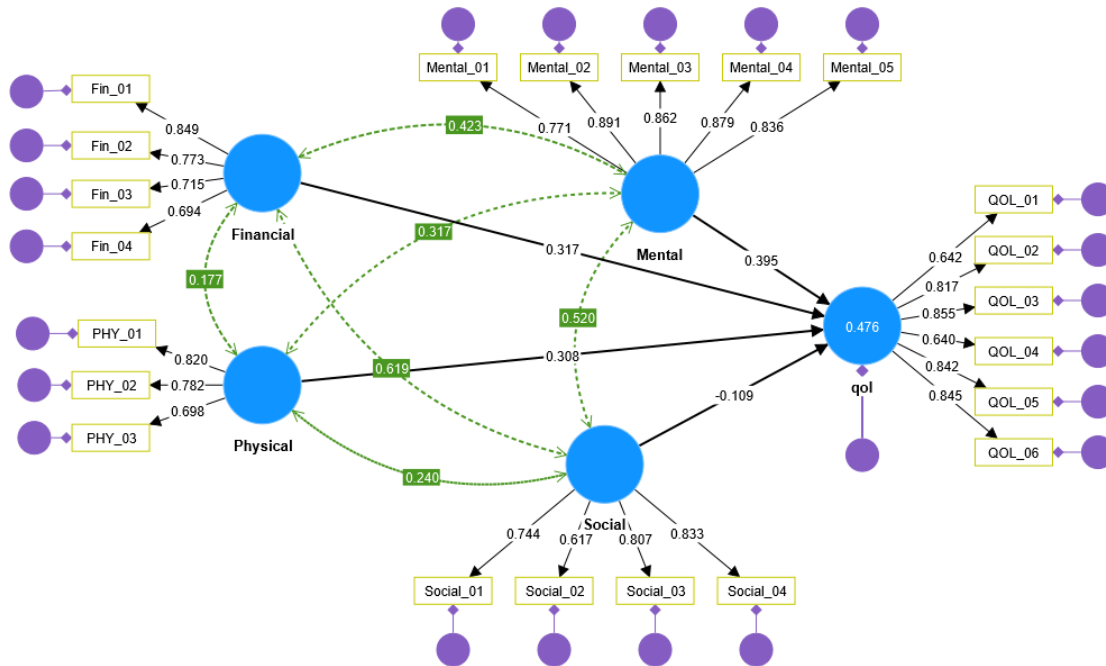


Figure 5 The Model

Table 16. Results of structural model (direct paths)

Direct paths	Beta	T Statistics	P Values	Results
Financial -> QoL	0.317	3.09	0.002	Supported
Mental -> QoL	0.395	3.638	0.001	Supported
Physical -> QoL	0.308	3.098	0.002	Supported
Social -> QoL	-0.109	1.007	0.314	Not Supported

Note: **p<0.001, *p<0.05 based on two-tailed test; t=1.96

The following table presents the Beta coefficients for the relationships between determinant variables:

Table 17. Beta coefficients between determinant variables

Relationship	Beta Coefficient
Physical and Mental	0.317
Physical and Social	0.240
Physical and Financial	0.177
Mental and Social	0.520
Mental and Financial	0.423
Social and Financial	0.619

The positive Beta coefficients indicate direct and significant relationships between the variables, with moderate to strong correlations observed. Notably, Mental and Social (0.520), Mental and Financial (0.423), and Social and Financial (0.619) exhibit particularly strong correlations. These findings support the alternative hypothesis H₁₄, indicating significant correlations between the determinants of QoL among football players, while rejecting the null hypothesis H₀₄.

The study offers valuable insights into the factors shaping football players' Quality of Life (QoL) and performance in Saudi Arabia. Demographic analysis highlights key player characteristics, including age, nationality, experience, and position. Notably, Saudi players dominate, with many aged 23-33.

Salary discrepancies between leagues are evident, with higher earners in the SPL. Statistical tests reveal significant QoL score differences between SPL and FDL players, with higher salaries correlating with lower QoL scores. Structural equation modeling underscores mental, physical, and financial factors' direct impact on QoL, while social factors show no significant relationship. Importantly, determinant variables exhibit significant correlations, emphasizing their collective influence on players' QoL. These findings inform stakeholders, including clubs, coaches, and the SAFF, of guiding strategies to enhance players' well-being and performance.

IV. CONCLUSION

- SPL and FDL players exhibit significant QoL score differences, reflecting SPL's global investment.
- Higher SPL salaries correspond to increased QoL, with notable distinctions within salary ranges, particularly in the 300k-700k SAR and 1.2m-4m SAR brackets.
- For FDL players, salary range impacts QoL until approximately 600k SAR.
- SEM analysis highlights the dominant influence of the mental factor on QoL, followed by financial and physical factors.
- Mental health demonstrates significant relationships with physical, social, and financial factors.
- Positive correlations among determinant variables reveal mutual enhancements, notably between Physical and Mental health, and Mental health and both Social and Financial factors.

4.1 Recommendations

Given the massive momentum of football as well as the concept of QoL locally and globally. Researchers in these fields are encouraged to explore further the sophisticated relationship between various factors and football players' QoL. Future studies should examine the connections between the variables influencing football players' performance and QoL in greater detail. more specifically through targeted interviews and extended research projects to achieve comprehensive and in-depth results in this way. Additionally, the researcher thinks that employing new technologies such as artificial intelligence (AI) will make a significant difference in the growth of the football sector overall. sporting facilities, fan experience, performance analysis, and refereeing. By continuing to investigate these factors, researchers can contribute to the development of evidence-based interventions aimed at enhancing players' overall QoL and optimizing their performance on and off the field.

The study underscores the paramount importance of mental health in football players' quality of life (QoL) and performance. Efforts must be directed toward enhancing and developing players' mental well-being to optimize their performance. Mental health intersects with various aspects of football, including managing performance expectations from fans, clubs, and coaches, which can significantly impact players' mental state. Additionally, pressure from high-stakes games and social media further exacerbates mental health challenges. Increasing awareness and fostering a supportive environment are crucial for addressing mental health issues effectively. It's essential to tackle the root causes of mental health-related challenges, such as financial pressure and fear of re-injury, to promote overall well-being among players.

Following the recommendations:

- Promote mental health awareness and destigmatization through campaigns and workshops.
- Establish confidential counseling services through organizations like the Football Players Association.

- Integrate mental health services within football clubs to provide screenings and support.

Since players have some degree of control over certain mental factor issues, there are practices and recommendations that may be made specifically for players to help with mental factor issues:

- Practice self-care by pausing, taking deep breaths, or engaging in activities like volunteering.
- Connect with your various communities, such as family and neighborhood, for mental support.
- Be kind to yourself, cultivate self-compassion, and acknowledge your inner strengths.
- Avoid comparing yourself to others and embrace your unique path and growth.
- Recognize the strength in diversity within sports, appreciating varied skills and capabilities.

Given the findings of the significant difference between SPL players and FDL players based on QoL score and the significant difference in QoL based on salary range among SPL and FDL players. Here are the recommendations for the previous findings:

- Support FDL Division: Address QoL gaps by enhancing resources and facilities for FDL players.
- Monitor and Evaluate: Establish systems for ongoing assessment to enhance interventions.
- Fair Compensation: Align salary structures with global standards, particularly for FDL players.
- Financial Literacy Promotion: Educate players on financial management for long-term stability.

4.2 Limitations

The lack of streamlined channels facilitated by clubs, or the federation hindered access to players for data collection. Additionally, reliance on self-report measures for assessing performance and QoL introduces potential bias, compounded by voluntary participation. This may have led to a self-selected sample, potentially biasing the findings.

4.3 Future work

Future research on football players' QoL in Saudi Arabia could use longitudinal studies and qualitative methods like interviews to deepen understanding and provide more precise recommendations for enhancing QoL. AI integration in assessing football players' QoL and performance offers benefits like efficient data analysis, identifying patterns, and proactive monitoring. Wearable devices and machine learning algorithms enable real-time tracking of players, detecting risks and optimizing training. Future advancements in AI promise to enhance football experiences for players, viewers, and ecosystems.

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Ethical statement: The author declares that he followed the ethical responsibilities.

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