

# Oral, Head and Neck Examination Practices of Nova Scotia Dental Hygienists

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# INTRODUCTION

In 2013, **4,150** new cases of oral cancer were diagnosed in Canada. Approximately **130** cases were in Nova Scotia.<sup>1</sup>

Canadian Cancer Statistics estimates **26%** of Nova Scotians diagnosed with oral cancer in 2013, will die.<sup>2</sup>

Almost 2/3s of oral cancer patients are diagnosed in late stages when tumors are large and have spread to lymph nodes.<sup>3</sup>

Early detection can significantly decrease the debilitating effects of oral cancer treatments and increase survival rates.<sup>2</sup>

# The Cochrane Review:

- Technologies to treat and manage oral cancer have progressed substantially. Traditional treatment includes surgery and radiotherapy and more recently systemic chemotherapy.<sup>4</sup>
- The five-year survival following diagnosis has remained around 50% for the past 30 years in most countries.<sup>4</sup>
- This is in marked contrast to other cancer where survival rates have improved (breast and colon).<sup>4</sup>
- May be explained in part to the fact that oral cancer is more often diagnosed at a late stage of the disease when prognosis is poorer and risks of morbidity and mortality are higher.<sup>4</sup>

The Cochrane Review concludes that oral cancer incidence and mortality can be reduced using 3 approaches:

Primary  
Prevention

Secondary  
prevention,  
screening  
and early  
detection

Improved  
treatment



# WHY CONDUCT THIS RESEARCH?

- **SAVING LIVES IS IMPORTANT!**
- Research shows that dental hygienists are facing barriers when it comes to performing head and neck examinations.<sup>3,4</sup>
- Therefore it would be helpful to have a “big picture” of what is happening out in practice.
- This study is, in part, a follow up to a study that was conducted by Dr. Joanne Clovis et al. in 1998.<sup>4</sup> It's useful to see if there have been any improvements in the knowledge and practices since that time.

# PURPOSE

# Purpose of the Research

## **PURPOSE STATEMENT**

To explore current Nova Scotia dental hygienists practices of the oral, head and neck examinations and to explore the barriers preventing them from conducting the examination.

## **RESEARCH QUESTION**

Are dental hygienists in Nova Scotia routinely performing oral, head and neck examinations, as taught by accredited schools?

# METHODS



# METHODS

- **ETHICS**

- Institutional ethics approval from the Health Sciences Research Ethics Board in January 2014

- **RESEARCH DESIGN**

- Descriptive cross sectional survey
- Quantitative study

- **TARGET POPULATION**

- Every licensed dental hygienist in Nova Scotia

# METHODS

- **RECRUITMENT METHODS**

- Email invitation to an online survey sent out to 670 practicing Nova Scotia dental hygienists through CDHNS
  - Two reminder emails sent out at one week intervals

- **SAMPLING METHODOLOGY**

- In order to achieve a confidence level of 95% and a margin of error of 5% we needed 244 hygienists to respond.
  - Target sample size = 244

# METHODS

- **DATA COLLECTION METHODS**
  - **Opinio©** online survey software used
    - Hosted on secure Dalhousie server
  
- **CATEGORIES**
  - Frequency of examinations
  - Steps of the examinations
  - Barriers
  - Demographic information

# METHODS

- **DATA ANALYSIS METHODS**
  - SPSS software
    - Descriptive and comparative analyses

# SURVEY INSTRUMENT

## Oral, Head and Neck Examination Practices of Nova Scotia Dental Hygienists

### INTRA AND EXTRA ORAL, HEAD AND NECK EXAMINATIONS

How often do you perform an intra/extra oral exam at the initial appointment?

Never Rarely Sometimes Usually Always

What patient factors would prompt you to perform an intra and extra oral, head and neck examination at the INITIAL appointment?

- Known tobacco user
- Known heavy alcohol user
- Known history of cancer
- Known history of HPV
- Age
- Known unhealthy eating (e.g. Low consumption of fruits and vegetables)
- Other:

# SURVEY INSTRUMENT

## Oral, Head and Neck Examination Practices of Nova Scotia Dental Hygienists

### **EXTRA ORAL EXAM - When performing an extra oral exam, do you:**

**Visually inspect the integrity of skin, eyes and lips?**

Never Rarely Sometimes Usually Always

**Palpate the lymph nodes of the head and neck region?**

Never Rarely Sometimes Usually Always

**Palpate the salivary glands?**

Never Rarely Sometimes Usually Always

**Palpate the TMJ upon opening and closing of the jaw?**

Never Rarely Sometimes Usually Always

# SURVEY INSTRUMENT

## Oral, Head and Neck Examination Practices of Nova Scotia Dental Hygienists

### INTRA ORAL EXAM - When performing an intra oral exam, do you:

Visually inspect the lips and vermillion border?

Never Rarely Sometimes Usually Always

Palpate the tongue?

Never Rarely Sometimes Usually Always

Visually inspect the oral cavity?

Never Rarely Sometimes Usually Always

Palpate the lips and cheeks?

Never Rarely Sometimes Usually Always

# SURVEY INSTRUMENT

## **Oral, Head and Neck Examination Practices of Nova Scotia Dental Hygienists**

**When was the last time you attended a continuing education course pertaining to intra and extra oral, head and neck examinations and/or oral cancer?**

- Never
- I am a new graduate
- More than 5 years ago
- Within the past 2-5 years
- Within the past 12 months

**Are you interested in attending continuing educational courses on oral cancer in the future?**

- Yes
- No

**Have you ever identified a suspicious finding in the head and neck region?**

- Yes
- No



# SURVEY INSTRUMENT

## Oral, Head and Neck Examination Practices of Nova Scotia Dental Hygienists

### DEMOGRAPHIC INFORMATION AND PRACTICE SETTING

From what dental hygiene institute did you graduate? (Please state if other)

APLUS Institute

How would you rate your dental hygiene knowledge/skill regarding intra and extra oral, head and neck examinations?

- Very good
- Good
- Poor
- Very poor
- Not sure

What year did you graduate from your dental hygiene program?

- 1960 -1969
- 1970 -1979
- 1980 -1989
- 1990 -1999
- 2000 - 2013

How many years have you been a practicing hygienist?

1

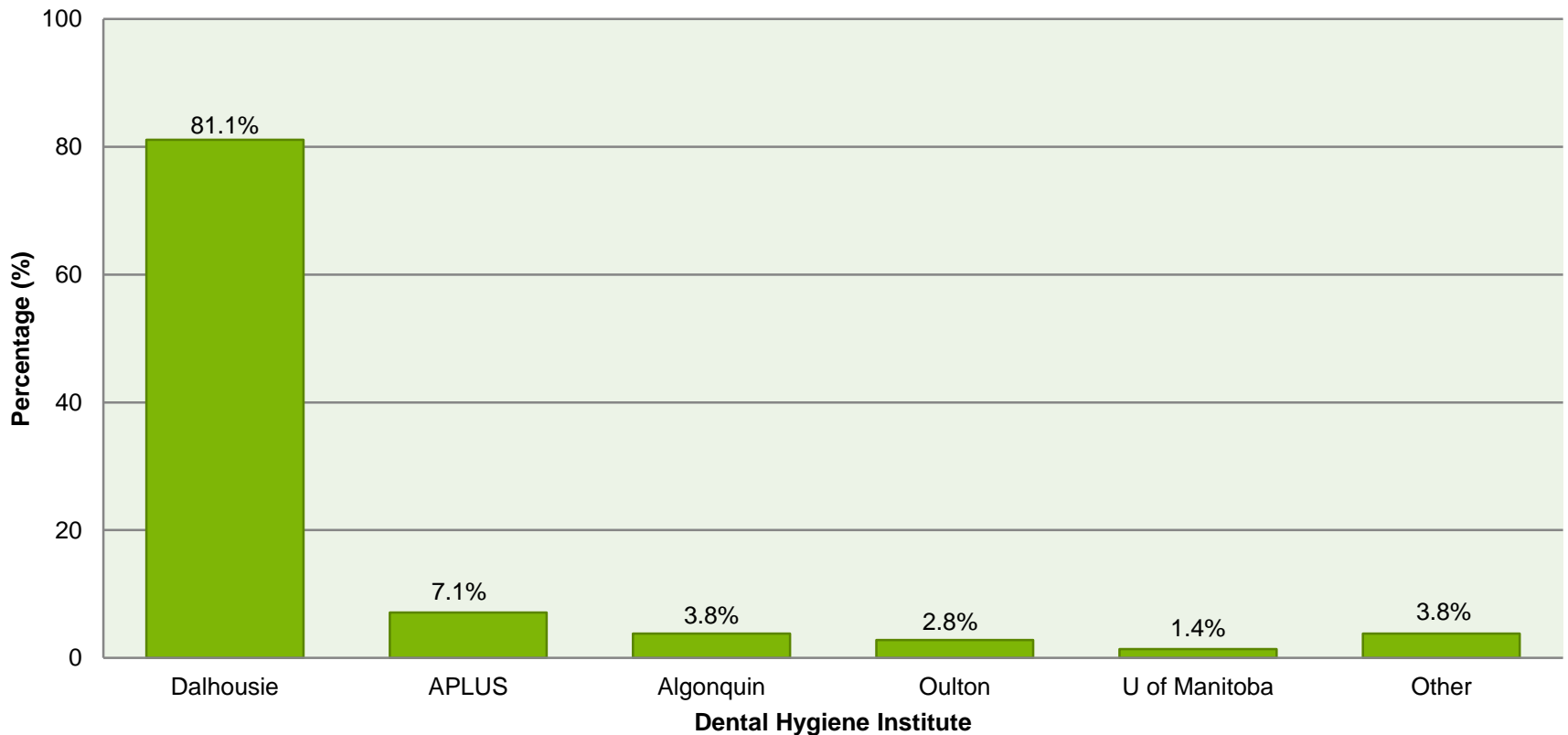
# RESULTS

# NUMBER OF PARTICIPANTS

- Population of CDHNS: 670
- Target sample size: 244
- N achieved: 212
- Response rate: 32%

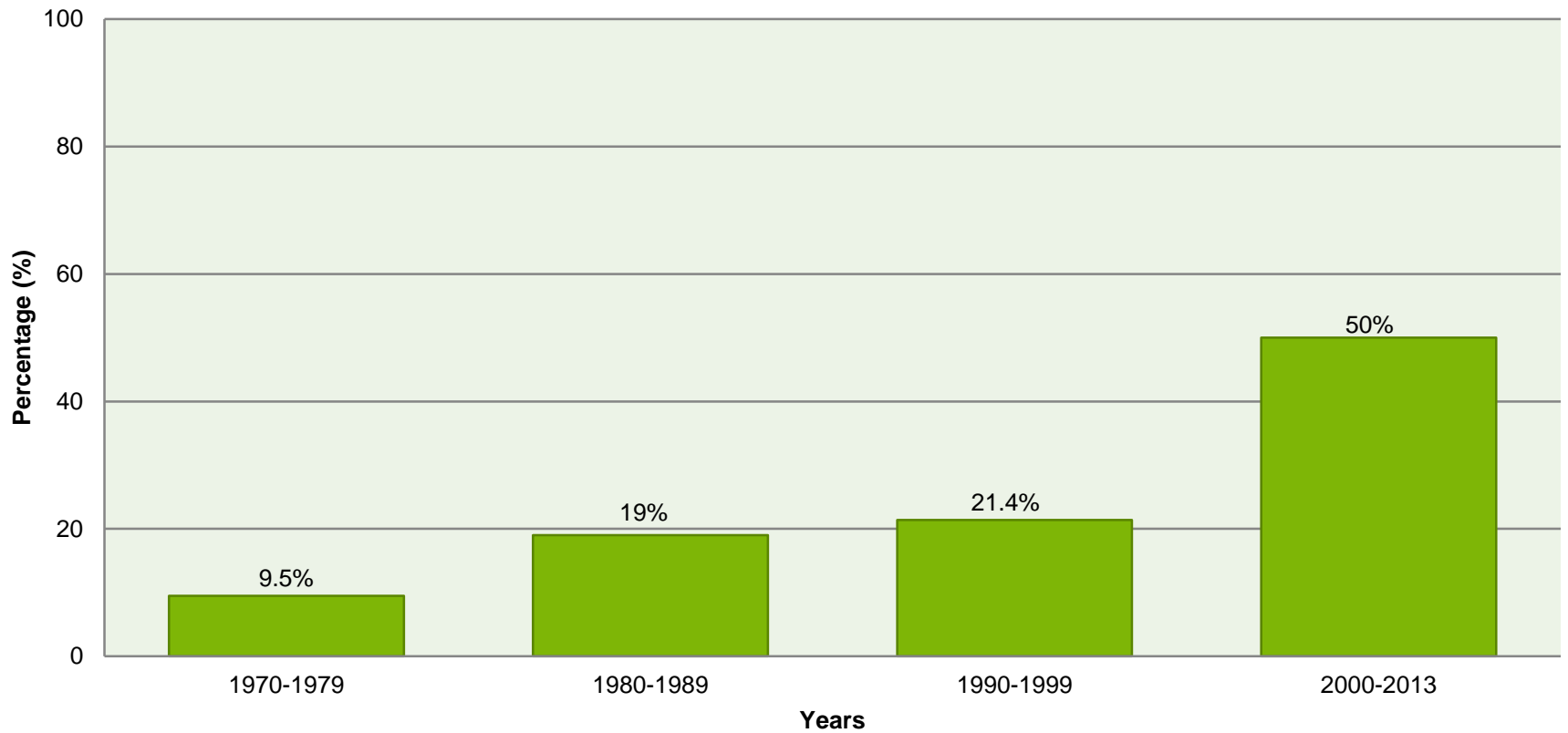
# DEMOGRAPHIC INFORMATION

## Institute of Graduation



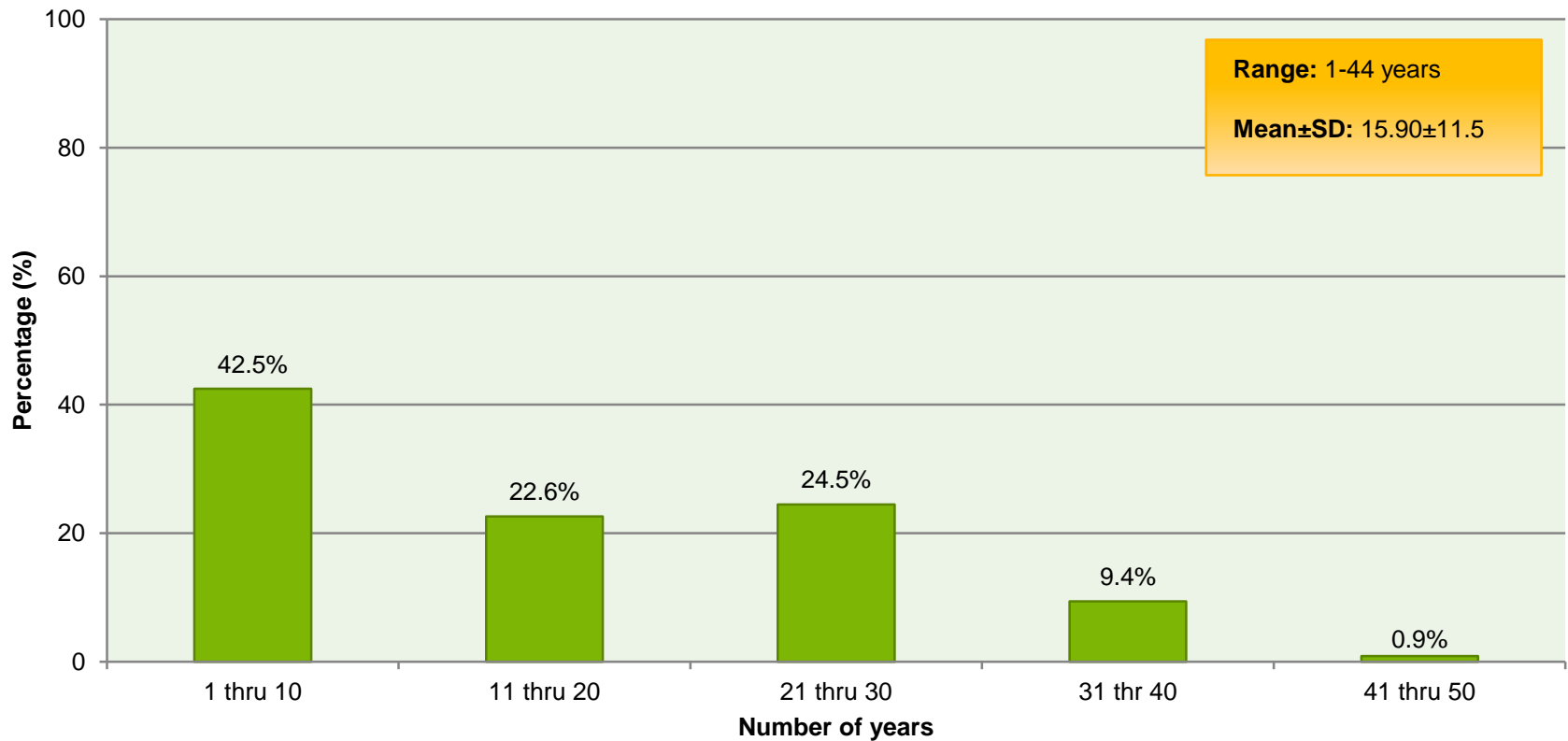
# DEMOGRAPHIC INFORMATION

**Year of Graduation**

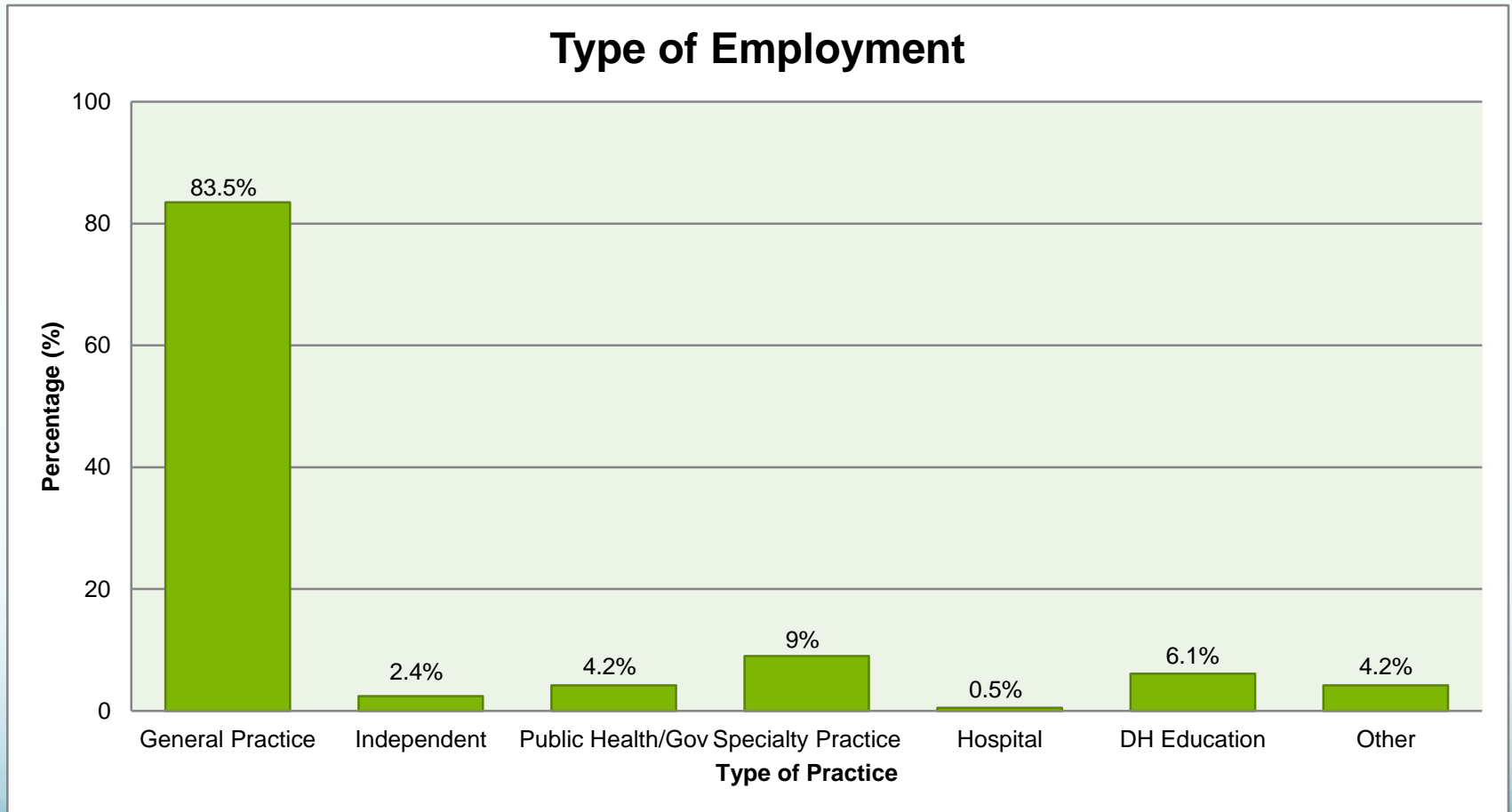


# DEMOGRAPHIC INFORMATION

## Years of Practice



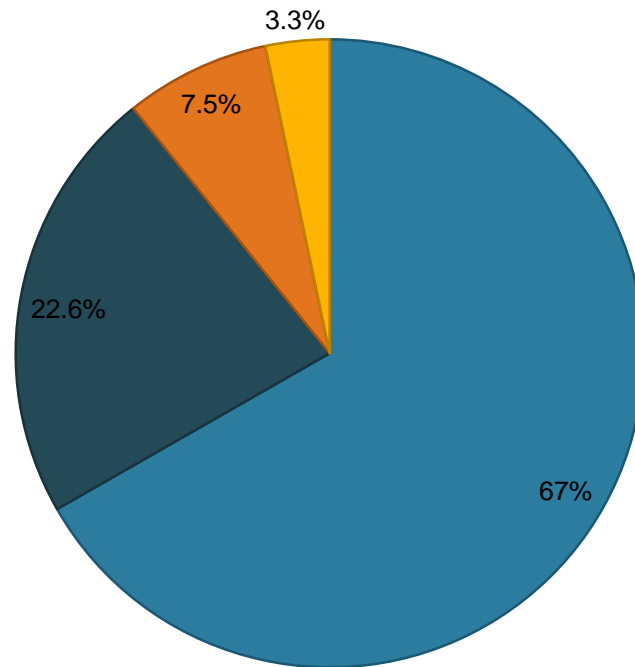
# DEMOGRAPHIC INFORMATION



# DEMOGRAPHIC INFORMATION

## Current work status

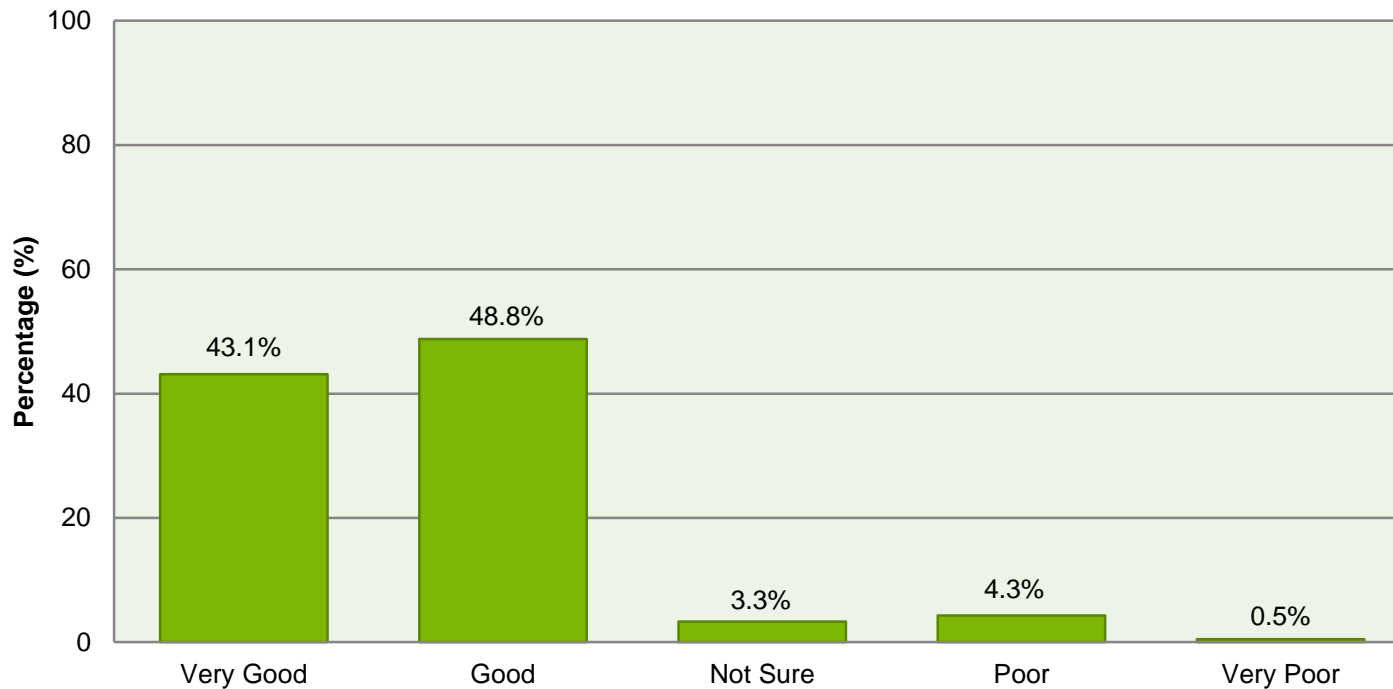
■ Permanent FT ■ Permanent PT ■ Casual ■ Unemployed



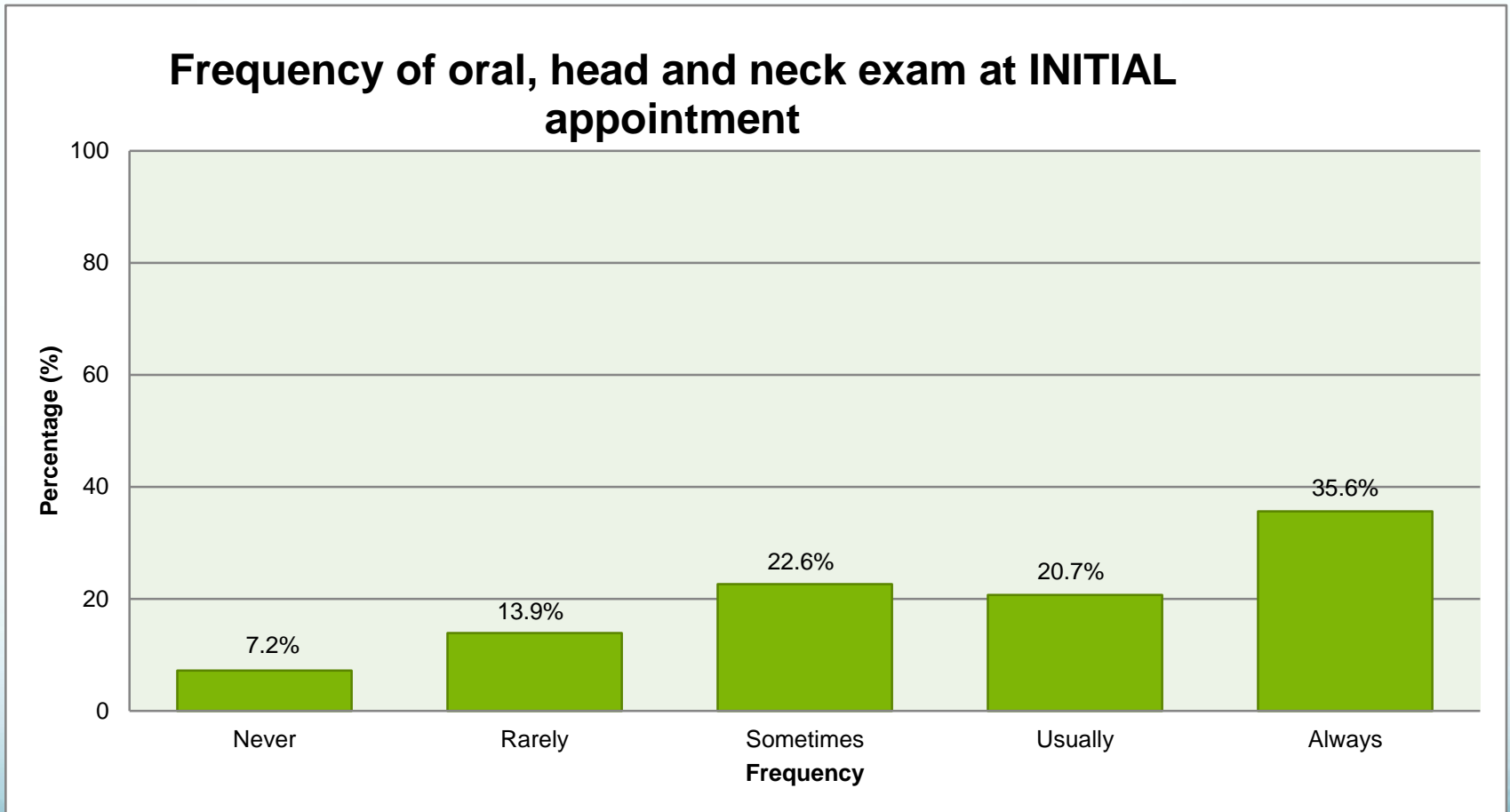


# SKILLS AND KNOWLEDGE

**Personal rating of ones own knowledge/skill regarding intra and extra oral, head and neck examinations**



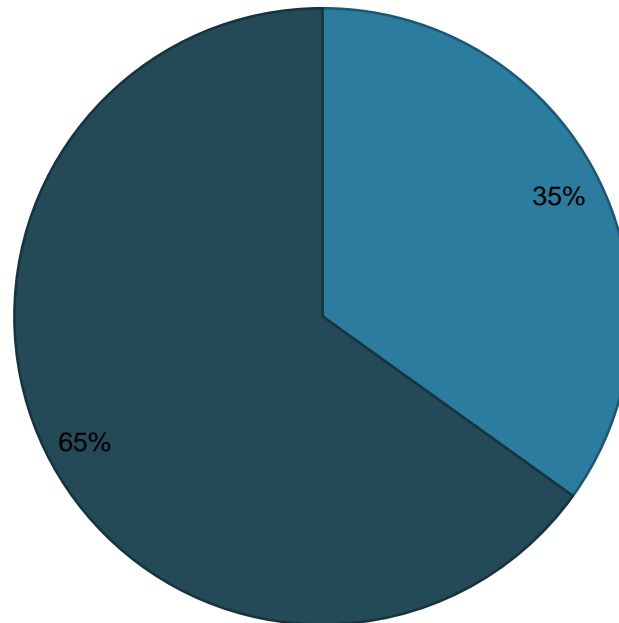
# FREQUENCY OF PERFORMANCE



# INITIAL APPOINTMENT

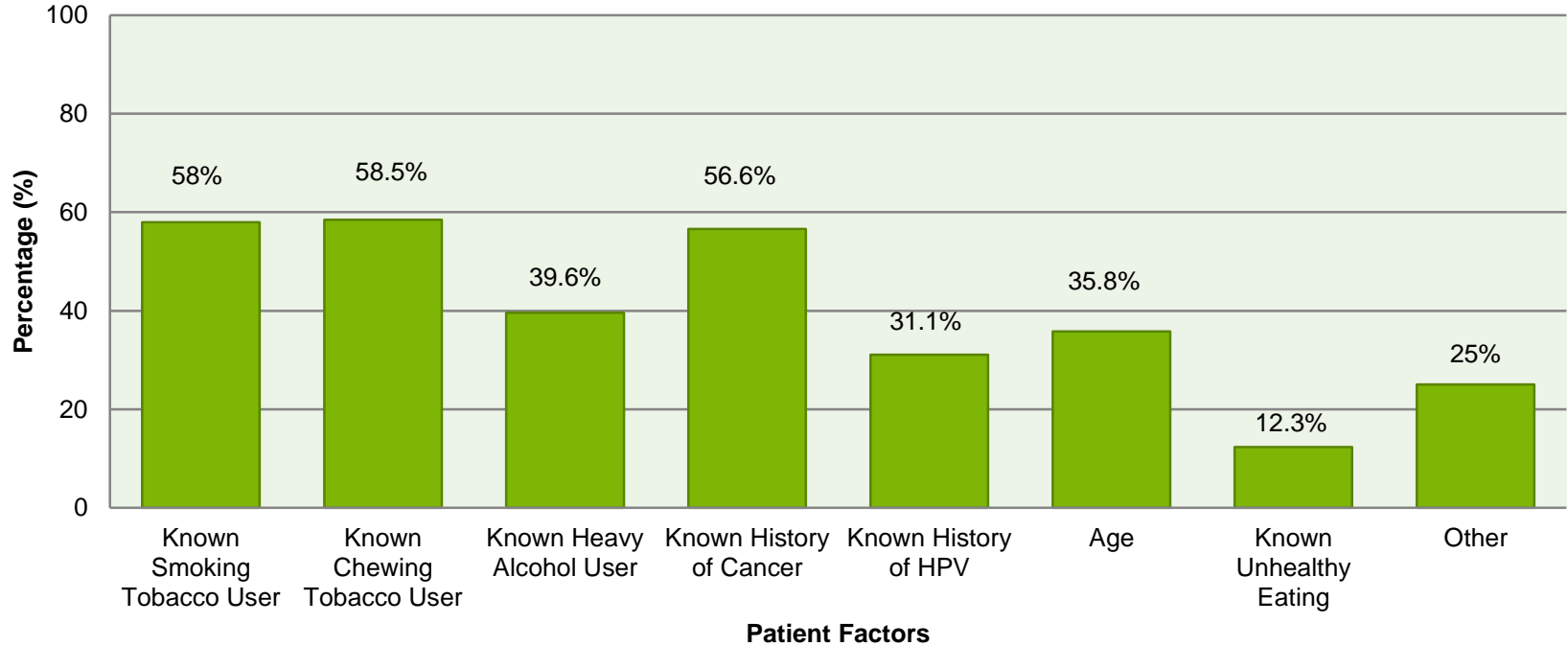
## Performance of exam at initial appointment

■ Always performing exam at initial appointment    ■ Not always performing exam at initial appointment



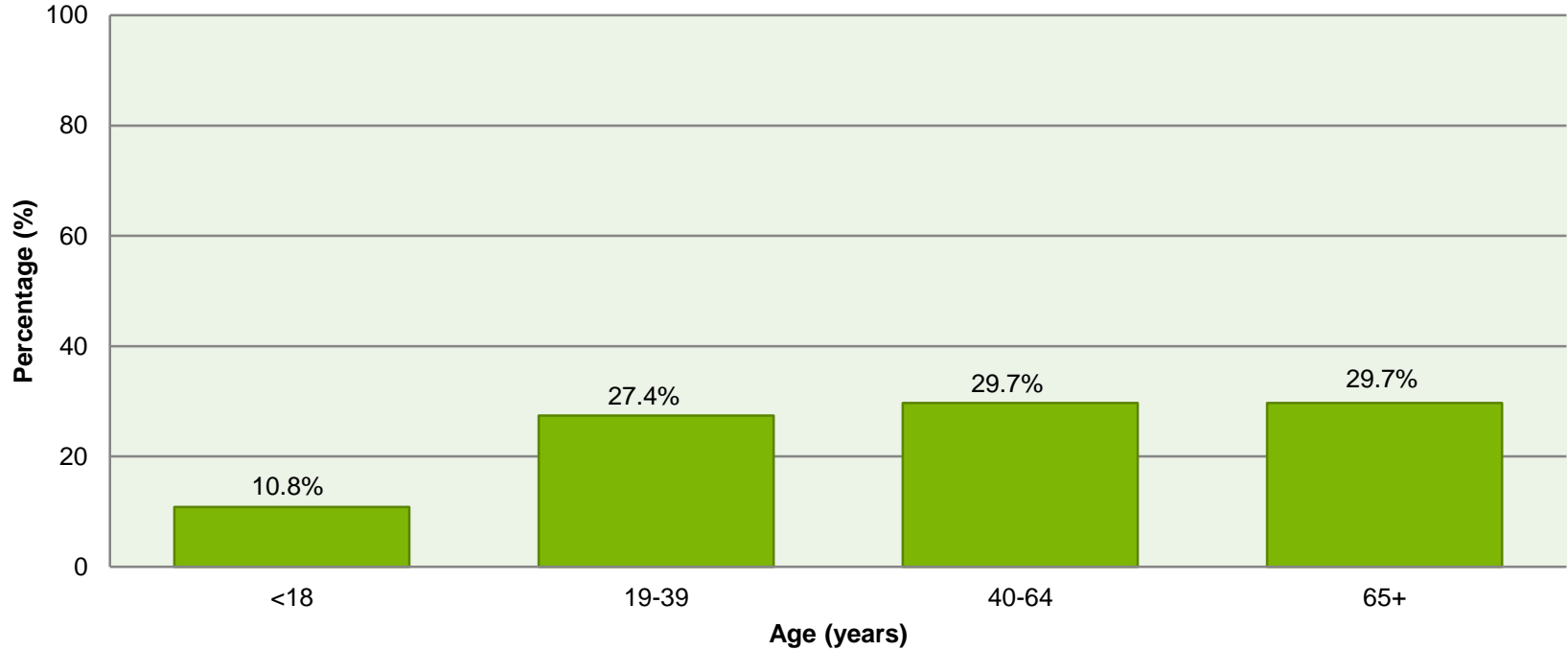
# FACTORS PROMPTING

**Patient factors prompting performance of intra and extra oral, head and neck examination at the INITIAL appointment**



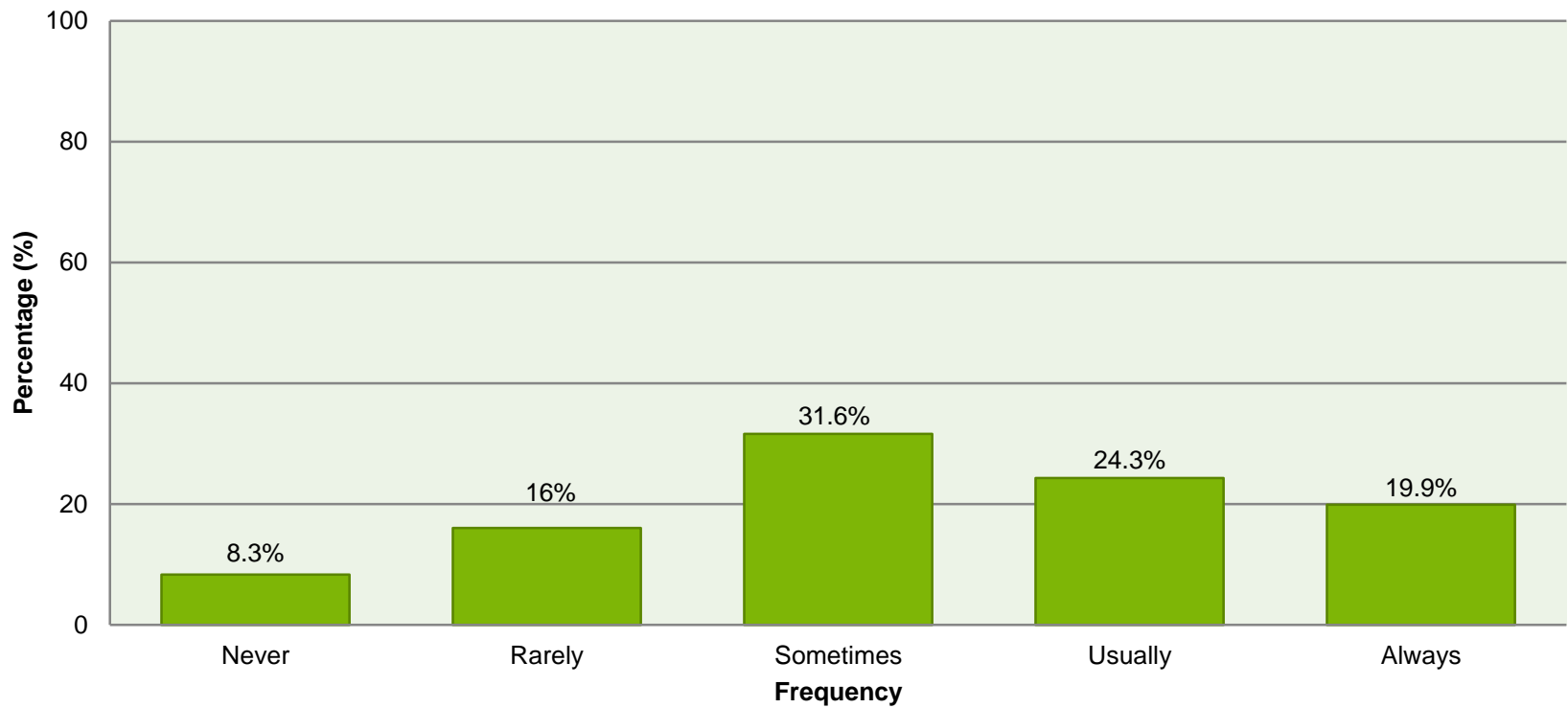
# PATIENT AGE

**Patient age prompting performance of an intra and extra oral, head and neck examination at the INITIAL appointment**



# FREQUENCY OF PERFORMANCE

**Frequency of performing the intra and extra oral, head and neck examinations at RECALL appointments**

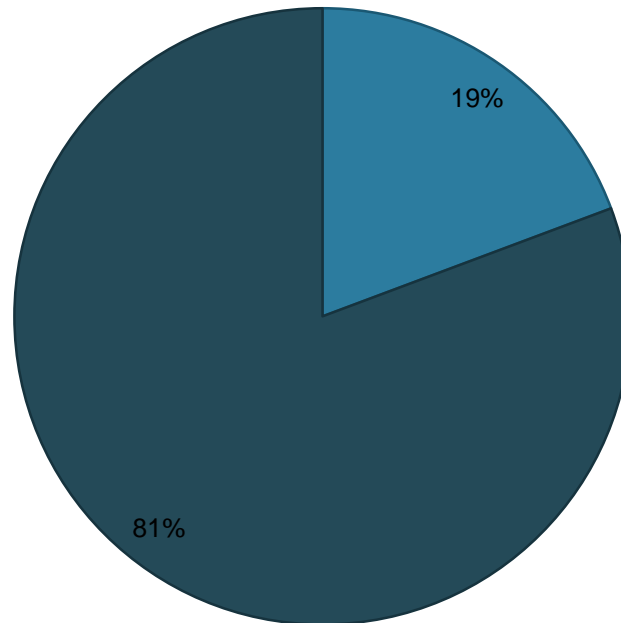


# RECALL APPOINTMENT

## Performance of exam at recall appointment

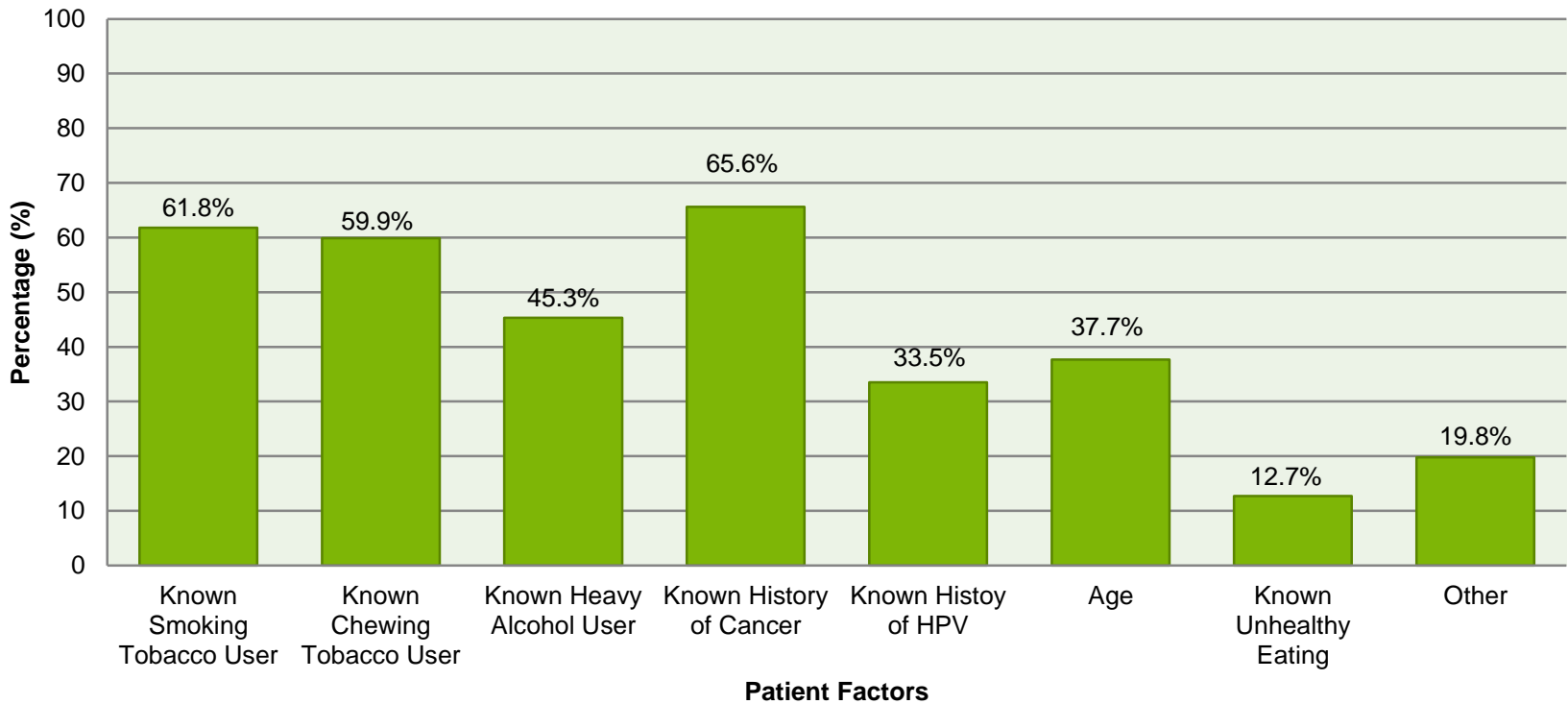
■ Always performing exam at recall appointment

■ Not always performing exam at recall appointment



# FACTORS PROMPTING

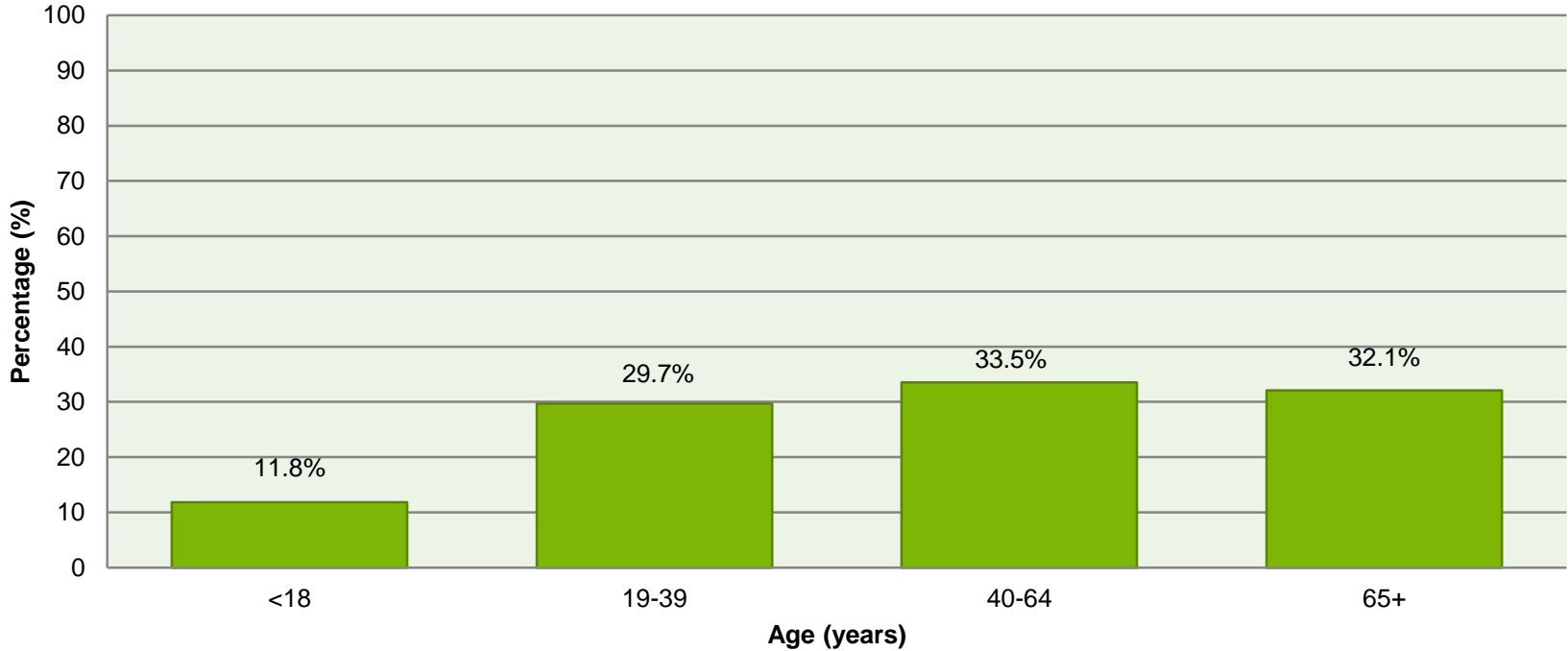
**Patient factors prompting performance an intra/extra oral exam at RECALL appointments**





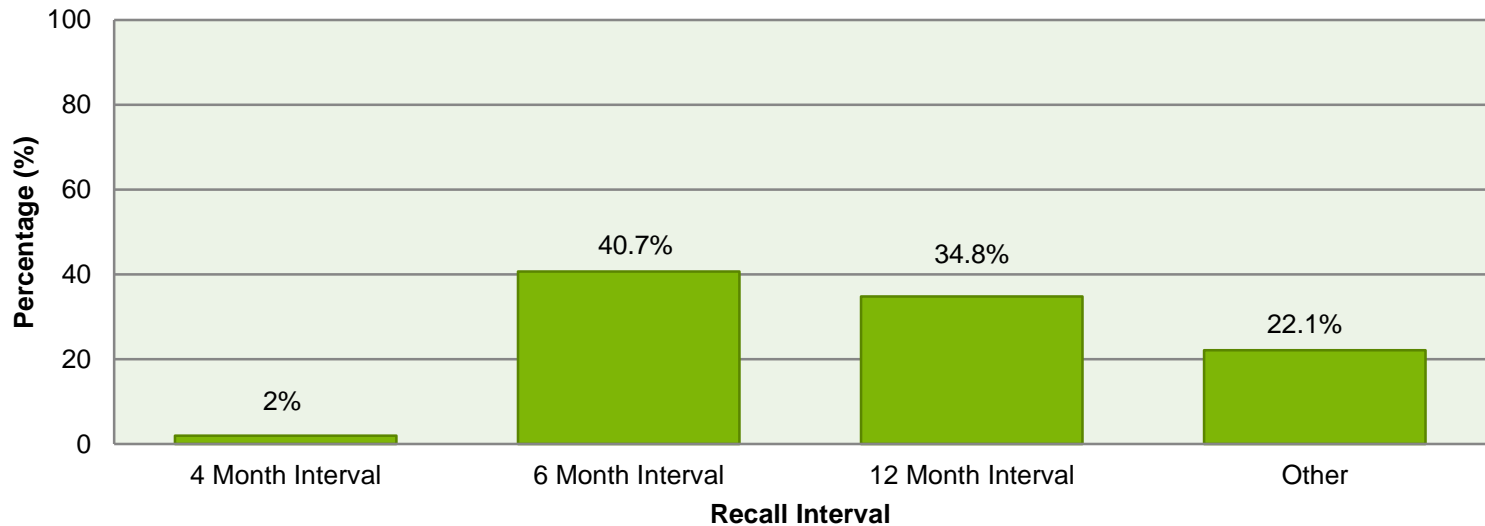
# PATIENT AGE

**Patient age prompting performance of an intra and extra oral, head and neck examination at the RECALL appointment**



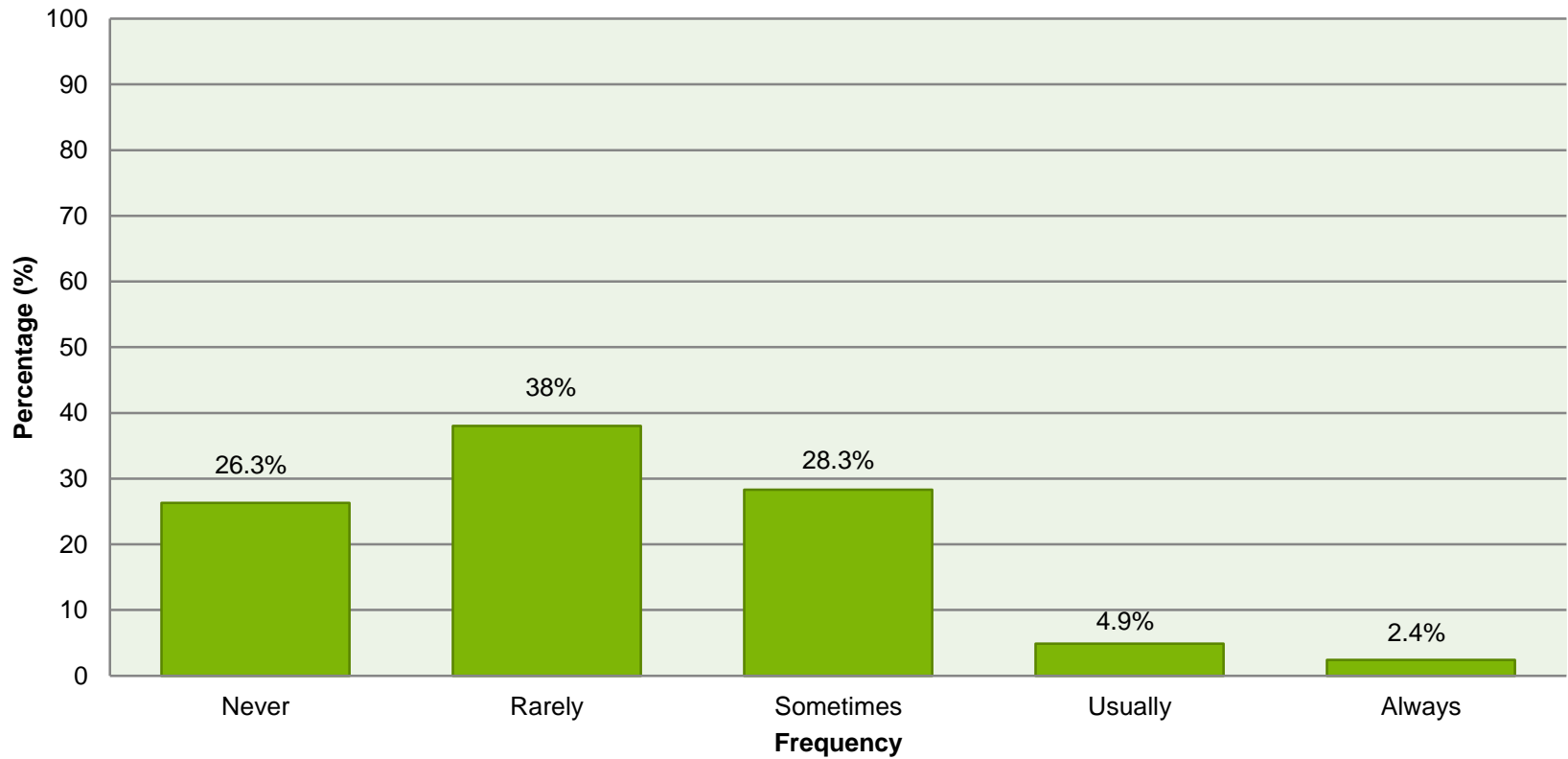
# RECALL INTERVALS

Recall intervals at which exams are performed



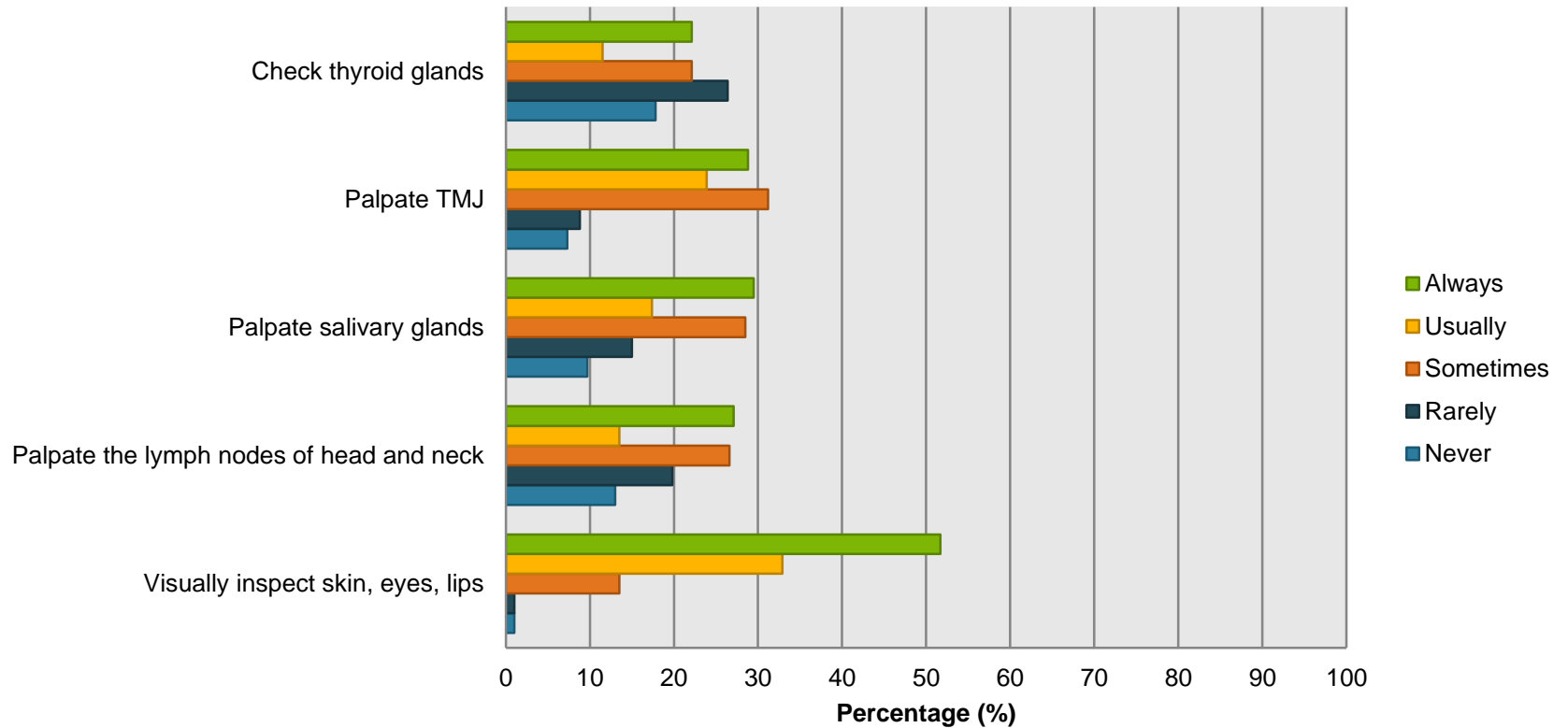
# SELF EXAMINATION

Provision of instruction for self examination



# EXTRA ORAL PERFORMANCE

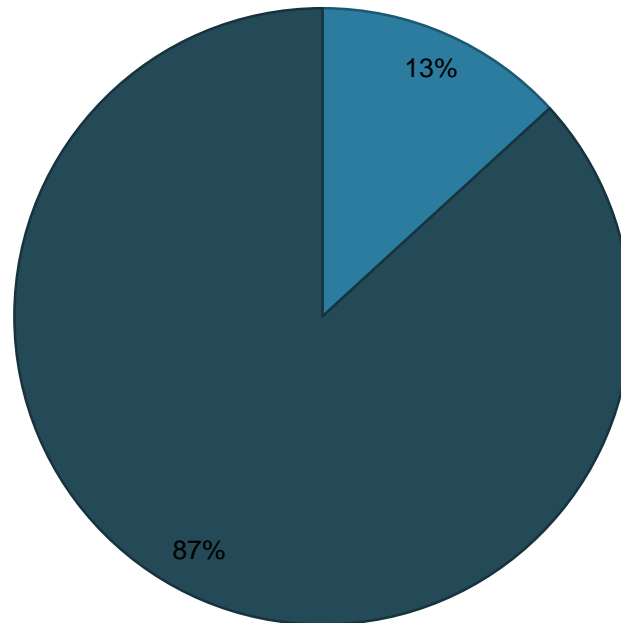
When performing an extra oral exam, do you:



# EXTRA ORAL PERFORMANCE

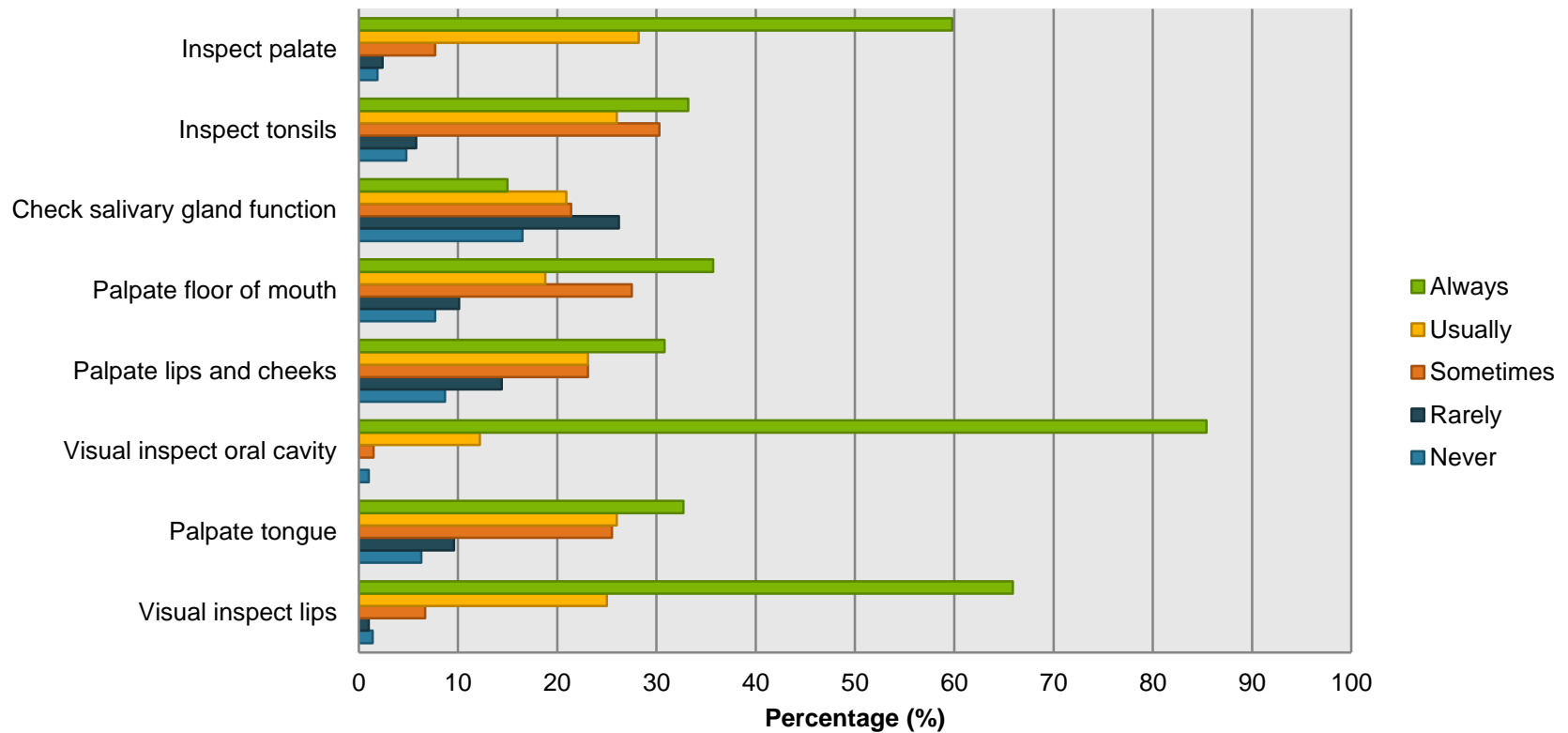
## Extra oral exam performance

■ Comprehensive ■ Partial



# INTRAORAL PERFORMANCE

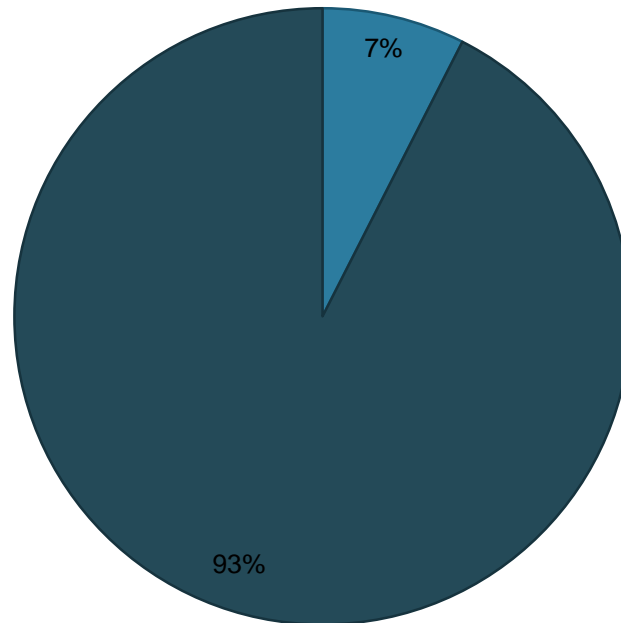
When performing an intra oral exam, do you?



# INTRAORAL PERFORMANCE

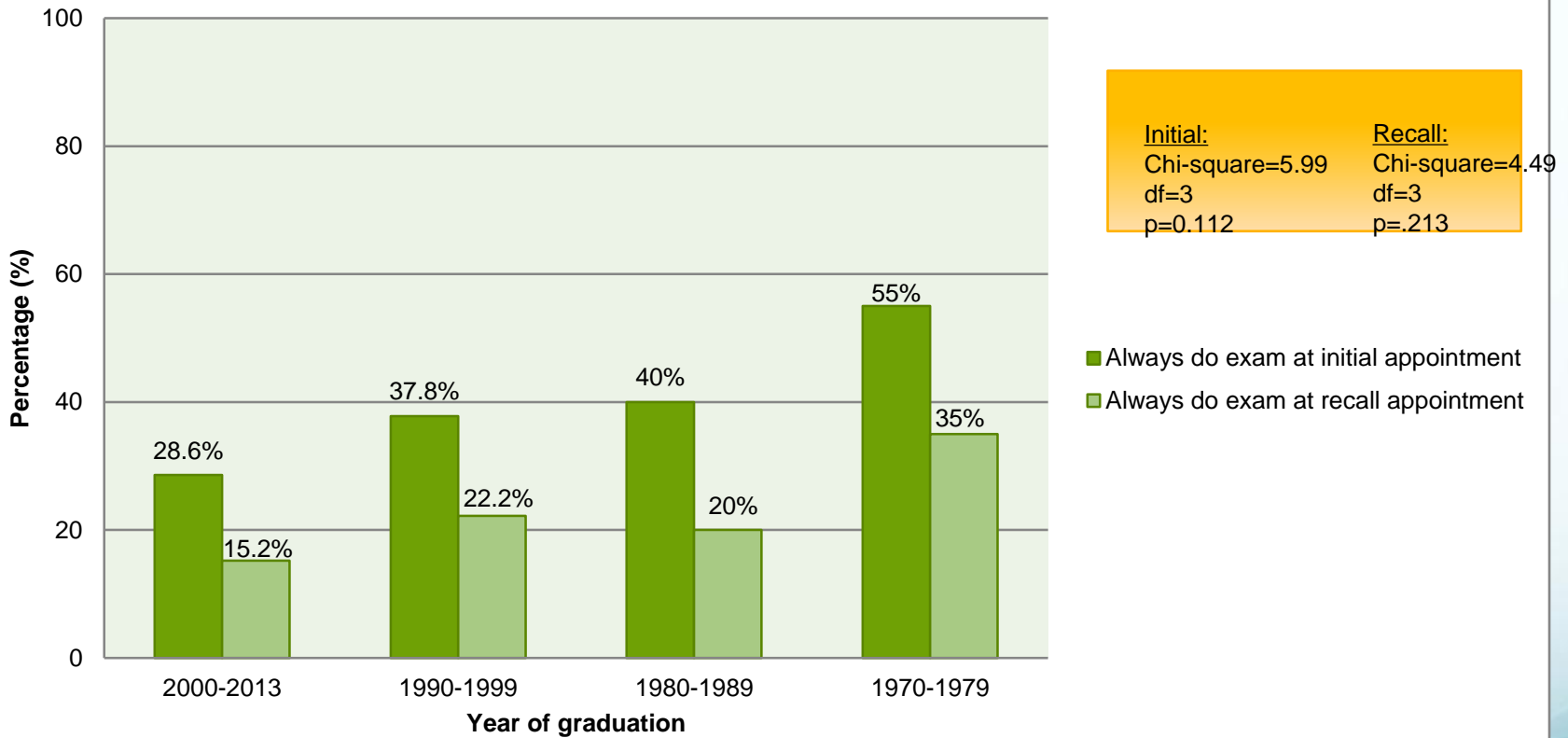
## Intra oral exam performance

■ Comprehensive ■ Partial



# COMPARATIVE ANALYSES

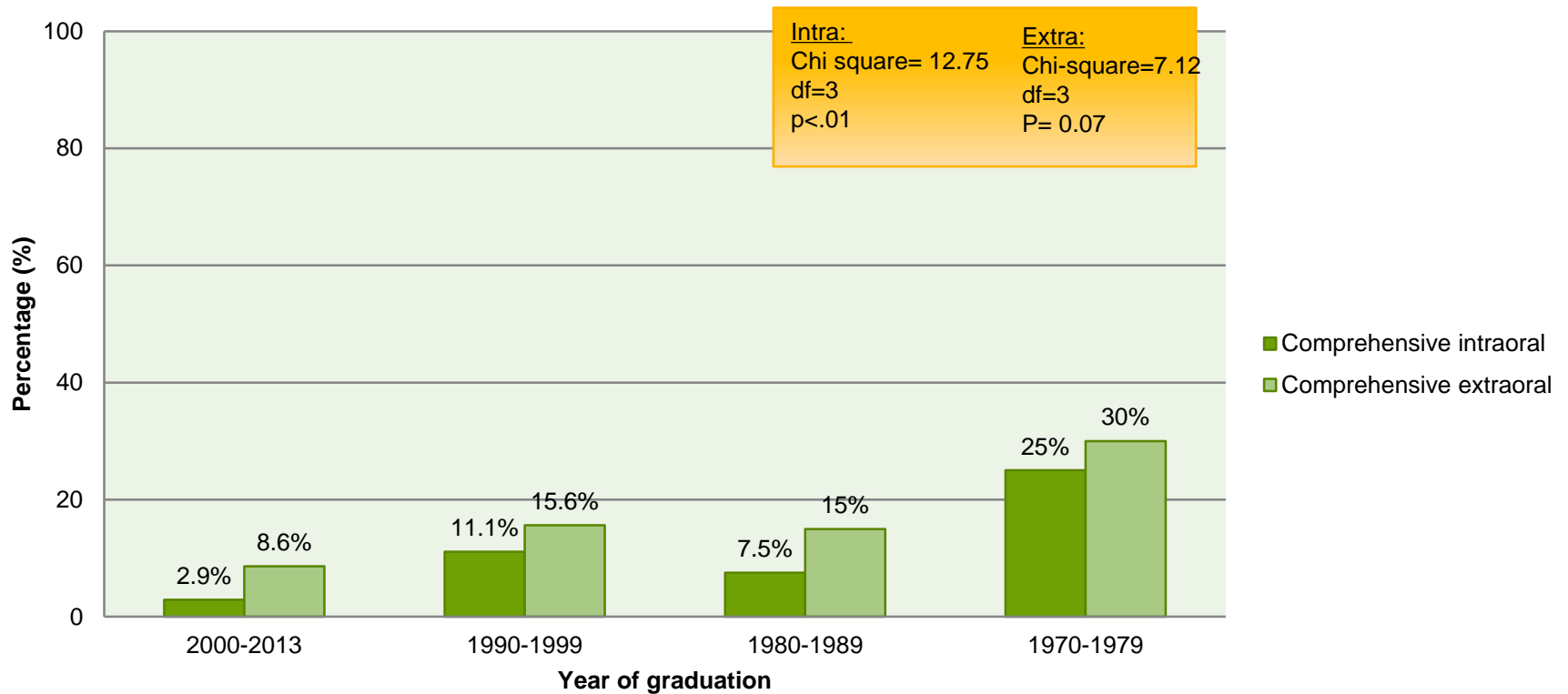
## Performance of exam at initial and recall appointments





# COMPARATIVE ANALYSES

## Comprehensive performance of intraoral and extraoral exams



# Logistic Regression Analyses

**Dependent variable:** Comprehensive intra oral exam

**Independent variables:** institute attended AND decade of graduation

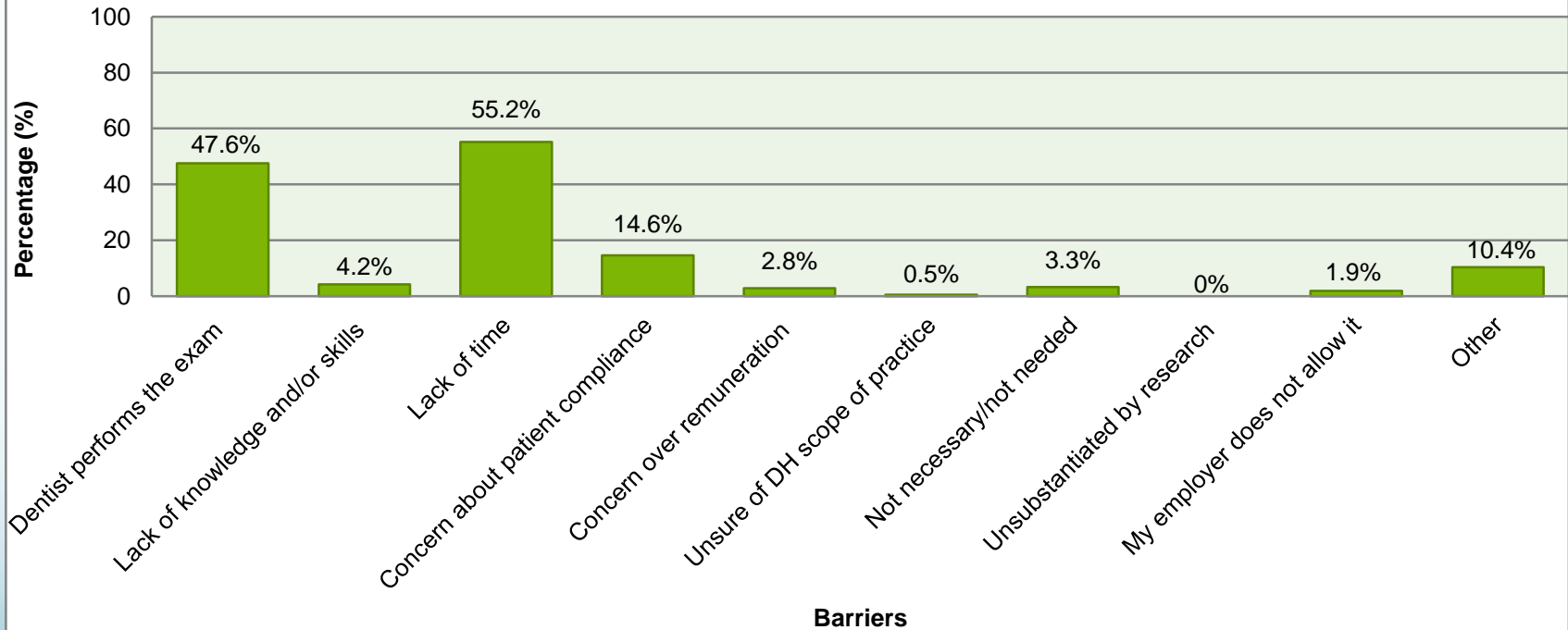
Overall regression model p value = 0.014

**Decade of graduation** was a significant predictor of performing a perfect intraoral exam ( $p=0.018$ )

Respondents who graduated in the decade **1970-79** were **11.3** times more likely to conduct a COMPREHENSIVE intra oral exam than respondents who graduated in **2000-2013**.

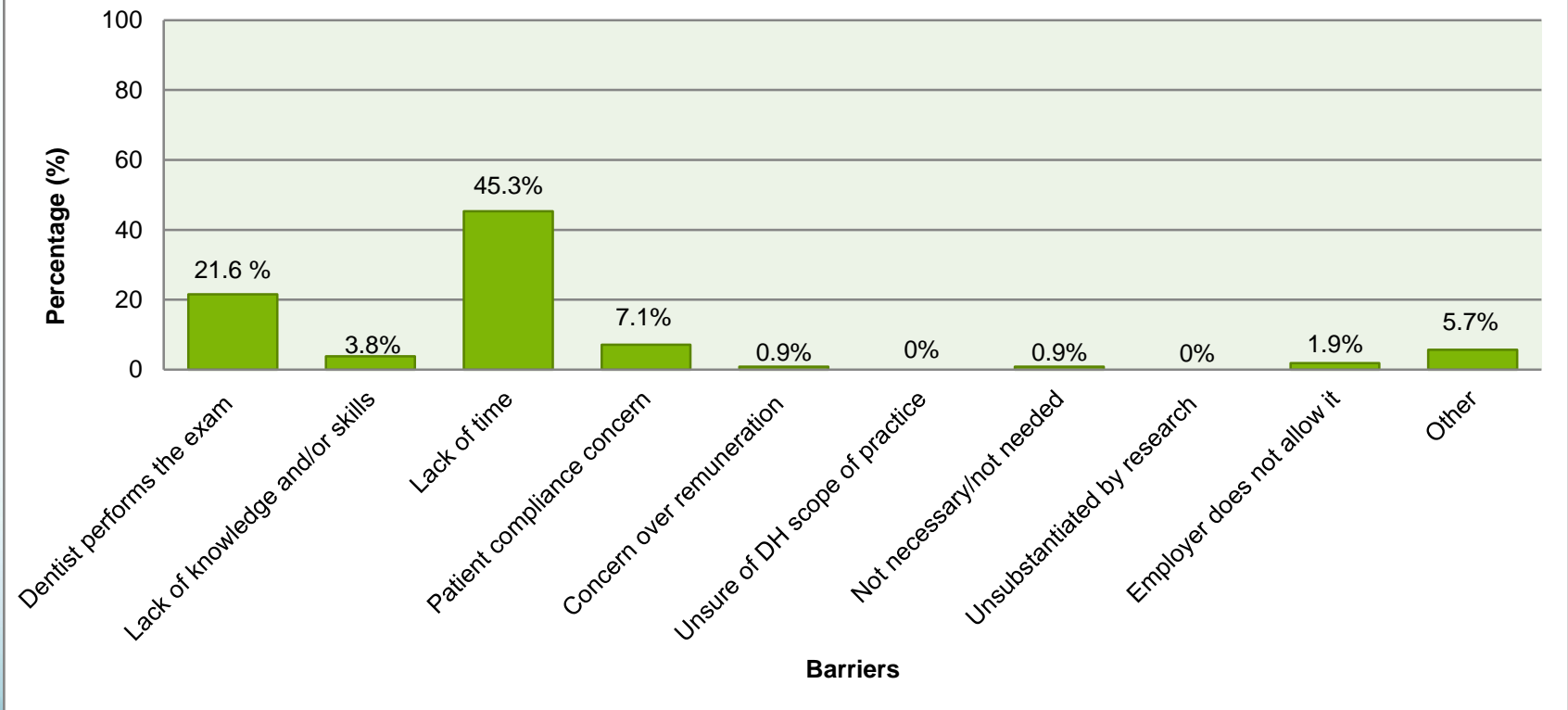
# BARRIERS

## Barriers to performing intra and extra oral, head and neck examinations routinely

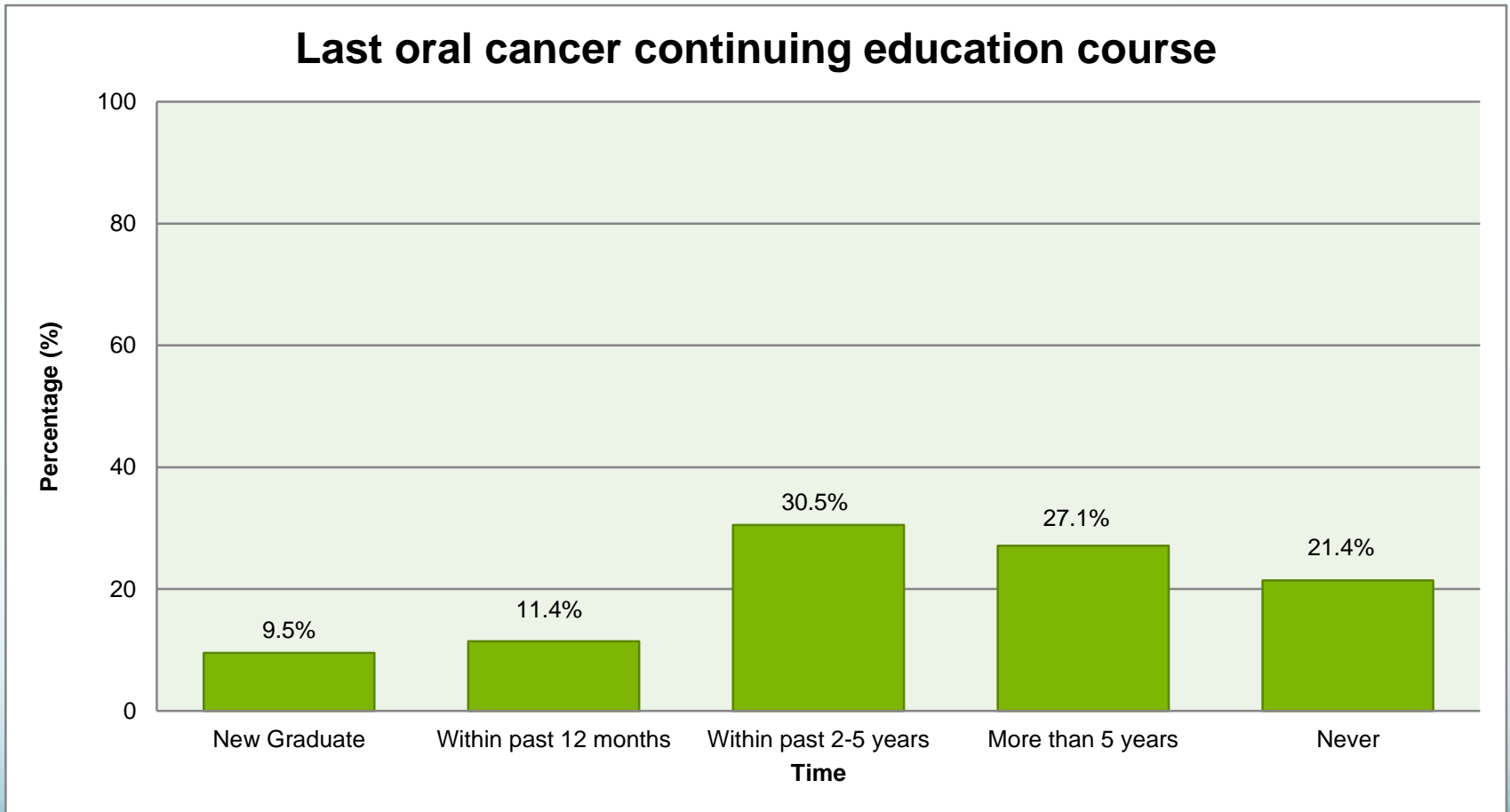


# BIGGEST BARRIER

The **BIGGEST** obstacle to performing intra and extra oral, head and neck examinations routinely



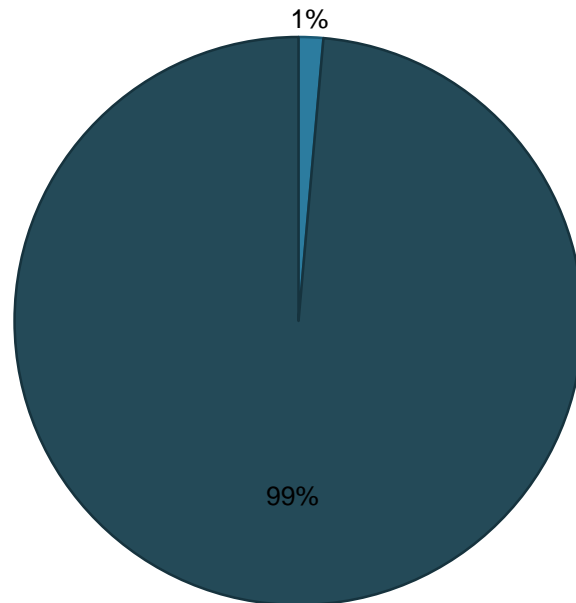
# CONTINUING EDUCATION



# CONTINUING EDUCATION

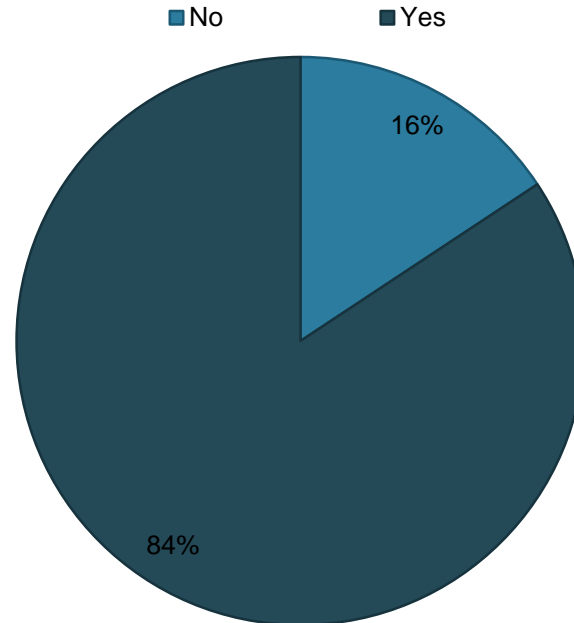
**Are you interested in attending continuing education courses on oral cancer in the future?**

■ No ■ Yes



# IDENTIFICATION OF SUSPICIOUS FINDING

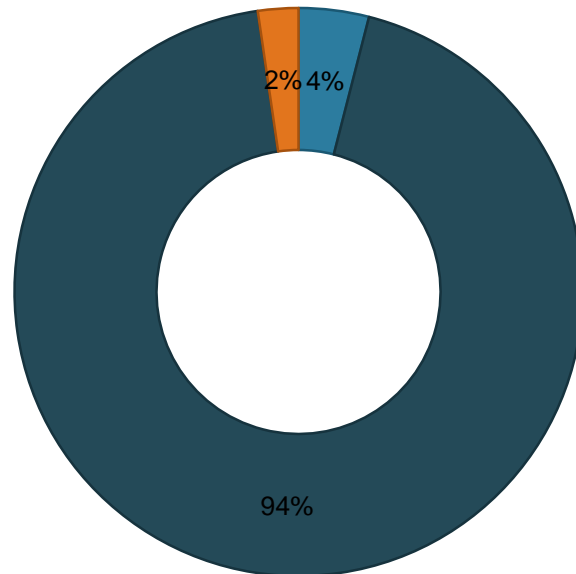
Have you ever identified a suspicious finding in the head and neck region?



# REFERRALS

**Have you ever directly or indirectly referred a patient for biopsy/diagnosis of a suspicious finding?**

■ No ■ Yes ■ Not sure





# QUALITATIVE THEMES

## 1) Respondents agree on the importance of the examination

- “I think whatever can be done to encourage more exams is helpful.”
- “I believe it is a valuable service we offer our patients.”
- “Performing head and neck exams is mandatory in my office and I also feel that it is an important practice.”

# QUALITATIVE THEMES

## 2) Exams are not being done

- “Rarely do I see my dentist do this exam and my hygienists never do one on me.”
- “I am the only hygienist [in my office] who takes the time to do an intra oral exam.”
- “I feel this isn't being performed often enough or routinely enough.”
- “In my dental office the dentist is supposed to, not sure if they are.”

# QUALITATIVE THEMES

## 3) Respondents offer suggestions

- “ To save time maybe this exam could be done in a private screening area while patients are waiting for their recare appointment.”

# **DISCUSSION & CONCLUSION**

# KEY QUESTIONS:

1. Are Dental Hygienists performing examinations **routinely**?
2. Are Dental Hygienists performing a **comprehensive** examination as taught by accredited institutions?
3. If not performing the examination, what are the **barriers**?

# 1) Routine performance

**35.6%** of dental hygienists report **always** performing the exam at the **INITIAL** appointment.

- 20.7% of DHs report usually performing the exam

**19.9%** of dental hygienists report **always** performing the exam at the **RECALL** appointment.

- 24.3% of DHs report usually performing the exam

## 2) Comprehensive Exams

**7%** of dental hygienists report performing a **COMPREHENSIVE** intraoral examination

**13%** of dental hygienists report performing a **COMPREHENSIVE** extra oral examination

### Intra Oral

Inspect palate  
Inspect tonsils  
Check salivary gland function  
Palpate the floor of the mouth  
Palpate lips and cheeks  
Visually inspect oral cavity  
Palpate tongue  
Visually inspect lips

### Extra Oral

Check thyroid gland  
Palpate TMJ  
Palpate salivary glands  
Palpate the lymph nodes of the head and neck  
Visually inspect skin, eyes and lips

- **91.9%** of dental hygienists rated their personal knowledge or skill regarding the exam as good to very good.

# 3) Barriers

Top three barriers to performing exam:

Lack of time (45.2%)

Dentists performs the exam (21.6%)

Lack of patient compliance (7.1%)



# FACTORS PROMPTING EXAM

## **2014 STUDY:**

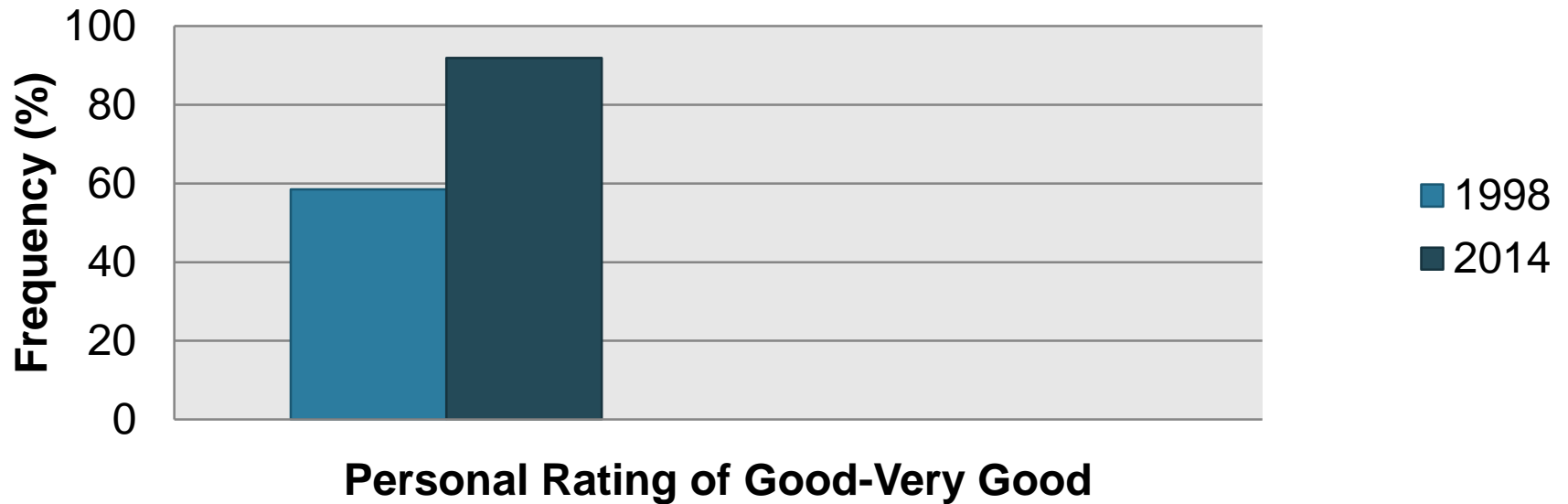
- Tobacco use
- Known history of cancer
- Known alcohol use

## **1998 STUDY:**

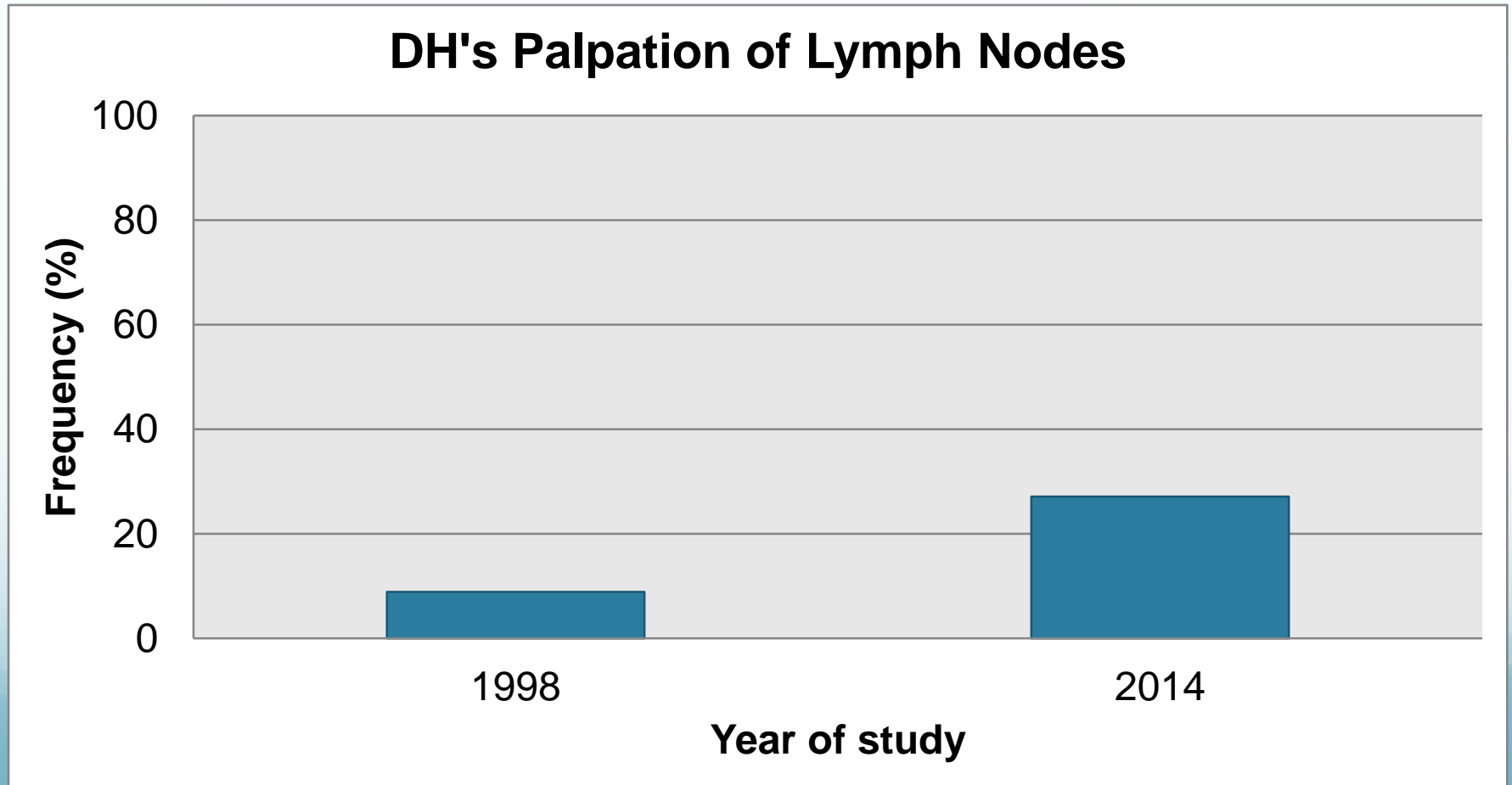
- Patient's history of cancer
- Patient's tobacco use
- Patient's alcohol use

# SELF PERCEIVED SKILLS

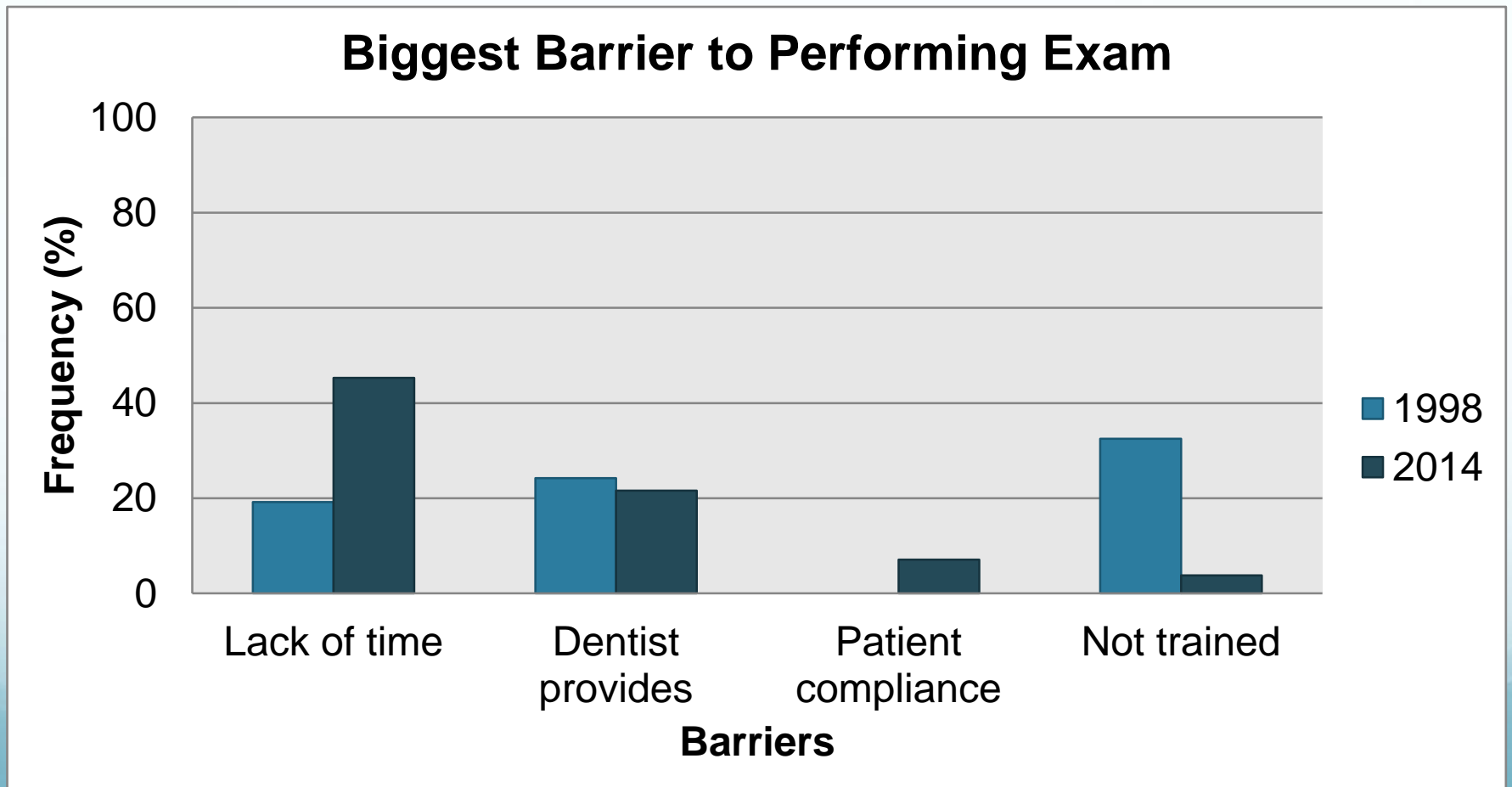
Personal rating of ones own knowledge/Skill



# PERFORMANCE IMPROVEMENT



# BARRIERS



# Significant Findings

Respondents who graduated in the decade **1970-1979** were **11.3** times more likely to conduct a COMPREHENSIVE intra oral exam than respondents who graduated in **2000-2013**.

- **Decade of graduation** was a significant predictor of performing a perfect intraoral exam ( $p=0.018$ )

# LIMITATIONS OF THE STUDY

## INTERNAL VALIDITY:

- Recall bias

## EXTERNAL VALIDITY:

- Respondents may have a greater knowledge or interest than non-respondents.
- Individual's ability to complete an online survey

# Conclusions

- Dental hygienists believe that these examinations are an integral part of their patient care
  - But, only 35% are always performing some portion the exam at the initial appointment and
  - 19% are always performing some portion of the exam at recall appointments
- Results indicate that Nova Scotia dental hygienists need more time to perform exam
- Participants indicate that more CE courses should be offered
- Dental hygienists who have been practicing longer are performing comprehensive examinations more frequently than others

# Our Responsibility

Dental hygienists are in an ideal position to perform oral cancer screening

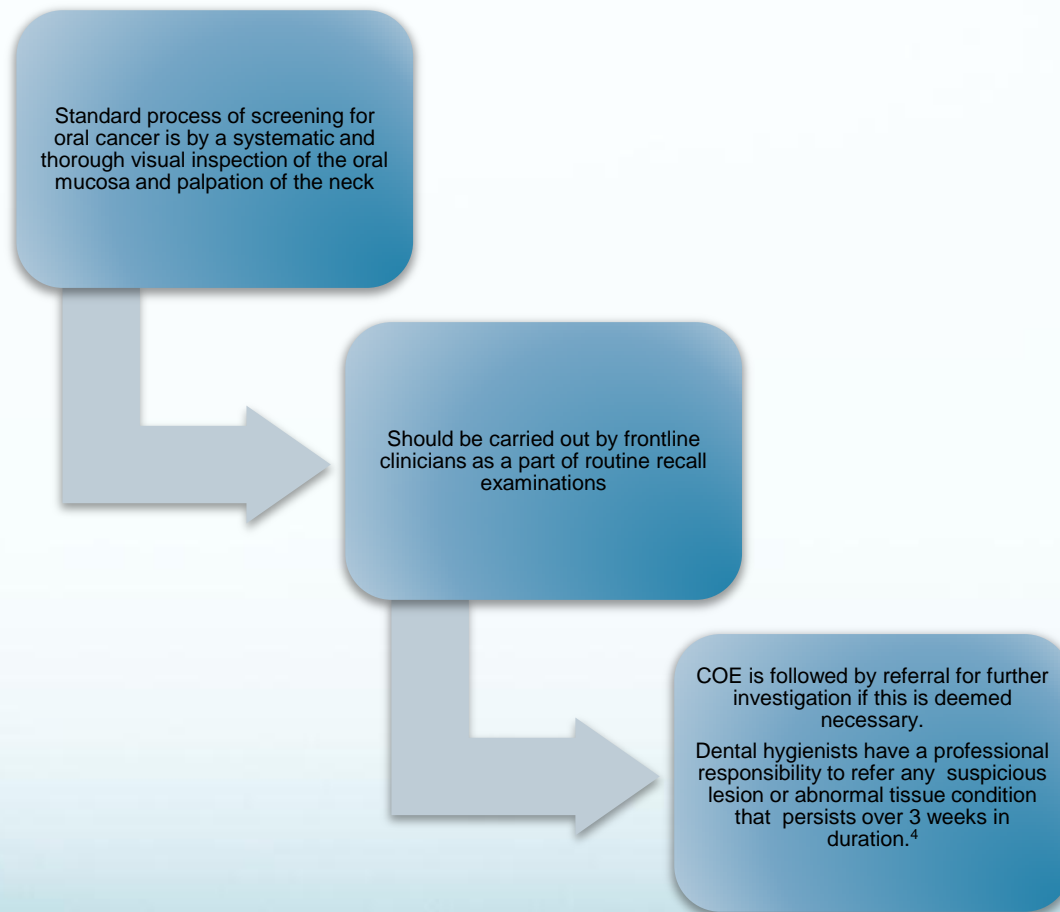
Dental hygienists are well trained to perform intra and extra oral examinations

Dental hygienists have an ethical responsibility to conduct comprehensive intra and extra oral examinations<sup>5</sup>

Interprofessional health collaboration is also a professional responsibility<sup>4</sup>



# Clinical Pathway



# RECOMMENDATIONS

Review office policy

- Discuss office protocols for intra/extra oral examinations
- Clarify responsibilities for examinations
- Review referral pathways

Educate other dental professionals on the scope of practice of dental hygienists.

# RECOMENDATIONS

## Further Research:

- Use this study as a pilot project and compare Nova Scotia to other Canadian provinces
- Survey dentists with the same instrument



# ACKNOWLEDGEMENTS

Dr. Martha Smith-Brillant

- Research Development Officer

Patricia Grant

- Registrar, College of Dental Hygienists of Nova Scotia

Professor Cara Tax

- Research Supervisor

Dr. Joanne Clovis

- Collaborator