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**RESEARCH ARTICLE**

# Goal Orientation and Desire for Approval Were Associated With Sports Injuries Among Young Japanese Athletes

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**Introduction:** This study aimed to clarify the relationship between psychological factors (goal orientation and desire for approval from others) and the severity of sports injuries experienced by young Japanese athletes.

**Methods:** A total of 560 young Japanese athletes (328 males and 232 females) aged 18Â24 years completed an online survey in 2022Â2023. A web questionnaire was used to investigate participants task and ego orientations, desire for approval from others (e.g., coaches and friends/families), and history of injury. The samples were then split into 3 groups on the basis of the rest duration due to the injury: noninjury group (0 days), mild-to-moderate injury group (1Â27 days), and severe injury group ( 28 days). Spearman s test examined a correlation between task and ego orientation scores among all samples. The MannÂWhitney test was used to compare the scores between the severe injury and noninjury groups.

**Result:** A significant positive correlation was found between task and ego orientation scores from all samples ( =0.27, 0.001). The severe injury group had significantly higher task orientation scores and desire for approval scores than the noninjury group ( =0.001, 0.001).

**Conclusions:** Japanese young athletes with high task orientation and approval desire may be at risk of severe sports injuries requiring 4 weeks to return to sports. The goal orientation profiles should be interpreted with caution. Future research should examine contextual effects such as the perceived motivational climate, in addition to the goal orientation profiles.

## INTRODUCTION

Acute sports injuries and overuse injuries occur owing to sports and exercise,[1] and sports injuries reduce an athlete s physical performance and are a heavy psychological burden for athletes.[2,3] Individuals who experience sports injuries are at risk of developing locomotory diseases.[3,4] Sports injuries adversely affect athletes in the present and the future because they affect athletes

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quality of life and longevity. Thus, sports injury prevention has become an important social issue from medical and public health perspectives.

Researchers have examined athletes' psychological characteristics that relate to their risk for sports injuries.[5] In addition to assessing individuals' psychological characteristics, social cognitive motivational theory can be used to further examine the factors related to the risk of injuries. One such theory is the Achievement Goal Perspective Theory, which has been extensively studied in sports psychology. According to Nicholls' goal perspective theory,[6] goal orientation is one of the keys to differentiating individuals' psychological responses in achievement contexts.[7] Goal orientations can be divided into task and ego orientations. Task orientation is the individuals' definition of success based on their personal best efforts and skill improvement. Ego orientation is the other type of goal orientation. Athletes with high ego orientation define their success on the basis of whether they are superior to others in a certain community.[5,8] A previous study reported that ego-oriented athletes tended to have a higher rate of mental problems than task-oriented athletes.[9] Another study reported that ego-oriented athletes were more likely to use dope at sports competitions.[10] In contrast, it was reported that task-oriented athletes were able to enjoy their competitions and build good relationships with others.[11] In addition, task-oriented athletes have reported that they prefer hard work and feel satisfied when they give their best effort.[12] Previous research employing goal orientation constructs has revealed competitive task-oriented athletes' adaptive psychological and behavioral responses.[11] Thus, it is logical to employ goal orientation constructs to examine the association between sports injuries and athletes' psychological characteristics.

Desire for approval from stakeholders such as coaches or families is a possible psychological factor that may affect an athlete's risk behavior.[13] Athletes' desire for approval often relates to their close relationships with their families, friends, and coaches. For example, an athlete's decision to continue playing to gain others' approval or praise despite being injured can be risky behavior.[13] Although approval from others can be a positive motivator for sports activities when a desire for approval is excessive, it may lead to an athlete's unreasonable decision making. Collectively, goal orientation and desire for approval at the expense of athletes' safety may be potential psychological and behavioral factors associated with a history of severe sports injuries in athletes. However, to the best of the authors' knowledge, no large-scale survey has investigated the relationship between these psychological factors and the history of severe sports injuries in young Japanese athletes.

The purpose of this study was to examine whether, as an overall trend, goal orientation and desire for approval are associated with a history of severe sports injuries in young Japanese athletes. The study hypothesized that (1) athletes with a history of severe sports injury show higher ego orientation and lower task orientation than noninjured athletes and (2) athletes with a history of severe sports injury show a higher desire for approval than those without a history of injuries.

## METHODS

### Web Questionnaire and Study Samples

This was an observational case-control study. An online survey was set up using LimeSurvey (Version 3.0). The study design and contents of the web questionnaire were approved by the ethics review board of Osaka University Hospital (Number 21216). The web questionnaire was open to the community through the website of the Orthopedic Department at Osaka University Hospital (https://survey.sp.ids.osaka-u.ac.jp/index.php/465338?lang=ja). In addition, this questionnaire was broadly distributed to the patients of Osaka University Hospital, Kobe University Hospital, Kansai Rosai Hospital, and Daini Osaka Police Hospital. The survey period was from March 26, 2022 to July 23, 2023. The questionnaire was designed to accept general sports persons aged >6 years. The participants who accessed the web questionnaire first read and agreed to the purpose and procedure of this study with the approved document before answering the questions. The participants provided their consent to join the survey by clicking the OK button on the web questionnaire; thus, consent was electrically obtained from all participants. For ethical reasons, participants aged <15 years also required consent from their parents. They were given approximately 10 minutes to complete all the questions.

### Measures

The web questionnaire consisted of (1) history of sports injuries, (2) goal orientation, and (3) desire for approval from friends and family and coaches.

The history of sports injury, which required a week or more interruption of sports activity, was reported. If the participant had several histories, only the most severe case (the case that required the longest recovery time) was reported. Associated information such as the date the injury, type of injury (acute or chronic), injured body part, length of sports activity suspension, and type of treatment (conservative or surgery) were also reported.

The degree of task and ego orientation was quantified using the Task and Ego Orientation in Sports Questionnaire (TEOSQ),[14] which consists of 13 items. Seven

items inquire about individuals' task orientations that are self-referenced criteria: effort and improvement for their definitions of success. A task orientation sample question is *I feel most successful in sport when I do my best.* On the other hand, 6-item ego orientation questions inquire about their definitions of success based on other-referenced criteria: demonstrating superiority and winning. A sample question about ego orientation is *I feel most successful when I am the best.* The participants answered each item on a 5-point Likert scale (1=strongly disagree to 5=strongly agree).[14] Two English−Japanese bilingual researchers translated the original TEOSQ to Japanese. One was a sports psychology specialist, and the other was a sports physiology specialist and a returnee. Both researchers were Japanese and had worked as faculty members at universities in the U.S. for >20 years. After repeating the back translation twice, the Japanese version of the TEOSQ was approved by 3 Japanese researchers (PhD in sports medicine, PhD in medicine and orthopedic surgery, and a sports nurse). In this process, care was taken to ensure that the meaning of the original text was not changed in the translation. The researchers conducted a confirmatory factor analysis using the current data. The confirmatory factor analysis results demonstrated consistent factor structure and factor loadings for the 2 latent variables (i.e., task and ego orientations) with acceptable fit indices (results are available by request to the third author). Finally, the translated TEOSQ demonstrated acceptable reliability for task and ego orientation (Table 1).

Desire for approval was measured using the following situational questions in which athletes sought approval from their surroundings during sports activities on a 5-point Likert scale (1=strongly disagree to 5=strongly agree). Question 1: *To what extent do you think you must meet your friends and family's expectations?* Question 2: *To what extent do you think you must meet the expectations of your coach and supervisor?*

## Statistical Analysis
A total of 1,007 athletes completed the web questionnaire during the survey period. Among this sample pool, the regional to national competition-level college-age athletes between the ages of 18−24 years were selected to minimize the effect of age difference (N=560; 232 women and 328 men, mean age=19.8 ± 1.6 years). The participants were then split into 3 groups on the basis of the rest duration due to the injury: noninjury group (0 day), mild-to-moderate injury group (1−27 days), and severe injury group (>28 days).[15]

The TEOSQ responses obtained using the 5-point Likert scale (1=strongly disagree to 5=strongly agree) were converted into scores ranging from 1 to 5.[14] To test the

**Table 1.** Basic Statistics of Measures and Intervariable Correlations

| | Basic statistics | | | | Correlations | | | |
| Variable | Mean (95% CI) Total sample (N=510) | Mean (95% CI) Severe injury group (n=182) | Mean (95% CI) Noninjury group (n=160) | Cronbach's alpha | 1. Task orientation | 2. Ego orientation | 3. Approval desire from family and friends | 4. Approval desire from coaches |
|---|---|---|---|---|---|---|---|---|
| 1.Task orientation | 4.09 (4.02, 4.13) | 4.19 (4.10, 4.28) | 3.98 (3.88, 4.07) | 0.80 | | **0.298/0.301**[a] | **0.207**[a]/**0.157**[b] | **0.215**[a]/**0.150** |
| 2. Ego orientation | 3.54 (3.46, 3.60) | 3.58 (3.47, 3.69) | 3.43 (3.31, 3.56) | 0.79 | 0.270[a] | | **0.111**[b]/**0.07** | **0.144**[b]/**0.152** |
| 3. Approval desire from family and friends | 3.35 (3.24, 3.46) | 3.65 (3.47, 3.84) | 3.07 (2.86, 3.27) | — | 0.142[a] | 0.135[a] | | **0.620**[a]/**0.594**[a] |
| 4. Approval desire from coaches | 3.69 (3.59, 3.79) | 3.98 (3.82, 4.13) | 3.45 (3.24, 3.65) | — | 0.165[a] | 0.139[a] | 0.623[a] | |

Note: In the boldface cells of the correlation table, the correlation coefficients among 4 variables for each group were separately displayed under the noninjury and severe injury groups. The italicized cells in the correlation table show the correlation coefficients among 4 variables from total samples.
[a]$p<0.001$.
[b]$p<0.05$.

reliability of the TEOSQ's task and ego responses, Cronbach's alpha coefficients of 7 items for task and 6 items for ego orientation were calculated. The authors considered a Cronbach's alpha coefficient of 0.7 or higher to be reliable.[16] To represent one's goal orientation, the task orientation score (average of 7 task orientation questions on 5-point Likert scales) and ego orientation score (average of 6 ego orientation questions on 5-point Likert scales) were calculated. For the approval desire questionnaire, responses obtained using the 5-point Likert scale (1=strongly disagree to 5=strongly agree) were converted into scores ranging from 1 to 5 to quantify how strongly the athletes sought approval from their families and friends (Question 1) and coaches (Question 2).

The Kolmogorov−Smirnov test was conducted to examine the normality of the distribution of the task and ego orientation scores. The correlations between the task and ego orientation scores of all samples were evaluated using Spearman's correlation coefficient, which did not assume the normality of the data on the basis of the results of the Kolmogorov−Smirnov test described below. The task and ego orientation scores and the desire for approval scores were compared between the noninjury group and the severe injury group using the Mann−Whitney $U$ test ($p<0.05$). Statistical tests were performed using IBM SPSS Statistics (Version 28.0).

## RESULTS

Demographic information of samples was summarized in Table 2. The noninjury group included 160 athletes (73 females), the mild-to-moderate injury group consisted of 218 athletes (91 females), and the severe injury group included 182 athletes (68 females). In the mild-to-moderate injury group, 128 athletes had acute injuries, 60 had chronic injuries, 25 had both types of injuries, and 5 did not know or did not respond to the question. In the severe injury group, 94 had acute injuries, 52 had chronic injuries, 31 had either of these injuries, and 5 did not know or did not respond.

Cronbach's alpha coefficients for the reliability of task and ego orientation responses were 0.8 and 0.79, respectively, indicating that the TEOSQ's responses were reliable.[16] The mean (95% CI) task orientation score was 4.09 (4.02, 4.13), and ego orientation score was 3.54 (3.46, 3.60).

The results of the Kolmogorov−Smirnov test showed that task and ego orientation scores did not follow a normal distribution ($p<0.001$). The correlation coefficient between task and ego orientation scores was $\rho=0.27$ ($p<0.001$), indicating a significant positive correlation between them. Eighty percent of athletes scored >3 points for both orientation scores (Figure 1). The severe injury group showed a significantly higher task orientation score than the noninjury group (U [$N_{noninjury}=157$, $N_{severe\ injury}=182$]=1,1362.5, z= −3.26, $p=0.001$); however, the ego orientation scores showed no significant differences between the groups (Figure 2).

The Kolmogorov−Smirnov test showed that the desire for approval scores for both questions did not follow a normal distribution ($p<0.001$). The severe injury group showed significantly higher scores for both

**Table 2.** Demographic Information of Each Group

| Information | Total sample n (%) | Noninjury group n (%) | Mild-to-moderate injury group n (%) | Severe injury group n (%) |
|---|---|---|---|---|
| All | 560 | 160 (28.6) | 218 (38.9) | 182 (32.5) |
| Age (years) | | | | |
| 18−20 | 425 (75.9) | 140 (87.5) | 157 (72.0) | 128 (70.3) |
| 21−24 | 135 (24.1) | 20 (12.5) | 61 (28.0) | 54 (29.7) |
| Sex | | | | |
| Male | 328 (58.6) | 87 (54.4) | 127 (58.3) | 114 (62.6) |
| Female | 232 (41.4) | 73 (45.6) | 91 (41.7) | 68 (37.4) |
| Injury type | | | | |
| Acute | 222 (55.5) | — | 128 (58.7) | 94 (51.6) |
| Chronic | 112 (28.0) | — | 60 (27.5) | 52 (28.6) |
| Includes both elements | 56 (14.0) | — | 25 (11.5) | 31 (17.0) |
| Unknown | 10 (2.5) | — | 5 (2.3) | 5 (2.7) |
| Level | | | | |
| City | 122 (21.8) | 47 (29.4) | 49 (22.5) | 26 (14.3) |
| Prefecture | 177 (31.6) | 54 (33.8) | 74 (33.9) | 49 (26.9) |
| Region | 126 (22.5) | 35 (21.9) | 52 (23.9) | 39 (21.4) |
| National | 135 (24.1) | 24 (15.0) | 43 (19.7) | 68 (37.4) |
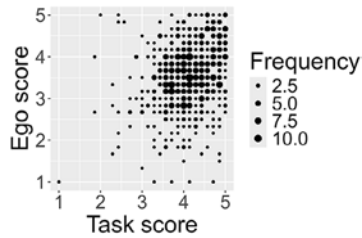
**Figure 1.** The distribution and frequency counts of the ego orientation score against the task orientation.

questions than the noninjury group (Question 1: U [$N_{noninjury}$=160, $N_{severe\ injury}$=182]=10,994, z= −4.067, $p$<0.001; Question 2: U [$N_{noninjury}$=151, $N_{severe\ injury}$=171]=9,823, z= −3.889, $p$<0.001) (Figure 3).

## DISCUSSION

This study found a relationship between the history of severe sports injuries, goal orientation characteristics, and a desire for approval from others among young Japanese athletes. Athletes who experienced severe sports injuries had a higher task orientation ($p$=0.001) and desire for approval ($p$<0.001) than those who did not experience severe sports injury. The results of this study can be the key to predicting the severe sports injuries from the psychological viewpoint.

First, the current results revealed that young Japanese athletes showed high scores for both task and ego orientation. This tendency is consistent with the results of a previous study by Isogai et al.[17] They compared the goal orientation characteristics of participants in physical education classes in Japan and with those in the U.S. The participants in the U.S. physical education classes showed no correlation between task and ego orientation

scores, whereas the Japanese participants showed a positive correlation.[17] This suggests that high task and ego orientation coexist in young Japanese athletes. Differences in goal orientation characteristics can be based on differences in experiences of sports success and cultural backgrounds regarding ability and effort in the sports context.[7] As is often the case with sports in Japan, coaches commonly emphasize everyone's effort regardless of how high the ability of individual athletes may be. However, previous study has consistently revealed a positive correlation between task and ego orientation in Japanese participants.[17] This is a characteristic of the Japanese, and future researchers should carefully observe outcomes with this characteristic with respect to goal orientation.

The severe injury group had higher task orientation scores. Among the young athletes included in this study, task orientation scores were significantly higher in the severe injury group than in the noninjury group. In contrast, ego orientation scores did not differ significantly between the groups (Figure 2). This result does not support the hypothesis that the severe injury group has higher ego orientation scores and lower task orientation scores. The following points can be inferred from previous studies as reasons for the high task-orientation scores in the severe injury group. A previous study reported that those with strong task orientation preferred hard work to improve their skills and that they obtained rewards such as satisfaction and a sense of accomplishment through hard work.[12] In addition, another study reported that task-oriented athletes have a higher tolerance for physical and mental fatigue than ego-oriented athletes.[9] These findings suggest that athletes with high task orientation have higher intensity, frequency, and number of repetitions in their usual practice, and these factors may lead to a
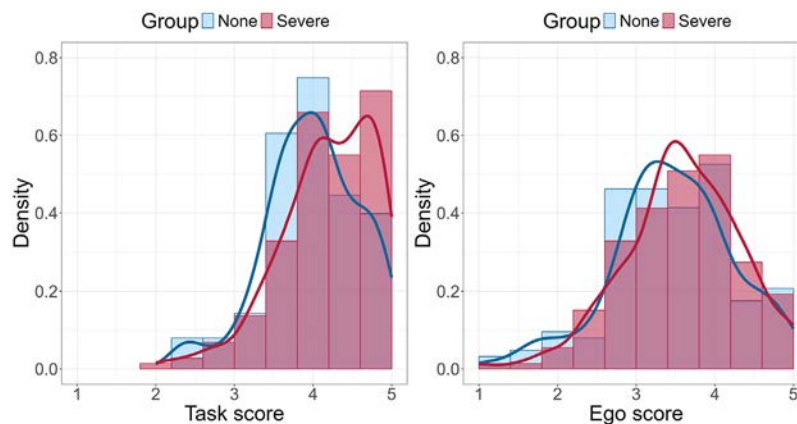


**Figure 2.** Distribution of task and ego orientation scores in the severe injury (severe) and noninjury (none) groups.
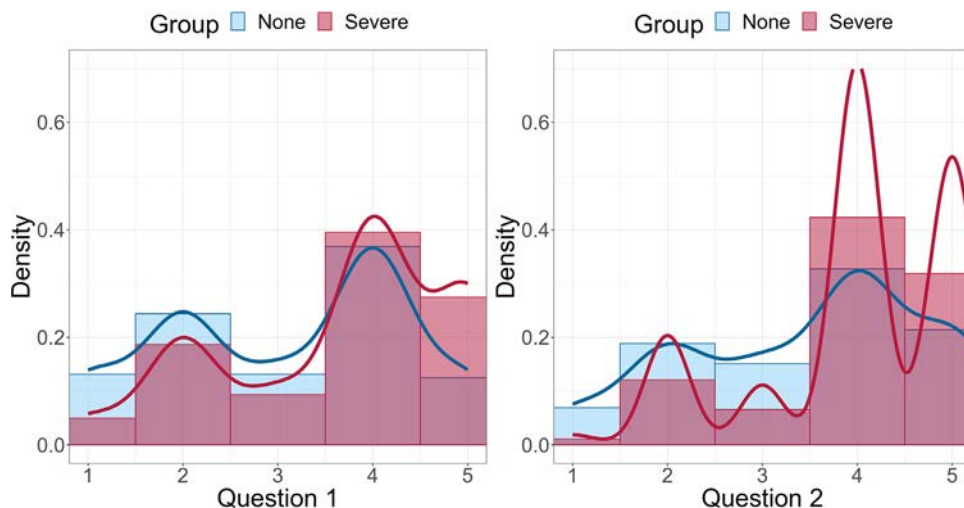
**Figure 3.** Distribution of scores on the question of approval desire in the severe injury (severe) and noninjury (none) groups.

greater physical training load and, consequently, injury.

A previous study reported that young athletes who were highly task oriented tended to exercise more and took insufficient breaks after sports injuries.[18] Although a clear understanding of task orientation should bring adaptive decision making on improving and maintaining athletes' physical and psychological conditioning. For example, the information available from this study alone could not confirm whether the young athletes in the severe injury group had physically demanding daily practices owing to their high task orientation. However, the risk of engaging in behaviors that burden the body excessively owing to high task orientation cannot be ruled out on the basis of the combined results of this and previous studies, especially because both goal orientations were correlated in this study. Thus, further research is required to understand whether this may be a key point in sports injury prevention.

No significant differences in ego orientation scores were found between the severe injury and noninjury groups (Figure 2), which did not support the hypothesis of this study. However, as mentioned earlier, task and ego orientations coexisted among young athletes in this study (Figure 1); therefore, the association between ego orientation and a history of severe sports injury must be considered. Previous research has shown that high ego-orientation athletes were likely to show their relative superiority through comparison with others, resulting in a higher frequency of problem behaviors, such as mental health problems and the risk of doping.[10] These problematic behaviors may involve choosing undesirable behaviors in daily practice and making physically demanding decisions. It is expected that there are situations in which sports are participated in by athletes in a psychological state of negative emotions, envy, and impatience toward others who perform better than themselves because they are oriented toward being superior to others. In such a situation, it can be inferred that a strong task orientation superimposed on a strong ego orientation masks the positive aspects of task orientation, such as improving one's skills, and reveals the negative aspects of obsessively pushing oneself.

The severe injury group reported significantly higher scores of the desire for approval than the noninjury group (Figure 3), suggesting that the psychological tendencies toward high approval from others may be a risk for serious sports injury. Although striving to meet the expectations of those around them is an essential motivator for athletes, excessive attempts to gain the admiration of others may sometimes lead to continued overload and risky behaviors at the expense of their own safety.[19] The authors of this study agree with the conclusion of the previous study stating that athletes, coaches, and medical personnel must consider and implement an environment for the prevention of sports injuries and disorders, including daily stress management, and believe that the results of this study will play a part in this effort.[20]

## Limitations

This study had a few limitations. Because the authors limited the age range of the athletes in data analysis process, caution must be exercised while generalizing the results of this study to the population who are in a different mental/physiologic developmental stage. The noninjury group targeted in this study included individuals at risk of injury in the future. A future follow-up survey

will be conducted to explore the no-injury group's injury status. Task and ego orientation scores were positively correlated, and it was difficult to separate task orientation from ego orientation in Japanese population. Future studies should also examine the interaction effects of task and ego orientations to predict injury-related variables. In addition, as interactionists have appealed, environmental factors, such as the motivational climate, should be factored in the predicting model.[7] Finally, although the authors did not have stratified sampling data, researchers may be interested in examining the differences in goal orientations and desire for approval between different competitive levels because the differences in competitive levels deviate intensities and frequencies of practice that can influence the risk of injuries.

Although the age range of the samples was limited to the young generation (from 18 to 24 years) to reduce the impact of age difference on the results, there were still several possible confounding factors, such as competition level, daily practice time, and athletic history, which may influence the history of sports injury. The authors acknowledge that the statistical analysis used in this study did not eliminate the potential effects of these confounding factors. Subgroup analysis for possible confounding factors could not be identified in detail owing to the limited sample size when the samples were broken out into subgroups. Because this project is ongoing, in future studies, the multivariate regression analysis or structural equation modeling approach with a robust sample may elucidate the impacts of other factors in addition to the goal orientation and approval desire on the history of sports injury.

## CONCLUSIONS

Young Japanese athletes included in this study were considered to have both task and ego orientations. Participants' task orientation and ego orientation scores were positively correlated. The severe injury group had a higher task orientation and need for approval than the noninjury group. Through this study, it is necessary to consider methods that are appropriate for measuring psychological characteristics of athletes, such as goal orientation and the need for approval, when predicting and implementing interventions to prevent acute sports and overuse injuries.

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