

# Characteristic of dental care received by smokers in Japan

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# Background

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- ◆ Numerous epidemiological studies have shown that smokers more frequently have dental diseases than non-smokers.
- ◆ Our research question is whether characteristics of dental care received by current smokers and non-smokers differ.

# Objective

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**To evaluate the characteristics of dental care of smokers in Japan,**

**◆ we investigated smoking status and treated disease among patients who visited dental clinics.**

**◆ we compared the distribution of treated disease between current smokers and non-smokers.**

# Dental clinic survey

## ◆ Survey design

- One day survey
- Questionnaire survey

Members of the Japan Dental Association, 65,329 dentists

1,022 dentists randomly selected

**753 dentists (response rate; 73.7%)**

14,187 patients

2,912 patients excluded because of incomplete information

1,590 former smokers excluded

**9,685 patients**

2,835 current smokers  
6,850 non-smokers

# Category of dental care

Category of dental care		Treated disease and encounter
Gingival/periodontal treatment	Early stage	Gingivitis Mild to moderate periodontal disease
	Advanced stage	Severe periodontal disease
Caries/endodontic treatment	Early stage	Dental caries
	Advanced stage	Endodontic disease Inflammation of dental pulp Apical periodontitis Periapical abscess and radicular cyst
Prosthetic treatment		Prosthetic treatment
Periodical check-up/orthodontic treatment		Dental examination Orthodontic treatment
Other treatments/encounters		Other periodontal diseases Other disorders of teeth and supporting structures Other diseases of the oral region, salivary glands and jaws Stomatitis and related lesions Dental injuries

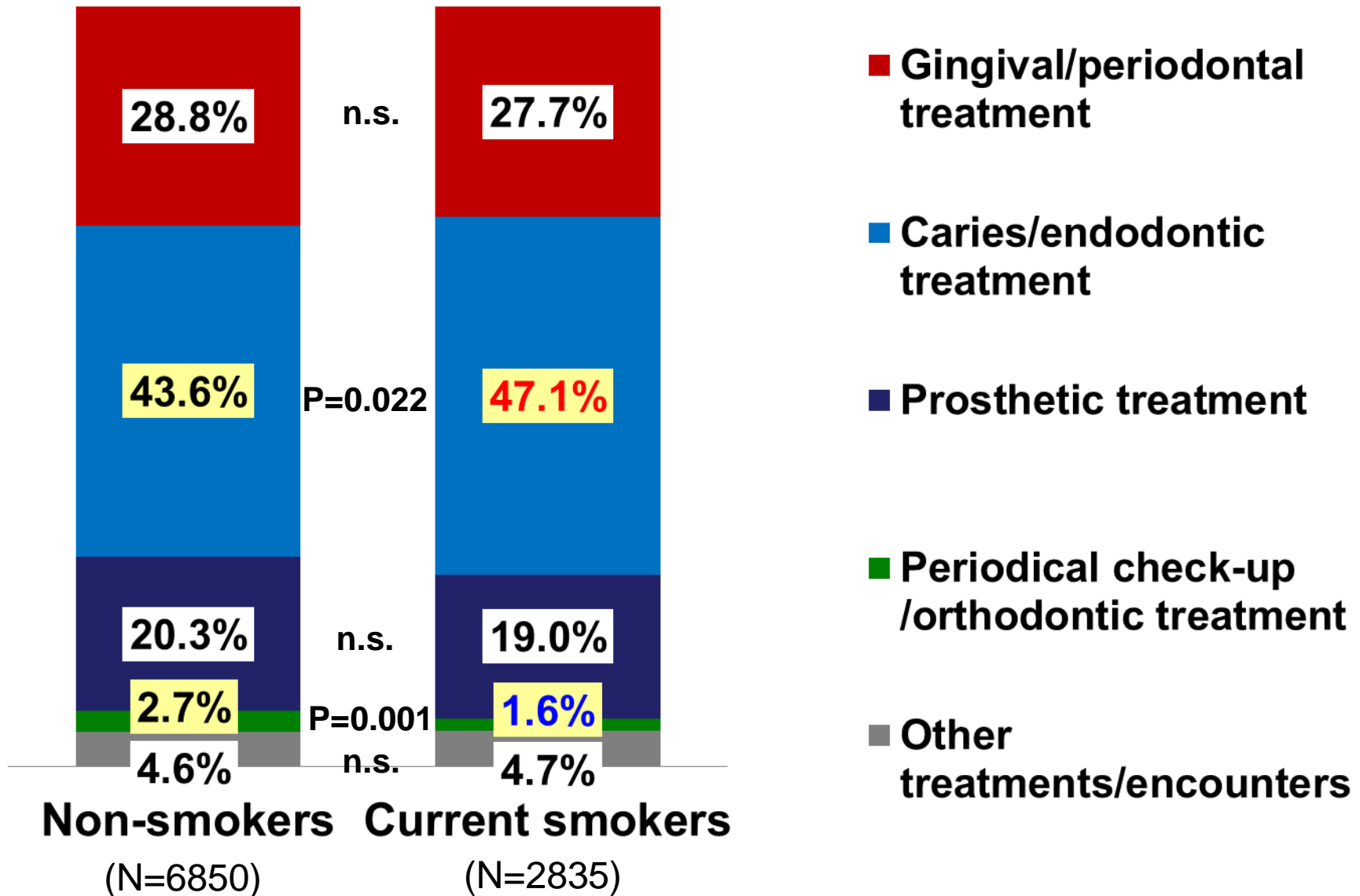
# Analyses

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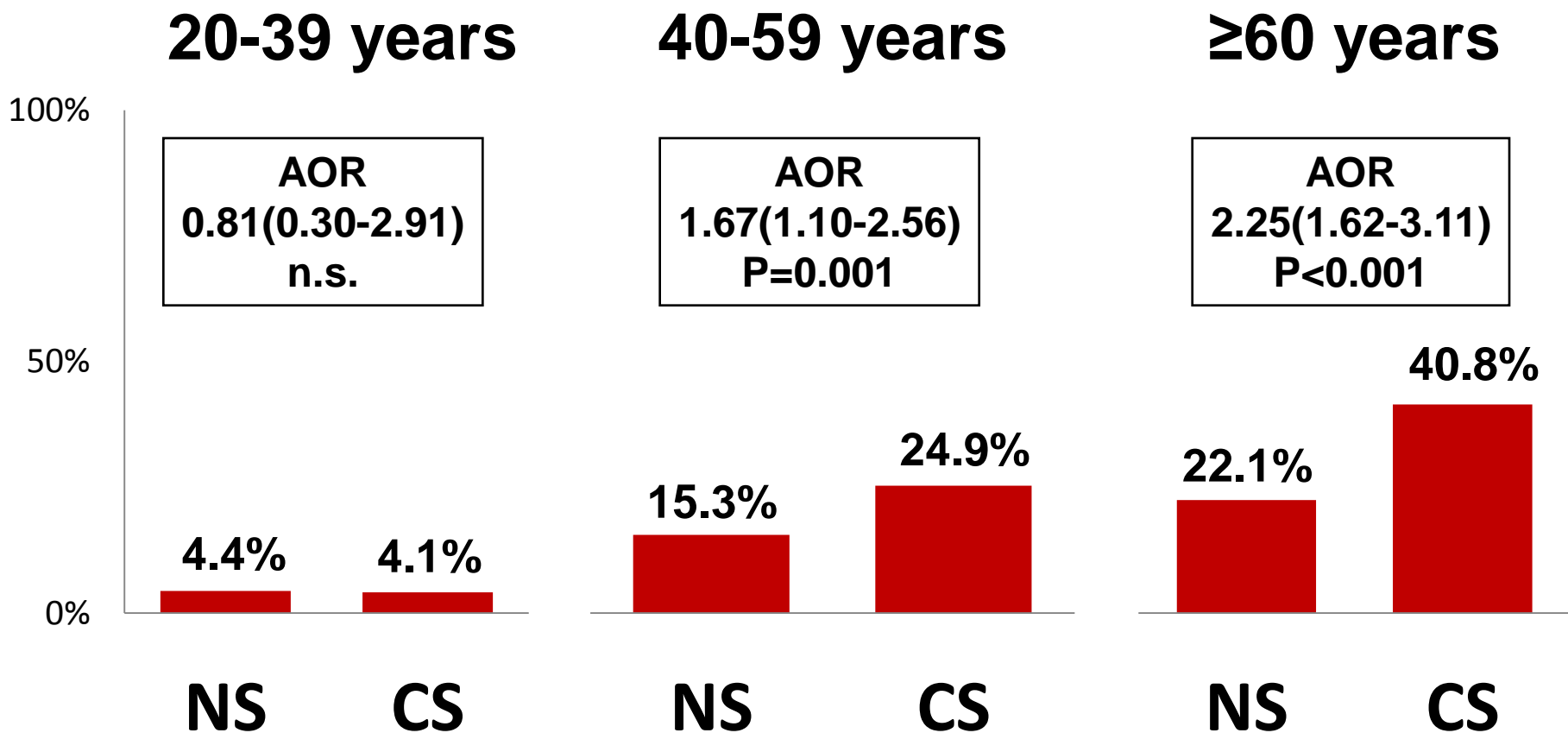
- ◆ **The analyses consisted of two phases.**
- ◆ **Phase 1 analysis compared the distribution of 5 categories of dental care by smoking status using chi-square test.**
- ◆ **Phase 2 analysis compared the level of treatment stage in gingival/periodontal treatment and caries/endodontic treatment by smoking status using logistic regression models.**
- ◆ **A potential effect of cluster sampling by dentists was adjusted.**

# Distribution of the treated diseases

P<0.001



# Proportion of advanced stage in gingival/periodontal treatment

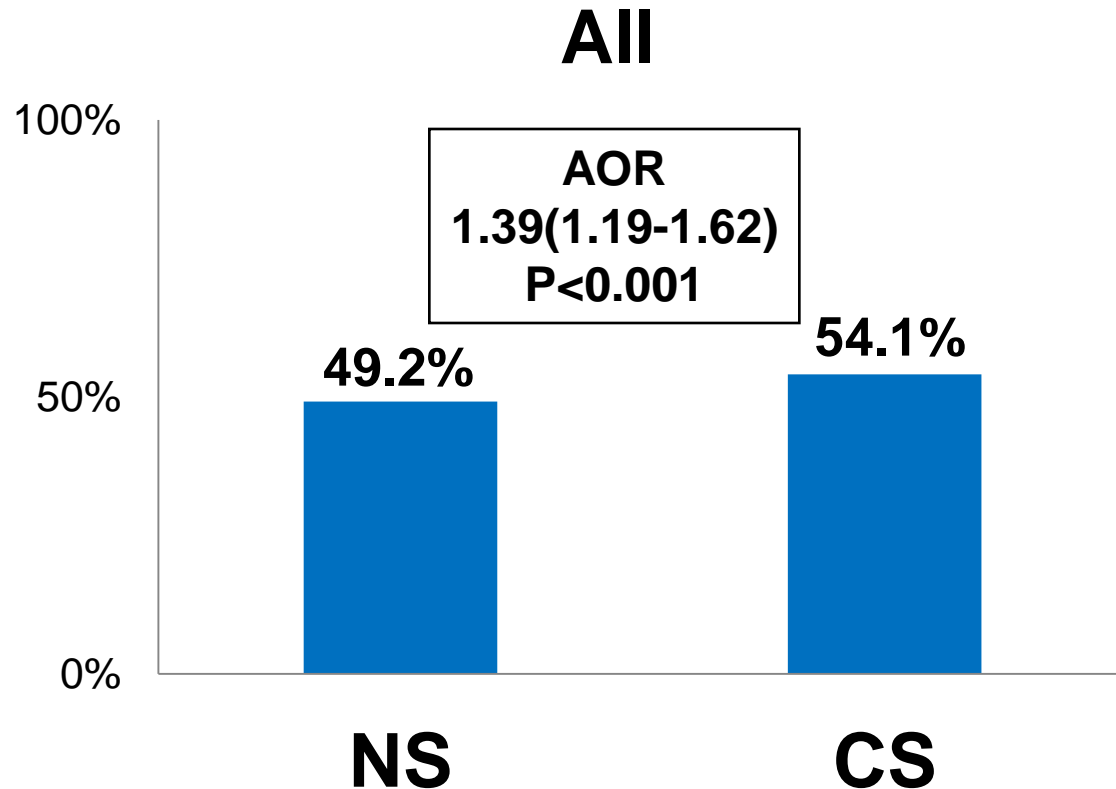


NS: Non-smokers , CS: Current smokers, AOR: odds ratio adjusted for gender



# Proportion of advanced stage in caries/endodontic treatment

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**NS: Non-smokers , CS: Current smokers**

**AOR: odds ratio adjusted for age and gender**

# Our main finding

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- ◆ The characteristic of dental care received by current smokers and non-smokers differed.
- ◆ Current smokers showed significantly higher distribution of endodontic treatment, and lower distribution for periodical check-up/orthodontic treatment than non-smokers.
- ◆ In the age groups of  $\geq 40$  years, current smokers more likely received gingival/periodontal treatment for the advanced stage of disease than non-smokers.



**Current smokers receive less preventive and more intensive dental care than do non-smokers**

# Impact of smoking on dental care

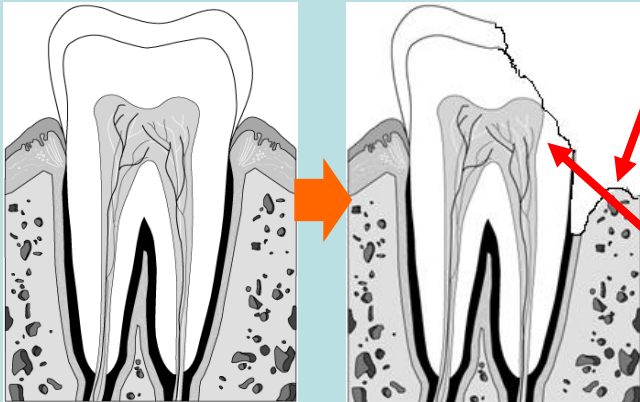
## Continuing smoking

Direct effects of smoking

Unhealthy behavior of smokers

Advances in dental diseases

Delayed dental care



Development of destruction of tooth supporting structure

Increased severe periodontal treatment in smokers

Development of destruction of tooth structure

Increased endodontic treatment in smokers

Increase of intensive dental care

Increase of dental care expenditures

# Conclusion

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- ◆ **Current smokers receive less preventive and more intensive dental care than do non-smokers, suggesting that smoking increases dental care expenses in smokers.**
- ◆ **Smoking cessation intervention in dental practices may reduce the excess dental care and its cost associated with smoking.**