

4th Asia Pacific Congress & Expo on

Dental and Oral Health

July 27-29, 2015 Brisbane, Australia

Association between BMI and caries in children/adolescence

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Background: Obesity is a growing health problem internationally. Dental caries and obesity are multifactorial diseases and are associated with dietary and lifestyle habits. Few data showed association between BMI and caries in children/adolescence but limited data about such association in adult.

Methods: We conducted a cross-sectional study at Taif University outpatient clinic, Taif, Saudi Arabia. Any individuals' ≥ 18 years who had a visit to the Dental clinic from Mar-Jun 2014 were asked to participate. Baseline characteristics were obtained by the participated physician. We used the Decayed, Missing, and Filled (DMF) index (range 1-18) to determine the total number of teeth or surfaces that are decayed (D), missing (M), or filled (F) in an individual. Information about healthy eating, smoking, exercise, sleep pattern and teeth brushing were collected. We also measured the media consumption by hours that include watching TV, using computer, video game and using smart phone for entertainment. We used SPSS to analyze the data. The primary goal of this study is to assess the relationship between obesity and the prevalence of dental caries.

Result: Total of 199 individuals participated, all were male with mean age 27.15 yrs, mean BMI 26.45 kg/m², 94.5% were married, 28% were faculty members and 72% were students, 5% have T2D and 5.5% have HTN. 18.6% brush teeth $>1/d$, 36.2% brush it daily, 18.1% brush at least once wkly, and 27.1% ≤ 4 monthly. 11.5% were active smokers, 47% were passive smokers, 89% reports sedentary lifestyle, 82% reports optimal sleep (6-8 hrs/night). 65.5% drinks soda at least daily, 38.7% eats ≥ 1 serving of fruit/vegetable daily, and only 24.6% consume media < 3 hrs daily. Mean DMF index was 6.45, 60.1% have DMF index ≤ 6.45 (considered as low dental caries group, LDC group) compare 39.9% have DMF index > 6.45 (high dental caries group, HDC group). LDC group vs. HDC group has mean age of 26.76 yr vs. 27.8 yrs (p .50), mean BMI 26.1 vs. 27.0 (p .28) and 42.3% of the faculty and 37.6% of the students among the HDC group. Regarding the habits, 11.8% of the LDC vs. 11.7% in the HDC group were active smokers (P .98), 44.5% vs. 57.1% were passive smokers (P .18), 87.4% vs. 92.2% reports sedentary lifestyle (p .19), 10.9% vs. 11.7 reports sleeping < 6 hrs (p .39), 71.4% vs. 57.14% reports drinking soda daily (p .04), 37.82% vs. 38.96% eating fruits daily, 23.5% vs. 24.7% consume media < 3 hrs/d, and 57.14% vs. 51.94% brush their teeth daily (p .67). Regarding the measured CV markers, SBP 127.34 vs. 127.9 (p .82), DBP 75.6 vs. 76.7 (p .31), and resting HR 75.3 vs 76.94 (p .09). After adjustment of age, soda/fruit/vegetable intake, and teeth brushing no correlation found between BMI and passive smoking with the DMF index (p .55).

Conclusion: 39.9% were found to have high dental caries according to the DMF index; those were more likely to have non-statistically significant higher BMI, SBP, DBP and resting HR when compared to the low dental caries group.

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