A survey of attitudes associated with smoking, periodontal disease, and implant therapy

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Background

• Smoking is a risk factor for various diseases, including periodontal diseases.

Smoking affects dental implant

- Smoking was identified as a risk factor for survival rate of dental implants.

The Kano Test for Social Nicotine Dependence
KTSND

• Anybody and Everybody
• Reflects 3 factors
  – Undervaluing the harm caused by smoking
  – Justifying smoking as acceptable cultural and social behavior
  – Overvaluing the favorable effects of smoking

Q 1: Smoking itself is a disease
Q 2: Smoking is a part of culture
Q 3: Tobacco is one of life’s pleasures
Q 4: Smokers’ lifestyles may be respected
Q 5: Smoking sometimes enriches people’s lives
Q 6: Tobacco has positive physical or mental effects
Q 7: Tobacco has effects to relieve stress
Q 8: Tobacco enhances the function of smokers’ brains
Q 9: Doctors exaggerate the ill effects of smoking
Q 10: People can smoke at places where ashtrays are available

Various factors affect the KTSND.
- Smoking experience
- Occupation
- Circumstance.
Purpose

- The purpose of the current survey was to investigate the attitude of patients towards smoking and their knowledge of risk factors for periodontal disease and dental implants.
Subjects and Methods

• The study subjects
  – Patients who visited the Tokyo Medical and Dental University Hospital for oral implants

• Investigation period
  – From January 2012 to December 2012.
# Questionnaire

A survey of attitudes associated with smoking, periodontal disease, and implant therapy

**Sex:** M or F  **Age:** ______

1) Are you a smoker?
   - A. Current smoker
   - B. Ex-smoker
   - C. Non-smoker

2) Do you think smoking is a risk factor of teeth and periodontal tissues?
   - 1. Definitely Yes
   - 2. Probably Yes
   - 3. Probably No
   - 4. Definitely Yes

3) Do you think smoking is a risk factor of dental implants?
   - 1. Definitely Yes
   - 2. Probably Yes
   - 3. Probably No
   - 4. Definitely Yes

Q 1: Smoking itself is a disease
   - 1. Definitely Yes
   - 2. Probably Yes
   - 3. Probably No
   - 4. Definitely Yes

Q 2: Smoking is a part of culture
   - 1. Definitely Yes
   - 2. Probably Yes
   - 3. Probably No
   - 4. Definitely Yes

Q 3: Tobacco is one of life's pleasures
   - 1. Definitely Yes
   - 2. Probably Yes
   - 3. Probably No
   - 4. Definitely Yes

Q 4: Smokers' lifestyles may be respected
   - 1. Definitely Yes
   - 2. Probably Yes
   - 3. Probably No
   - 4. Definitely Yes

Q 5: Smoking sometimes enriches people's lives
   - 1. Definitely Yes
   - 2. Probably Yes
   - 3. Probably No
   - 4. Definitely Yes

Q 6: Tobacco has a positive effect on mental or physical effects
   - 1. Definitely Yes
   - 2. Probably Yes
   - 3. Probably No
   - 4. Definitely Yes

Q 7: Tobacco has an effect to relieve stress
   - 1. Definitely Yes
   - 2. Probably Yes
   - 3. Probably No
   - 4. Definitely Yes

Q 8: Tobacco enhances the function of smokers' brains
   - 1. Definitely Yes
   - 2. Probably Yes
   - 3. Probably No
   - 4. Definitely Yes

Q 9: Doctors exaggerate the ill effects of smoking
   - 1. Definitely Yes
   - 2. Probably Yes
   - 3. Probably No
   - 4. Definitely Yes

Q 10: People can smoke at places where ashtrays are available
   - 1. Definitely Yes
   - 2. Probably Yes
   - 3. Probably No
   - 4. Definitely Yes

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**Knowledge for periodontal disease**

- Smoking states
- Knowledge for dental implant

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**KTSND = 14**
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**Questions:**

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   - 3. Probably No
   - 4. Definitely Yes

Q 10: People can smoke at places where ashtrays are available
    - 1. Definitely Yes
    - 2. Probably Yes
    - 3. Probably No
    - 4. Definitely Yes
<table>
<thead>
<tr>
<th>Category</th>
<th>People</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1585</td>
</tr>
<tr>
<td>Respondent</td>
<td>1159</td>
</tr>
<tr>
<td>Male</td>
<td>386</td>
</tr>
<tr>
<td>Female</td>
<td>773</td>
</tr>
<tr>
<td>Mean age</td>
<td>54.1</td>
</tr>
</tbody>
</table>
## Smoking status

<table>
<thead>
<tr>
<th></th>
<th>Current smoker (%)</th>
<th>Ex-smoker (%)</th>
<th>Non-smoker (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole</td>
<td>144 (12)</td>
<td>216 (19)</td>
<td>799 (69)</td>
<td>1159</td>
</tr>
<tr>
<td>Men</td>
<td>85 (21)</td>
<td>138 (33)</td>
<td>191 (46)</td>
<td>414</td>
</tr>
<tr>
<td>Women</td>
<td>59 (8)</td>
<td>78 (10)</td>
<td>608 (82)</td>
<td>745</td>
</tr>
</tbody>
</table>

![Bar chart indicating smoking status for different categories](chart.png)
Knowledge of risk factors for periodontal disease

<table>
<thead>
<tr>
<th>Knowledge of smoking related to periodontal disease</th>
<th>Current smoker (%)</th>
<th>Ex-smoker (%)</th>
<th>Non-smoker (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definitely Yes</td>
<td>65 (45)</td>
<td>146 (68)</td>
<td>410 (60)</td>
<td>621 (59)</td>
</tr>
<tr>
<td>Probably Yes</td>
<td>57 (39)</td>
<td>45 (20)</td>
<td>178 (26)</td>
<td>282 (27)</td>
</tr>
<tr>
<td>Probably No</td>
<td>16 (11)</td>
<td>20 (9)</td>
<td>75 (11)</td>
<td>113 (11)</td>
</tr>
<tr>
<td>Definitely No</td>
<td>6 (5)</td>
<td>3 (2)</td>
<td>21 (3)</td>
<td>31 (3)</td>
</tr>
</tbody>
</table>

<Actual number>

<Percentage>
Knowledge of risk factors for dental implants

<table>
<thead>
<tr>
<th>Knowledge of smoking related to dental implant</th>
<th>Current smoker (%)</th>
<th>Ex-smoker (%)</th>
<th>Non-smoker (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definitely Yes</td>
<td>34 (23)</td>
<td>83 (39)</td>
<td>118 (17)</td>
<td>234 (23)</td>
</tr>
<tr>
<td>Probably Yes</td>
<td>55 (28)</td>
<td>61 (28)</td>
<td>202 (30)</td>
<td>318 (31)</td>
</tr>
<tr>
<td>Probably No</td>
<td>46 (32)</td>
<td>68 (32)</td>
<td>342 (50)</td>
<td>456 (44)</td>
</tr>
<tr>
<td>Definitely No</td>
<td>9 (6)</td>
<td>2 (1)</td>
<td>23 (5)</td>
<td>34 (3)</td>
</tr>
</tbody>
</table>

<Actual number>

<Percentage>
# KTSND scores

<table>
<thead>
<tr>
<th></th>
<th>Non-smoker</th>
<th>Ex-smoker</th>
<th>Current smoker</th>
</tr>
</thead>
<tbody>
<tr>
<td>KTSND</td>
<td>11.80 ± 5.85</td>
<td>13.07 ± 5.33</td>
<td>14.88 ± 4.74</td>
</tr>
</tbody>
</table>

![Bar chart showing KTSND scores for different smoking statuses]

- Current smoker
- Ex-smoker
- Non-smoker

* Denotes statistical significance.
The Health, Labor, and Welfare Ministry reported that the percentage of current smoker was **20.1%** in 2011, higher than **12%** in this study.

They also reported that the percentage of men who current smoker (**32.4%**) was higher than the percentage of women who current smoker (**9.7%**). This research showed similar results about a higher percentage of men (**21%**) than women (**8%**) who current smoker.

The reason, current smoker is low in this study, included, the male-to-female ratio of this study was **1:2**. And the patients that visited the University Hospital were often referred by other general practices, and thus, they had already received instructions regarding dental treatments.
Smoking could be a risk factor for various diseases

- Smoking could be a risk factor for various diseases, periodontal and dental implants.


<Acknowledged rate of a risk factor>

For periodontal disease: 59%

For dental implant: 23%
It is too rapid to purvey sufficient information about dental implant therapy to patients. The difference in knowledge regarding dental implants between doctors and patients was very large, and almost all patients were unaware of risk factors for dental implants.
## The KTSND

<table>
<thead>
<tr>
<th></th>
<th>Non-smoker</th>
<th>Ex-smoker</th>
<th>Current smoker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yoshii et al.</td>
<td>12.2 ± 5.3</td>
<td>12.2 ± 4.9</td>
<td>18.0 ± 5.0</td>
</tr>
<tr>
<td>Yoshii et al.</td>
<td>10.5 ± 5.6</td>
<td>12.9 ± 5.9</td>
<td>19.0 ± 4.6</td>
</tr>
<tr>
<td>Takai et al.</td>
<td>13.4 ± 4.4</td>
<td>-</td>
<td>18.9 ± 3.8</td>
</tr>
<tr>
<td>Yamamoto et al.</td>
<td>13.8 ± 4.7</td>
<td>-</td>
<td>16.0 ± 3.8</td>
</tr>
<tr>
<td>This study</td>
<td>11.80 ± 5.85</td>
<td>13.07 ± 5.33</td>
<td>14.88 ± 4.74</td>
</tr>
</tbody>
</table>
The rates of patients are incredible high.

On the basis of these results, the Japanese Society of Periodontology has recommended smoking cessation as a factor, which positively decreases periodontal diseases; therefore, patients who visited the clinic recognized smoking as a risk factor for periodontal disease in informed consent with doctor.
Conclusion

• Current smoking rate in this study was low (12%).
• 59% of patients recognized smoking as a risk factor for periodontal disease whereas 23% recognized it as a risk factor for dental implants.
• The KTSND scores in this study were comparatively low. Therefore, patients who visit dental clinics could better understand and practice smoking cessation with sufficient informed consent.