

ORIGINAL SCIENTIFIC PAPER

Stress among Talents in a Football Academy

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Abstract

This article studies Norwegian football academy players who have been part of a professional club at level 2 in Norwegian elite football. The purpose of the article is to report the stress levels of selected players in 2013 and 2016. In addition, the study compares the reported stress level of players who were part of the academy in both 2013 and 2016, with that of the players who were new to the academy in 2016. The selection consists of two groups of players between 12 and 16 years: group 1 consists of 57 players (age 12.8 years) from 2013 and group 2 consists of 51 players (age 15.0 years) from 2016. The results show that the 2013 players reported a significantly higher evaluation and development stress and significantly lower academic stress. The youngest age group reported a significantly higher evaluation stress compared to both the 14-year-olds and the 15–16-year-olds. Compared to the oldest players, the 12–13-year-olds reported a significantly higher development stress and a significantly lower academic stress. Furthermore, the results showed that the players who had been part of the academy for a long time reported significantly less stress on both dimensions – evaluation and development stress. The results would indicate that coaches should be aware of newly recruited players because of their potential lack of safety in the role as an academy player. Further studies should be conducted to see to what extent these results can be confirmed in other academies or other similar performance groups.

Key words: *stress, football, youth*

Introduction

The development of young football players has become an important task for both professional and non-professional clubs in Norway. Internationally, the pursuit of the greatest talents, especially among the professional clubs, is still increasing both in the process of identifying and developing them (Roderick, 2006), as has also been seen in Norway (Sæther, 2017). In recent years, new development arenas have evolved for motivated young football players for a high number of weekly training sessions at an early age, and several of these offers include a collaboration with schools or the establishment of football academies (Sæther, 2017). The main function of these football academies is to contribute to the development of the greatest talents in the region, by making more use of professional coaches. However, the creation of football academies is somewhat relatively new in the Norwegian context, and much of the international research is conducted in countries where these academies have been present for a longer period of time, such as England (Reeves, Nicholls, & McKenna,

2009). The players selected for these academies are given a unique opportunity to be part of a good development environment, with access to some of the best resources and facilities in the region (Ashworth, & Heyndels, 2007). On the other hand, players are also part of a competitive learning environment that places high demands on performance development in the short and long term (Nerland, & Sæther, 2016). Such development environments with clear demands and expectations can be challenging to relate to for young players, where pressure and expectations can often lead to stress and insecurity, especially if the player does not feel capable to handle the situation. Although it is reasonable to assume that players who may be part of such development environments also have the best prerequisites for success and end up as professional players, a recent study of Norwegian age-specific national team players indicates that this is not necessarily the case. A study that followed all selected national team players in the 1991 age cohort with annual cross-sectional surveys in the period 2005–2015, showed that only 16% of players who were in the age-specific



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national teams ended up as elite players at the elite level in Norwegian football or abroad (Sæther, 2017).

There are several explanations as to why the most talented football players did not succeed despite being perceived as some of the greatest talent within their age cohort. Some explanations lie outside the football field, such as motivation and attitudes, while others may be explained by lack of progression and skill development on the football pitch. An important premise for development is about the players' experience of coping and this is where the players' experience of stress may be crucial. Lazarus & Folkman, (1984) refer to stress as an imbalance between a situation and an individual's resources. This imbalance is a lot about being in a situation that you basically do not have the resources to handle. It is therefore natural to assume that young players who are part of a challenging development environment with high expectations both from their surroundings (coaches, team-mates, parents) may experience pressure and stress related to their own performance and own development (Finn, & McKenna, 2010; Sæther, & Aspvik, 2016).

Theoretical Framework

Fletcher, Hanton and Mellalieu (2006) claimed stress is a comprehensive process consisting of: stressor, assessment, negative response (strain) and handling (coping) responses. Stress is an ongoing process that involves the individual's relative relationship (transacting) to the environment, their assessment of the situation they are in, and their efforts/ attempts to handle the challenges that may arise. They further pointed out that a stressor is the environmental requirement or stimulus that an individual experiences, while negative strain is defined as the individual's negative response to stressors (such as burnout). According to Lazarus and Folkman (1984), stress must be understood on the basis of both primary and secondary assessments in a dynamic process. They point out, however, that the primary assessment must in no way be perceived as more important than the secondary one. The primary assessment deals with the individual's evaluation of the importance of a situation, such as stressful, positive or irrelevant. A situation is perceived as stressful if the individual is affected by being in a situation and struggling to handle the situation, positive if they experience that their satisfaction is maintained or improved, whereas if the environmental impact has no implication for their satisfaction, the situation is described as irrelevant.

These primary assessments can be perceived as a threat (expected as potentially harmful), a challenge (difficult but with potential gain), damaging (destruction or loss that has already occurred) or a destructive factor for well-being (Lazarus, 2000). An important distinction between injury and threat is that you can learn to predict and plan better handling of the threat, compared to the damage that has already occurred. The challenge has many similarities to the threat because they both demand a mobilization of ways to deal with the situation and are not necessarily mutually exclusive. But a distinction between these is that the challenge focuses on the potential benefits of the situations, which can be characterized by emotions like enthusiasm, while the threat centred more around the potential damage and is more often centred around negative feelings such as fear and anxiety. Carver and Connor-Smith (2010), similar to Lazarus and Folkman (1984), also emphasized that pressure and coping with a threat or obstacle will be

stressful. The secondary assessment deals with the individual's evaluation of their personal resources to master the stress as a result of the primary assessment, which is the basis of the mastering process. This assessment is essential in any potential stressor because the outcome depends on what can be done and what is at stake in the situation. The assessment takes into account the choices available and the assessment of whether the way in which the situation is handled will lead to the desired outcome and whether the strategy will work.

Studies have further shown that boys compared to girls experience fewer interpersonal events like stressors (Rudolph, 2002; Rudolph, & Hammen, 1999). Reeves and colleagues (2009) found that English football academy players reported mistakes and team performance as key stressors. The youngest players (12–14 years) also reported coaches and selection as the main stressors, while the older teenagers (15–18 years) cited their families as being the greatest stressors (such as pressure and criticism from parents). Players must learn to cope with these stressors if they have a chance to achieve a potential professional sports career (Holt, & Dunn, 2004), as a lack of coping may potentially lead to reduced well-being (Ivarsson, Stenling, Fallby, Johnson, & Borg, 2015), hope (Gustafsson, Skoog, Podlog, Lundqvist, & Wagnsson, 2013), and increase the risk of burnout (Gustafsson, & Skoog, 2012; Raedeke, & Smith, 2004).

A previous study of junior players in three Norwegian top clubs showed that players who had the least play time reported significantly more stress performance and evaluation stress to the players who had more play than them (Sæther, & Aspvik, 2016). Another study of academics from two Norwegian top clubs showed that players who considered themselves as less skilled compared to their teammates reported significantly more performance stress (Sæther, Aspvik, & Høigaard, 2017). The same study also showed a strong correlation between playing time and the players' assessment of their own skills, where those players who considered themselves as more skilled than their teammates also got the most playing time. A third study of junior players in three level 2 clubs and three elite level clubs showed that level 2 players reported significantly more evaluation stress, performance stress and development stress, compared to the players in the elite level clubs (Engan, & Sæther, Submitted).

This article investigates football academy players from a level 2 club in Norwegian top football, consisting of players between the ages of 12 and 16. The main purpose of the article is to report the stress levels of a selection of players in 2013 and 2016. The second purpose is to compare the reported stress levels between three age groups in the selection (12–13, 14 and 15–16 years), while the final aim was to compare players who were part of the academy in both 2013 and 2016 with those players who were new to the academy in 2016.

Method

This survey has two samples: sample one consists of 57 (average age 12.80, std.78) male players who were part of a soccer academy in a level 2 club in the Norwegian top football club in 2013, while sample two consists of 51 (average age 15.02 years old, std.83) male players who were part of the same football academy as in sample one in 2016. This academy has been part of a project called the Football Academy which has been following several academies over several years.

Procedure

The survey was conducted following a training session by the academy in December 2013 (N57) and March 2016 (N51). Of the 51 players in sample two, almost half (23) were part of sample one, while the remaining half were new players in the academy. Before the players answered the questionnaire, all players were informed about the purpose of the study and that it was voluntary and anonymous, and that the information would be treated confidentially. The study is approved by the Norwegian Centre for Research data.

Instrument

Stress. The measuring instrument used in this survey is developed based on the Adolescent Stress Questionnaire (16 questions), designed to measure stress among adolescents (Byrne, Davenport, & Maznov, 2007; Moksnes, Byrne, Mazanov, & Espnes, 2010). The instrument intends to measure stress among athletes and contains 12 questions (for further elaboration see previous publications where the instrument is used) (Sæther, & Aspvik, 2016; Sæther et al., 2017). The introduction to these questions was: *Here are some statements about things and situations that you may experience as stressful. Please tell us how stressful each of these things and the situations have been in the last year.* Players were asked to respond to a Likert-designed scale from 1–5; 1 (not stressful at all/not relevant); 2 (a little stressful); 3 (moderately stressful); 4 (pretty stressful); and 5 (very stressful); These 12 questions were further analysed via a factor analysis to find the data material's suitability for further analyses using SPSS version 21.0.

The analysis of the correlation matrix showed many coefficients above .03 and higher. The Kaiser–Meyer–Olkin value was .83 for the entire sample, and is above the recommended value of .6, and Bartlett's test of sphericity achieved statistical significance ($p < .00$), and supports factor change in the correlation matrix (Tabachnick, & Fidell, 2001). The factor analysis showed the presence of four components with eigen values above 1, explaining 38.2%, 10.4%, 8.6%, and 8.4%, respectively, of the variance in the sample. All four components were included in the analyses, explaining 65.8% of the variance in the sample. The four factor combinations were defined as: 'evaluation stress', which indicates stress caused by being evaluated by coaches or co-workers (i.e. being evaluated by your coach); 'performance stress', which refers to stress in terms of exercise and matches (i.e. exercise performance); 'developmental stress', which indicates stress regarding development both from

teammates and the coach (i.e. coaches who expect a lot); and 'academic stress', which deals with stress regarding the school situation and the lack of time for other recreational activities (i.e. engaging in some school subjects). This dimension has been referred to as 'future stress' in a previous study (Sæther, & Aspvik, 2016).

An internal consistency test was conducted on all four components (subscales). This test is a Cronbach's alpha value, which generally increases when the correlation between questions increases. The most traditional threshold for a 'good' internal consistency is set to a Cronbach's alpha > 0.7 . Cronbach's alpha values for each subscale were .64 for evaluation stress, .63 for performance stress, .71 for development stress, and .60 for academic stress. Thus three of the four subscales in the sample were below the 0.7 threshold. In spite of this, all four indices were kept for further analyses. Correlation analyses for the weakest index, academic stress, were from, .162–.569. It is however important to acknowledge that an alpha value is dependent not only on the importance of the correlation between items but also the number of questions (items) in the scale. For example, a subscale (index) may look like more homogeneous simply by doubling the number of items, even though the average correlation is the same. Since the questions related to the different subscales theoretically fit each other in this study, and the number of questions in each subscale is low (3 questions), all subscales were merged as an index even though three of the four alpha values were below 0.7.

Analysis

All the analyses were conducted in SPSS version 21.0. Average and standard deviations were calculated for the four stress components. Because the dimensions of the stress instrument were not normalized, parametric statistics were conducted in the form of chi-square tests where the significance level was set to ($p < .05$), to identify differences between the 2013 and 2016 selections between the three age groups (12–13 years, 14 years, 15–16 years), and between the two groups that had been part of the academy both in 2013 and 2016.

Results

The results show that 2013 players reported a significantly higher evaluation stress and development stress, and a significantly lower academic stress compared to 2016 (Table 1).

Table 1. Descriptive data for the sample, in 2013 (N57) and 2016 (N51), respectively, mean, SD and chi-square test

Dimensions	2013	2016	x ² (df)	Total
	Mean (SD)	Mean (SD)		Mean (SD)
Evaluation stress	2.13 (0.7)	1.74 (0.6) ^a	76.64 (17)*	1.91 (0.7)
Performance stress	2.05 (0.9)	2.04 (1.3)	19.17 (13)	2.04 (1.1)
Development stress	2.13 (0.8)	1.99 (0.6) ^a	93.16 (18)*	2.05 (0.7)
Academic stress	1.95 (0.7)	2.44 (0.9) ^a	90.26 (22)*	2.18 (0.8)

Legend: Categories: 1= not stressful at all or irrelevant, 5= very stressful.; * Statistical significance, $P < 0.05$.; a = Significant difference ($P < 0.05$) from 2013.

Comparing the different age groups, the results showed that the youngest age group (12–13 years old) showed a significantly higher evaluation stress compared to both 14-year-olds and 15–16-year-olds (Table 2). Furthermore, the results also showed that 15–16-year-olds reported significantly less devel-

opmental stress and significantly more academic stress. The results also showed that 12–13-year olds reported a non-significant ($P = .09$) trend of less developmental stress, and that 15–16-year-olds reported a non-significant ($P = .07$) trend of more evaluation stress.

Table 2. Descriptive data for the sample, according to age and chi-square test between the three age groups

Dimensions	12–13 yrs Mean (SD)	14 yrs Mean (SD)	15–16 yrs Mean (SD)	Total Mean (SD)
%	49.5	30.0	20.5	100
Evaluation stress	2.18 (0.7)	1.74 (0.6) ^a	1.80 (0.6)a	1.91 (0.7)
Performance stress	2.02 (0.9)	1.91 (0.7)	2.37 (1.6)	2.04 (1.1)
Development stress	2.13 (0.8)	2.02 (0.7)	2.07 (0.6)a	2.05 (0.7)
Academic stress	2.05 (0.1)	2.06 (0.9)	2.53 (0.9)a	2.18 (0.8)

Legend: Categories: 1= not stressful at all or irrelevant, 5= very stressful.; * Statistical significance, $P < 0.05$.; ^aSignificant difference ($P < 0.05$) compared to 12–13-year-olds.

When comparing the players who were part of the academy both in 2013 and 2016 (Table 3) with those same-age players who were only part of the academy in 2016, the results

show that the previously selected players reported significantly lower stress levels regarding the evaluation and development.

Table 3. Descriptive data for sample two, according to earlier selected (N28) and newly selected (N23) players, mean, SD and chi-square test

Dimensions	Earlier selected players (2013) Mean (SD)	Newly selected players (2016) Mean (SD)	x2(df)
Evaluation stress	1.51 (0.5)	1.93 (0.5) ^a	18.26 (6)*
Performance stress	1.84 (0.9)	2.20 (1.5)	7.57 (8)
Development stress	1.77 (0.5)	2.17 (0.6) ^a	17.22 (8)*
Academic stress	2.29 (0.7)	2.57 (1.1)	10.09 (12)

Legend: Categories: 1= not stressful at all or irrelevant, 5= very stressful.; * Statistical significance, $P < 0.05$.; ^aSignificant difference ($P < 0.05$) from earlier selected players.

Discussion

Talented footballers who are part of a football academy must relate to expectations of both short- and long-term performance (Reeves et al., 2009). Being part of a football academy can therefore be a stressor for many players and may be a stress if they cannot handle the situation (Finn, & McKenna, 2010), where their fear of failure in terms of achievement and development is central (Sager, Busch, & Jowett, 2010). The purpose of this article is: 1) to describe the degree of stress experienced by academy players aged 12–16 years in 2013 and 2016 respectively, and collected for both groups and divided into three age groups (12–13, 14, and 15–16 years); 2) to compare the degree of experience stress among players selected for the academy in both 2013 and 2016, with that of the players who were new to the academy in 2016.

The results showed that 2016 players reported significantly less evaluation stress and development stress and significantly more academic stress compared to 2013. As a group, players have thus had a positive development in view of a reduced evaluation stress, which in previous studies has proved challenging for junior players with little playtime (Sæther, & Aspvik, 2016; Sæther et al., 2017). This indicates that players to a lesser extent feel their existence in the football academy as a threat but are able to handle the stressors. As academic stress increases, this may indicate that players are less able to handle relationships outside the football field, thus perceiving the situation as a challenge to a greater extent. On the other hand, it is natural that as they grow older (in selection 2, the players are over 2 years older), the players then the situation outside the course and especially the school situation will be more demanding and to a greater extent perceived as a stressor, and may be perceived by some as a threat because they do not get the opportunity to concentrate mainly on their existence as a

football player.

When comparing the different age groups, the results show that the youngest players (12–13-year-olds) report a significantly higher evaluation stress compared to the other two age groups. These results may indicate that the youngest players experience being evaluated by coaches, but also by fellow players, as a challenge. This can be attributed to the fact that these players are the youngest age group in the academy which means that the players have less experience of being evaluated by the coaches, which can be perceived as a stressor. This assumption is also supported by the non-significant ($P = .07$) trend that the oldest players (15–16-year-olds) reported less evaluation stress compared to 14-year-olds. This may be because nearly half of the players in 2016 were part of the academy in 2013, or because the players have been selected for the academy at a higher age, which could increase the chances of being part of the academy even towards the end of their teens. On the other hand, there are other types of stress that are more challenging as the players get older, which is confirmed by the fact that the oldest players reported significantly more academic stress compared to the 12–13-year-olds, indicating some of the challenges in transition from junior to senior (Sæther, 2017). When the players grow older, it is natural to expect them to experience the situation as more challenging (Holt, & Dunn, 2004).

As already stated, this can be related to the expectations of managing the school situation and future thinking in addition to their own chances of becoming a professional football player. Reeves and colleagues (2009) found that the oldest players (15–18 years) in several English academies raised families (such as pressure and criticism from parents) as greater stressors compared to the youngest (12–14 years). As football academies can be perceived as a very competitive environment

(Arnold, & Fletcher, 2012; Hanton, Fletcher, & Coughlan, 2005; Mellalieu, Neil, Hanton, & Fletcher, 2009), lack of stress and pressure management could lead to reduced performance (Lazarus, 2000). The players' experience of the situation will depend on the demands made in the environment and the individual's resources to accommodate these, to avoid the imbalance that increases the experience of stress (Lazarus, & Folkman, 1984).

The ability of the players to handle this potential stress situation over time, such as the 3-year period covered by this study, can therefore be regarded as crucial. The results showed that those players who have been part of the academy throughout the period reported both significantly lower evaluation and development stress. Since the dimension evaluation mainly involves coaches' and co-players' evaluation of player performance, it is not unnatural that the players who have been part of the academy for a longtime express the academic side of their life to be less of a stressor. That the players who have been part of the academy also report a significantly lower developmental stress may indicate that players selected later experience that they have more to prove to the coaches, compared with the established players. Perhaps surprisingly, there were no significant differences in performance stress, as shown in a previous study by Norwegian academics in which performance pressure was significantly lower among the players who considered themselves among the best in the academy (Nerland, & Sæther, 2016).

In pursuit of the many factors that may be crucial to the development of young talented soccer players (Williams, & Reilly, 2000), it is argued that players also have to master the academic side of their life. The existence of football talents in a football academy is naturally challenging, as most players will experience adversity on their way to a potential football career. An important dimension in the understanding of stress and its influence in this context is the individual dimension where a stressor for one player is not necessarily experienced as a stressor for another (Lazarus, & Folkman, 1984).

This survey has weaknesses that should be pointed out. One of these weaknesses is that data collections were conducted at different parts of the year or the season, where the first data collection was conducted in December after the season, while the second data collection was conducted in March ahead of a new season. This may have affected players' answers, especially those players who had received indications that they may not be part of the academy in the coming season.

Another weakness of the survey is the factor charges, where three of the dimensions, with the exception of development stress, were 0.6, and somewhat below the desired 0.7. This weakens the results of these indices and means careful consideration should be used in the interpretation of them. Due to the small sample size, the result showing that evaluation stress was significantly different between the players who were part of the academy in 2013 and 2016, and the players who were new in 2016, should be confirmed by other studies before attaching too much value to this finding. A third challenge with this study is the use of the measuring instrument. Although earlier studies found similar results, the instrument is still under development (Sæther, & Aspvik, 2016; Sæther et al., 2017).

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Conflict of Interest

The authors declare that there are no conflict of interest.

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