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## Article

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Journal of Risk and Financial Management

## Provided in Cooperation with:

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*Suggested Citation:* Barth, Michael; Schlesinger, Torsten; Pitsch, Werner (2022) : Is professional soccer a risk for their "lives afterwards"? A social-sciences-based examination of retired professional soccer players from a long-term perspective, Journal of Risk and Financial Management, ISSN 1911-8074, MDPI, Basel, Vol. 15, Iss. 12, pp. 1-12, <https://doi.org/10.3390/jrfm15120609>

This Version is available at:

<https://hdl.handle.net/10419/275086>

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Article

# Is Professional Soccer a Risk for Their “Lives Afterwards”? A Social-Sciences-Based Examination of Retired Professional Soccer Players from a Long-Term Perspective

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**Abstract:** Most professional soccer players’ careers end before their forties. Consequently, many of them face a relatively early retirement from their profession, thus facing multifaceted changes and potential issues of adjustments in different areas of their lives. Public discussion and therein expressed concerns have led to increased attention on the topic, notably among practitioners and researchers. This study described and analyzed central retirement transition and adjustment outcomes of ex-professional soccer players from a social sciences and long-term perspective. A total of 78 ex-professionals completed the online questionnaire, most of them having played in the highest German soccer division for several years and having retired from professional soccer 10 years or more ago. Overall, 8.9% (95% CI 2.5 to 21.2; n = 45) showed signs of mental health problems. Compared to the results of a gender- and age-matched sample from the German population, retired ex-professionals were significantly more satisfied with their life and their personal income, and assessed themselves as having a higher subjective social status. Although further evidence is necessary to draw any final conclusion, our results do not point to those publicly discussed concerning central retirement transition and adjustment outcomes of (average) former professional soccer players in the long run.

**Keywords:** retirement; transition; soccer; football; professional sport



**Citation:** Barth, Michael, Torsten Schlesinger, and Werner Pitsch. 2022. Is Professional Soccer a Risk for Their “Lives Afterwards”? A Social-Sciences-Based Examination of Retired Professional Soccer Players from a Long-Term Perspective. *Journal of Risk and Financial Management* 15: 609. <https://doi.org/10.3390/jrfm15120609>

Academic Editor: Thanasis Stengos

Received: 30 October 2022

Accepted: 6 December 2022

Published: 15 December 2022

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## 1. Introduction

### 1.1. Problem Statement

Is professional soccer a risky or even high-risk sport? Thinking about this question, one might immediately search for injury statistics. Others might try to calculate the probability of becoming a professional soccer player, and others would think about analyzing the working conditions of professionals. This makes it clear that we can consider different kind of risks and thus answer this question from various perspectives—with the view from a typical epidemiologist, interested in injury incidence figures, as a sport psychologist, analyzing athletes’ mental health, or a sports economist perhaps interested in athletes’ incomes and contract durations. Due to the fact that research on the retirement of professional soccer players has increasingly narrowed down to mental health from a psychological perspective (for a systematic review see [Barth et al. 2021](#)), we decided to take a broader or more holistic social sciences perspective, including psychology, sociology, and economics.

Next to the perspective, the period of time that should be taken into consideration has to be determined. In this context, a central characteristic of a soccer player’s professional career has to be considered. The time as an active professional soccer player is, on average, a short period in a person’s life. Consequently, identifying potential risks and impacts of a professional soccer player’s career for the post sport life from a social sciences perspective

seems to be of high relevance; for the (former) soccer players and other stakeholders (e.g., players unions, clubs) as well.

A short narrative review on retirement research in sports in general shows: Initial publications on the retirement of professional athletes—including soccer (Mihovilovic 1968)—date back to the 1960s. In the 1980s and early 1990s, a growing concern about athletes' transition out of sports was apparent in the literature. As Miller and Kerr (2002, p. 144) mentioned, “particularly among researchers who also worked in applied capacities”. Since then, sports retirement has been a flourishing research field. *Theoretical concepts* on transition in general and sports retirement in particular have primarily been developed from psychological, sociological, and economical perspectives (Schlossberg 1981; Sussman 1972; in sports: Küttel 2017; Stambulova 2003; Stambulova et al. 2009, 2021; Stambulova and Ryba 2014; Taylor and Ogilvie 1994; Wylleman 2019). Today, textbooks on athlete career development and transition commonly include chapters on athletes' retirement (e.g., Alfermann and Stambulova 2007; Lavalley 2000; Petitpas et al. 2012; Wylleman 2019). Next to these theoretical considerations and discussions, *practical* programs such as ERASMUS+ B-WISER (n.d.), *The World Player Development, Wellbeing, Transition and Retirement Standard*, Paris 2017 (2017), and other so-called “dual career” programs (Stambulova and Wylleman 2019, for a review) were introduced to support athletes during their career transitions and in their retirement from sports. This career assistance was enriched during the last decades, among others by an increasing number of different types of career assistance programs (Stambulova et al. 2021).

In a decade of proclaimed, “exponential conceptual, theoretical, methodological, and applied developments in the athlete career knowledge” (cf. Stambulova et al. 2021, p. 524), one would expect that the same is true for empirical investigations. Their imperative is clear: Theoretical concepts have to be verified and practical programs should be evidence based and evaluated. However, in the discussion of sports retirement, it has to be considered that retirement processes and their outcomes may vary by sport, performance level, and professionalization (Barth et al. 2021; for an empirical examination of this see e.g., Knights et al. 2019). Due to this necessity of limiting ourselves to a field with similar problems and similar conditions, we further focus on professional soccer players.

The current state of knowledge on professional soccer players' sport retirement transition and adjustment outcomes from social sciences perspectives, as well as on possible determinants, was recently presented by Barth et al. (2021). By systematically reviewing the available empirical research, the authors identified 17 eligible studies, with the first being published in the 1980s. Within the 14 quantitative and three qualitative or mixed-methods studies, more than 2200 retired professional soccer players were investigated. However, within the 14 quantitative studies and the quantitative part of the one mixed-methods study, only one study was classified as having a low risk of bias; nine showed a moderate risk, one a moderate to high risk, and four had a high risk of bias of reported results. Of the qualitative studies respective the qualitative part of the mixed-methods study, only one study was assessed as having a high methodological quality. Consequently, the available knowledge from empirical investigations is fraught with some uncertainty. Furthermore, the review showed the following. First, the research of professional soccer players retirement was narrowed down to mental health from a *psychological perspective*. Second, perhaps relating to the mentioned perspective, the most recent investigations seem to be concentrated on a *short period after career termination*. Third, a *comparison* of the results from ex-professional soccer players to other relevant populations for a better interpretation was very rarely the case. Saying that, it became clear that evidenced representative and reliable knowledge about ex-professional soccer players' educational, occupational, socio-economic, and well-being outcomes is required (Barth et al. 2021).

Therefore, the central purpose of this article is to (empirically) examine central retirement transition and adjustment outcomes of ex-professional soccer players from a social sciences perspective, with special interest in the long-term. Such a purpose requires the

determination of a problem-oriented theoretical perspective on retirement transition as well as the determination of central adjustment outcomes, i.e., concepts.

### 1.2. Theoretical Framework

Looking at different theoretical concepts in sports retirement research reveals that authors emphasize the process nature of transition and the necessity of applying a holistic approach (Stambulova et al. 2009; Wylleman 2019). However, to at least partly close the above-mentioned research gaps one and two, we have to shift our focus from the retirement transition phase to post-retirement. Our view on the problem is from a social sciences perspective. Therefore, the resource-based dynamic process perspective (Wang et al. 2011) is a suitable theoretical framework for our research problem at hand. Consequently, and although we used a phase-like approach to describe the research gaps, we view retirement as a longitudinal process. Such an approach relaxes the sequential assumption regarding the development stages in retirement adjustment. However, at the same time, we have to accept that retirees' well-being (or any other variables defined as outcome or resource) could fluctuate up and down at any given point of time (Wang et al. 2011).

As stated above, we were especially interested to view the problem at hand from a long-term and social sciences perspective. The distinction between retirement transition phase and post-retirement is based on retirees' actions, not on a clear time cut (for the distinction of phases see Barth et al. 2021). However, determining whether an action is to be characterized as a retirement transition action or not seems to be just as vague. The same is true for the distinction between short-term and long-term. Here, we (pragmatically) followed Barth et al. (2021) and defined short-term as a time-span between professional soccer career end and time point of survey of less than 10 years, long-term of 10 years and more. It should be added that this refers to samples' mean time spans and not individual players. None of the relevant available studies used such a criterion on an individual level, nor was the respective information available.

Following Wang and Shultz (2010) as well as Muratore and Earl (2015), we defined (mental) wellbeing and life satisfaction as central retirement transition and adjustment outcomes. Furthermore, how well the respondents have overall managed their adjustment to the new life situation after their career as a professional soccer player and if this process is completed seems to be of high relevance in the context. In order to meet the required social sciences perspective, variables in the context of former players' current socioeconomic status have to be considered.

The existing results from original empirical studies on the above-determined concepts are presented in the next section.

### 1.3. Literature Review

In empirical investigations on professional soccer players' retirement, mental wellbeing was commonly measured with a short version of "The 12-Item General Health Questionnaire" (GHQ-12; Goldberg and Williams 1988). Table 1 summarizes the existing empirical results on former professional soccer players' mental health (GHQ-12).

First, and most striking, all studies were classified as short-term. Second, the level for indication of signs of symptoms of anxiety/depression/mental health problems was not always the same. Therefore, results are not directly comparable with each other. Third, some of the publications had a similar focus, with data seemingly stemming from one survey (see also Barth et al. 2021). Fourth, with the exception of Kilic et al. (2017), studies reported a prevalence of symptoms of anxiety/depression/mental health problems in former professional soccer players of roughly one-third.

For current life satisfaction, it must be said that none of the existing empirical studies on the retirement of professional soccer players investigated the former professionals' life satisfaction at the time-point of the survey.

**Table 1.** Former professional soccer players’ mental health (GHQ-12).

Study	N	Retirement [M (SD) in Years] <sup>1</sup>	Time Elapsed Since Retirement	Concept	GHQ-12 Indicator <sup>2</sup>	GHQ-12 M (95% CI)
Gouttebarga et al. (2015)	104	5.0 (3.0)	4.0 (3.0) years	Prevalence	2 or more out of 6	39% (30–49%) <sup>3</sup>
Gouttebarga et al. (2016a)	187	4.4 (3.6)	4.4 (3.6) years	Prevalence	2 or more out of 12	35.3% (28.4–42.1%)
Gouttebarga et al. (2016b)	n.a. <sup>4</sup>	4.4 (3.6)	4.4 (3.6) years	Prevalence	2 or more out of 12	35.3% (28.4–42.1%)
Gouttebarga et al. (2017)	220	4.0 (3.0)	4.0 (3.0) years	Prevalence	3 or higher out of 12	26% (n.a.)
Kilic et al. (2017)	n.a.	6.0 (4.4)	6.0 (4.4) years	Prevalence	2 or more out of 12	18.7% (13.8–23.5%)
Van Ramele et al. (2017)	n.a.	4.0 (3.0)	4.0 (3.0) years	12-month incidence	3 or higher out of 12	29% (21–39%)

<sup>1</sup> Time since retirement; <sup>2</sup> Indication of signs of symptoms of anxiety/depression/mental health problems; <sup>3</sup> GHQ-12 sub-score for anxiety/depression (6 items of the GHQ-12); <sup>4</sup> Information not available.

To the best of our knowledge, the only study investigating the *quality of adjustment after a career as a professional soccer player* was the one of [Carapinha et al. \(2018\)](#). However, the authors investigated the quality of the transition process and not the outcome of the process—our central interest.

For former professional soccer players’ *current socioeconomic status*, the existing empirical investigations show: In a short-term perspective, (self-) employment rates between 75% and 86% were reported for former professional players ([Gouttebarga et al. 2015](#); [Gouttebarga et al. 2017](#); [Gouttebarga et al. 2016a](#); [Gouttebarga et al. 2016b](#); assuming that 52/212, i.e., an employment rate of 25% in [Van Ramele et al. 2017](#) is a reporting error; see [Barth et al. 2021](#)). In his early study, [Houlston \(1982\)](#) found that 33% of former players became initially unemployed after their career termination and 21% of them found an initial position as a coach within professional soccer. [Semyonov \(1986\)](#) reported that former players often became independent entrepreneurs; a field where, according to the mentioned author, education level is not a formal prerequisite. In a long-term perspective, during roughly 15 years of retirement from professional soccer, former players had 2.1 jobs, each lasting on average 7.0 years ([Drawer and Fuller 2002](#)). Of 379 former players in [Curran’s \(2015\)](#) study, 252 (67%) stayed within soccer in different positions, including coaches, managers, scouts, agents, club administrators, and media professionals. In this context, it must be considered that this sample consisted of former players having retired from professional soccer ten years and more, but also of players who did end their career within the last ten years before the survey.

To the best of our knowledge, no study has investigated former soccer players’ satisfaction with their professional career after ending their soccer career or their satisfaction with their current income. Furthermore, no results on the former players’ occupational status (from a long-term perspective) or more details on their current job were reported.

Therefore, the aim of our empirical investigation was to describe central retirement transition and adjustment outcomes of ex-professional soccer players from a social sciences perspective. For a better interpretation of results, findings from ex-professionals were compared to results of a gender and age-matched random sample drawn from the German Socio-Economic Panel (SOEP), i.e., to a gender and age-matched sample from the German population. Our central interest was not on the short-term (psychological) transition-phase perspective, but on the long-term (social sciences) perspective.

## 2. Methods

### 2.1. Sampling Procedure

The survey was part of the project “Career of professional soccer players after sport: A life cycle based analysis” founded by the Deutsche Forschungsgemeinschaft (DFG). The survey was supported by the players’ union VDV, the German Football Association (DFB),



and the German Football League (DFL). Our first approach was a life-cycle representation of former professionals in terms of looking at active and post-sport careers. The interviews preceding the survey indicated that active professional soccer players have little interest in participating in a post-sport career survey. Furthermore, access to professionals proved extremely difficult, as players are hermetically sealed off from the outside world, making direct access to players almost impossible or only possible through third parties. After several pre-tests and corresponding revisions, an online questionnaire in German and English was conducted. All teams of the Bundesliga (highest German league), 2. Bundesliga (second highest German league) and 3. Liga (third highest German league) were contacted by mail and twice by phone. In the course of this, a request was also made to forward the link to the questionnaire to the so-called "Traditionsmannschaften". Quite a few of the clubs contacted expressed in this context that they did not wish to participate in the study. In addition, the survey was publicized at a meeting of the Bundesliga and 2nd Bundesliga women's teams. Here, the clubs were subsequently asked to participate a second time by telephone.

As of 29 April 2020, the number of clicks was 415; 226 people had started the questionnaire. Since it was already clear at this point that an adequate sample size could not be achieved in this way, the decision was made to collect further contact data on former players via an online database. For this purpose, data on former players from the 1984/1985 to 2006/2007 seasons were collected. In total, 3221 players were involved. Possible current contact addresses were collected via internet research. In addition to e-mail addresses, players were contacted via social media channels (e.g., Instagram) (sent out: 20 August 2020). If there was no response, a reminder letter was sent. As of 2 November 2020, the click-through number was 666; 362 people had started the questionnaire. On 25 November 2020, the questionnaire was clicked for the last time. Since no further activity was recorded by the end of December, the survey was terminated on 31 December 2020.

After data cleaning, the sample consisted of 158 cases. The sample composition in terms of "soccer activity status" and gender is shown in Table 2.

**Table 2.** Composition of the sample (absolute frequencies).

Player Group	Male	Female	Gender Missing	Total
ACTIVE professional players with current contract	8	32	33	73
FORMER professional players WITH current contract as an amateur soccer player	3	0	0	3
FORMER professional players WITHOUT current contract as an amateur soccer player	78	1	3	82

### 2.2. Sample

Those active players, who did not indicate their gender mostly abandoned the questionnaire at an early stage (approximately 70% after approximately one-third of the questionnaire); for both reasons, those were not usable for the study. When these cases were disregarded, it became clear that the vast majority of responding active players were female. The picture was different for former players, with 81 people in this group being male.

The web-search for former players' addresses was conducted exclusively for male athletes. Due to the fact that male and female soccer players differ considerably in their career opportunities in soccer, a pooling of female active players and former male players would distort results. For this reason, the decision was made to limit the further analyses to former professional male players. Consequently, a life-cycle representation in terms of looking at active and post-sport careers was impossible.

For this investigation, we defined "former professional soccer player" as a male person who had a contract with a soccer club from the Bundesliga, the 2nd Bundesliga, or the 3rd Liga in Germany, or a league comparable in level in other countries. In addition, they had to have finished their career as a (professional) soccer player and not want to resume it.

This means that they had stopped playing soccer as a gainful activity, including playing in an amateur league; playing or not playing soccer as a leisure activity was not considered as a criterion in this context. Thus, the final sample consisted of 78 cases. Out of these 78 cases, 28 were filled out before the application of the second approach of data collection (via e-mail and social media channels), and 50 were filled out afterwards.

The vast majority (89.7%) of former professionals in the sample reached the highest league level (Bundesliga or comparable). Five players reported playing in the 2nd Bundesliga as their highest-reached level; three were in the 3rd league. When asked about their primary position played as a professional, players provided the following information (n = 62): goalkeeper (n = 5), defender (n = 19), midfielder (n = 23), and striker (n = 15).

The former professionals' careers lasted, on average, 11.8 (SD  $\pm$  4.4, n = 78) years, with a minimum of 2 and a maximum of 20 years. They played at their highest level for an average of 7.5 (SD  $\pm$  5.2, n = 77) years, with more than half of the sample (n = 42) reporting having played at that level for more than five years. Thirteen players reported having one or more contracts with only one club. Fifty-three had contracts with different clubs from Germany. Twelve former professionals had contracts with clubs from Germany and also with clubs from abroad.

Twenty-seven former players terminated their professional careers in the 1980s and 1990s, 32 between the years 2000 and 2009, and 16 after 2010. On average, former players ended their professional careers 17.8 (SD  $\pm$  8.4, n = 75) years ago; only 4 players ended their careers within the last five years. Overall, 82.7% of players reported ending their careers 10 years or more ago; 37.3% even 20 years or more ago. In the group of the 4 players ending their careers within the last five years, only 1 player ended his career within the last two years.

The sample thus consists of a large majority of former professionals with several years of experience in the highest divisions. The majority of the former professionals played exclusively for clubs in the German soccer leagues. In context with the above criticism of the short-term analysis carried out to date from a primarily psychological perspective, this sample can—on an individual player level—be described as “mixed” in terms of time between career termination and interview. The small number of cases prevents a differentiated multivariate analysis in this respect. However, and this is striking, roughly 80% of the players in the sample ended their careers 10 or more years ago. With an average of 17.8 (SD  $\pm$  8.4, n = 75) years between players' careers ending and the time point of the survey, the sample can be described as “long-term” in accordance with the above stated criteria.

For a better interpretation of results, results from the variables current life satisfaction and satisfaction with current income from this sample were compared to a gender and age-matched random sample drawn from the German Socio-Economic Panel (SOEP), version 36, 2019 (hereinafter: SOEP.v36.sample). For building this comparison sample, the procedure was as follows. We restricted this data set to male subjects and drew a sample of 10 times the sample size (n = 780) in relation to the birth cohorts. In this context, we want to state that 11 players did not specify their age. The others were born between 1954 and 1989. The matching was planned to include further variables, especially the players' parental socioeconomic background. However, due to missing values in the respective variables we had to abandon these planned matching procedures.

In addition to objective measures of socioeconomic status and current occupational situation of former players, the survey assessed subjective social status using the German version of the MacArthur Scale (Hoebel et al. 2015). For comparison, we used the 2018 wave of the Socio-Economic Panel Innovation Sample (SOEP-IS; n = 1720). A matching procedure comparable to the above was not possible due to a lack of corresponding variables in the SOEP-IS sample.

### 2.3. Instrument and Central Measures

As stated above, our central variables/constructs were: (1) mental wellbeing, (2) life satisfaction, (3) how well the respondents have overall managed their adjustment to the new life situation after their career as a professional soccer player and if this process is completed, and (4) the socioeconomic status. Their operationalization and measurement are described in the following.

(1) *Mental wellbeing* was measured by GHQ-12 (Goldberg and Williams 1988). This test was applied not only because it is regarded as one of the most appropriate for use in mental health surveys (Alaminos-Torres et al. 2021), but also because it was already used in professional soccer players retirement research (see Table 1). The GHQ-12 comprises 12 items. Each item was scored on a Likert-type rating scale (0-1-2-3). For our further analyses we converted the Likert-type ratings into a dichotomous score (0-0-1-1), i.e., the traditional way of analyzing these data. The sum score of these converted items can thus range between 0 and 12 points, where the higher the score, the greater the psychological distress. No established cut-off points for the GHQ-12 exist. However, when applied to professional soccer players' retirement research, different investigators used different cut-off values (some used a score of 2, others used a score of 3) to detect signs of mental health problems (see Table 1). We used a score of at least 3 but will also additionally provide the results if the threshold of 2 would have been primarily used. Furthermore, a sub-score for anxiety/depression was calculated summing up 6 dichotomous items of the GHQ-12 (cf. Gouttebauge et al. 2015). Following Gouttebauge et al. (2015), a score of 2 or more indicates signs of anxiety/depression.

(2) The second retirement transition and adjustment outcome was *current life satisfaction*, which was operationalized via a single question: "How satisfied are you with your life, all things considered?" (0, "completely dissatisfied" to 10, "completely satisfied"). This question was chosen to establish comparability of the samples' results to the SOEP.v36.sample results.

(3) Respondents were asked how well or badly they have overall managed the adjustment to the new life situation after their career as a professional soccer player (*quality of adjustment after a career as professional soccer player*; 5-point Likert-type rating scale, from very badly to very well). In this context we also asked the former players if they feel that the adaptation to the new life situation after their career as a professional soccer player is completed (4-point Likert-type rating scale: yes, rather yes, rather no, no). Both questions were based on the survey of Küttel (2017).

(4) Preliminary interviews in the pilot phase of this study showed that, especially for active professional soccer players and for former players as well, direct data on their consumption and saving behavior as well as questions on the current income represent quite sensitive data. Therefore, we primarily used subjective measures for assessing the ex-player's *socioeconomic status*. We first asked players to self-assess their subjective social status. The operationalization was done by application of the German version of the MacArthur Scale of Subjective Social Status (ladder with 10 rungs from rung 1, people who are the worst off, those who have the least money, least education, and worst jobs or no job to rung 10—at the top of the ladder—people who are the best off, those who have the most money, most education, and best jobs; Hoebel et al. 2015). Furthermore, we asked the respondents about the satisfaction with their current personal income (0, "not at all satisfied" to 10, "extremely satisfied"). For assessment of the satisfaction of former players with their current professional career, we applied the Greenhaus Scale. To produce a total career satisfaction score, we averaged the responses on the five items (each a 5-point Likert-type rating scale from "strongly agree" to "strongly disagree") according to Greenhaus et al. (1990). Finally, we asked the respondents about their current occupational status in their current main job.



### 2.4. Data Analyses

The 95% CIs were used to (approximately) detect statistical significance. For calculating 95% binomial confidence intervals (CIs), we used the Clopper–Pearson method. All data analyses and statistical testing was done in IBM SPSS, version 26.

### 3. Results

The empirical results will be presented in the following order: (1) results on how well the respondents think they have managed their *adjustment to the new life situation after their career as a professional soccer player overall* and if this process is complete for them; (2) ex-soccer players' *mental wellbeing* (GHQ-12) and results on the respective sub-score for anxiety/depression; (3) former professionals' *current life satisfaction*; (4) ex-players' *current socioeconomic status*.

The vast majority (83.3%; n = 78) answered that they feel their adjustment to the new life situation after their career as a professional soccer player has been completed (yes). An additional 6.4% (n = 5) answered "rather yes". Only one person answered no and four answered rather no. Two people chose the category "don't know", and one person did not answer at all. When asked how well or badly they had overall managed the adjustment to the new life situation after their career as a professional soccer player, nearly 90% answered good (34.6%) or very good (55.1%). No person answered very bad, and only one ex-soccer professional answered bad.

Forty-five respondents answered every of the GHQ-12-questions and could thus be used for the respective analyses. Using the threshold of 3 (and more), less than 10% (8.9%, 95% CI 2.5 to 21.2) showed signs of mental health problems. If we would have used the threshold of 2, the respective percentage would be 15.6% (95% CI 6.5 to 29.5). For the sub-score for anxiety/depression, the result was 10.2% (95% CI 3.4 to 22.2).

The results showed that ex-soccer professionals (M = 8.2, 95% CI 7.9 to 8.5, n = 42) had a statistically significant higher life satisfaction compared to the (gender- and age-matched) German population (M = 7.5, 95% CI 7.4 to 7.6, n = 780).

Socio economic status: Ex-soccer professionals (M = 7.4, 95% CI 7.2 to 7.7, n = 60) viewed themselves as standing on a higher rung compared to the results from German residents (M = 5.6, 95% CI 5.6 to 5.7, n = 1720). Furthermore, former players were more satisfied with their current personal income (M = 8.0, 95% CI 7.5 to 8.5, n = 57) compared to the (gender- and age-matched) German population (M = 6.8, 95% CI 6.6 to 7.0, n = 780). The total career satisfaction score was M = 4.1 (95% CI 3.9 to 4.2, n = 58). Table 3 shows that 71.7% to 85.0% either agreed to some extent or strongly agreed when they were asked if they were satisfied with different aspects of their current professional career.

**Table 3.** Ex-soccer professionals' satisfaction with their current professional career (n = 59–60).

I Am Satisfied with...	Strongly Disagree	Disagree to Some Extent	Neither Agree Nor Disagree	Agree to Some Extent	Strongly Agree
... the success I have achieved in my current professional career.	0.0%	1.7%	13.3%	40.0%	45.0%
... the progress I have made toward meeting my overall career goals in my current professional career.	0.0%	6.8%	13.6%	35.6%	44.1%
... the progress I have made toward meeting my goals for income in my current professional career.	0.0%	5.0%	23.3%	45.0%	26.7%
... the progress I have made toward meeting my goals for advancement in my current professional career.	0.0%	5.1%	18.6%	49.2%	27.1%
... the progress I have made toward meeting my goals for the development of new skills in my current professional career.	0.0%	5.0%	18.3%	53.3%	23.3%

Overall, 93.7% (95% CI 84.5 to 98.2) of all former players answering (n = 63; missing n = 15) stated that they were employed full-time at the time of the survey; two were part-time and two were marginally employed. None of the former players indicated that they

were unemployed. Compared to the results in the (gender- and age-matched) German population: here we found that 19.4% were unemployed (95% CI 16.6 to 22.3).

We further analyzed the occupational status of ex-soccer professionals' current main jobs: 38.1% (95% CI 26.1 to 51.2;  $n = 63$ ) stated that they were self-employed. We found that 54.2% (from  $n = 59$ ) of ex-soccer professionals indicated that their current main job is related to soccer (e.g., coach, club management). We then compared the group of self-employed and non-self-employed and whether their jobs were related to soccer. This revealed an interesting result: three-quarters of ex-soccer professionals working as non-self-employed worked in a field related to soccer. Interestingly, in the context of being self-employed, the opposite applies; the vast majority (78.3%) stated that their job was not related to soccer.

#### 4. Discussion and Conclusions

This paper aimed to describe central retirement transition and adjustment outcomes of ex-professional soccer players from a social sciences perspective, including psychology, sociology, and economics.

With soccer players having, on average, retired from their professional careers 17.8 (SD  $\pm 8.4$ ,  $n = 75$ ) years ago, this study was the first to investigate the former players' *mental well-being* by application of the GHQ-12 under a long-term perspective. Because of our approach of using a threshold score of 3 to detect signs of mental health problems, our results are directly comparable to those of [Van Ramele et al. \(2017\)](#) and [Gouttebarga et al. \(2017\)](#). The detected prevalence of mental health problems in our results (10.2% with 95% CI 3.4% to 22.2%) were descriptively below the two mentioned studies. If we had applied 2 for the indication of signs of mental health problems, our result would be 15.6% (95% CI 6.5% to 29.5%). Only one study existed with which we could compare our results of the subscore of the GHQ-12 for anxiety/depression. We found a prevalence of anxiety/depression in ex-soccer professionals that was statistically significant below the prevalence found by [Gouttebarga et al. \(2015\)](#). In a more general interpretation, it could be said that the prevalence of signs of mental health problems in the population of ex-professional soccer players under a long-term perspective was not statistically significant, but remarkable below the existing—based on a short-term perspective—results.

Interestingly, none of the existing empirical studies on professional soccer players' retirement investigated the former professionals' *life satisfaction* at the time-point of the survey. It could be shown that ex-soccer professionals had a higher life satisfaction compared to the results of a gender- and age-matched sample from the German population. Before the background of the long-term view, it seems unsurprising that the vast majority of subjects stated that they felt their *adaptation to the new life situation after their career as a professional soccer player* was completed. Furthermore, nearly 90% answered they managed their adjustment to the new life situation after their career as a professional soccer player very well or well.

Due to our interview results mentioned above, we primarily used subjective measures for assessing the ex-players' *socioeconomic status*. Ex-soccer professionals assessed themselves as having a higher subjective social status than the average German population. Moreover, they were, on average, more satisfied with their current personal income compared to the results of a gender- and age-matched sample from the German population.

The total current professional career satisfaction score was 4.1 (95% CI 3.9 to 4.2). Thus, it seems to be justified to say that ex-soccer professionals were satisfied with their current professional career. None of the former professionals indicated that they were unemployed at the time of the survey. With more than a third, the proportion of self-employed persons was relatively high under former soccer professionals compared to the German average, with 9.4% in 2018 ([Statistisches Bundesamt 2019](#)). A relatively high proportion of self-employment under former professional soccer players was already reported by [Semyonov \(1986\)](#). Surprisingly, three-quarters of employed ex-soccer professionals' jobs were related to soccer, whereas nearly exactly the contrary was true for the self-employees, with 21.7%, not even a quarter, indicating that their job/business was related to soccer.

Taken together, the results seem—in the mean—to be quite “positive” compared to what seems to be known in the context of professional soccer players’ retirement. Thus, the question arises as to how these results can be explained.

Some reasons might be found in this study’s limitations. The central limitations are, first, not being able to generate a representative sample. Although we were kindly supported by the Players’ Union VDV, the DFB and the DFL, we contacted every club twice, and then additionally used a second approach for collecting data, even though the number of clicks stayed far behind our expectations. Furthermore, we were not able to get some central information on the population. Our second approach to collecting (more) data may have caused a selection bias. Additionally, a self-selection bias might have taken place through which former professionals might have decided to not take part in the survey or to not answer certain question. Thus, we have to stand back from saying that our results were representative for (German) ex-soccer professionals. The small samples size hindered further, more differentiated analyses. However, we were able to generate a unique sample of ex-professionals who played in the best soccer leagues in the world and, on average, retired a long time ago. Second, the measurement of the variables and its central consequences: Although variables/constructs were named retirement transition and adjustment outcomes, the interpretation must not be in a causal manner, i.e., we do not state that any results are caused by the retirement from soccer. The different variables were only measured at one point in time. However, before the background of the resource-based dynamic process perspective (Wang et al. 2011), we have to accept that retirees’ well-being (or any other variables defined as outcome or resource) could fluctuate up and down at any given point of time (Wang et al. 2011). In this context, it should be added that the vast majority answered that they feel their adjustment to the new life situation after their career as a professional soccer player has been completed. Due to our interview results in the pilot phase of this study, we applied subjective measures for assessing the socio-economic status. Additionally, ex-soccer professionals self-assessed their mental well-being and were not clinically tested.

Next to the limitations of the study, we can see an additional approach to explaining the seemingly “positive” results. The systematic review by Barth et al. (2021) clearly showed that for former professional soccer players, empirical knowledge on long-term central retirement transition and adjustment outcomes from a social sciences perspective is missing. Most existing information in this context seems to be anecdotal information. We all know cases of so-called “problematic” sport retirements from media reports. However, how many cases are too many? Is a “good” mean value “good enough”? This is a normative discussion which is to be held by the sport representatives. Regardless of the outcome of this discussion, for any investment in sport transition and retirement programs, we think it is important to know the prevalence of concerning central retirement transition and adjustment outcomes. These probabilities could also help athletes to make more informed choices about aspiring or not a career as a professional soccer player, i.e., answering for themselves the question of whether or not being a professional soccer player is too high a risk for their later life.

Comparable to Barth et al. (2021), we can now advise that we urgently need evidenced representative and reliable knowledge about central retirement transition and adjustment outcomes of ex-professional soccer players from a social sciences and long-term perspective. However, we doubt that such a project could be realized by any other research group. Therefore, we suggest the following for future research. First, it would be interesting to investigate why retirement from sports already seems to be considered problematic in advance—especially before the background that the justification for several “post-sport career programs” is to be found in the believed negative occupational and socio-economic situation of former sports professionals; things which seem to be best evaluated in the long-term and not in the short-term. Second, to investigate this problem with qualitative approaches such as biographic mapping, especially with the aim to identify patterns ending up in a problematic situation. Third, by application of a dynamic perspective, it

would be interesting to measure the outcomes not once but several times to get a better understanding of the process as such. In this context, the question arises—if time-dependent and intertemporal patterns can be identified.

Based on the currently existing empirical evidence and our results, we think it is justified to conclude that we have, on average, no indication for concerning central retirement transition and adjustment outcomes of ex-professional soccer players in the long run from a social sciences perspective. On the contrary, these first results indicate that ex-professional soccer players' life satisfaction and (subjective) socioeconomic status is above the population's average. It should be emphasized that this quantitative view is oriented towards the average; it does not say that no problematic progressions on individual levels exist.

**Author Contributions:** Conceptualization, M.B. and T.S.; Data curation, M.B., T.S. and W.P.; Formal analysis, M.B.; Funding acquisition, M.B., T.S. and W.P.; Investigation, M.B.; Methodology, M.B. and T.S.; Project administration, W.P.; Resources, M.B., T.S. and W.P.; Writing—original draft, M.B.; Writing—review & editing, M.B., T.S. and W.P. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research was funded by the GERMAN RESEARCH FOUNDATION (DFG), grant number 404929781.

**Data Availability Statement:** The data presented in this study are available on request from the corresponding author.

**Acknowledgments:** We want to thank the Players' Union VDV, the German Football Association (DFB), and the German Football League (DFL) for their kind support in this project.

**Conflicts of Interest:** The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

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