**Critically Appraised Topic (CAT)**

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| **Project Team:** |
| **5B-2** |
| **Project Team Participants:** |
| **Nadia Hatoum, Lucas Schwartz, Nikhila Alsakani, & Matthew Kettering** |
| **Clinical Question:** |
| In patients with very high caries risk due to poor dietary and oral hygiene control, how can we realign expectations with restoring their dentition? |
| **PICO Format:** |
| **P:** |
| **High caries risk patients** |
| **I:** |
| **Middle socioeconomic class** |
| **C:** |
| **Low-income class** |
| **O:** |
| **Access to dental care** |
| **PICO Formatted Question:** |
| Will patients with high caries risk in a middle socioeconomic class compared with a low-income class have better access to care? |
| **Clinical Bottom Line:** |
| **Lots of factors such as sex, race, ethnicity, social factor determinants, rural, and socioeconomic impacts are factors that all influence the persons access to care.**  **Comparing the middle socioeconomic class to low-income class, the middle class will most likely have more opportunities for access to care because of private health insurance.**  **Further research would benefit how to identify more barriers to improve the nations low-income populations oral health.** |
| **Date(s) of Search:** |
| **9/28/20, 9/29/20, 9/30/20** |
| **Database(s) Used:** |
| **Pubmed, National Academies of Sciences, Engineering, & Medicine.** |
| **Search Strategy/Keywords:** |
| **socioeconomic status, access to dental care** |
| **MESH terms used:** |
| **Dental Care/ economics, Global Health, Health Services Accessibility, Healthcare, Disparities, Ethnic groups, & socioeconomic factors.** |
| **Article(s) Cited:** |
| **Inequality in Utilization of Dental Services: A Systematic Review and Meta-analysis**   * **Reda, Sophie F et al. “Inequality in Utilization of Dental Services: A Systematic Review and Meta-analysis.” *American journal of public health* vol. 108,2 (2018): e1-e7. doi:10.2105/AJPH.2017.304180**   **Access to dental care: Solving the problem for underserved population**   * **Eslamipour, Faezeh et al. “Access to dental care among 15-64 year old people.” *Journal of education and health promotion* vol. 7 46. 3 Apr. 2018, doi:10.4103/jehp.jehp\_99\_17**   **Improving Access to Oral Health Care for Vulnerable and Underserved Populations**   * **IOM (Institute of Medicine) and NRC (National Research Council). 2011. *Improving access to oral health care for vulnerable and underserved populations*. Washington, DC: The National Academies Press** |
| **Study Design(s):** |
| **Inequality in Utilization of Dental Services: A Systematic Review and Meta-analysis**   * **Study Design:**   + **Meta-Analysis**   **Access to dental care: Solving the problem for underserved population**   * **Study Design:**   + **Systematic Review of cohort studies**   **Improving Access to Oral Health Care for Vulnerable and Underserved Populations**   * **Study Design:**   + **Consensus Study Report** |
| **Reason for Article Selection:** |
| **Inequality in Utilization of Dental Services: A Systematic Review and Meta-analysis**   * **The article’s meta-analysis helped find data to answer the PICO question.** * **A high level of evidence.** * **The studies that were outliers or had biased findings were analyzed and removed.** * **The study is relevant and conducted over a 12-year span.** * **No Bias intentions from the authors or organization (American Public Health Association).**   **Access to dental care: Solving the problem for underserved population**   * **This research journal article is reliable but can be considered biased from one author presenting their findings.** * **Dr. Albert Guay is a chief policy advisor for the ADA.** * **The research is from 2004.** * **It follows the PICO question regarding populations being underserved and reasons for not having access to care.**   **Improving Access to Oral Health Care for Vulnerable and Underserved Populations**   * **High level of Evidence** * **Closely followed the PICO Question** * **Research was done by ”The National Academies”, Advisors to the nation on science, Engineering, and medicine.** * **A very trustworthy source published by the National Academies Press.** * **The consensus study reports findings were from 2000-2011. Relevant but new studies should be conducted** |
| **Article(s) Synopsis:** |
| **Inequality in Utilization of Dental Services: A Systematic Review and Meta-analysis**   * **Included studies: a total of 117 studies with 7,830,810 participants of the span of the meta-analysis from January 2005 to April 2017.** * **81 studies found income:**   + **(OR = 0.66; 95% CI = 0.54, 0.79; *P* < .001)**   + **Inequality was significantly higher in North America and Southeast Asia.**   + **No significance between low HDI (Human Development Index) and High HDI.** * **25 studies found rural locations:**   + **(OR = 0.87; 95% CI = 0.76, 0.97; *P* = .011)**   + **Inequality was significantly lower in low HDI than High-HDI.** * **47 studies found ethnic minorities or immigrants:**   + **(OR = 0.71; 95% CI = 0.59, 0.82; *P* < .001)**   + **Inequality was found to be higher in High-HDI countries than low-HDI.** * **Conclusion: Inequalities in dental service utilization are both considerable and globally consistent.** * **Overall 7 million participants in this study showed the male participants, ethnic minorities or immigrants, rural, those with lower education or income, or those without insurance were less likely to use the dental services.**   **Access to dental care: Solving the problem for underserved population**   * **A Survey was conducted on age, race, and poverty status from 1983, 1997, & 2002.** * **Age:**   + **1983- kids 2-4 were 28.4% in the clinic.**   + **1997-44.1; 2002- 40.1**   + **2002- 80.9% ages 5-17 were in the clinic.** * **Race:**   + **African-Americans 41.8% in 1987; 55% in 2002**   + **Whites 57% in 1987; 65.5% in 2002** * **Poverty Status:**   + **Below poverty 1997 - 50%; 2002 -47.8%**   + **At or above poverty 1997 -67%; 2002 -66.5%** * **Conclusion- Barriers need to be addressed and analyzed when identifying underserved segments of a population.** * **Demand for dental care, the dental work force and the economic environment all need to be addressed.** * **The DHSPA (Dental Health Personnel Shortage Areas) has been attributing to access shortage areas to improve the dental work in underserved regions. Dentist to population ratio is determined for care.**   **Improving Access to Oral Health Care for Vulnerable and Underserved Populations**   * **In 2011, approximately 33.3 million underserved individuals living in DHPSA.** * **No dental insurance=2/3 less likely for oral care compared to people with private insurance.** * **In every age group,**    + **lower-income group are more likely to have had dental caries experience and more than twice as likely to have untreated dental caries comparing to high-income people.** * **People living below the FPL are less than half as likely to have visited a dentists in the past year as those who are over 400 percent of the FPL** * **March 2011, 4639 dental shortage areas.**   + **estimate of 9,642 dentists needed for a 3,000:1 population to practitioner ratio.** * **More than half of the population did not visit a dentist in 2004.** * **Nearly all measures indicate that low-income, vulnerable and underserved populations access oral health care in very low amounts compared to the middle class.** * **Conclusion-**   + **“Social determinants also affect oral health and contribute to the inequalities in oral health “ (IOM and NRC, 2011)**   + **Oral health literacy one of the most important educational concepts to improve the dental health status of these patients.** |
| **Levels of Evidence:** (For Therapy/Prevention, Etiology/Harm)  See <http://www.cebm.net/index.aspx?o=1025>  **1a** – Clinical Practice Guideline, Meta-Analysis, Systematic Review of Randomized Control Trials (RCTs)  **1b** – Individual RCT  **2a** – Systematic Review of Cohort Studies  **2b** – Individual Cohort Study  **3** – Cross-sectional Studies, Ecologic Studies, “Outcomes” Research  **4a** – Systematic Review of Case Control Studies  **4b** – Individual Case Control Study  **5** – Case Series, Case Reports  **6** – Expert Opinion without explicit critical appraisal, Narrative Review  **7** – Animal Research  **8** – In Vitro Research |
| **Strength of Recommendation Taxonomy (SORT) For Guidelines and Systematic Reviews**  See article **J Evid Base Dent Pract 2007;147-150**  **A** – Consistent, good quality patient oriented evidence  **B** – Inconsistent or limited quality patient oriented evidence  **C** – Consensus, disease oriented evidence, usual practice, expert opinion, or case series for studies of diagnosis, treatment, prevention, or screening |
| **Conclusion(s):** |
| * + **Access to care is defined mostly by insurance and the countries health care system.**   + **Data surveys have been conducted in the past near present showing an increase going to the dentist in all socioeconomic classes, but the oral health literacy still needs improvement. Our patient’s focus is on her oral health literacy. She needs to understand that her lifestyle and health will influence her dental treatments. Our patient needs to comprehend why a full mouth implant reconstruction would not be an ideal treatment.**   + **Further research is necessary to understand how we can improve these barriers to improve low-income class commitment to their oral care.** * **Recommendations to rural care and Medicaid have been implemented in the past, but still need more work to influence the demand of our nation’s oral health.** |