



ANALYSIS AND ASSESSMENT OF THE INFLUENCE OF SOCIO-ECONOMIC FACTORS ON THE PREVALENCE OF CARIES AMONG PATIENTS WITH CARDIOVASCULAR PATHOLOGY

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ABSTRACT

Another study updates the later studies on social determinants and caries in adults, with no publication year and language requirements. These studies include new results, comments, and criticisms in an iterative process, enhancing the current scientific knowledge of this subject. New studies can provide important data for a review. This should be valued more than just the change of outcome. Therefore, the update process is not useful when only the primary outcome is changed, however it is when it also maintains the credibility of previous studies. This study aimed to perform an update of a previous systematic review and to perform a subgroup meta-analysis and meta-regression to evaluate the effect modification of socioeconomic indicators on dental caries in adults. The hypothesis was that adults with worse socioeconomic indicators are more affected by dental caries.

АНАЛИЗ И ОЦЕНКА ВЛИЯНИЯ СОЦИАЛЬНО-ЭКОНОМИЧЕСКИХ ФАКТОРОВ НА РАСПРОСТРАНЕННОСТЬ КАРИЕСА СРЕДИ БОЛЬНЫХ С СЕРДЕЧНО-СОСУДИСТОЙ ПАТОЛОГИЕЙ

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ABSTRACT

Другое исследование обновляет более поздние исследования социальных детерминант и кариеса у взрослых без указания года публикации и языковых требований. Эти исследования включают новые результаты, комментарии и критику в итеративном процессе, расширяя текущие научные знания по этому предмету. Новые исследования могут предоставить важные данные для обзора. Это следует ценить больше, чем просто изменение результата. Таким образом, процесс обновления



бесполезен, когда изменяется только основной результат, однако он полезен, когда он также сохраняет достоверность предыдущих исследований. Целью этого исследования было обновление предыдущего систематического обзора, а также проведение метаанализа и метарегрессии подгрупп для оценки влияния модификации социально-экономических показателей на кариес зубов у взрослых. Гипотеза заключалась в том, что кариесом больше страдают взрослые с худшими социально-экономическими показателями.

Введение. Relevance. Poor oral health, including dental caries, has been associated with systemic diseases, particularly cardiovascular pathologies. Socio-economic factors such as income level, education, and access to healthcare play a significant role in determining oral health outcomes. This study aims to evaluate the influence of socio-economic factors on the prevalence of caries among patients diagnosed with cardiovascular diseases (CVDs) in Uzbekistan. Dental caries affect a high number of adults around the world, and despite the possible applied prevention measures, a high prevalence of untreated caries was reported between 1990 (34.3%) and 2015 (34.1%), affecting 2.5 billion people worldwide in 2015. Incorporating social determinants, such as health equity and well-being, into theoretical models help to explain caries inequality among populations. In 2016, the World Dental Federation (FDI) approved a new definition of oral health and recognized its multifaceted nature. From this perspective, Healthy People 2020 addressed oral health goals by monitoring and reducing health inequalities. Oral health is an essential component in achieving good general health and it is a fundamental human right to establish a good quality of life and well-being [2]. Previous systematic reviews on socioeconomic indicators and caries in adults showed a relationship between socioeconomic disadvantages and caries. In a qualitative synthesis of 41 studies, schooling, income, and occupation were associated with greater severity of dental caries. However, quantitative data analysis was not performed. It was not possible to identify another systematic review on this subject among adults. A systematic review and meta-analysis that was published in 2017 performed the search from 2000 to 2018, limiting publications in English, and included studies with different age groups (children, adults, and elderly) and caries assessment in permanent and primary teeth.

Methods. A cross-sectional study was conducted in 2023, involving 600 patients with cardiovascular pathology from three major hospitals in Uzbekistan. Data were collected on socio-economic indicators (income, education level, and place of residence), oral health status (presence and severity of caries), and cardiovascular diagnoses. Statistical analysis was performed using SPSS version 26, with chi-square tests and logistic regression models employed to identify associations between socio-economic factors and caries prevalence.

Results. The overall prevalence of dental caries among patients with CVDs was 78%. Patients with lower income levels (monthly income <1,500,000 UZS) exhibited a significantly higher prevalence (88%) compared to higher-income patients (65%, $p < 0.001$). Similarly,



individuals with primary education or less had a higher prevalence (85%) compared to those with secondary or higher education (70%, $p < 0.01$). Rural residents were more affected (82%) than urban residents (74%, $p < 0.05$), likely due to limited access to dental care services. Logistic regression analysis revealed that low income (OR=2.5, 95% CI: 1.8-3.4) and lower education levels (OR=1.8, 95% CI: 1.3-2.5) were significant predictors of caries prevalence.

Conclusion. The findings underscore the strong influence of socio-economic factors on the prevalence of dental caries among patients with cardiovascular pathology in Uzbekistan. Targeted public health interventions, including community-based oral health programs and improved access to affordable dental care, are crucial. Policies addressing the socio-economic disparities in healthcare are needed to reduce the dual burden of oral and cardiovascular diseases.

Recommendations:

1. Establish subsidized dental clinics in rural and low-income areas to ensure equitable access to oral health services.
2. Implement nationwide campaigns to raise awareness about the importance of oral hygiene, particularly targeting populations with lower education levels.
3. Encourage collaboration between cardiologists and dentists to provide comprehensive care for patients with CVDs.
4. Introduce programs aimed at improving the financial stability and educational attainment of vulnerable populations.

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