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Research Article

Prevalence of Dental Caries in Japanese Professional Soccer Players

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ABSTRACT

In this study, prevalence of dental caries was evaluated in 195 Japanese professional soccer players. The prevalence of dental caries was evaluated using the WHO caries diagnostic criteria (DMF index) that is obtained from numbers of Decayed (D), Missing (M) and Filled (F) teeth (DT, MT and FT, respectively). The mean age, height and weight in 195 soccer players were 26.9 ± 4.7 years old, 177.1 ± 6.1 cm, and 71.6 ± 6.5 kg, respectively. The mean values of DT, MT and FT in 195 players were 0.2, 0.2, and 4.7, respectively. The mean value of DMFT per person is 5.1, and that of DMFT percentage is 83.1%. The prevalence of dental caries in Japanese professional soccer players was better than general adult population at all ages in Japan. The low prevalence of dental caries would enable Japanese professional soccer players to optimize performance.

INTRODUCTION

Dental diseases such as dental caries and periodontal diseases and states of the occlusion and temporomandibular joint can affect oral health. In addition, it has been demonstrated that these factors are associated with systemic diseases such as the heart disease and diabetes [1]. These findings suggest that the oral health status is highly correlated with the conditioning of athletes [2]. In sports medicine in olden ages, attention was focused on strengthening physical activities of athletes and treatment of injuries and rehabilitation. However, in recent years, the main focus is placed on the prevention of injuries of athletes and the creation of an environment of how to display the better player's performance. Under the condition with dental diseases such as dental caries and periodontal diseases, athletes cannot fully ingest nutrition and perform clenching so that the player's performance would be decreased. Therefore, in order to maintain the condition of athletes, it is necessary to maintain oral health through dental care. Although there are many studies examining oral health status in athletes [3], the number of manuscripts dealing with professional soccer players is limited. In this study, we report the results of prevalence of dental caries in 195 Japanese professional soccer players.

MATERIALS AND METHOD

The study was approved by the local Ethics Committee and an informed consent for the oral examination was obtained from all soccer players. Oral examination was performed by one dentist and was performed according to WHO recommendations. For this study, 195 professional soccer players in Japan aged 18 to 41 years (mean

age: 26.9 ± 4.7 years) received the oral health screening (Figure 1, top). The height ranged 156 to 196 centimeter (cm) (mean height: 177.1 ± 6.1 cm) (Figure 1, middle). The weight raged 50 to 90 kilogram (Kg) (mean weight: 71.6 ± 6.5 Kg) (Figure 1, bottom). The dental examinations were performed by naked eye examination and probing, and caries prevalence was assessed by using evaluation of the Decayed (D), Missing (M) and Filled (F) teeth index (DMFT index). Statistical analysis was performed using STATISTICA10J (StatSoft). Numerical data were expressed as the mean ± SD.

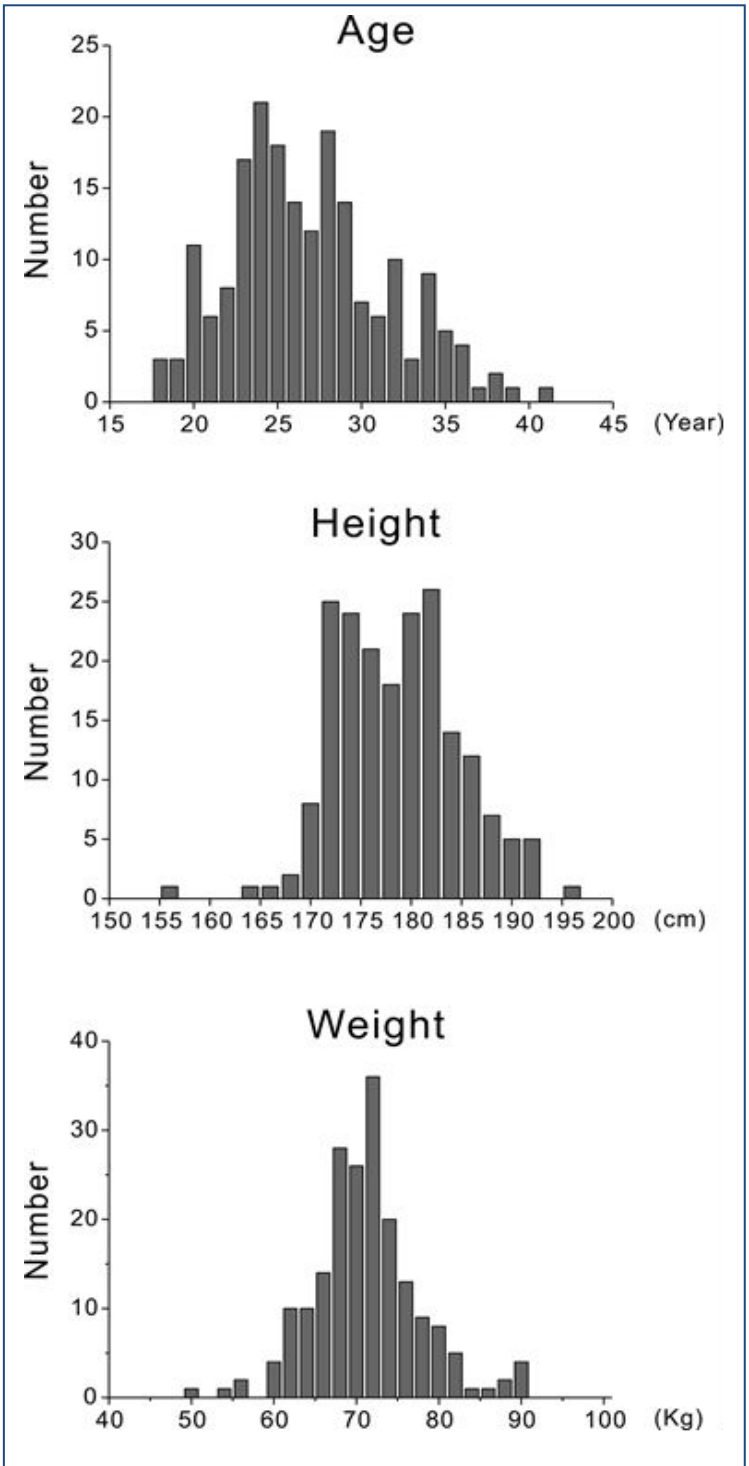

Figure 1: Histograms of numbers of age, height and weight (n = 195).

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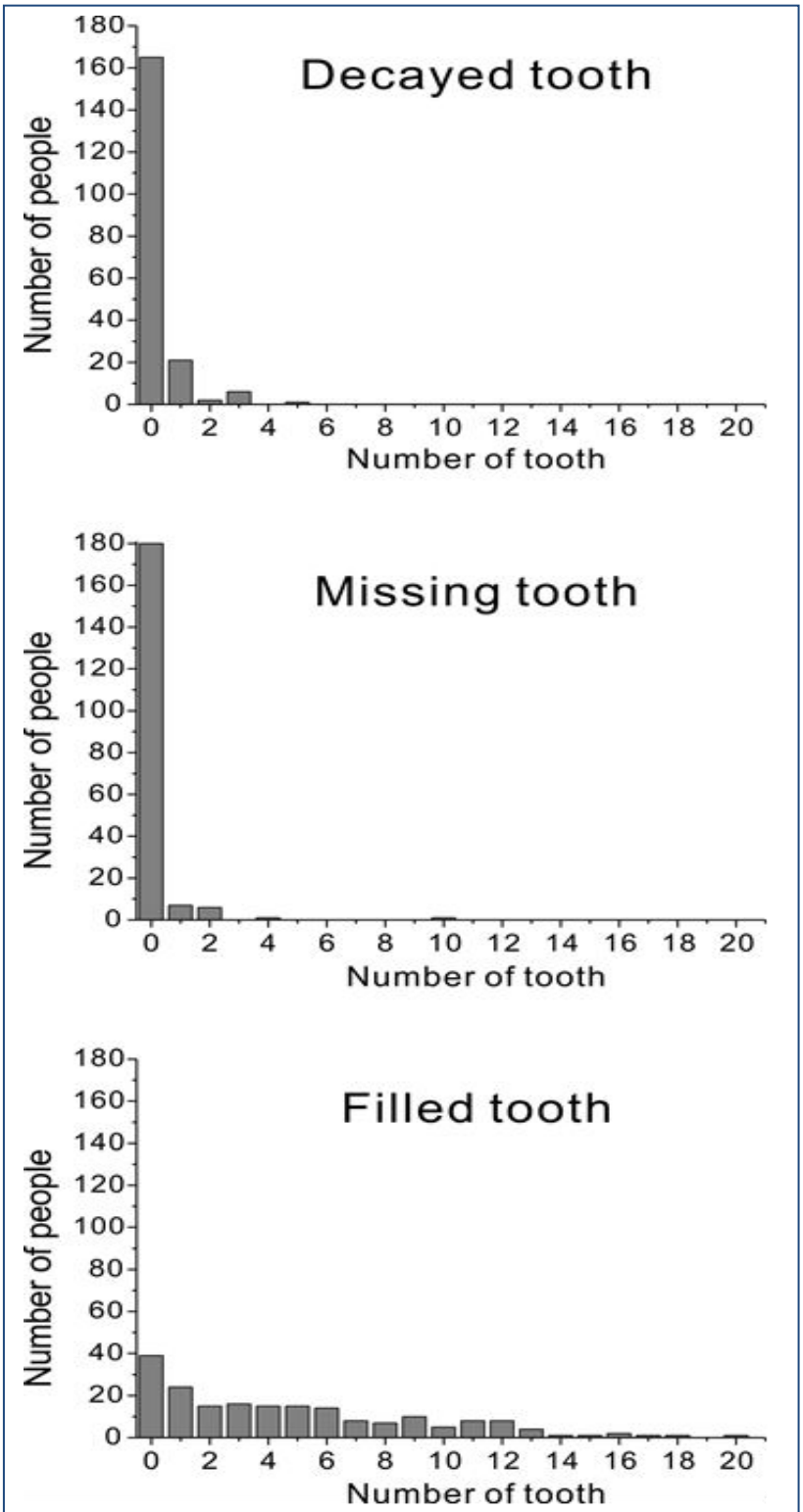

Figure 2: Histograms of numbers of decayed tooth, missing tooth and filled tooth (n = 195).

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RESULT AND DISCUSSION

The histograms of the number of the people for Decayed Teeth (DT), Missing Teeth (MT) and Filled Teeth (FT) in 195 Japanese soccer players were depicted in Figure 2. The mean values of DT, MT and FT in 195 players were 0.2, 0.2, and 4.7, respectively. The mean value of DMFT per person is 5.1, and that of DMFT percentage (%) is 83.1. The mean values of DMFT per person in soccer players aged 15-24, 25-34 and 35-44 were 2.8 (n = 69), 6.0 (n = 112) and 10.0 (n = 14), respectively. The mean values of DMFT percentage (%) aged 15-24, 25-34 and 35-44 were 69.6 (n = 69), 83.1 (n = 112) and 100 (n = 14), respectively. The survey by the Ministry of Health, Labor and Welfare in Japan (2016) revealed that the mean values of DMFT per person aged 15-24, 25-34 and 35-44 were 3.1, 7.4 and 12.1, respectively, and the mean values of DMFT percentage (%) aged 15-24, 25-34 and 35-44 were 78.6, 90.2 and 99.3, respectively. These results suggest that prevalence of caries in Japanese professional soccer players was better than general population at all ages in Japan although the mean value of DMFT percentage aged 35-44 was similar between two groups. We have previously reported that the mean value of DMFT per person in 48 professional sports players (33 soccer players and 15 futsal players) aged 18-41 (26.9 ± 5.5) was 6.4 [4], indicating that our previous results are almost similar to our present results. Taken together, it is conceivable that awareness of prevention of dental caries in Japanese professional soccer players is high.

On the other hand, it has been demonstrated that prevalence of dental caries in soccer players was high in other reports. For example, the mean DMFT index was greater in professional soccer players (mean age; 21) in the football club Barcelona (5.7) than in medical and dental students (3.4 and 5.0, respectively). With respect to the caries activities, the mean value of decayed teeth was greater in soccer players (2.2) than in medical and dental students (1.2 and 0.9, respectively) [5,6]. These reports suggested that soccer players on an elite level may have a greater risk of caries than non-soccer players. Also, it has been shown that the mean DMFT index in professional soccer players (17-30 years old) of a Thailand soccer team was 10.08, which was higher compared with the result obtained by national survey of adult people (DMFT index: 6.0) [7,8]. This study also indicates that soccer players have a higher risk for dental caries. Furthermore, a recent study has reported that oral health was poor in 187 UK profession male football players, in which 37% players had active dental caries and 53% dental erosion [9]. Previous studies indicated that sports drink intake during exercise might enhance a risk of dental erosion [10]. Furthermore, decreased salivary production during exercise may affect oral health [11]. Therefore, it is crucial to keep in mind for these factors in order not to cause oral health problems. To prevent oral diseases such dental caries and periodontal diseases, we should provide dental care education to professional soccer players and their staffs.

CONCLUSION

The prevalence of dental caries in Japanese professional soccer players was low, which may lead to positive impact on training and performance. Although oral health is crucial to not only general health and well-being but also quality of life, health promotion is necessary to optimize performance in soccer players.

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