Prevalence and determinants of symptoms related to mental disorders in retired male professional footballers

Dr. Vincent Gouttebarge\textsuperscript{a,b}, prof. dr. Haruhito Aoki\textsuperscript{c}, prof. dr. Gino M Kerkhoffs\textsuperscript{b}

\textsuperscript{a} World Players’ Union (FIFPro), Hoofddorp, The Netherlands
\textsuperscript{b} Department of Orthopaedic Surgery, Academic Medical Center, Amsterdam, The Netherlands
\textsuperscript{c} St. Marianna University School of Medicine, Kawasaki, Japan

Congresses: none
Funding: none
Conflict of interest: none

Acknowledgements: The authors would like to thank the players’ unions from Belgium (Sporta), Chile (Sindicato Futbolistas Profesionales De Chile SIFUP), Finland (Jalkapallon Pelaajayhdistys Ry JPY), France (Union Nationale des Footballeurs Professionels UNFP), Japan (Japan Pro-Footballers Association JPFA), Norway (Norske Idrettsutøveres Sentralorganisasjon NISO), Paraguay (Futbolistas Agremiados del Paraguay FAP), Peru (Agremiación de Futbolistas Profesionales del Perú SAFAP), Spain (Asociación de Futbolistas Españoles AFE), Sweden (Spelarföreningen Fotboll I Sverige SFS) and Switzerland (Swiss Association of Football Players SAFP). The authors are very grateful to all retired players for their participation in the study.

Corresponding author:
Dr. Vincent Gouttebarge
World Players’ Union (FIFPro)
Scorpius 161
2132 LR Hoofddorp, the Netherlands
Email: v.goutebarge@fifpro.org
Telephone: +31621547499

Abstract

Objective
The objective of this study was to determine the prevalence of symptoms related to mental disorders (distress, anxiety/depression, sleep disturbance, adverse alcohol behaviour, adverse smoking behaviour, adverse nutrition behaviour) among retired professional footballers, and to explore their associations with stressors i.e. determinants such as severe injury, surgery, life events and career dissatisfaction.

Method
Cross-sectional analyses were conducted on baseline questionnaires from an ongoing prospective cohort study among retired male professional footballers. Based on validated questionnaires to assess both stressors and symptoms related to mental disorders, an electronic questionnaire was set up and distributed by players’ unions in 11 countries across three continents.

Results
Prevalence of symptoms related to mental disorders among 219 retired professional footballers ranged from 11% for adverse smoking behaviour and 18% for distress, to 35% for anxiety/depression and 65% for adverse nutrition behaviour. Especially life events that occurred in the previous six months was positively associated with distress (OR=1.3; 95%CI 1.0-1.6), anxiety/depression (OR=1.6; 95%CI 1.2-2.1), sleeping disturbance (OR=1.3; 95%CI 1.1-1.7) and adverse nutrition behaviour (OR=1.4; 95%CI 1.0-1.8).

Conclusions
A high prevalence of symptoms related to mental disorders was found among retired professional footballers, confirming a previous study in a similar study population. Relationships were established between symptoms of mental disorders and severe injuries, recently occurred life events, and career dissatisfaction.
Key Words

Soccer; Mental disorders; Substance-related disorders

Introduction

During their career, professional, i.e. elite, athletes are highly at risk for recurrent and severe musculoskeletal injuries.\(^1\) In the worst cases, these injuries might even force professional athletes to retire early from their sport, while involuntary – i.e. forced – retirement as well as career dissatisfaction has been identified as a potential risk for symptoms related to mental disorders in post-sport life.\(^2,3\)

Analogous to elite athletes from other sport disciplines, professional footballers are likely to experience symptoms related to mental disorders just after retirement from the pitch.\(^2,3\) In the long term (post-sport life), retired professional footballers are also at risk to suffer from osteoarthritis, a pathology known to potentially induce mental health problems.\(^4-6\)

Additionally, retired professional footballers are also as likely as anyone to be exposed to more conventional stressors that might lead to symptoms related to mental disorders, especially major life events.\(^7\) Despite these risks for mental health disorders among retired professional footballers, scientific knowledge about the occurrence of symptoms related to mental disorders such as distress, depression or adverse health behaviours is still lacking.\(^8\)

The aim of the present study was twofold: to determine the prevalence of symptoms related to mental disorders (distress, anxiety/depression, sleep disturbance, adverse alcohol behaviour, adverse smoking behaviour, adverse nutrition behaviour) among retired professional footballers, and to explore their associations with stressors i.e. determinants such as severe injury, surgery, life events, and career dissatisfaction.

Method

Design, study setting and participants

Reported in compliance with the STROBE statement (STrengthening the Reporting of OBservational studies in Epidemiology; international, collaborative initiative of
epidemiologists, methodologists, statisticians, researchers and journal editors involved in the conduct and dissemination of observational studies), the present study is a cross-sectional analysis of the baseline questionnaires from an ongoing prospective cohort study.⁹ Official approval for our study was obtained by the board of St. Marianna University School of Medicine (Kawasaki, Japan), and the present research was conducted in accordance with the Declaration of Helsinki (2013).

Participants were retired professional footballers, with the sample size calculation indicating that at least 138 participants were needed (confidence interval of 95%; precision of 5%) under the assumption that one out of ten retired players might suffer from a mental health condition.¹⁰ Expecting a response rate of at least 40%, we strived then to reach at least a total of 345 retired players. Inclusion criteria were: (i) being member of a national players’ union, which means having committed significant time to football training and having competed at professional football level; (ii) being 45 years old or younger; (iii) being male; and (iv) being fluent either in English, French, Japanese or Spanish. The World Players’ Union (FIFPro) asked the national players’ unions in Belgium, Chile, Finland, France, Japan, Norway, Paraguay, Peru, Spain, Sweden and Switzerland to select potential participants from their members at random.

Outcome measures
Symptoms related to mental disorders were assessed through several validated scales. Distress in the previous four weeks was measured using the validated Distress Screener (3 items scored on a 3-point scale) which is based on the four-dimensional symptom questionnaire (4DSQ).¹¹ The 4DSQ i.e. Distress Screener has been validated in several languages among which English, French and Spanish (test-retest coefficients ≥ 0.89; criterion-related validity: Area Under ROC Curve ≥ 0.79).¹¹ A total score ranging from 0 to 6 was obtained by summing up the answers on the three items, a score of 4 or more indicating the presence of distress.¹¹ The validated 12-item General Health Questionnaire (GHQ-12) was used to assess psychological symptoms related to anxiety/depression in the previous
four weeks.\textsuperscript{12} The GHQ-12 has been validated in several languages among which English, French and Spanish (criterion-related validity: sensitivity ≥ 0.70, specificity ≥ 0.75, Area Under ROC Curve ≥ 0.83).\textsuperscript{12} Based on the traditional scoring system, a total score ranging from 0 to 12 was calculated by summing up the answers on the 12 items, with a score of 2 or more indicating signs of anxiety/depression (Area Under Curve = 0.88).\textsuperscript{12} Sleep disturbance in the previous four weeks was assessed through two single questions derived from the validated PROMIS (short form) scored on a 4-point scale.\textsuperscript{13} The PROMIS has been validated in several languages among which English, French and Spanish (construct validity: product-moment correlations ≥ 0.96) (for detailed information, see www.nihpromis.org).\textsuperscript{13} A total score ranging from 0 to 2 was obtained by summing up the answers to the two questions, a score of 1 or more indicating the presence of sleep disturbance. Current level of alcohol consumption was detected using the validated three-item AUDIT-C.\textsuperscript{14} The AUDIT-C has been validated in several languages among which English, French and Spanish (criterion-related validity: Area Under ROC Curve 0.70 – 0.97).\textsuperscript{14} A total score ranging from 0 to 12 was obtained by summing up the answers on the three items, a score of 5 or more indicating the presence of adverse alcohol behaviour.\textsuperscript{14} Current smoking behaviour was assessed with a single question (yes or no). Current eating habits was examined using four statements validated in English and Dutch (e.g., ‘I eat regularly throughout the day’), each to be answered on how many days per week (from 0 to 7) this is the case.\textsuperscript{14} Consuming healthy meals less than five days per week, eating regularly throughout the day less than three days per week, having breakfast before 10:30 less than three days per week, and having a final meal before 20:30 less than three days per week, was reported as adverse nutrition behaviour.\textsuperscript{14}

\textit{Determinants}

The number of severe injury during the professional football career was examined with a single question. In our study, severe injury was defined as one that occurred during team activities and led to either training or match absence for more than 28 days.\textsuperscript{15} The number of
surgery undergone during professional football career was examined with a single question. The occurrence of life events either in the previous six months (LE<6) or longer than six months ago (LE>6) was explored by 13 single questions (yes or no) of the validated Social Athletic Readjustment Rating Scale.\textsuperscript{16} Two scores were calculated: one by summing up the life events occurred in the previous six months (LE<6) and one by summing up the life events occurred longer than six months ago (LE>6). Professional football career dissatisfaction was explored through the Greenhaus scale (5 items on a 5-point scale) which has been validated in general working populations.\textsuperscript{17} A total score ranging from 5 to 25 was obtained by summing up the answers on the five items, a lower score indicating a higher level of dissatisfaction.\textsuperscript{17}

\textit{Procedures}

Based on the determinants and outcome measures under study, an electronic questionnaire available in English, French, Japanese and Spanish was set up. In addition, the following descriptive variables were included: age, length, body mass, duration of professional football career, level of play, squad position, educational level, duration and nature (forced or not) of retirement, and current occupation (job type and hours per week). In order to guarantee the strict confidentiality of the responses, no personal identifiable information was included in the questionnaire. Information about the purpose and procedures of the study was sent per email to potential participants by their national players' unions. If interested in participating in the study, participants gave their informed consent and were asked to fill in their questionnaires online within two weeks. Two reminders were sent per email after two and four weeks. Once completed (around 15 minutes was required), the electronic questionnaires were saved automatically on a secured electronic server. Retired professional footballers participated voluntarily in the study and did not receive any reward for their participation. Questionnaires were distributed between April and September 2014.

\textit{Data analyses}
All data analyses were performed using the statistical software IBM SPSS Statistics 22.0 for Windows. Descriptive analyses (mean, standard deviation, frequency, range) were performed for the different descriptive variables, outcome measures and determinants. Prevalence of symptoms related to mental disorders (distress, anxiety/depression, sleep disturbance, adverse alcohol, smoking and nutrition behaviours) were calculated, using the Wald method (sample size of more than 150 persons) for 95% confidence interval (95% CI). Univariate logistic regression analyses expressed as odds ratio (OR) and related 95% confidence interval (95% CI) were performed to explain the potential relationship between determinants and the presence/absence of the health conditions under study.

Results

Participants

A sample of 357 retired professional footballers were contacted by the national players’ unions. In total, 249 participants (all male) gave their written informed consent and completed the questionnaire (overall response rate of 69%). As 30 questionnaires were discarded from the analysis due to them being insufficiently completed, 219 retired professional footballers (mean age of 35 years; mean career duration of 12 years; mean duration since retirement of four years) participated in the study and were involved in the analysis. Around three quarters of the retired professional footballers were employed, working on average nearly 35 hours a week. During their football career, they had suffered on average three severe injuries and had undergone two surgeries. All characteristics of the participants are presented in Table 1.

Prevalence of symptoms related to mental disorders

Prevalence of symptoms related to mental disorders among retired professional footballers ranged from 11% for adverse smoking behaviour and 18% for distress, to 35% for anxiety/depression and 65% for adverse nutrition behaviour. All prevalence rates are presented in Table 2.
**Relationship between determinants and symptoms related to mental disorders**

The associations between determinants (stressors) and symptoms related to mental disorders are presented in Table 3. Especially life events that occurred in the previous six months was positively associated with distress (OR=1.3; 95%CI 1.0-1.6), anxiety/depression (OR=1.6; 95%CI 1.2-2.1), sleeping disturbance (OR=1.3; 95%CI 1.1-1.7) and adverse nutrition behaviour (OR=1.4; 95%CI 1.0-1.8).

**Discussion**

The aim of the study was to determine the prevalence of symptoms related to mental disorders (distress, anxiety/depression, sleep disturbance, adverse alcohol behaviour, adverse smoking behaviour, adverse nutrition behaviour) among retired professional footballers, and to explore their associations with stressors, i.e. determinants such as severe injury, surgery, life events and career dissatisfaction. Based on cross-sectional analyses on questionnaires among 219 retired male professional footballers, prevalence of symptoms related to mental disorders ranged from 11% for adverse smoking behaviour to 65% for adverse nutrition behaviour. Especially life events that occurred in the previous six months was positively associated with distress (OR=1.3; 95%CI 1.0-1.6), anxiety/depression (OR=1.6; 95%CI 1.2-2.1), sleeping disturbance (OR=1.3; 95%CI 1.1-1.7) and adverse nutrition behaviour (OR=1.4; 95%CI 1.0-1.8).

**Our findings**

Symptoms related to mental disorders such as distress, anxiety, depression and substance abuse/dependence are more frequently reported in young adults than at any other stage of the lifespan, having also a significant impact on functioning and quality of life.\(^{19,20}\) The findings of our study concur with those of a FIFPro's preliminary cross-sectional study conducted in 2013, confirming that symptoms related to mental disorders are highly prevalent among retired professional footballers.\(^{21}\) Among 104 retired professional footballers from Australia, Ireland, the Netherlands, New Zealand, Scotland and United States,
prevalence of mental health problems ranged from 16% for burnout to 42% for adverse nutrition behaviour. In other studies using similar scales for most outcomes measures than the ones used in our study, prevalence of anxiety/depression was found to range from 13% to 19% in Australia (general population), from 17% to 21% in Denmark (practice population), and from 17% to 25% in the Netherlands (general and practice population, young male employees). Prevalence of distress in both young and older working populations was reported to range from 5% to 18%. This suggests that symptoms related to mental disorders might be more prevalent among retired professional footballers than in these other study populations.

When compared to professional footballers who are still active, it seems that the prevalence of symptoms related to common mental disorders is higher in the group of retired players as shown in the FIFPro’s preliminary cross-sectional study. In a recent FIFPro study, prevalence of symptoms of mental disorders among professional footballers was found to range from 4% for adverse smoking behaviour and 9% for adverse alcohol behaviour, to 38% for anxiety/depression and 58% for adverse nutrition behaviour. These prevalence rates are once again lower than those found in our study among retired players.

In 2007, Guskiewicz et al. reported that around 11% of retired National Football League (NFL) players had been diagnosed with clinical depression, diagnosis being significantly associated with recurrent concussion. More recently, it has been shown that serious injuries and concussion during a sports career affected negatively the well-being of past elite Australian Football League (AFL) players as well as their daily life. In our study, the occurrence of symptoms related to mental disorders (distress, anxiety/depression, sleeping disturbance, adverse nutrition behaviour) was associated with life events that occurred in the previous six months, and correlated (ad hoc analysis) with severe injuries during a professional football career. Consequently, it seems that being severely injured during a professional football career might lead to mental health problems in the long term, which is in line with the findings of Guskiewicz et al. (2007) previously acknowledged. Consequently, monitoring the occurrence of these injuries during a career as well as
monitoring the physical health of professional footballers once retired might contribute to the early identification of retired players potentially at risk for mental health issues.

**Limitations and strengths**

Conducting an epidemiological study in such a group of retired professional footballers entails some methodological and procedural considerations. First, our study relies on a cross-sectional analysis of baseline questionnaires. Such a research design allowed us to explore the associations between the determinants, i.e. stressors and outcome measures involved in our study, but did not allow any casual relationships to be established. Second, potential participants were recruited (at random) by the national players’ unions in order to safeguard the privacy of their members. As the contact information of potential participants was not available to the researchers, non-response analysis could not be conducted. Third, because national players’ unions struggle to keep contact once players have retired from professional football, the size of the sample included in our study is not as high as expected, especially considering the participation of 11 national players’ unions. Consequently, it remains doubtful whether our respondents can be seen as representative for the whole population of interest and whether our results are generalizable to all retired professional footballers. Fourth, we can regret that the four statements used to explore adverse nutritional behaviour did not involve any information about the composition of the food being consumed. This aspect should be taken into consideration in future empirical studies. Finally, we can mention that the principal strengths of our study rely especially in the topic being explored (symptoms related to mental disorders) and the study population (retired professional footballers). In our study, we strived to include players that were recently retired from professional football, which means aged 45 years old or younger, as scientific studies have shown that the period just after retirement from professional, i.e. elite, sport is sensitive and difficult for many athletes. Despite this latest evidence, scientific knowledge about the mental health problems occurring while transitioning out of professional football is scarce. As a result, the present study, as well as FIFPro’s preliminary study, might contribute to raising
self-awareness of all stakeholders in professional football about the potential problems related to mental disorders among players that have recently left the game. This is of course an important and necessary step before developing possible support and help for retired professional footballers.

Implications of the study

As previously acknowledged, scientific knowledge about symptoms related to mental disorders among retired professional footballers remains scarce. The present epidemiological study is a necessary first step in ultimately proposing adequate preventive and supportive measures aimed at protecting and empowering the sustainable health of retired players. The current findings justify a multidisciplinary approach (involving all medical professionals responsible for professional footballers) for treatment of major injuries during the active career of professional footballers as well as in the long term treatment of osteoarthritis. In the post sport life, such a multidisciplinary approach might offer the opportunity to optimally treat both osteoarthritis and symptoms related to mental disorders.

When it comes to the support of retired professional footballers, evidence-based measures are lacking, with the exception of some support made available by several national players’ unions. By contrast, it appears that the other important stakeholders in professional football, namely clubs – i.e. employers and official football authorities – have omitted embedding the health of players in a life span perspective. Because professional football profiles itself as a full occupational category, retired professional footballers have the same right as any employee from other occupational categories. Consequently, as stated by both the World Health Organization and International Labour Organization, employers are responsible for the protection, promotion, inspection and support of the highest level of physical, mental and social well-being of their employees long after they reach retirement age. It therefore seems odd that support measures related to mental health (or other health issues) for retired professional footballers are lacking.
As we have already stated, raising the self-awareness of professional footballers about mental disorders that might occur after their career is a minimum standard. Also, an exit-career examination might be developed and implemented in order to counsel recently retired professional footballers about the application of relevant measures and skills in order to promote a healthy lifestyle and empower their sustainable mental health and functioning. These measures might be a good starting point for empowering the sustainable health of professional footballers, thereby concurring with the needs expressed by both current and retired professional footballers.

Conclusion
This study has shown that the prevalence of symptoms related to mental disorders among retired professional footballers ranged from 11% for adverse smoking behaviour and 18% for distress, to 35% for anxiety/depression and 65% for adverse nutrition behaviour. Symptoms related to mental disorders were associated with the occurrence of recent life events, and correlated with severe injuries during a professional football career. With regard to these findings, self-awareness about the mental health issue that might occur after a professional football career should be raised. In addition, supportive measures such as an exit-career examination should be developed and implemented in order to promote and empower the sustainable mental health and functioning of professional footballers in their post-sport life.

References


25. Gouttebarge V, Aoki H, Kerkhoffs GM. Symptoms of common mental disorders in male professional footballers - Prevalence and associated determinants. Submitted


Table 1: Characteristics of the retired professional footballers (N = 219).

<table>
<thead>
<tr>
<th>Variables</th>
<th>N = 219</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (in years; mean ± SD)</td>
<td>35.0 ± 6.4</td>
</tr>
<tr>
<td>Height (in cm; mean ± SD)</td>
<td>180.8 ± 6.9</td>
</tr>
<tr>
<td>Weight (in kg; mean ± SD)</td>
<td>82.2 ± 10.8</td>
</tr>
<tr>
<td>Duration football career (in years; mean ± SD)</td>
<td>11.6 ± 5.0</td>
</tr>
<tr>
<td>Level of play (top league; %)</td>
<td>64</td>
</tr>
<tr>
<td>Field position (%)</td>
<td></td>
</tr>
<tr>
<td>Goalkeeper</td>
<td>13</td>
</tr>
<tr>
<td>Defender</td>
<td>39</td>
</tr>
<tr>
<td>Midfielder</td>
<td>34</td>
</tr>
<tr>
<td>Forward</td>
<td>14</td>
</tr>
<tr>
<td>Educational level (%)</td>
<td></td>
</tr>
<tr>
<td>No schooling completed</td>
<td>2</td>
</tr>
<tr>
<td>Nursery/Elementary school</td>
<td>2</td>
</tr>
<tr>
<td>High school</td>
<td>24</td>
</tr>
<tr>
<td>Vocational/technical school</td>
<td>24</td>
</tr>
<tr>
<td>College, university or equivalent</td>
<td>48</td>
</tr>
<tr>
<td>Voluntary retired from football (%)</td>
<td>45</td>
</tr>
<tr>
<td>Duration of retirement (in years; mean ± SD)</td>
<td>4.4 ± 3.6</td>
</tr>
<tr>
<td>Currently (self-)employed (%)</td>
<td>76</td>
</tr>
<tr>
<td>Working hours per week (mean ± SD)</td>
<td>34.8 ± 14.7</td>
</tr>
<tr>
<td>Severe injuries (mean; min - max)</td>
<td>3 (0 - 11)</td>
</tr>
<tr>
<td>Surgeries(mean; min - max))</td>
<td>2 (0 - 11)</td>
</tr>
<tr>
<td>LE&lt;6 (mean; min - max)</td>
<td>1 (0 - 9)</td>
</tr>
<tr>
<td>LE&gt;6 (mean; min - max)</td>
<td>2 (0 - 10)</td>
</tr>
<tr>
<td>Career dissatisfaction (mean; ± SD)</td>
<td>12.0 ± 4.4</td>
</tr>
</tbody>
</table>

N, number of participants; SD, standard deviation; cm, centimetres; kg, kilograms; min, minimum; max, maximum; LE<6, life events in the past 6 months; LE>6, life events longer than 6 months ago
Table 2: Prevalence of symptoms related to mental disorders among retired professional footballers.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>N</th>
<th>Prevalence (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distress&lt;sup&gt;1&lt;/sup&gt;</td>
<td>38/206</td>
<td>18.4 (13.2-23.7)</td>
</tr>
<tr>
<td>Anxiety/depression&lt;sup&gt;1&lt;/sup&gt;</td>
<td>66/187</td>
<td>35.3 (28.4-42.1)</td>
</tr>
<tr>
<td>Sleeping disturbance&lt;sup&gt;1&lt;/sup&gt;</td>
<td>58/206</td>
<td>28.2 (22.0-34.3)</td>
</tr>
<tr>
<td>Adverse alcohol behaviour&lt;sup&gt;2&lt;/sup&gt;</td>
<td>50/203</td>
<td>24.6 (18.7-30.6)</td>
</tr>
<tr>
<td>Adverse smoke behaviour&lt;sup&gt;2&lt;/sup&gt;</td>
<td>23/202</td>
<td>11.4 (7.0-15.8)</td>
</tr>
<tr>
<td>Adverse nutrition behaviours&lt;sup&gt;2&lt;/sup&gt;</td>
<td>131/203</td>
<td>64.5 (58.0-71.1)</td>
</tr>
</tbody>
</table>

N, number of participants; CI, confidence interval; <sup>1</sup>, 1-month prevalence; <sup>2</sup>, point prevalence
Table 3: Associations (odds ratio and 95% confidence interval) between determinants and symptoms related to mental disorders among retired professional footballers.

<table>
<thead>
<tr>
<th></th>
<th>Distress</th>
<th>Anxiety/depression</th>
<th>Sleeping disturbance</th>
<th>Alcohol</th>
<th>Smoking</th>
<th>Nutrition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe injuries</td>
<td>1.0 (0.8-1.2)</td>
<td>0.9 (0.7-1.0)</td>
<td>0.8 (0.7-1.0)</td>
<td>0.9 (0.7-1.0)</td>
<td>0.8 (0.6-1.0)</td>
<td>1.2 (1.0-1.3)</td>
</tr>
<tr>
<td>Surgeries</td>
<td>1.0 (0.8-1.2)</td>
<td>1.0 (0.9-1.2)</td>
<td>1.1 (0.9-1.3)</td>
<td>1.0 (0.9-1.2)</td>
<td>1.3 (1.0-1.6)*</td>
<td>0.9 (0.8-1.1)</td>
</tr>
<tr>
<td>LE&lt;6</td>
<td>1.3 (1.0-1.6)*</td>
<td>1.6 (1.2-2.1)**</td>
<td>1.3 (1.1-1.7)*</td>
<td>1.1 (0.9-1.4)</td>
<td>1.3 (1.0-1.7)</td>
<td>1.4 (1.0-1.8)*</td>
</tr>
<tr>
<td>LE&gt;6</td>
<td>1.1 (1.0-1.3)*</td>
<td>1.0 (0.9-1.8)</td>
<td>1.0 (0.9-1.2)</td>
<td>1.0 (0.9-1.2)</td>
<td>1.2 (1.0-1.4)*</td>
<td>1.0 (0.9-1.1)</td>
</tr>
<tr>
<td>Career dissatisfaction</td>
<td>1.0 (0.9-1.1)</td>
<td>1.0 (0.9-1.1)</td>
<td>1.0 (0.9-1.1)</td>
<td>0.9 (0.9-1.0)*</td>
<td>1.0 (0.9-1.1)</td>
<td>1.0 (0.9-1.0)</td>
</tr>
</tbody>
</table>

N, number of participants; *, p<0.05; **, p < 0.01; LE<6, life events in the past 6 months; LE>6, life events longer than 6 months ago