The Importance of Oral and Dental Health in College Students

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Outline for this session

1. Describe the impact oral and dental health has on the overall health and well-being of college students.
2. Identify oral and dental structures, and risk factors in college students for dental and oral health problems.
4. Identify ways to develop dental health education interventions for college students.
5. Understand the dental health seeking habits of college students.
Impact of oral and dental health on the overall health and well-being of college students.
Healthy People 2020 (HP2020)

Oral health goal to “Prevent and control oral and craniofacial diseases, conditions, and injuries, and improve access to preventive services and dental care.”

Oral health objectives are:
(1) Oral Health of Children and Adolescents,
(2) Oral Health for Adults,
(3) Access to Preventive Services,
(4) Oral Health Interventions,
(5) monitoring Surveillance Systems, and
(6) Public Health Infrastructure.

There are also oral health interventions outlined in HP2020 which is found at HealthyPeople2020.gov.
Various Research Findings

• Calderon and Mallory (2014) said, “U.S. adolescents aged 12-19 are in serious distress because of poor oral health”.

• Dye, Xianfen, and Beltrán-Aguilar (2012) found:
  – that 20% of children between the ages of 5 and 11 have at least one tooth that is decaying and untreated;
  
  – 13% of adolescents between the ages of 12 and 19 have at least one tooth that is decaying and untreated.

  – Twenty-five percent of children and adolescents from families with low-incomes have untreated cavities in their teeth, while only 11% of children and adolescents from higher income homes have untreated cavities.
Various Research Findings

• In CDC (2014b) research, the 17.5% of 5-19 year old children have untreated dental caries/tooth decay and 27.4% of adults between ages 20-44 years old have tooth decay.

• The good news is that tooth decay is preventable. Fluoridated drinking water, fluoridated toothpaste, fluoridated tooth dental coating/sealant, and regular dental care are prevention efforts.
Various Research Findings

- Yarbrough, Nasseh, and Vujicic (2014) found the top three reasons for 18-34 year olds not going to a dentist were:
  - having a healthy mouth and not needing dental care (37.9%),
  - cost (35.7%), and
  - not having time to get to a dentist (28.4%).
Various Research Findings

• There are dramatic disparities in oral health within the United States and they cross all genders, ages, ethnic and racial groups, socioeconomics, and geographical regions.
• Periodontal disease is prominent in 47% of US adults and increases to 70% in adults over the age of 65.
• Periodontal disease is also higher in men than in women.
• The racial and ethnic groups with the poorest oral health are non-Hispanic blacks, Hispanics, American Indian and Alaska Natives.
• Mexican American and black non-Hispanic children ages 2-4 and 6-8 years demonstrate the greatest racial and ethnic disparities.
Oral and dental structures, and risk factors in college students for dental and oral health problems
Cross Sectional Anatomy of Tooth

- Enamel
- Dentin
- Gingiva
- Cementum
- Pulp
- Bone
- Periodontal Ligament
- Space

Crown
Root

http://www.britannica.com/science/tooth-anatomy
Bacterial Diversity in the Oral Cavity

• 700 + bacterial species detected in healthy oral cavity (Aas et al., 2005).
• Primary Intraoral Gram Negative Anaerobic Colonizers: Streptococci and Actinomyces

Caries
  – *Streptococcus mutans* (*S. mutans*) (Avila et al., 2009)
    • cariogenic microorganism breaks down simple and complex dietary sugar for energy
    • produces an acid waste product that demineralizes enamel

Periodontitis
  – *Actinobacillus* actinomycetemcomitans (*Aa*), *Porphyromonas gingivalis* (*P. gingivalis*), *Bacteroides* forsythus (*B. forsythus*)
  – Oral Bacteria that activate the host inflammatory response
  – Inflammatory disease and injury cannot develop without these bacteria. (Avila et al., 2009)
Oral-Systemic Link

- Cardiovascular disease and stroke
- Pulmonary disease
- Arthritis
- Diabetes
- Cancer
- Gastrointestinal disease
- Pre-term low birth weight

(Azarpazhooh, & Leake, 2006; Beikler, & Flemmig, 2011)
Tooth Brushing
Flossing

1. Hold the floss thread between your teeth.
2. Gently guide the floss between your teeth.
3. Use a sawing motion to remove plaque.
4. Rinse with water to clean.
Common Oral Hygiene Mistakes

- Using toothbrush for too long.
- Not brushing teeth long enough.
- Not using dental floss.
- Not cleaning tongue.
- Rinsing mouth with water too soon after brushing teeth.
- Using a hard bristle toothbrush.
- Using incorrect brushing technique: Wrong motion and angle.
- Brushing too soon after a meal.
Oral Cavity and Oropharyngeal Cancers

Risk Factors

• Tobacco
• Alcohol
• Human papilloma virus (HPV)
• Poor nutrition
• Age
• Ultraviolet (UV) light exposure
• Genetics

8 Steps of Intraoral Cancer Screening

A. Mucosa
   - Gingiva

B. Lip
   - Buccal mucosa
   - Posterior gingiva

C. Anterior gingiva
   - Vestibule

D. Mucosa
   - Tonsil area

E. Hard palate
   - Tonsilar area
   - Soft palate

F. Ventrall surface of tongue
   - Floor of mouth

G. Lateral border of tongue

7 Steps of the Extraoral Cancer Screening

1. Submental
2. Submandibular
3. Supraclavicular
4. Cervical chain
5. Occipital
6. Posterior auricular
7. Anterior auricular
Oral Cavity and Oropharyngeal Cancer

Signs and Symptoms

What to ask....

- A sore in the mouth that does not heal (most common symptom).
- Pain in the mouth that doesn’t go away (also very common).
- A lump or thickening in the cheek.
- A white or red patch on the gums, tongue, tonsil, or lining of the mouth.
- A sore throat or a feeling that something is caught in the throat that doesn’t go away.
- Trouble chewing or swallowing.
- Trouble moving the jaw or tongue.
- Numbness of the tongue or other area of the mouth.
- Loosening of the teeth or pain around the teeth or jaw.
- Voice changes.
- A lump or mass in the neck.
- Weight loss.
- Constant bad breath.
Oral Cavity and Oropharyngeal Cancers

Prevention Strategies

- Routine screenings of patients with high risk factors for oral cancer.
- Educate self-examination for those with high risk factors.
- Tobacco smoking cessation education.
- School-based programs to prevent smoking and smokeless tobacco use.
- Optimize host resistance:
  - Exercise.
  - Nutrition.
  - Rest.
  - Stress reduction.
- HPV16 - cross-protection through vaccinations: Gardasil and Cervarix.
- HPV and sexual health education.
Mouth Impact Safety

**Laceration**
Properly fitted mouthguards help to protect the soft tissues of the lip, cheeks, gums and tongue by covering the sharp surfaces of the teeth.

**TMJ (Jaw Joint) Trauma**
Properly fitted mouthguards reduce the potential for jaw joint fracture and displacement by cushioning against the impact.

**Mouth Impact**
Causes possible damage to the soft tissues of the lips, cheeks, tongue and gums, as well as the teeth and upper jaw.

**Jaw Fracture**
Properly fitted mouthguards reduce the force upon impact helping to protect the jaws from fracture.

**Direct Jaw Impact**
Causes possible damage to the teeth, TMJ and jaws.

**Under Chin Impact**
Causes possible damage to the teeth, TMJ and jaws.
Common Dental Injuries for College Students: Emergency Care and Treatment.
College Students: Most Common Dental Issues, Injuries, and Emergencies

- Intraoral bacterial and or viral infections.
- Intraoral soft tissue trauma lesions.
- Toothache, lost crown, lost filling, sensitivity, periapical abscess.
- Acute Dental Trauma involving:
  - Lips
  - Tongue
  - Teeth
  - Facial fracture
- TMJ conditions.

(Douglass & Douglass, 2003; Malone University, 2016; Mercy Medical Center Dental Residency Program, 2016)
Poor Oral Hygiene

Symptoms:
- Gingival bleeding
- Pain
- Halitosis
- Fatigue
- Fever

Treatment:
- Improve oral hygiene
- Refer to dentist/dental hygienist for treatment
Aphthous Ulcers (aka, Canker Sore)

Treatment:
- Over-the-counter agents
- Antiviral Prescription
- Homeopathic remedy

Herpetic Lesions (aka, Cold Sores)

Treatment:
- Avoidance to acidic or spicy food
- Over-the-counter agents
- Warm saltwater rinse
- Prescription antibiotics or anti-inflammatories

Orthodontic Induced Mouth Trauma

Treatment:
- Warm saltwater rinse
- Orthodontic wax
- Adjustment of wire
- Over-the-counter agents
- Antiviral Prescription
- Homeopathic remedy
Lost Crown, Lost Filling, or Chipped Tooth

Do not attempt to re-cement -- always best to see a dentist first when a crown or filling falls out.

Dental Wax can be used for temporarily relief.

See dentist for restoration.
Dental Abscess

- Swollen gums
- Abscessed tooth
- Pocket of pus (abscess)
- Infected pulp
- Healthy pulp
- Abscessed tooth
- Healthy tooth

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Acute Dental Trauma

Seek help immediately or call 911 if:

• Loss of one or more of teeth or tooth/teeth move out of place.
• Severe bleeding in the mouth that does not stop.
• Unable to move jaw (mandible).
• Severe pain under eyes or involving cheek bone (maxilla).
• Trouble breathing.
Tooth Avulsion
(knocked out tooth due trauma)

• Find the tooth, pick up by crown, and avoid touching the root.
• Confirm it is a permanent tooth.
• If dirty, wash tooth briefly under cold running water (10 seconds).
• Encourage the patient to replant the tooth.
• If replanting not possible, place the tooth in a suitable storage medium.
  – Glass of milk.
  – Patient’s spit in a container (place the tooth in it).
  – A special formulated media for avulsed teeth (balanced salt solution that preserves the tooth for up to 24 hours).
  – Avoid storage in water!
• Immediately seek emergency dental treatment.
Controlling Bleeding and Swelling

Sterile Gauze
- Place gauze over the site of bleeding
- Use gauze to move the tongue to see inside the mouth.

Black Tea Bag
- Place a wet tea bag inside of a piece of gauze and hold over the wound to stop bleeding.
- Active ingredient: Tannic acid

Hydrogen Peroxide
- Used to disinfect and clean up blood
- Never use it full strength in and around mouth - dilute 50/50 with water.

Ice Pack
- Reduces swelling
- Serves as temporary pain relief
Dental Erosion

Irreversible loss of tooth structure due to chemical dissolution by acids not of bacterial origin.

- Acid from the human body (reflux or bulimia).
- Foods and drinks with a pH below 5.0–5.7
  - Acidic and carbonated beverages (citric and phosphoric acid)
  - Sports drinks
  - Energy Drinks
  - Fruit Juices
Complications of Oral Piercings

- Infection
- Prolonged bleeding, pain and swelling
- Chipped/cracked teeth
- Injury to gums and soft tissue
- Interference with normal oral function

Labret

Labret induced bone and connective tissue loss

Barbell tongue piercing

Barbell trauma induced fractures to adjacent mandibular incisors
TMJ and Stress

- Increased headaches
- Increased bruxism
- Jaw joint pain
- Muscle tension
- Ear pain
- Popping and clicking of jaw joint
- Inability to open and close your mouth easily
Always refer to a dentist!

Have a dental emergency kit in your student health centers.
What We Know About College Students

• College students are no different than others in their age group.

• They are risk takers.

• They no longer have parents in their immediate presence to remind them to brush their teeth.
What We Know About College Students

• College students may forget to floss daily, brush their teeth multiple times per day, or they may even go days without brushing their teeth.

• The combination of busy college students, risk taking, and lack of campus dental health care services is a dangerous triad both for the present and also for the future.

• Current health issues can be caused by poor oral health practices. But also future health issues are caused by current day poor oral health practices.
What We Now Know About Dental and Oral Health

• In 2016 it is now known that many health illnesses and diseases have their origins in the mouth and are due to poor dental hygiene by the patient.

• Health behaviors such as poor nutrition, alcohol consumption, and use of tobacco products affect oral health and contribute to poor oral health.
What We Now Know About Dental and Oral Health

• Research has linked oral health to systemic conditions including heart disease, pneumonia, osteoporosis and osteopenia, stroke, diabetes, both preterm births and low birth weight babies, oral cancer, and human papilloma virus (HPV) (Glick, 2005).

• Thirty thousand new cases of oral cavity and pharynx cancer are found annually, with 8000 deaths due to oral cancer.

• Oral cancer has a 5-year survival rate of only 50% because it is found at a later stage in the cancer.
What We Now Know About Dental and Oral Health

• The newest concern for oropharyngeal cancer is related to the human papillomavirus (HPV).

• Sixty-two percent of oropharyngeal cancers are caused by HPV (Dunne, Markowitz, Saraiya, Stokley, Middleman, Unger, & Iskander, 2014).

• The HPV is the most common sexually transmitted infection in the US (CDC, 2014a).
What We Now Know About Dental and Oral Health

• There are currently 79 million people infected with HPV in the US, and there are 14 million new infections each year in the US.

• There are more than 150 different types of HPV.

• Forty of these are transmitted through oral and genital sexual contact (CDC, 2014a).
What We Now Know About Dental and Oral Health

• College students use of tobacco and alcohol along with the increase in oral sex and acquisition of HPV could contribute to future cases of oral cancer.

• Educating college students about oral health today can prevent dental health issues and oral cancer in their futures.
What We Now Know About Dental and Oral Health

• Oral health literacy was defined in Healthy People 2010 (2000) as, “the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate oral health decisions”.
What We Now Know About Dental and Oral Health

• Health literacy is vital at all stages of life, but promoting health literacy within the college student population sets them up for a lifetime of improved literacy for health.

• Promoting health literacy also needs to include the promotion of oral health literacy.
What We Do Not Know….But Need to Find Out

• College students often abandon healthy lifestyle habits when going off to college and this could include dental health habit.

• However, what are the health habits of high school students prior to going off to college?

• Maybe incoming college students did not have dental health habits to begin with?
What We Do Not Know….But Need to Find Out

• Both of these unanswered questions could provide student health centers with the opportunity to provide dental and oral health educational programming at freshman orientation and through peer health educators.

• These dental and oral health education efforts could establish positive dental and oral health habits in college students and thus positively impacting their long term health and wellness.
The dental health seeking habits of college students
Percentage of Students Who Report Having a Dental Exam and Cleaning from 2000-2013
Dental Exam and Cleaning by Gender

- More females (N=445,381) have an annual dental exam and cleaning than males (N=232,757).
- Exactly why there is a difference of more females (50%) to males (26%) cannot be determined by the data.

Dental Exam and Cleaning in the Last Year by Ethnicity

- All ethnicities report they have an annual dental exam and cleaning, however there is a large discrepancy between Whites and other ethnicities.
- Fifty-six percent of White college students reported having an annual dental exam and cleaning, while no other ethnicity even achieved 10% having an annual exam and cleaning.
- Three percent of Blacks, 4.5% of Hispanics, 7% of Asian, 0.93% of Indian, 1.0% of Biracial/Multiracial, and 2.1% of Other ethnicity reported having a dental exam and cleaning.
Dental Exam and Cleaning in Last Year in International Students

- Sixty-three percent of international students have the annual exam and cleaning compared to 34.32% who do not.

Dental Exam and Cleaning in Last Year by University Type

- When the data were compared between public verses private colleges or universities, the students from both institutional types reported having a dental exam and cleaning in greater numbers (74.55%) than students who did not have a dental exam and cleaning (23.65%).
- What was found in the data is the discrepancy between the public and private colleges/universities.
- Forty-seven percent of students at public colleges/universities have had a dental exam and cleaning compared to only 27.1% of students who attended a private college/university.
Dental Exam and Cleaning at 2 or 4 Year Schools

- And finally, students attending a 4 year college/university have an annual dental exam more (72.43%) than those who attend a 2 year college/university (3.44%).
Ways to develop dental and oral health education interventions for college students.

- Ask your patients if they are getting regular dental checkups.
- Develop campus-wide dental and oral health awareness programs.
- Develop dental and oral health literacy programs in the student orientation programming.
• The month of April is oral health awareness month…celebrate it!

• International students are in need of being connected to dentists in the city where the university is located.

• Develop peer education programs.
  – Positive oral and dental health behaviors
  – Life-long practices for oral and dental health
  – Positive outcomes for oral and dental health
  – Overall well-being.
• The American Dental Association (ADA) has free educational materials for the general public that student health centers can use and distribute across campus.
  – The two most recent ADA educational materials are:
    • (1) Common Oral Sores and Irritation (2012), and
    • (2) Detecting Oral Cancer (2010).

• Two other ADA educational materials, while now dated, but worthy of consideration for updating or revisions are:
  (1) How Medications Can Affect Your Oral Health (2005), and

• The ADA also has a current campaign called “MouthHealthy” (http://www.mouthhealthy.org).
  – This could be incorporated into the dental and oral health education of the college student population.

• Dental and oral health educational materials are needed specifically for the college population.
• Campus student health centers need to develop relationships with area dental hygienists and dentists for referral of students with dental and oral health issues. Having these partnerships already established will speed up the transfer of a student from the college health center to the dentist’s office for dental care.

• Partnering with local dentists to donate toothbrushes and toothpastes for college students could help address dental health during the collegiate years.
• College student health center professionals need to regularly ask their patients if they are getting regular dental checkups, encourage dental visits, and make referrals to area dentists.

• Student health center professionals make significant impacts on the undergraduate and graduate students and their physical and mental health. Adding oral health and its connection to overall health completes the circle.
• The American College Health Association should consider surveying their member institutions to discover if dental health services are provided within student health centers, and by whom (dental hygienists, dentists, dental students, medical physicians) these dental health services are provided.

• The ACHA-NCHA Advisory Committee should consider expanding the ACHA-NCHA survey to include more dental health questions specific to detailed dental health behaviors such as tooth brushing regularity, dental flossing, and incidence of dental problems during their collegiate years.
Remember this...

- An economic concern in college students are those who are experiencing food insecurity and if they are struggling to purchase food, it is possible that they are also struggling to buy toothpaste, toothbrushes, and dental floss!
As health care providers and health educators, we must not forget dental health as an integral part of overall health in college students, and we must educate for dental health and the prevention of related dental health issues.
References


There is no tooth fairy!
Questions?
Thank You for Attending!
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