



# Oral Hygiene Behaviors and Prevalence of Dental Caries for Students Residing on a Kentucky University Campus

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## INTRODUCTION AND PURPOSE

### Literature:

- Appalachia faces oral health disparities to combat the “silent epidemic”, where more than 90% of the Appalachian population suffers from tooth decay by 44 years of age and over 1/2 of adults have periodontal disease (Savage et al., 2018).
- Residents in rural Appalachia are less likely than urban residents to visit dentists, more likely to have no dental insurance, suffer disproportionate rates of missing teeth (Savage et al., 2018).
- The low range of dental services that Medicaid can cover in Kentucky affects about 1/4 of the population with unmet dental services (Wang et al., 2021).
- In a survey conducted to investigate oral health behaviors among university students in Indonesia, Malaysia, Myanmar, Thailand, and Vietnam, researchers found the following: 27.7% of students reported sometimes having tooth ache in the past 12 months, 39.4% reported having one or more cavities, 20.3% did not brush their teeth twice or more times a day, 89.5% did not use toothpicks twice or more times a day, and 30.9% had never been to a dentist (Peltzer & Pengpid, 2017).
- The CDC found that the prevalence of dental caries among American adults aged 20-64 years old was 90% (Oral Health Surveillance Report, 2019, 2021).
- Oral health should always be looked at as a part of an individual's general health, as oral disease have strong links to other noncommunicable diseases such as diabetes and cardiovascular diseases (Duangthip & Chu, 2020).

### Purpose of this study:

- The purpose of this study was to assess self-reported oral hygiene practices and prevalence of dental caries among Kentucky students living on campus.

### Hypotheses:

- Students who reside in suite style dorms will have a higher frequency brushing, flossing, and lower prevalence of dental caries, compared to students who live in community style rooms.
- Students who identify as females will have better oral hygiene behaviors than students who identify as males.

## METHOD

### Participants:

- Undergraduate students, 18 years of age and older and enrolled at a regional Kentucky university campus.
- Participants from the Kentucky university campus must be an undergraduate student and be a resident of student housing.

### Survey:

- The Oral Health Behaviors for University Students (OHBUS) Survey is a 21-question survey assessing student behaviors regarding their oral hygiene and dental caries. The survey was created by a graduate researcher and their committee. The OHBUS was pilot-tested for clarity and understanding.
- 5 demographic questions, 7 questions regarding a participant's oral hygiene behaviors, 1 question regarding dental insurance, 1 question about smoking behaviors, 1 question about chewing tobacco, 2 questions regarding sugar food and drink intake; and 4 questions about perceived oral health.
- Distribution of survey was via email between March 6<sup>th</sup>- 24<sup>th</sup>, 2023.
- 333 students completed the survey

### Data Analysis:

- Means, Standard deviations, Proportions/Percentages, and Chi square analysis

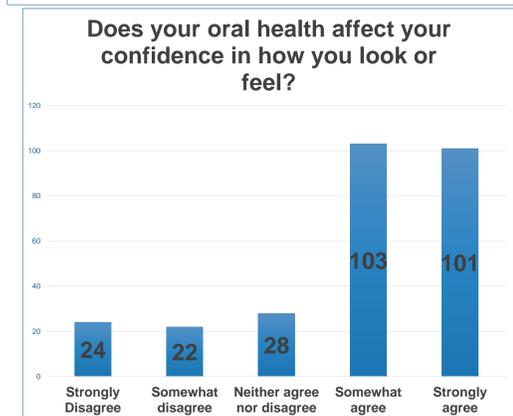
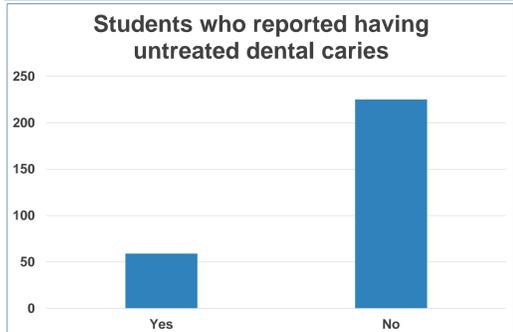
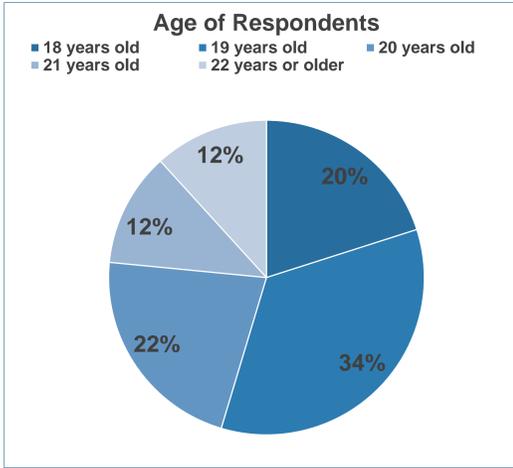
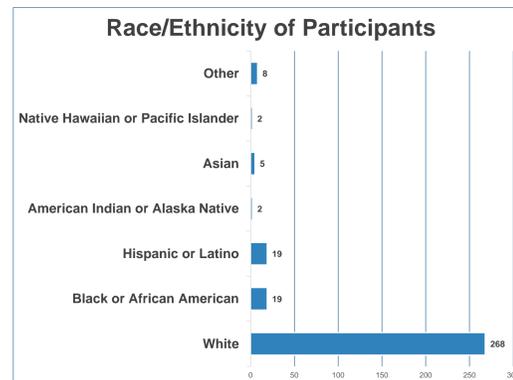
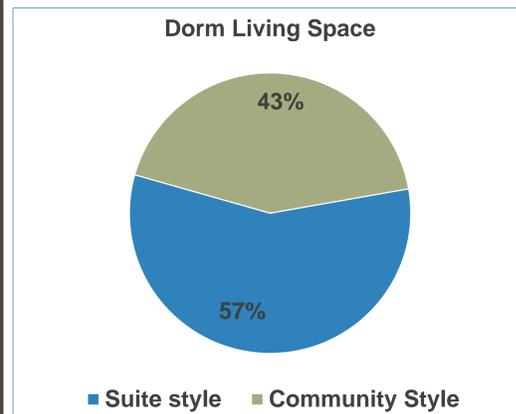
## RESULTS: DATA & GRAPHICS

| Oral health behaviors/ dental caries | Suite Style n=161 | Community Style n=122 | $\chi^2$ | P-value |
|--------------------------------------|-------------------|-----------------------|----------|---------|
| Brushing                             | 148               | 97                    | 9.21     | 0.002*  |
| Flossing                             | 90                | 61                    | .97      | .324    |
| Dental caries                        | 33                | 25                    | 0.0      | .99     |

\*p<.05

| Oral health behaviors/ dental Caries | Male n=49 | Female n=202 | $\chi^2$ | P-value |
|--------------------------------------|-----------|--------------|----------|---------|
| Brushing                             | 43        | 185          | 0.69     | 0.41    |
| Other Cleaning Aids                  | 23        | 117          | 1.93     | .17     |
| Dental caries                        | 5         | 42           | 2.91     | .09     |

\*p<.05



## RESULTS AND DISCUSSION

**Students who reside in suite style dorms will have a higher frequency brushing, flossing, and lower prevalence of dental caries, compared to students who live in community style rooms.**

- The study showed a statistically significant difference (p<.05) between dorm styles and brushing teeth with the proportion of suite style residents reporting more brushing,  $\chi^2(1, n=283)=9.21, p= 0.002$ . The study showed that there was no statistically significant difference between dorm style and flossing,  $\chi^2(1, n=283)=0.971, p= 0.324$ , or between dorm style and self-reported dental caries,  $\chi^2(1, n=283) <.0001, p= 0.99$ .

**Students who identify as females will have better oral hygiene behaviors than students who identify as males.**

- The study showed no statistically significant difference (p<.05) between males/females and brushing,  $\chi^2(1, n=251)=0.69, p= 0.69$ . Additionally, there was no statistically significant difference (p<.05) between males/females reporting they used other cleaning aids  $\chi^2(1, n=283)=1.93, p= 0.17$ . Lastly, there was no statistical significance (p<0.05) in results between males/females and prevalence of self-reported dental caries  $\chi^2(1, n=283)=2.91, p= 0.09$ .

### Other findings

- Results of the study revealed that the self reported prevalence of dental caries was 20% among survey participants.
- 10% of males reported dental caries compared to 20% of females
- 73.4% of students reported that their oral health played a role in self confidence and how they looked or felt.

## Implications and Recommendations

- Whether students live in a suite style or community style dorm affects brushing teeth behaviors. However, whether a student lives in a suite style or community style dorm does not affect flossing behaviors or number of self reported dental caries.
- Gender does not seem to play role in oral health behaviors or self reported dental caries.
- Future studies should investigate oral health behaviors based on age and/or race/ethnicity. Another focus should be on assessing oral health knowledge in students residing in on campus dorms. Additionally, further studies can look at overall general perceptions of their oral health.

## REFERENCES

- Duangthip, D., & Chu, C. H. (2020). Challenges in Oral Hygiene and Oral Health Policy. *Frontiers in Oral Health*, 1, 575428. <https://doi.org/10.3389/froh.2020.575428>
- Oral Health Surveillance Report, 2019. (2021, December 9). <https://www.cdc.gov/oralhealth/publications/OHSR-2019-index.html>
- Peltzer, K., & Pengpid, S. (2017). Dental health status and oral health behavior among university students from five ASEAN countries. *Nagoya Journal of Medical Science*, 79(2), 123–133. <https://doi.org/10.18999/nagjms.79.2.123>
- Savage, M. W., Scott, A. M., Aalboe, J. A., Burch, S., Stein VanArsdall, P. S., & Mullins, R. (2018). Oral health beliefs and behavior among young adults in Appalachian Kentucky. *Journal of Applied Communication Research*, 46(1), 113–134. <https://doi.org/10.1080/00909882.2017.1382705>
- Wang, T. T., Dixon, E. L., Bair, E. F., Ferrell, W., Linn, K. A., Volpp, K. G., Underhill, K., & Venkataramani, A. S. (2021). Oral health and oral health care use among able-bodied adults enrolled in Medicaid in Kentucky after Medicaid expansion: A mixed methods study. *Journal of the American Dental Association* (1939), 152(9), 747–755. <https://doi.org/10.1016/j.adaj.2021.04.016>

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