

# An Exploration of Dental Examination Frequency and Socioeconomic Status

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## Introduction

- Routine dental examinations and cleanings play a crucial role in maintaining good oral health (CDC, 2021)
- Despite being largely preventable, **dental diseases** such as dental caries, periodontal diseases, and oral cancers, remain a major public health problem, as they **can have a significant negative impact on one's quality of life** (Watt, Listl, Peres & Heilmann, 2015)
- Treatment for these issues can be costly for individuals as well as health care systems (Watt, Listl, Peres & Heilmann, 2015)
- **Inequalities and disparities exist when it comes to oral health care and accessing dental services and they disproportionately impact socially disadvantaged members of society** (Mouradian, Wehr & Crall, 2000).
- Many individuals in the US who can not afford out-of-pocket dental care, do not have dental insurance, and live in communities that do not have access to fluoridated water and school sealant programs, tend to have poorer oral health outcomes (CDC, 2021).

## Research Questions

- Is dental examination frequency **associated** with socioeconomic status among adolescents?
- Does the association between dental examination frequency and socioeconomic status **differ for individuals based on their SES level?**
- Does the **probability** an individual receiving a dental examination change based on their socioeconomic status?

## Methods

### Sample

- Respondents (n=6,504) were drawn Wave 1 of **the National Study of Adolescent to Adult Health**, a nationally representative sample of **adolescents from the United States** in grades 7-12 during the years of 1994-1995

### Measures

- **Dental examinations** were evaluated through **frequency** using the question, "when did you last have a dental examination by a dentist or hygienist?" Multiple levels were coded dichotomously in terms of having a dental examination within the last year or not.
- **Socioeconomic status** was assessed based on a **cumulative index score** that combined the responses of 3 questions pertaining to **financial stability/income and the education level of an adolescent's father and mother**
- The 3 SES index variables were dichotomously coded and scores on the index ranged from 0 (being of lower SES) to 3 (being of higher SES)

## Results

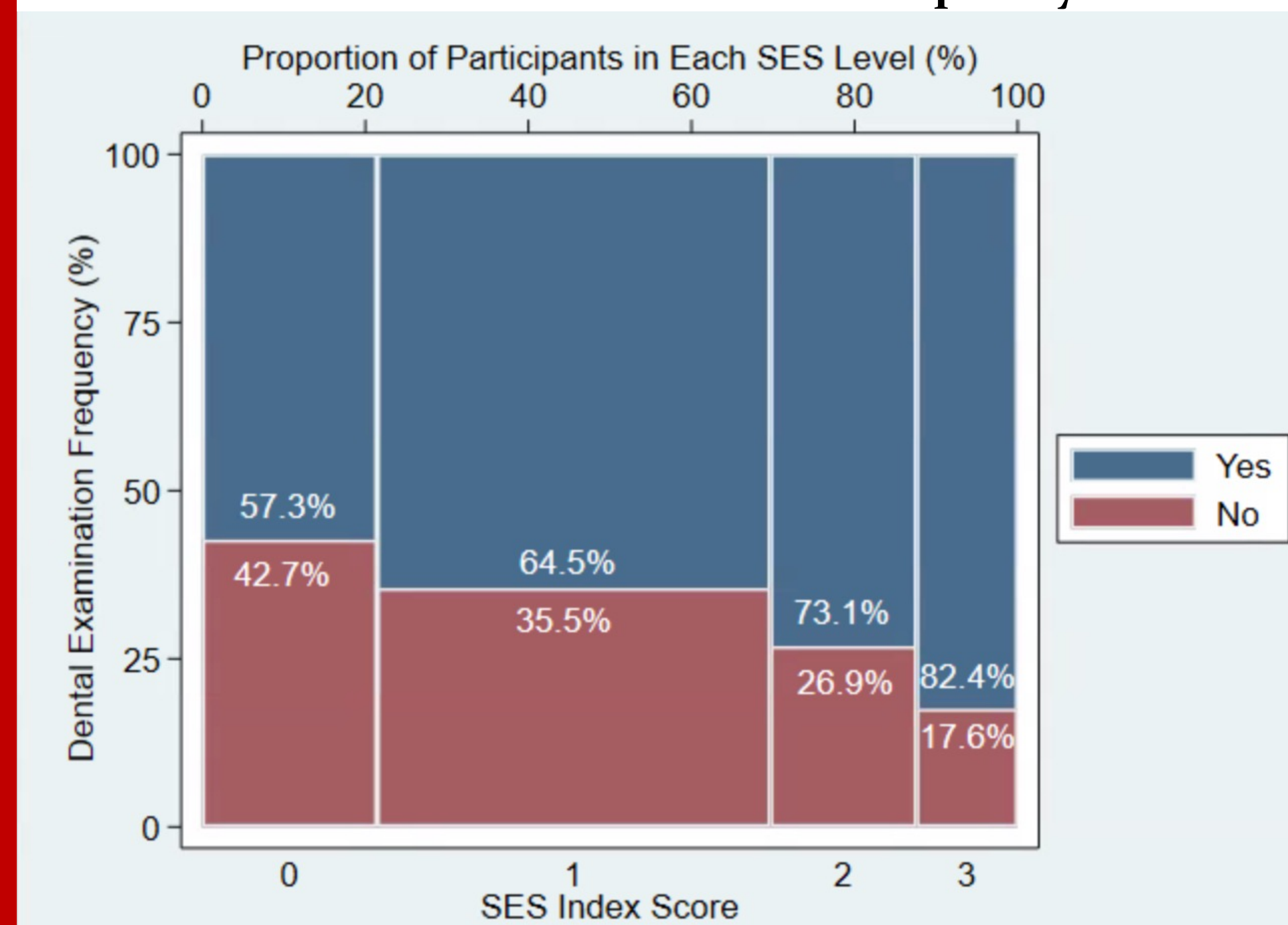
### Univariate

- **66.73%** of respondents received a dental examination in the past year
- The distribution of respondent SES index score was **skewed right**, with **48.25%** of participants scoring "1" on the SES index

### Bivariate

- A Chi-Square test of independence showed SES index scores of adolescents was **significantly associated** with socioeconomic index score ( $X^2 = 173.2120$ , 3 d.f.,  $p=0.000$ )
- Additionally, a post-hoc test using a Bonferroni Adjustment revealed that there was a **significant association** within all levels of the socioeconomic status (Figure 1)
- A logistic regression also showed that socioeconomic index score was **significantly and positively associated** with dental examination frequency (O.R. 1.49, CI 1.40-1.58  $p=0.0001$ ).

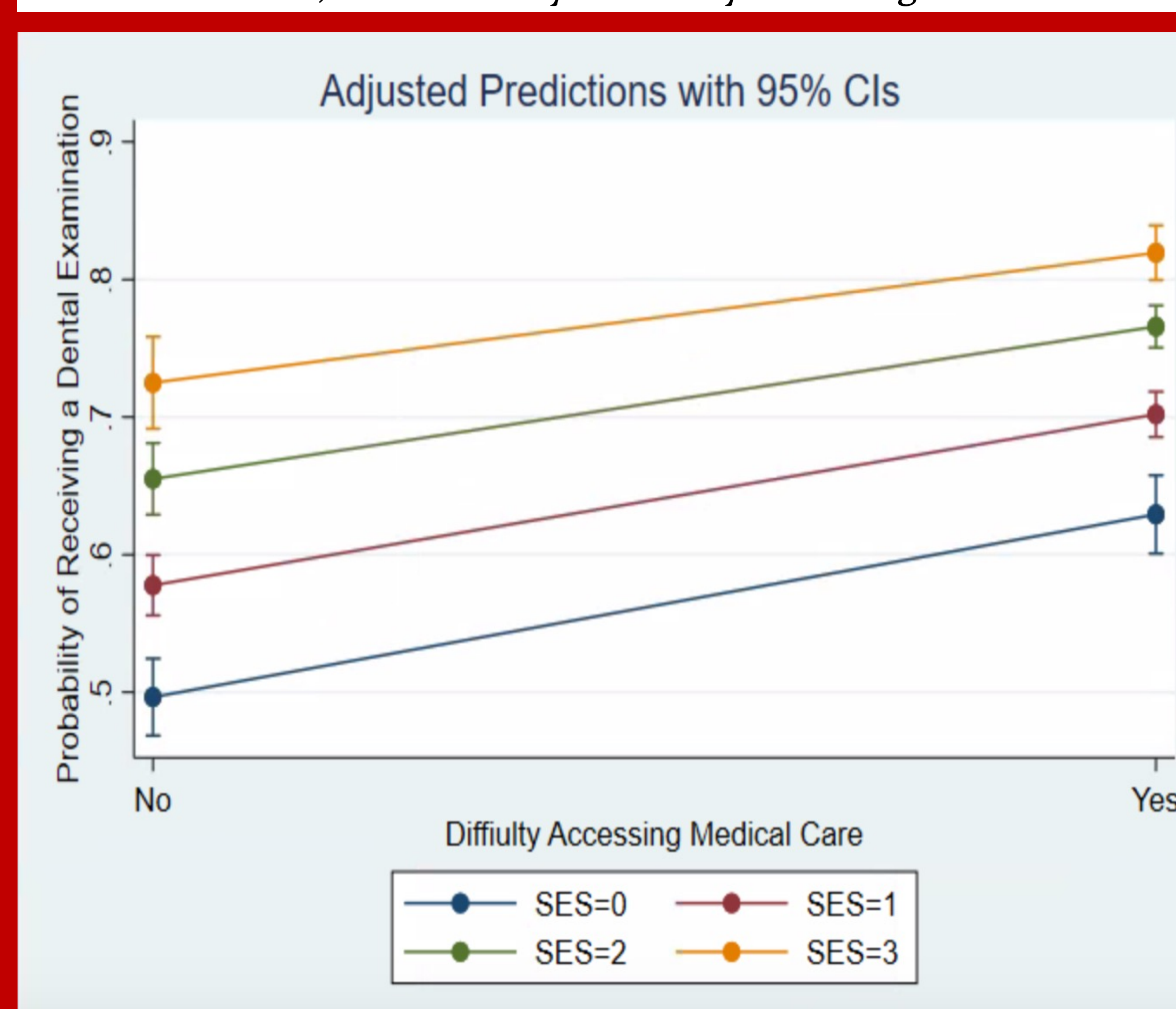
Figure 1. Proportion of Participants in Each SES Level and Their Dental Examination Frequency



### Multivariate

- Multiple logistic regression demonstrated that having to medical care **increased the probability** of receiving a dental examination at all levels of SES (Figure 2).
- After **controlling for difficulty accessing medical care**, socioeconomic status is still significantly associated with dental examination frequency ( $p=0.000$  Figure 2).
- Additionally, the odds of receiving a dental examination is **1.38 times greater** for each increase in SES index score when medical care is controlled for.

Figure 2. Probability of Receiving a Dental Examination for Each SES Level, controlled by Difficulty Accessing Medical Care



## Discussion

- The odds of receiving a dental examination **increased by 1.49** when SES index score increases by one level
- among adolescents, those with a **lower SES** index score of 0 or 1 **had fewer regular dental examinations** compared to those with a higher SES index score of 2 or 3
- Statistical analyses based on this sample provide **further evidence to the existence of disparities related to oral health and dental service** in the United States
- By emphasizing the importance of this public health issue at the national and global level, it will hopefully stimulate further debate and discussion on the topic
- Additionally, the findings of this analysis and similar studies can **inform evidence based-action and collaboration efforts** among researchers, policymakers, public health practitioners, and the general public to **narrow SES related disparities and inequalities**.