

A Study on the Stress and Coping Behavior of Collegiate Athletes : Stress and Coping Behavior in Physical Education Classes

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The stress which collegiate students experience in physical education classes were examined. The results obtained in the research are as follows. 1) Principal cause of stress was the feeling of inability of the students and the behavior of professors who teach in the class. 2) The stress response mentioned most was "anger/irritation". 3) The coping behavior that the respondents mentioned most was "passive attitude". And 4) a slight differences in stress response and coping behavior were observed between athletes and non athletes. The differences were discussed in relation with psychological characteristics of athletes.

Keywords: stress, coping behavior, athlete, physical education class, university

INTRODUCTION

Sport is an activity that is essentially based on physical movement. In order to achieve a high performance in sport events, athletes have to have physical strength and specific skills of each kind of sport. At the same time, they need to have some kinds of mental competence to be a successful athlete. For example, Anshel (1997) mentioned mental characteristics of elite sport competitors such as risk-taking, stimulus-seeking, competitiveness, self-confidence, expectations for success, ability to regulate stress, etc. Here in this paper we would like to address an issue of stress and coping behavior of athletes. As sport activities per se include some kind of competition, they are full of sources of stress, like criticism from coach, teammates, or audience, physical pain, losing or failure, physical and mental errors, and so on. And participants in sport events need to deal

with those sources of stress in order to be successful in sport competitions. Orlick (1990) indicates that the ability to remain cool under situations of tension and stress is important to compete successfully and that the key is not to eliminate stress but to regulate it by using adequate coping techniques. Elite athletes are considered to have that ability to cope with stress. The question is whether those who participate continuously in competitive sport activities, belonging to sport clubs, are different from those who do not practice sport in the aspect of stress-related behavior, and whether the continuous sport experiences affect the stress-related behavior of athletes.

Sport is an activity which implies enjoyment. There are many people who practice sport for pleasure. In that case, sport practice serves to relieve the stress of daily life and make us more relaxed. On the other hand, sport brings down stress to us, for example, as indicated above, when it

is done in the form of competition. Another situation in which sport activity causes stress on us is physical education classes in educational institutions like school and university. The physical education classes are a part of the school course. So students do not participate willingly in sport activities of physical education classes. In the physical education classes, students sometimes have to participate in some kinds of sport which they does not like or which they are not good at. And this can be one of the causes that could make children unfond of some kinds of sport. Also in the physical education classes, the performance is usually related to the academic records. These two aspects could be sources of stress for the students who attend the classes.

There are some researches on the stress and coping behavior in physical education classes of junior high school. For example, Sasaki (1995, 1996, 1997) analyzed the cognitive structure of stressors and stressful events in physical education classes. Also Sasaki (1998) investigated the coping with stress during physical education classes. In these researches it has been demonstrated that junior high school students experience various kind of stress during physical education classes.

Here we conducted a research on stress and coping behavior of colligate students, (students of sport science majors) in physical education classes of an university. There are some diffrences in the characteristics of physical education classes between junior high school and university. In the case of junior high school, all the students have to take a course of physical education every year. In other words, the physical education is a compulsory subject. And during the course of one year students practice several kinds of

sport, which are predetermined. On the other hand, in the university where this research was carried out, subjects of physical education are compulsory, too. But students are, to some extent, able to choose the subjects. For instance, they have to take two subjects from a group of athletics, swimming, and apparatus gymnastics, and have to choose two from a group of five kinds of ball sport, etc. In each subject only one kind of sport is practiced. In both of junior high school and university, the subjects of physical education are compulsory, but it can be said that in the university, students have a little more possibility to select some kinds of sport that they like and to keep away from others that they do not like or they are not good at.

PURPOSE

The purpose of this study is as follows. Firstly, we intend to analyze what is the cause of stress in physical education classes of university or in what situation the students experience stress during the classes. The analysis will be of assistance to improve the content of each subject and the management of the classes. Secondly, we will examine psychological responses that students have in stressful situations and their coping behaviors. Especially differences in stress and coping behavior will be studied between students who are continuously participating in sport as competition belonging to sport clubs and those who are not (referred to as *athletes* and *non athletes*, respectively, hereafter). Through the comparison between the two groups of students, we would like to know whether collegiate athletes show some specific psychological characteristics in stressful situations.

METHODS

Questionnaire: A questionnaire on the stress in physical education classes of university was made for this study. In the questionnaire respondents were asked to remember one of stress-related experiences that they had in physical education classes and to answer four questions about their experience as follows: 1) kind of sport of the class in which they experienced stress, 2) cause of stress or situation in which the stress was experienced, 3) psychological responses in that situation, and 4) coping behavior to the stress. In the third question they were required to choose their answer out of a list of alternatives: a) depression, b) anxiety/concern, c) panic, d) anger/irritation, e) fear, f) mental strain, g) others. And the rest were open-response questions. They were also asked if they continuously participate in sport activities belonging to sport clubs.

Procedure: A survey using the questionnaire mentioned above was conducted in June, 2008 in a university of sport science. The respondents were second-year students of the university. All of them are sport science majors. In a class of the university, the questionnaire was given to the students and they were asked to complete it. The questionnaires were collected immediately

after they were filled in. It took about 30 minutes to finish the survey.

In some of the collected questionnaires, it was evident that the answers were not on the stress experiences in physical education classes of the university. Those questionnaires were removed from the data. And the analysis was made on the data of 208 respondents (127 males and 81 females). As to the continuous participation in sport, there were 157 students who were doing sport (athletes) and 51 students who were not (non athletes).

RESULTS

1. Kinds of sport of the class in which stress experiences occurred

Percentages of kinds of sport of the class mentioned in which students experienced stress are shown in Fig. 1. As a whole, kinds of sport that showed higher percentages are as follows: athletics (22.6%), swimming (14.4%), handball (13.9%), basketball (12.5%), apparatus gymnastics (10.6%), volleyball (9.1%). There were slight differences in the percentages between athletes and non athletes. Non athletes had a little higher percentages in athletics and apparatus gymnastics. But a chi-square test showed no statistically significant differences between two groups ($\chi^2=11.205, df=7$).

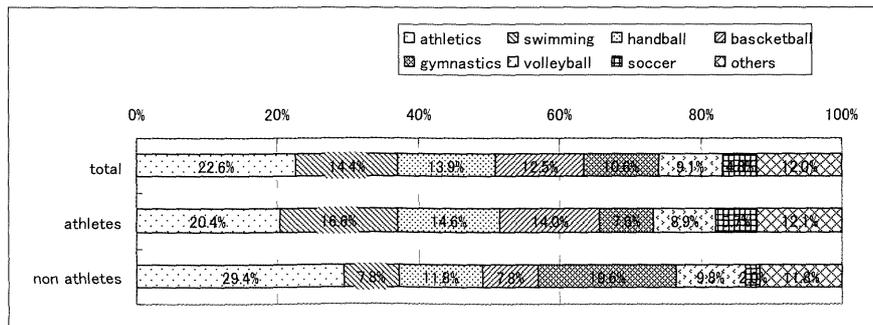


Fig. 1 Kind of sport in which stress was experienced

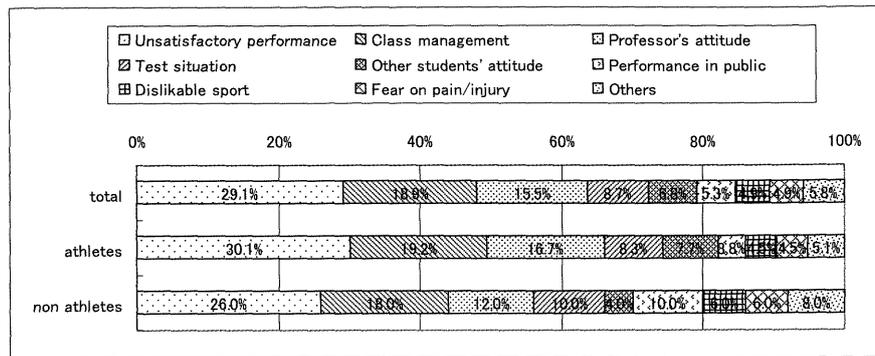


Fig. 2 Cause of stress

2. Cause of stress

Various kinds of situations or events were mentioned by students as a cause of stress, and they were put into categories according to its content. Principal categories are as follows. a) "Unsatisfactory performance" means a situation in which students can not perform as they want or can not achieve a goal that they has. b) "Class management" refers to the objection or dissatisfaction of students to how a professor manages his/her classes. c) "Professor's attitude" refers to inappropriate language and behavior of a professor. d) "Test situation" includes situations where students face some kind of test about which they have not self-confidence. e) "Other students' attitude" refers to the situation in which other students in the same class do not act as they are expected to, or students feel themselves disadvantaged because of acts of others. f) "Performance in public" means that students have to do something in front of other students. g) "Dislikable sport" includes situation where students have to participate in sport activities that they do not like or that they are not good at. And h) "fear on pain/injury" is the situation in which students are afraid of having pain or injury when they perform some kind of sport.

Percentages of the principal categories of

situation mentioned as a cause of stress were shown in Fig. 2. At large the situation mentioned most as a cause of stress was "unsatisfactory performance" (29.1%). Also the following showed higher percentages: "class management" (18.9%), "professor's attitude" (15.5%), "test situation" (8.7%), "other students' attitude" (6.8%). On the percentages of cause of stress, there was little difference between athletes and non athletes ($\chi^2=5.241$, $df=8$).

3. Stress responses

Percentages of each stress response given by the students are shown in Fig. 3. The most frequently mentioned response was "anger/irritation" (38.5%). And followed it responses like "panic" (14.4%), "depression" (13.9%), "mental strain" (13.9%), and "anxiety/concern" (10.6%). There was a slight difference in the percentages between athletes and non athletes. Athletes showed a little higher percentage for "anger/irritation" than non athletes. Meanwhile the percentage for "mental strain" was a little higher in non athletes than in athletes. However, the differences in percentages between two groups were not statistically significant ($\chi^2=11.095$, $df=6$).

4. Coping behavior in stressful situation

Answers about actions which the students took in order to deal with stress were organized by several categories. The categories employed here are as follows. a)

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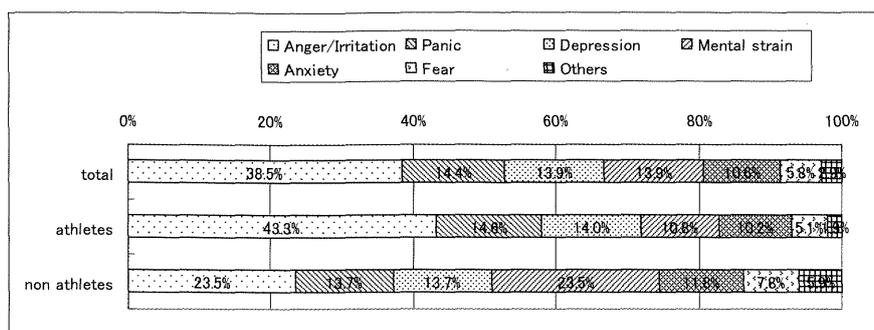


Fig. 3 Content of stress

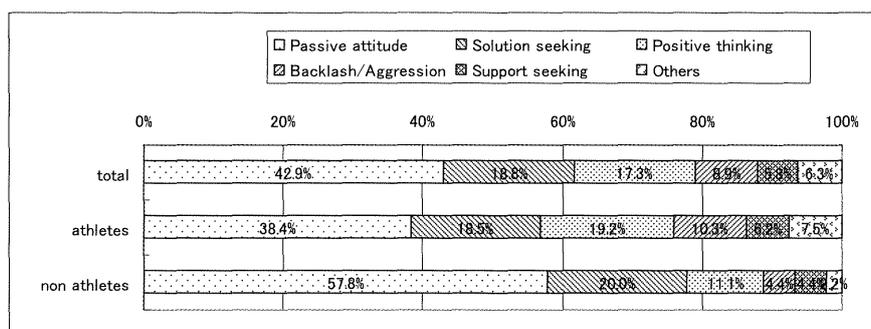


Fig. 4 Coping behavior

“Passive attitude” includes doing nothing, giving up, having patience, etc. b) “Solution seeking” means practicing exercises, making an effort, and so on. c) “Positive thinking” refers to trying to comprehend the situation in a positive manner. d) “Support seeking” means trying to obtain emotional support or advices from their friends or family. And e) “aggression/repulsion” includes giving a back answer, venting frustration on objects, etc. The percentages of each category of actions mentioned by the respondents are shown in Fig. 4. As a whole the percentage of “passive attitude” was the highest (42.9 %). And other categories “solution seeking” (18.8%), “positive thinking” (17.3%), “aggression/repulsion” (8.9%), and “support seeking” (5.8%) followed it. There were tendencies that the percentages of “positive thought” and “aggression/repulsion” were somewhat higher in athletes than non athletes and that of “passive attitude” was

slightly higher in non athletes than in athletes. But these tendencies were statistically insignificant ($\chi^2=7.394$, $df=5$).

5. Differences between male and female students

Percentages of kind of sport of the class, cause of stress, stress responses, and coping behavior in each of male and female students are shown in Fig. 5 to Fig. 8, respectively.

About the percentages of kind of sport in which the stress was experienced, little differences were observed between male and female respondents ($\chi^2=4.639$, $df=7$). Meanwhile there were differences in the percentages of cause of stress ($\chi^2=16.399$, $df=8$, $p<.05$). The percentage of “performance in public” was higher in female students than in male students, and those of “test situation” and of “other students’ attitude” were higher in male group than female group. In the stress responses there were little differences

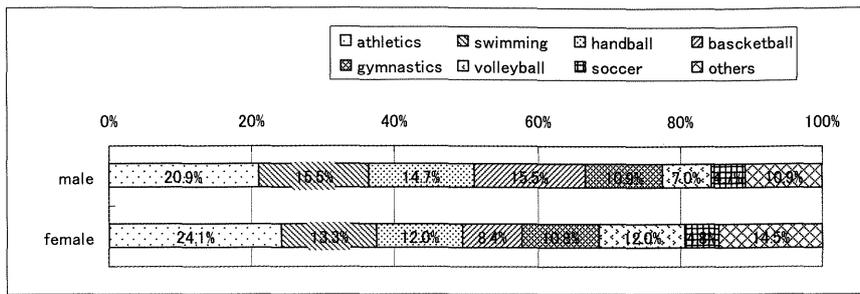


Fig. 5 Kind of sport in which stress was experienced in male and female students

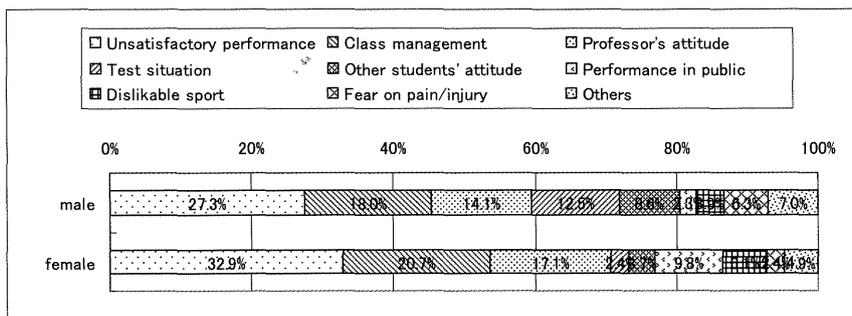


Fig. 6 Cause of stress in male and female students

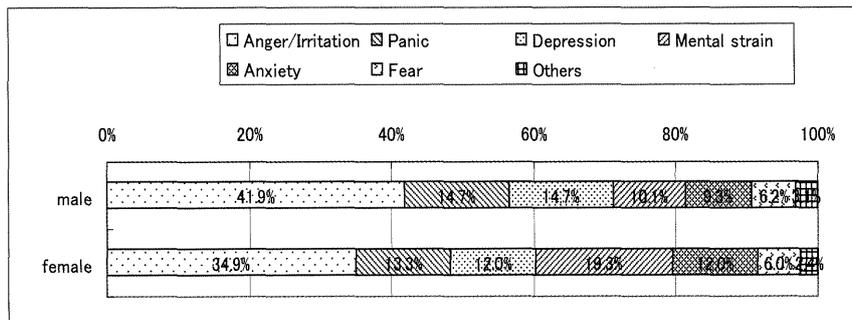


Fig. 7 Content of stress in male and female students

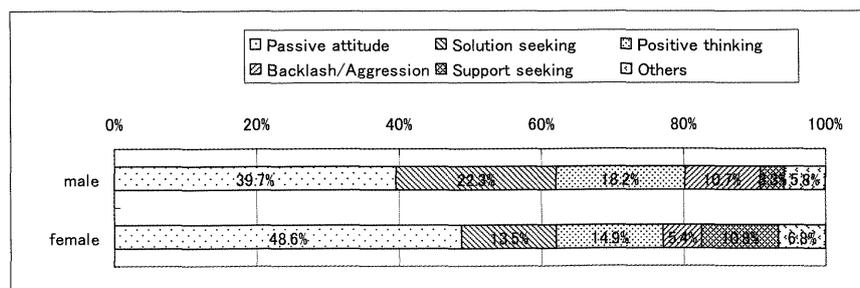


Fig. 8 Coping behavior in male and female students

between two groups ($\chi^2=4.540$, $df=6$). With regard to the coping behavior, there were tendencies that female students showed a little higher percentages for "passive attitude" and "support seeking" than male students, and male students showed slightly higher percentages for "seeking solution", "positive thinking", and "aggression/repulsion", though the differences in the percentages between two groups were not statistically significant ($\chi^2=8.807$, $df=5$).

DISCUSSION

1. Stress and coping behavior in physical education classes

Many of students mentioned, as the kind of sport of the class in which they experienced stress, athletics, swimming, apparatus gymnastics, handball, basketball, and volleyball. The former three kinds of sport have some points in common. Firstly, these subjects are considered to be robust and hard to practice, that is, participants need to have physical strength and lots of energy to practice them. Secondly, these three kinds of sport lack game elements in themselves. In this sense it could be said that they are less amusing or entertaining. These two aspects can be a source of stress in the class of these sports. Meanwhile the latter three kinds of sport are indoor ball games. A possible explanation could be that classes of these sports are carried out in a gymnasium and much exercise in it causes heat-related discomfort. However, answers about this kind of discomfort were observed very little. So, The explanation might lie not in the characteristics of these kinds of sport but in other factors, which has to be analyzed in future research.

With regard to the cause of stress, there were many respondents who mentioned causes which were related to poor or unsatisfactory performance and concern about it in test situations. They are directly related to the ability on sport of each student. It can be said that students feel stress when they recognize or anticipate inability on sport. Another principal factor of cause of stress has relation with the professor who manages the classes. Many respondents mentioned, as a cause of stress, "professor's attitude" and "class management". The former refers to infelicitous comments or inappropriate reproaches that a professor makes to students, and the latter includes complaints of students with regard to the way a class is managed by the professor. Their complaints center around insufficient and unclear explanations that the professor gives to students and the situation in which students have to wait their turns to do something during the class. Although it is not clear to what extent what the students claim is objective and legitimate, it seems very important for the professor, in order to improve his/her classes, to take what the students think into consideration when he/she designs classes or gives them to the students.

On the content of the stress, it should be noted that the percentage of "anger/irritation" was very high. About 40 % of the respondents mentioned it. We are living in a highly stressful environment. We are constantly exposed to stressful events. And generally speaking this situation might make us more propense to be irascible, which is also reflected in the response of the students in the physical education classes of university.

More than 40% of the students replied that they showed "passive attitude" when they felt stress in physical education classes. This

means that many students do nothing in their stress-related experiences or they abide stress-related situations. One possible explanation is that they have learned helplessness through repeated past experiences of failure or inability in the study or sport activities in the school. Further research will be needed on this point.

2. Comparison between athletes and non athletes

In the results obtained here, there were slight differences between groups of athletes and non athletes, although they were not statistically significant. Firstly, on the kind of sport of the class, non athletes showed higher percentages in athletics and apparatus gymnastics than athletes. These kinds of sport demand more physical strength and the classes are physically harder than others. Generally speaking, the athletes, through their daily training, are considered to have more physical strength than non athletes, which can be a cause of the differences in the percentages of the two kinds of sport between the two groups. Swimming is also a physically tough sport, but the percentage of swimming of non athletes was not higher than that of athletes. This can be explained by the fact that the students are able to choose two out of a group of athletics, swimming, and apparatus gymnastics. It seems that those who are not good at swimming avoid taking the class of swimming, and so not so many non athletes mentined it as a sport in which they experienced stress.

Secondly, with regard to the stress responses athletes showed higher percentage of anger/irritation than non athletes. This indicates that athletes are more likely to get angry than non athletes. Anshel (1997) suggests that sport coaches often advise

their athletes to get physical with opponents. It seems that in sport aggressiveness is considered to be desirable characteristics, especially in sports with physical contacts. So, athletes might have the disposition of aggressiveness more than non athletes. Consequently, this difference may be related to the difference in the percentage of "anger/irritation". On the other hand, non athletes showed a little higher percentage of "mental strain" than athletes. In the sport events such as meets, tournaments, and competitions, athletes face the situations in which they get tense. So they are conceived to be more accustomed to the tense situations and consequently to be less likely to feel the strain, which resulted in lower percentage of mental strain than no athletes.

Thirdly, as to the coping behavior that students showed to the stress which they experineded, the percentage of "positive thinking" was a little higher and that of "passive attitude" was lower in athletes than in non athletes. These resluts can be explained in terms of predispositions of athletes. Waitly (1978) indicates that one essential quality of winners, including those in sport, is that they are positive. That is to say, successful athletes have positive expectancy, positive self-image, positive self-control, positive self-esteem, positive self-awareness, and so on. This positiveness of the athletes may be related to the differences in the percentages of "positive thinking" and "passive attitude" between two groups. Also athletes showed a little higher percentage of "aggression/repulsion", which could have relation with the aggressive characteristics of athletes mentioned before.

3. Comparison between male and female students

Some differences were obtained in the

results between male and female students. As to the cause of stress the chi-square test showed significant differences between male and female students. The percentage of "performance in public" was higher in female students than in male students. A scrutiny of the data revealed that almost all the responses of this category were reported in the class of aerobic dance in which the majority of participants are female students. So, it can be said that the mentioned difference was directly related to the kind of sport, not to the gender of respondents. Meanwhile the percentages of "test situation" and "other students' attitude" were higher in male than in female students. It is not clear what these differences can be attributed to. This point will be subjected to further examination.

Also there were slight differences in the coping behavior between the two groups. While male students showed a little higher percentages on "solution seeking" and "aggression/repulsion", female students showed somewhat higher percentages on "passive attitude" and "support seeking". Yamada et al. (2006) examined the coping behavior of collegiate athletes. In their results female athletes showed lower scores on "problem solving" and higher scores on "avoidance", which was discussed in relation with their psychological dependence on their coaches. These results coincide with those obtained in this study.

The results of this research can be summarized as follows. Firstly, the stress that the students experience in physical education classes is caused principally by two factors, the feeling of inability of students themselves and the behavior of the professor. Secondly, a characteristic on the stress responses that the

students have is that they had more "anger/irritation" than other responses. And thirdly, as coping behavior the students mentioned more "passive attitude" than positive one such as "positive thinking" and "solution seeking".

There were slight differences between athletes and non athletes, although the differences were not statistically significant. On this point we need to carry out further researches. Firstly, in this study the respondents were divided into two groups, athletes and non athletes, according to actual continuous sport practice. But in the group of non athletes, there were students who had practiced some kind of sport before. So in order to examine the difference between athletes and non athletes, more precise grouping of the respondents should be made by taking the past experiences of sport practice in the past into account. Also the kind of sport of the respondents, individual sport or team sport, should be considered, as the kind of sport has been shown to have relations with coping behavior of athletes (Yamada et al., 2006). Secondly, in this research the relations among the cause of stress, the stress response, and the coping behavior were not analyzed because of limited amount of data. Further examination on the relations among these three will be needed in order to understand better the structure and the characteristics of stress of collegiate athletes in physical education classes.

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