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雑誌名	体育科学系紀要
巻	17
ページ	115-122
発行年	1994-03
URL	<a href="http://hdl.handle.net/2241/15891">http://hdl.handle.net/2241/15891</a>

## Attitudes towards specific stress conditions in Japanese soccer players

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In this study the attitudes of male Japanese soccer players towards specific stress conditions were analysed. 246 soccer players on professional and university level participated in the investigation.

The professional players evaluated the interactions with the directors, injured players, new players, spectators, home and away referees as more stressful than the university players. The professional players considered home and away games as well as a relegation rank before the end of the season as more stressful than the university players. Moreover the professional players assessed reproaches during the game, high performance expectations, high nervousness, the feeling of physical weakness and high superiority of the opponent as less performance decreasing than the university players.

The evaluation differences could apparently be due to the differences in existential importance and experience of the two groups of soccer players on professional and university level.

Key words : Attitude ; Stress conditions ; Environment, game and season ; Performance effect ; Japanese soccer players.

### 日本サッカー選手におけるストレスに関する研究

本研究では、男子日本サッカー選手が、様々な要因に対して感じているストレスの程度が分析された。調査の対象は、246名のプロ、および大学サッカー選手であった。

大学選手と比較してプロ選手は、フロントや部長、怪我をしている選手、チームに新しく加入した選手、観衆、レフリーといった要因によりストレスを感じていた。また、プロ選手は、ホームゲームやアウェーゲーム、シーズン終わり頃の下位成績といった要因によっても、大学選手より大きなストレスを感じていた。さらに、プロ選手は、試合中の非難、プレーの出来への要求が高すぎることに、極度に神経質になっていること、身体が弱っている感じ、試合で相手チームが非常に優勢であること、といったストレス事項がプレーに悪影響を及ぼすと評価していた。

プロ選手と大学選手との間に見られたこれらの相違は、明らかにサッカー選手としての経験の差が原因であると言えるであろう。

#### I. INTRODUCTION

According to the cognitive stress model of Lazarus and Launier (1981)<sup>2)</sup>, the 3 phases of primary appraisal, secondary appraisal and reappraisal

could be differentiated in response to various kinds of stressors. The primary appraisal focused on the evaluation of stress and threat of person- and environment-related conditions. The secondary appraisal centered on the assessment of specific coping techniques and strategies. The reappraisal consisted of a new evaluation of the stressful conditions and the coping process. This

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phase model was applied to stress situations in everyday life and in various sport disciplines.

Specific aspects of the primary appraisal of stress conditions in soccer players were investigated, among other authors, by Rieder and Ritter (1979)<sup>4)</sup>, Machts and Victor (1981)<sup>3)</sup> and Teipel(1993)<sup>6)</sup>.

Rieder and Ritter (1979)<sup>4)</sup> used a specific stress-related questionnaire in 158 male soccer players. The soccer players from German professional and amateur leagues assessed the conditions of earlier losses against the opponent team, influence of spectators, unexpected good performance of the opponent team and previous losses as performance increasing. On the contrary, the situations of feelings of physical weakness, uncomfortable competitive conditions, failing actions at the beginning of the game, conflicts with the coach and disadvantage by the referees were considered as performance decreasing. Soccer players with low experience evaluated some of the situations as more stressful than players with high experience. Machts and Victor (1981)<sup>3)</sup> conducted their study on the basis of another specific questionnaire in soccer players. They found out that the soccer players regarded continuous criticism by the coach from the bench, failing actions, negative criticism by the teammates and increasing insecurity after ball losses as detrimental to their performance.

Teipel (1993)<sup>6)</sup> analysed the evaluations of stress conditions in more experienced male and less experienced female German soccer players. The male soccer players assessed the relationship with older players and with journalists as more stressful than the female players. The more experienced male players regarded the conditions of a loss, a high loss, a loss in a home game and a loss in an away game as more stressful than the female players. Besides, the male players considered the conditions of a medium rank and the relegation rank after 5 games as well as the relegation rank at mid-season as higher stressful than the female players. Furthermore, the more experienced male players assessed the conditions of

high performance expectations, reproaches during the game, visual, acoustic or tactile disturbing cues, the role of the favorite and long-lasting travels as less performance decreasing than the less experienced female players.

In continuation of the investigation of Teipel (1993)<sup>6)</sup> the purpose of this study was to analyse the primary appraisal of specific stress conditions in the whole group of Japanese male professional and university soccer players and in comparison between the two groups in respect of

1. environment-, game- and season-related stress conditions.
2. effects of competitive stress conditions on performance.

## II. METHOD

For the analysis of the primary appraisal of soccer players a comprehensive exploratory semi-standardised questionnaire concerning various assessments of stress factors in soccer players was translated from German language to Japanese language(see Teipel 1992)<sup>5)</sup>.

The analysis of the evaluation of the environment-, game- and season-related stress conditions was conducted by means of a part of the comprehensive specific questionnaire. All in all, this part included 37 environment-related aspects, game-related factors and season-related components. These 37 aspects were answered on a 7-point-scale from '1 = not stressful' to '7 = very stressful'. Sufficiently high degrees of test criteria were mentioned by Urena-Bonilla(1991)<sup>7)</sup> and Teipel(1992)<sup>5)</sup>.

The evaluation of the effect of competitive stress conditions on performance was conducted by means of another part of the comprehensive specific questionnaire. It comprised 21 items concerning game- and season-related conditions, for example competition delays, high nervousness, previous low performance in training and game, reproaches during the game, disadvantage by the referee, influence of spectators. These competitive conditions were assessed on a 7-point-scale from '1 = performance increasing' to '7 = perform-

ance decreasing'. Sufficiently good questionnaire criteria were described by Frester (1972)<sup>1)</sup>, Urena-Bonilla (1991)<sup>7)</sup> and Teipel (1992)<sup>5)</sup>.

246 male Japanese soccer players participated in this investigation. The average age was 21.5 years and the average experience as soccer players was 11.2 years. The average frequency of training was 6.4 times per week.

The comparison of evaluations of stress conditions was conducted between 70 professional and 176 university soccer players. The professional players came from several teams of the newly established Japanese professional league. The university players were members in the best university teams of Japan. The average age of the professional soccer players (24.9 years) was more than 4.5 years higher than that of the university players (20.1 years). The experience of the professional players (15.8 years) was 6.5 years longer than that of the university players (9.3 years). The average training frequency of the professional players was with 7.6 times per week slightly higher than that of the university players with 6.0 times per week.

For the data analysis descriptive and inferential statistics were applied. First of all, the attitudes were analysed in the whole group of the 246 male Japanese soccer players. Secondly, the comparison of the attitudes between the two groups of 70 professional and 176 university soccer players was conducted by means of the analysis of variance rather than the t-test. This was done because of the higher quality and exactness of the analysis of variance for the comparison of evaluations between independent groups.

### III. RESULTS AND DISCUSSION

The evaluations of specific stress conditions and of the effects of stress conditions on performance can be related to the whole group of the 246 male soccer players as well as the comparison between 70 professional and 176 university soccer players (see Table 1 and 2 as well as Figure 1 and 2).

#### 1) Evaluation of stress conditions

The whole group of the 246 soccer players evaluated the 14 environmental conditions from low to medium stressful. The relationship with the away referees, the opponent players, the coach, the home referees and the directors was assessed as medium stressful. The relationship with the new players, the opponent coaches, the injured players, the journalists, the fanatic own spectators and average engaged spectators was evaluated as low stressful.

It can be seen in Table 1 and Figure 1 that in respect of these 14 environmental conditions 8 at least tendentially significantly different evaluations (10% level) could be detected between professional and university soccer players. The professional players evaluated all 8 situations as more stressful than the university players. The highest evaluation differences were found in the relationship with the directors, the average engaged spectators, the fanatic own spectators, the journalists, the away referees, the home referees as well as the new players and the injured players.

In reference to the game-related stress conditions the whole group of the 246 soccer players evaluated the situations of low loss, high loss, loss, loss in a home game and tie before the end of the game as highly stressful. In contrast, the conditions of a tie, an away game, a home game, a win and a high lead before the end of the game evoked only low stress evaluations.

The professional players considered 11 from 14 conditions as more stressful, 2 of them as tendentially significantly more stressful than the university players. The professional players assessed the situations of home game and away game as tendentially significantly more stressful than the university players. Furthermore they evaluated the condition of a tie in a home game as being in the trend more stressful than the university players.

The whole group of the 246 soccer players rated the season-related conditions as quite differently stressful. The conditions of a medium rank in the third last game, a medium rank after

Table 1 Comparison of the evaluations of environment-, game- and season-related stress conditions between 70 male Japanese professional and 176 Japanese university soccer players ('1 = not stressful' to '7 = very stressful')

Environmental conditions	Prof. players		Univ. players		F-value	Sig.
	M	SD	M	SD		
Relationship with						
1. the directors	4.00	1.67	2.83	1.54	27.12	.0000
2. the coach	3.14	1.46	3.26	1.80	.23	.6291
3. the assistance coach	3.17	1.41	2.88	1.62	1.66	.1977
4. younger teammates	2.61	1.25	2.52	1.53	.17	.6787
5. older teammates	2.82	1.38	2.92	1.49	.19	.6567
6. injured players	2.41	1.22	2.10	1.26	3.00	.0844
7. new players	2.60	1.40	2.23	1.44	3.18	.0755
8. fanatic own spectators	2.42	1.21	1.83	1.25	11.49	.0008
9. average engaged spectators	2.35	1.12	1.69	1.11	17.74	.0000
10. home referees	3.68	1.45	3.13	1.69	5.69	.0178
11. away referees	4.54	1.63	3.84	1.74	8.27	.0044
12. opponent players	3.60	1.19	3.38	1.54	1.07	.2998
13. opponent coaches	2.44	1.23	2.24	1.39	1.08	.2996
14. journalists	2.50	1.28	1.92	1.41	8.87	.0032
Game conditions						
15. home game	3.02	1.36	2.65	1.46	3.32	.0694
16. away game	3.88	1.28	3.52	1.59	2.87	.0915
17. win	2.35	1.54	2.47	1.56	.29	.5857
18. tie	4.25	1.35	3.95	1.46	2.21	.1379
19. loss	5.84	1.43	5.69	1.29	.63	.4272
20. low loss	6.05	1.32	5.92	1.21	.59	.4394
21. high loss	6.01	1.38	5.81	1.37	1.07	.3003
22. tie in home game	4.80	1.42	4.47	1.37	2.71	.1008
23. loss in home game	5.84	1.35	5.57	1.36	1.94	.1643
24. tie in away game	4.12	1.43	4.20	1.27	.16	.6839
25. loss in away game	5.14	1.49	5.23	1.43	.19	.6615
26. high lead before the end of the game	2.24	1.23	2.06	1.28	1.00	.3169
27. highly behind before the end of the game	5.15	1.57	4.82	1.70	1.92	.1662
28. tie before the end of the game	5.57	1.44	5.41	1.55	.53	.4665
Season conditions						
29. top rank after 5 games	2.81	1.44	2.81	1.55	.00	.9856
30. medium rank after 5 games	3.58	1.27	3.47	1.43	.08	.7720
31. relegation rank after 5 games	5.21	1.55	4.92	1.66	1.62	.2041
32. top rank at mid-season	3.15	1.46	3.34	1.53	.78	.3758
33. relegation rank at mid-season	5.41	1.27	5.29	1.29	.42	.5149
34. third last game on relegation rank	5.80	1.21	5.45	1.33	3.53	.0614
35. third last game on medium rank	4.54	1.17	4.62	1.15	.25	.6169
36. last game : promotion only by a win	6.05	1.22	6.00	1.22	.10	.7415
37. last game : relegation avoidance only by a win	6.22	1.11	6.34	0.97	.61	.4347

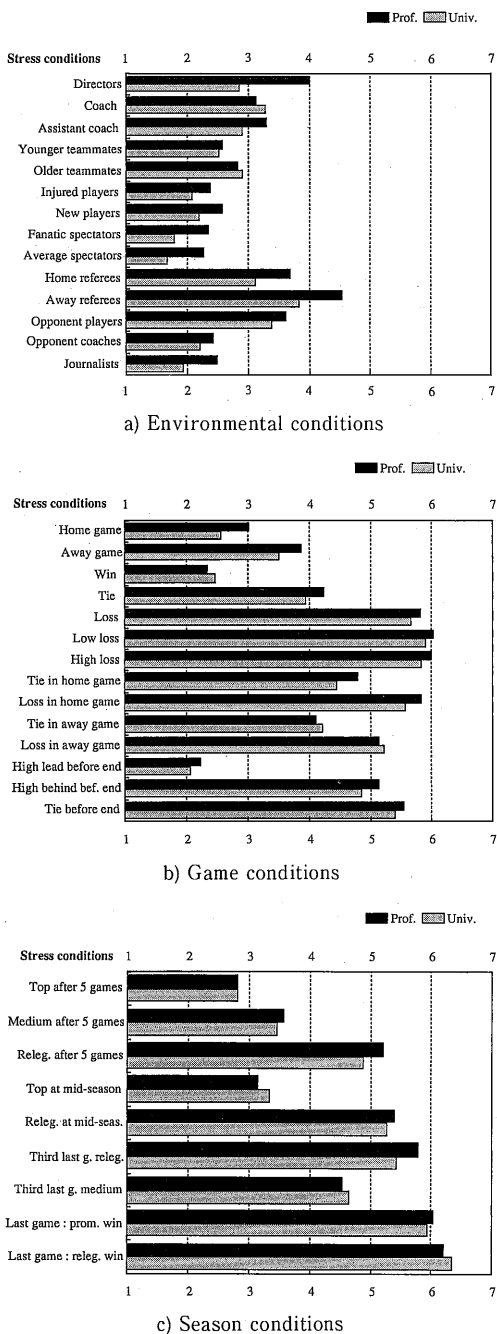


Figure 1 Comparison of the evaluations of environment-, game- and season-related stress conditions between 70 male Japanese professional and 176 Japanese university soccer players ('1 = not stressful' to '7 = very stressful')

5 games, a top rank at mid-season and a top rank after 5 games were assessed as low stressful. The situations of relegation avoidance only by a win in the last game, the promotion only by a win in the last game, the relegation rank in the third last game and the relegation rank at mid-season displayed the highest ratings of stress.

Concerning the 9 season-related conditions the professional players considered 5 situations as more stressful, 3 conditions as slightly less stressful than the university players and one condition as equally stressful. In the case of the condition of the third last game on a relegation rank the professional players showed a tendentially significantly higher evaluation of stress than the university players.

Thus, the professional players considered 11 from 37 stress conditions as at least tendentially significantly more stressful than the university players. Probably due to their engagement in soccer as professional players and due to their higher degrees of experience with important conditions for their careers in soccer, the professional players showed higher extents of susceptibility to several stress situations than the university players. This obviously resulted in higher primary appraisals of stress than in the university players, who were students in the first place and soccer players in the second place.

These findings manifested a high tendency of accordance with the results of Teipel (1993)<sup>6)</sup> in which the more experienced male soccer players displayed higher stress appraisals in 9 from 37 conditions than the less experienced female players.

## 2) Evaluation of the effects of stress conditions on performance

The analysis of the effects of general stress conditions on performance was conducted by means of a specific questionnaire. This questionnaire consisted of 21 conditions which were evaluated on a 7-point-scale from '1 = performance increasing' to '7 = performance decreasing' (see Table 2

Table 2 Comparison of evaluations of the effect of general stress conditions on performance between 70 male Japanese professional and 176 Japanese university soccer players ('1 = performance increasing' to '7 = performance decreasing')

	Prof. players		Univ. players		F-value	Sig.
	M	SD	M	SD		
1. Starting failing actions	5.40	1.15	5.29	1.31	.33	.5617
2. Competition delays	4.75	0.95	4.67	0.99	.34	.5600
3. High nervousness	5.54	1.08	5.93	1.06	6.63	.0106
4. Sleeping disturbances	5.24	0.98	5.41	1.21	1.10	.2933
5. Role of favorite	3.61	1.21	3.86	1.23	2.14	.1443
6. High performance expectation	4.34	1.28	4.83	1.28	7.33	.0072
7. Previous losses	3.94	1.06	4.06	1.17	.59	.4401
8. Feeling of physical weakness	5.41	0.85	5.74	0.92	6.63	.0106
9. Conflicts with coach, friends or in the family	5.40	0.99	5.51	1.07	.61	.4324
10. Unpredicted good performance of opponents	4.54	0.87	4.85	1.05	4.68	.0313
11. Previous low performance in training and games	4.44	0.91	4.71	0.96	3.94	.0482
12. Unknown opponents	4.04	0.64	4.11	0.88	.36	.5450
13. Reproaches during game	4.45	0.87	5.11	1.20	17.40	.0000
14. High superiority of the opponent	4.48	0.77	4.78	0.98	5.31	.0220
15. Disadvantage by referee	4.68	1.11	4.94	1.04	3.04	.0821
16. Uncomfortable competitive facilities	5.14	1.05	5.05	0.96	.37	.5398
17. Permanent thoughts of fulfilling expectations	4.21	1.07	4.34	1.31	.55	.4560
18. Interfering visual, acoustic and tactile stimuli	4.60	0.80	4.85	1.03	3.50	.0625
19. Previous loss against the opponent	3.95	0.92	4.06	1.06	.52	.4684
20. Long-lasting travel	5.15	1.07	5.31	0.94	1.34	.2471
21. Spectators	3.10	1.57	2.87	1.38	1.22	.2688

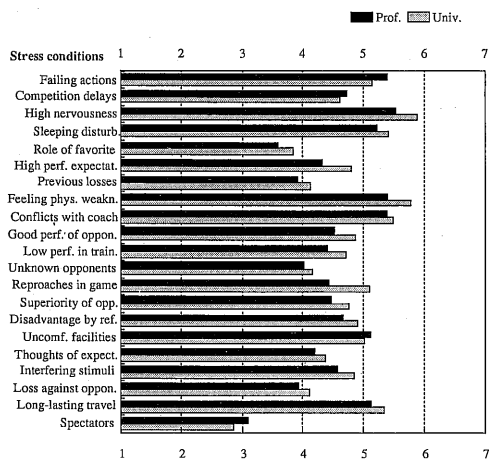


Figure 2 Comparison of evaluations of the effect of general stress conditions on performance between 70 male Japanese professional and 176 Japanese male university soccer players ('1 = performance increasing' to '7 = performance decreasing')

and Figure 2).

The assessments of most conditions by the whole group of the 246 male professional and university soccer players were made on the medium scale levels. Comparatively high degrees of performance increases were detected in the conditions of the influence of spectators, the role of the favorite, the previous losses, the previous loss against the opponent and the game against an unknown opponent. In contrast, the conditions of high nervousness, feeling of physical weakness, conflicts with the coach, with friends or in the family, sleeping disturbances as well as starting failing actions were considered as comparatively highly performance decreasing.

In respect of the 21 items on the effects of general stress conditions on performance 9 at least tendentially significant differences between professional and university players could be detected. All 9 conditions were evaluated as more performance decreasing by the university

players than by the professional players. The university players assessed the situations of reproaches during the game, high performance expectation, high nervousness, feeling of physical weakness, high superiority of the opponent, unpredicted good performance of opponents, previous low performance in training and games as at least significantly more performance decreasing than the professional players. The situations of interfering visual, acoustic and tactile stimuli and disadvantage by the referee were assessed as tentatively significantly more performance decreasing by the university players than by the professional players.

The soccer experience of the professional players was 6.5 years longer than the soccer experience of the university players. It can be assumed that the professional players regarded most of the stress situations as less performance decreasing than the university players, because they had already experienced these and also other conditions in their training sessions and in their games more often than the university players.

These findings showed a high degree of similarity especially with the results of Rieder and Ritter (1979)<sup>4)</sup> in male soccer players concerning the effects of selected stress conditions on performance. They also found out that less experienced soccer players evaluated some conditions as more performance decreasing than experienced soccer players.

#### IV. SUMMARY

In this study the attitudes in terms of primary appraisals of 246 male Japanese soccer players from professional and university level towards specific stress conditions were analysed.

Concerning environment-related stress conditions the professional players rated the interactions with the directors, injured players, new players, spectators, home and away referees as well as journalists as more stressful than the university players. In respect of game- and season-related factors the professional players considered home and away games as well as the relegation

rank before the third last game as more stressful than the university players. The comparison of the effects of stress conditions on performance between professional and university players made obvious that the university players evaluated reproaches during the game, high performance expectations, high nervousness, feeling of physical weakness, high superiority of the opponent, unpredicted good performance of the opponent as more performance decreasing than the professional players.

Thus on the one hand, the professional players regarded several environment-, game- and season-related stress conditions as more stressful than the university players. It can be assumed that these evaluation differences could be due to the greater existential importance of these conditions for the professional players than for the university players. But on the other hand, the more experienced professional players considered several specific conditions as less performance decreasing than the less experienced university players. Therefore the longer experience of the professional players seemed to have resulted in higher performance increasing evaluations than the lower experience in the university players. It can be assumed that even more experienced professional soccer players manifest lower stress evaluations and less performance decreasing assessments than the investigated group of the relatively young professional players.

The results of this study should be included in the long-term educational programme and short-term preparation of male and female soccer players and soccer coaches on high school, but especially on university and professional level.

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