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Change in Attitude of Dental Students towards Mouth Guards after Training and Lecture

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The role of mouth guards in preventing oral and maxillo-facial injuries is recognized worldwide. The Japan Rugby Football Union released a notification imposing the use of mouth guards in high school matches on March 30, 2006. However, only 32.1% of students who participated in the Japanese dental students' physical education meet (rugby football section) possessed mouth guards.

We investigated the attitude of dental students towards mouth guards through a questionnaire survey before and after a lecture on mouth guards and training for mouth guard fabrication.

The students who belonged to the rugby football team of Asahi University School of dentistry were selected. Twenty-three students were included in 1998 and 26 students in 2000.

The dental students gained proper knowledge and became aware of the effectiveness of mouth guards when they were involved in mouth guard fabrication.

Key words: Questionnaire survey, Mouth guard, Training, Lecture

INTRODUCTION

Mouth guards are well known to prevent oral and maxillo-facial injuries[1-10]. The role of mouth guards in preventing injuries is recognized worldwide. In rugby football particularly, the top-level players usually wear mouth guards. The Japan Rugby Football Union released a notification imposing the use of mouth guards in high school matches on March 30, 2006[11]. However, Honda et al. reported that only 32.1% of students who participated in the Japanese dental students' physical education meet (rugby football section) possessed mouth guards[1]. This low rate is probably because sports dentistry is not included in the curriculum in all dental schools in Japan and the notification from Japan Rugby Football Union was insufficient.

A questionnaire survey indicated that other sports athletes had a slightly higher wearing rate of mouth guards than rugby football players in the school of dentistry[9]. Players resent having to wear mouth guards, and there is the problem not to have a form of the mouth guard as the safe appliance anymore. There are many investigations on the use of mouth guards[11-18].

The knowledge and attitude of dental students towards wearing of mouth guards have been reported previously[13,19].

In the present study, dental students were given a lecture on sports dentistry and training for mouth guard fabrication. We investigated changes in students' appreciation of mouth guards through questionnaire survey after the lecture and training for mouth guard fabrication. We also examined which in this school days was most suitable to receive practical training for mouth guard fabrication.

MATERIALS AND METHODS

Students who belonged to the rugby football team of the Asahi University School of Dentistry were selected. Twenty-three students were included in 1998 and 26 students in 2000 (Table 1). The females involved in the study were not players. They were managers who provided support to the members of the team. Some members were included in both 1998 and 2000.

The questionnaire contained questions to be answered prior to and/or after the lecture and training (Table 2). First, the subjects answered the questions before attending the lecture and receiving training for mouth guard fabrication. Then, the questionnaire shown in Table 3 was distributed. Questions Q3, 4, 5 and Q6 listed in Table 2 were intended for the male subjects only. All questions except Q12 and Q13 were yes or no questions.

The lecture on the importance and purposes of sports dentistry and the purpose, function, and fabrication of mouth guards was 120 minutes long.

Impressions were taken with alginate impression material. The plaster mix was poured under vibration into the impression.

Table 1 Distribution of subjects

	1998			2000		
Grade	Male	Female	Total	Male	Female	Total
2	3	3	6	8	0	8
3	3	2	5	5	2	7
4	3	1	4	3	1	4
5	3	2	5	3	1	4
6	3	0	3	3	0	3
Total	15	8	23	22	4	26

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Table 2 Questionnaire

Before hearing lecture / after training for mouth guard fabrication

Q1 Are you interested in knowing about mouth guards? ♂♀

Q2 How much do you think a mouth guard costs? ♂♀

Q3 Are you willing to wear a mouth guard during practice? ♂

Q4 Are you willing to wear a mouth guard while playing games? ♂

Before taking lecture

Q5 Are you using a mouthpiece and mouth guard now? ♂

Q6 Are you afraid of sports injury? ♂

Q7 Have you explained the necessity of mouth guards to anyone? ♂♀

Q8 Being a dental student, would you like to learn to fabricate mouth guards? ♂♀

Table 3 Questionnaire

After training for mouth guard fabrication

Q9 Have you explained the necessity of mouth guards to anyone? ♂♀

Q10 Is the mouth guard fabrication procedure difficult for you? ♂♀

Q11 Which school year do you think is suitable to receive practical training for making mouth guards? ♂♀

Q12 Circle terms that you could not understand:
dental arch, gingival, palatal, buccal, mucobuccal fold, superior labial frenum, buccal frenum, hamular notch, cervical, occlusion, eccentric occlusion, physiologic rest position, centric occlusion, functional occlusion, functional cusp, occlusal plane, simple impression, parallel cast others ( ) ♂♀

Q13 Write your impression of the mouth guard fabrication training. ♂♀

The students were instructed to mark the outline of the mouth guard on the dental cast. The softened seat material of the mouth guard was molded with a molding device (Fig. 1). The mouth guard was adjusted and polished. A dentist, who was experienced in making mouth guards, adjusted the occlusion. The mouth guard sheets were provided by Sunstar Corporation for the first experiment in 1998; Dyuru soft color supplied by Rinkai Corporation was used for the second experiment.

RESULTS

The results of the questionnaire survey before hearing the lecture and after training for mouth guard fabrication are shown in Table 4. The percentage of students who possessed mouth guards increased significantly from 6.7% in 1998 to 36.4% in 2000. The percentage of subjects who answered 'yes' to Q7 ("Have you explained the necessity of mouth guards to anyone?") was very low. However, about half of the students answered 'yes' to Q9 ("Have you explained the necessity of mouth guards to anyone?") after training for mouth guard fabrication. The results indicate that the students' attitudes towards mouth guards had changed. Q6 showed that over 80% of the students had fears of sports injury.

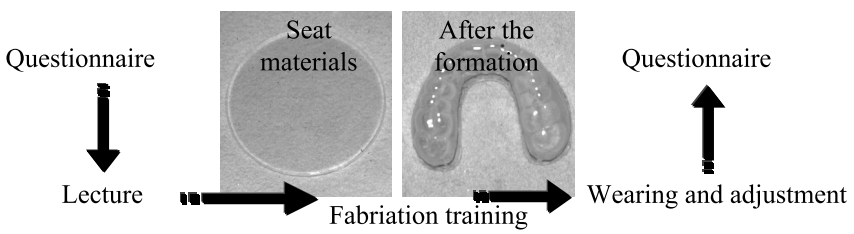
In 1998 and 2000, 54.4% and 28.8% of students, respectively, felt that the fabrication of the mouth guard was difficult.

Students' degree of interest in mouth guards is shown in Fig. 2. The degree of interest in mouth guards increased remark-

Table 4 Distribution of subjects

	1998	2000
Before hearing lecture		
Q5 Do you own a mouth guard?	6.7*	36.4
Q6 Are you afraid of sports injury?	86.7	86.4
Q7 Have you explained the necessity of mouth guards to anyone?	13.0	19.2
Q8 Being a dental student, would you like to learn to fabricate mouth guards?	65.2	88.5
After training of mouth guard making		
Q9 Would you like to explain the necessity of mouth guards to another person?	40.9	52.4
Q10 Is the mouth guard fabrication procedure difficult for you?	54.5	28.6

*Percentage that answered "yes" (%)



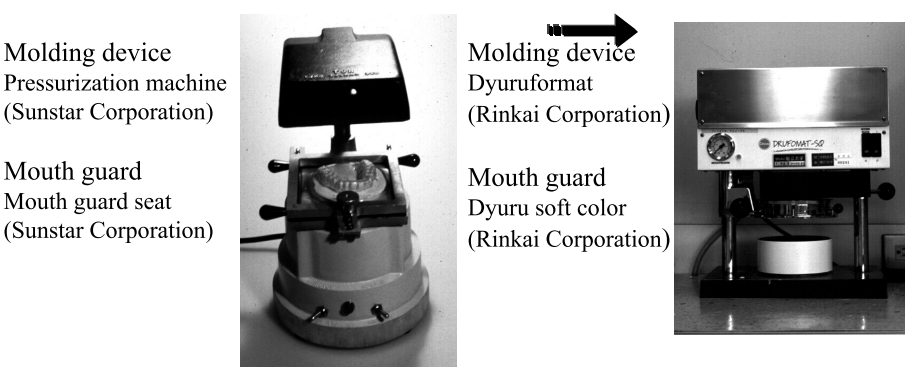


Fig. 1 Materials and mouth guard fabrication procedure

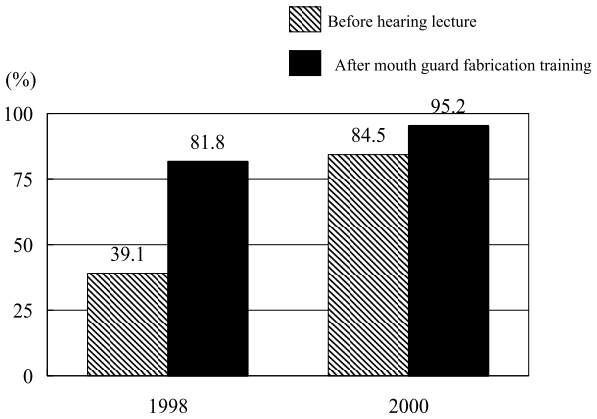


Fig. 2 Degree of interest in mouth guards (Response to Q1)

ably after training for mouth guard fabrication in 1998. The degree of interest in mouth guards in 2000 was considerably high both before the lecture and after training.

The degree of willingness to wear a mouth guard during practice (Fig. 3) and playing games (Fig. 4) also showed a similar tendency. Results from both 2000 and 1998 showed lesser willingness to wear a mouth guard during matches than practice. The degree of willingness to wear a mouth guard during practice and playing games in 1998 doubled after training for mouth guard fabrication.

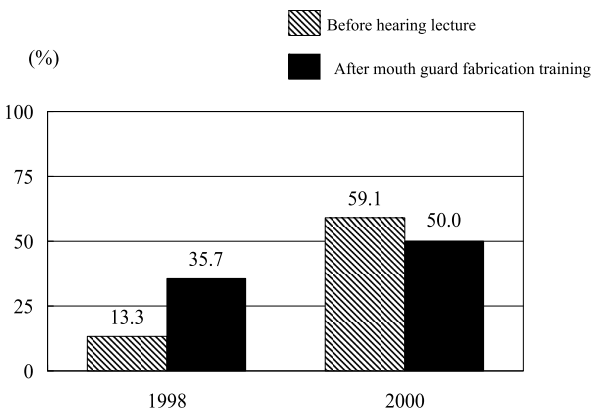


Fig. 3 Degree of willingness to wear a mouth guard during practice (Response to Q3)

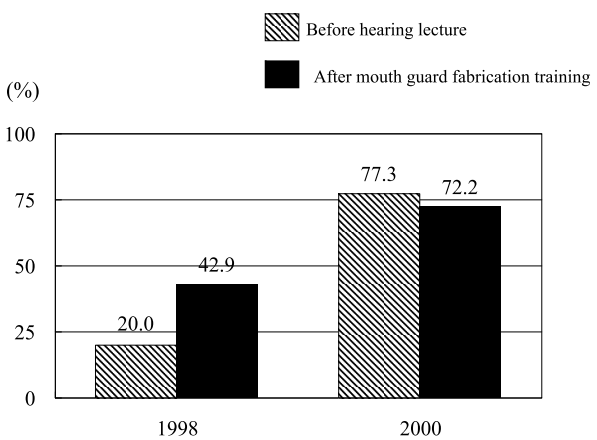


Fig. 4 Degree of willingness to wear a mouth guard while playing games (Response to Q4)

The expected purchase price of mouth guards is shown in Fig. 5. The expected price of a mouth guard before taking the lecture was 5539yen; after training, that price increased by 1.6 times in 1998.

The results for suitable school years to receive practical training of mouth guard fabrication are shown in Fig. 6. There was no remarkable difference in the results of 2000 and 1998.

As the school year progressed, the number of the terms that students were unable to understand decreased (Fig. 7).

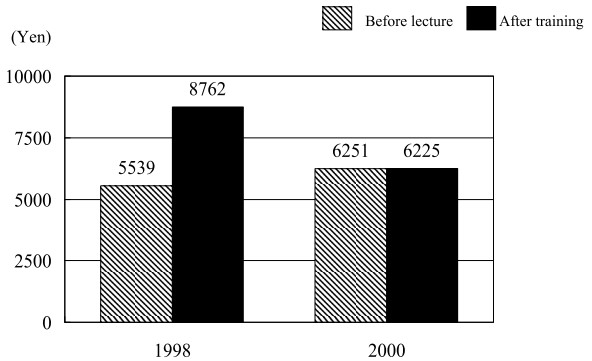


Fig. 5 Expected purchase price of mouth guards (Response to Q2)

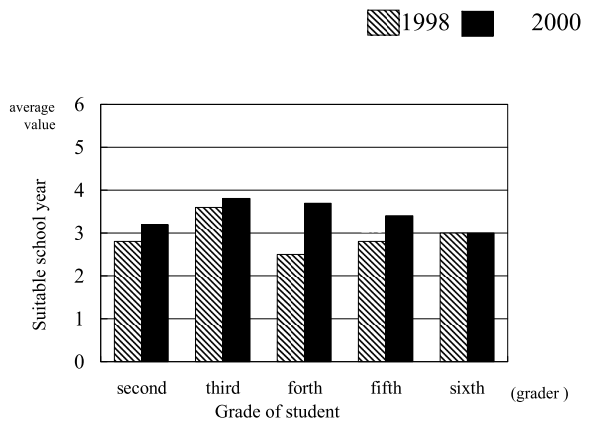


Fig. 6 Which school year do you think is suitable to receive practical training for making mouth guards?

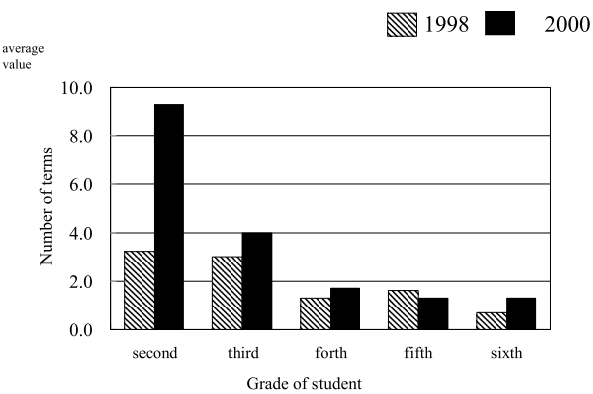


Fig. 7 Number of terms students were unable to understand

DISCUSSION

In this study, we attempted to easily the use of mouth guards. The following methods can be employed to encourage the use of

mouth guards. The sports dentist can deliver a lecture to the players and make them aware of the usefulness of mouth guards. Another way is to provide training for stock type mouth guard fabrication to motivate the players[11]. We strongly recommend the use of a custom type mouth guard rather than a stock type mouth guard for various reasons. Being students of dentistry, we receive practical training for making the custom type mouth guard.

The possession rate of mouth guards in 2000 was higher than that in 1998. Reasons for this change might be that some students who already had the experience of making mouth guards in 1998 had participated in the program in 2000. Also, students may have been exposed to mouth guards by seeing players wearing them on television.

Almost all students were afraid of sports injuries. A rugby player and the manager thought that a mouth guard was necessary.

The degree of willingness to wear a mouth guard while playing games in 2000 after training for mouth guard fabrication was lesser than that before hearing the lecture. One of the reasons for the decrease in the value might be the assumption that wearing a mouth guard decreases athletic ability by disturbing speech and breathing and causing discomfort.

The expected purchase price of a mouth guard was an average of 5,539yen before the lecture and an average of 8,762yen after training in 1998. Sakai et al. reported that mouth guards costing 3,000–5,000yen each could be reasonably paid for ex gratia by the school security society.

The Japan Dental Association at Iwate reported that the price of mouth guards ranged from 2,000–20,000yen and an average of 5,000yen was reported in a national investigation.

CONCLUSION

In the present study, dental students gained proper knowledge and became aware of the effectiveness of mouth guards when they became involved in mouth guard fabrication.

It is thought that the training for mouth guard fabrication might have changed the attitude of students towards clinical training.

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実習および講義前後のマウスガードに対する意識変化

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口腔および顎顔面の外傷を防ぐマウスガードの役割は世界的に認識されている．平成18年３月30日日本ラグビーフットボール協会は「高等学校の試合におけるマウスガードの義務化について」の通達を公表している．しかし，全日本歯科学生体育大会のラグビー部門の参加学生のマウスガード所持率は32.1%である．

我々は，マウスガードに関する講義および製作実習の前後に，アンケート調査からマウスガードに対する認識の変化を検討した. 朝日大学歯学部ラグビー部に所属する学生を対象とした. この調査は1998年23人に，2000年には26人の学生に対し実施した.

歯学部の学生に，自身でマウスガードを製作することで，歯学部学生にマウスガードに対する認識，正しい知識および興味を持たすことができた.

キーワード：アンケート調査，マウスガード，製作実習，講義

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