Measuring the Impact of Tooth Removal and Delayed Dental Services on Well-Being and Life Satisfaction: A Comparison with Major Chronic Diseases, Texas 2010

BACKGROUND

The Centers for Disease Control and Prevention provides $6.8 million to 20 states to strengthen oral health programs and the provision of oral health services (1). This funding remains separate in Texas from chronic disease prevention funds related to conditions such as asthma, cardiovascular disease, and diabetes. Consideration for oral health issues remains minimal within the chronic disease setting in Texas. The actual comparison between the impact of oral health issues and the impacts of traditional chronic diseases has not been described in Texas.

While oral diseases are recognized to cause morbidity (2), impacts of access to dental services have been less well-defined in the general adult population. Oral quality of life measures have frequently focused on the impact of major tooth loss, especially in elderly populations (3,4). Less is known regarding the burden of major tooth loss and delayed dental care services in younger adult populations.

OBJECTIVE

The study’s purpose is to inform prioritizing oral health issues within a chronic disease setting in Texas by measuring the health impact of permanent tooth removal and delayed dental care services.

METHODS

Data came from the 2010 Texas Behavioral Risk Factor Surveillance System. Three binary variables were used to characterize oral health issues:

- Delayed dental services: Never visited a dentist or a dental clinic for any reason OR visit 5 or more years ago.
- Major tooth loss: 6 or more teeth removed because of tooth decay or gum disease.
- Delayed tooth cleaning: Major tooth loss had been managed by a dentist or dental hygienist OR cleaning 5 or more years ago.

Three binary variables were used to characterize impact on health:

- Poor physical health: 1 or more days physical health not good during the past 30 days.
- Poor mental health: 1 or more days mental health not good during the past 30 days.
- Dissatisfied with life: Dissatisfied or very dissatisfied with life in general.

Cardiovascular disease, diabetes, and asthma status were determined by self-reported doctor diagnosis.

Logistic regression models were used to provide measures of associations (odds ratios with associated 95% confidence intervals). Models were adjusted for age, sex, race, ethnicity, education level, income level, body mass index, marital status, current smoking status, alcohol consumption, and physical activity level.

Sex and age group (18−39, 40−64, ≥ 65) were treated as potential effect modifiers. Models evaluating effect modification were also adjusted for the presence of major chronic diseases. Statistical significance was determined at the P < .05 level. All analyses were conducted in Stata v. 11.0.

RESULTS

Approximately 1 in 2 adults in the general Texas adult population reported at least one or more oral health issues. A greater proportion of adults reported major tooth removal (26.6%) than delayed dental services (15.3%) and delayed tooth cleaning (15.8%).

Respondents reporting delayed dental services and delayed tooth cleaning were more likely to be non-White, unemployed, current smokers, obese, not married, heavy alcohol consumers, and less physically active.

The majority of persons who reported delayed tooth cleaning and delayed dental health services were young adults (18−39 years).

Comparison between dental conditions and chronic diseases (Figures 1a, 1b, 1c)

The adjusted odds ratio for the association between delayed dental services and all three major outcomes were similar in young adults: 2.16 (1.40−3.53) peer mental health; 2.12 (1.31−3.42) peer physical health; 2.56 (1.25−5.32) life dissatisfaction.

Adjusted associations between tooth loss and poor mental health, poor physical health, and life dissatisfaction were not statistically significant for any of the three age groups.

Young adults with delayed tooth cleaning displayed four times the odds of having life dissatisfaction compared to young adults without delayed tooth cleaning: 4.41 (2.40−8.71) unadjusted; 4.05 (2.10−7.83) adjusted.

CONCLUSION

- Oral health issues have high prevalence in the general Texas adult population.
- Delayed dental care and tooth removal have strong associations with lack of well-being and life dissatisfaction among Texas adults.
- These associations are comparable to and even stronger for certain measures than the impact of asthma, diabetes, and cardiovascular disease.
- Delayed dental services have a particularly negative impact in younger adult populations.
- Results indicate higher priority is needed for oral health issues in health promotion activities.
- Priority should also be given to increasing access to dental health services for young adults.

References