

Association between Families Economic Status on Parents' Level of Knowledge about Dental Caries Disease in Early Childhood

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ABSTRACT

Dental caries is an infectious disease that attacks the lining of the teeth caused by bacteria. According to the Indonesian Basic Health Research in 2018, the prevalence of dental caries in Indonesia is still quite high, namely 45.3% which has increased compared to data in 2013 which amounted to 25.9%. In early childhood with an age range of 3-4 years, they experienced dental caries as much as 36.4% and at the age of 5-9 years as much as 54.0%. These conditions can negatively affect the pattern of early childhood health. Using Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA), researchers conducted a systematic literature review on the relationship of family economic status to the level of parental knowledge about caries in early childhood. Based on the processing of the data obtained, this

study concluded that there is a relationship between family economic status and caries in early childhood which is also influenced by the level of knowledge of parents about the importance of maintaining oral and dental health. This research can be used as a reference as well as education for parents to know the importance of maintaining oral health in young children. Periodically this can influence the mindset of parents towards oral and dental health care in early childhood so that the prevalence of caries in Indonesia, especially early childhood, can be minimized.

Keywords: Economic status, Oral health, Dental caries, Childhood

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INTRODUCTION

Dental caries is an infectious disease that attacks the hard tissues of the teeth, namely enamel, dentine and cementum caused by acids produced by bacterial metabolism on the surface of the teeth, so that within a certain period of time these acids will damage the tooth coating and cause cavities. Early Childhood Caries (ECC) is caries that occurs in the teeth of early childhood, if the condition is severe it can be called Severe Early Childhood Caries (S-ECC) (Ireland R, 2014). According to the Indonesian Basic Health Research in 2018, the prevalence of dental caries in Indonesia is still quite high, namely 45.3%. That prevalence has increased compared to data in 2013 which amounted to 25.9%. In early childhood with an age range of 3-4 years, 36.4% experienced dental caries and 54.0% at the age of 5-9 years.

Caries is a multifactorial disease. There are several factors that influence the occurrence of caries, such as oral environmental factors, individual factors, community factors, and family factors. Environmental factors in the oral cavity include the host, sugar, and biofilm or dental plaque. Individual factors include physical and demographic conditions, visits to the dentist, healthy habits and behavior, the presence of genetic factors, and the influence of growth and development. Community factors, namely race or ethnicity, culture, environment, physical safety, and dental service facilities in their environment. As well as family factors which include family healthy behavior, parents' health status, and socio-economic status (FDI, 2015).

Socioeconomic status is a factor that is indirectly related to a person's health status, including the degree of dental and oral health (Mulder BC, *et al.*, 2011). Baker EH, 2014 revealed that factors that can be used to measure the socio-economic level of a family include occupation, income, and education. Indrawati ES, 2015 added that a person's occupation affects his family life where each individual's occupation is different. This difference can lead to the

difference between low income levels and high income levels.

Income is the total income of the head of the family or other family members. While education is an activity and effort to improve personality by fostering personal potential. Economic status itself is defined as the position of a person or family in society based on monthly income. Economic status can be seen from the income adjusted for staple goods (Ri K, 2013). Income can affect social status that occurs in the community. This affects the social recognition of the social status of each individual in society.

Health knowledge includes what a person knows about ways to maintain health, such as knowledge about infectious diseases, knowledge about health-related factors, knowledge about health care facilities, and knowledge about disease prevention. Factors that affect a person's level of knowledge include education; information or mass media; social, cultural, and economic; environment; experience; and age. The level of education will influence changes in attitudes and behavior towards health. Parents with a high level of education will more easily absorb information and apply it in everyday life, for example parents can practice and train their children to maintain oral health (Tanaka K, *et al.*, 2013).

The high incidence of dental caries in children (ECC) from families with low economic status indicates a lack of dental care for children (Pratamawari DN, *et al.*, 2022). The American Academy of Pediatric Dentistry (AAPD) recommends that the initial visit to the dentist should begin within 6 months of the eruption of the first primary teeth. In addition to visits to the dentist every 6 months, the role of parents is also very important in maintaining healthy teeth and mouth in children, for example teaching children to brush their teeth, brushing their teeth for 2-3 minutes, checking dental and oral hygiene, and teaching them how to assess cleanliness. teeth independently (Husna A, 2016).

Dental caries in children who are not treated will result in impaired quality of life, such as pain in the mouth, difficulty chewing

or eating hard food, insomnia, absence from school and difficulty concentrating in class. Children with dental caries have a worse quality of life impact than children without dental caries. The main impacts that arise include pain which will result in disruption to eating patterns, sleep patterns, school and social activities (Gilchrist F, *et al.*, 2015; Lima SL, *et al.*, 2018). Therefore, parents are very responsible for the dental health of their children, so it is important to know more about the relationship between the economic status of parents and the level of knowledge of parents about caries in early childhood.

MATERIALS AND METHODS

This type of study is a series of literature studies related to library data collection methods where the object of research is taken through library sources without the researcher having to go into the field to find the necessary data (Melfianora M and Si M, 2019). The data collection method is to collect secondary data obtained from various sources, such as books, scientific journals, reports, and others (Siyoto S and Sodik MA, 2015). The database source used in this study is Google Scholar with the stages of literature review described by the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) method.

This method is carried out systematically by following the correct research stages or cycles. The review system is a method that uses reviews, studies, structured evaluations, classifications, and categorization of evidence based that has been produced previously. The steps in carrying out a systematic review are very well planned and structured so that this method is very different from the method which is simply to convey a literature study. Screening of research data is carried out to select research problems that are appropriate to the topic of the problem to be discussed. At screening, the researcher determined the inclusion and exclusion criteria. Inclusion criteria include journals with a period of 10 years (2012-2022), journals in Indonesian or English, the type of journal is a research journal with research objects on early childhood and parents. Meanwhile, the exclusion criteria included *in vitro* research, research on experimental animals, research with only abstracts, literature review and case reports (Figure 1).

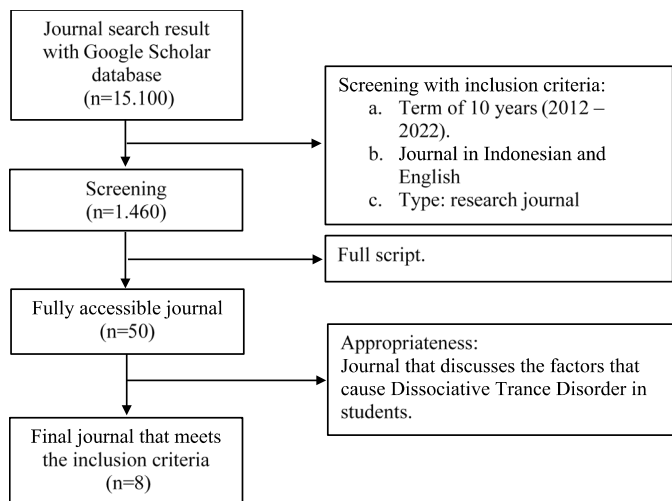


Figure 1: Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) flow diagram

RESULTS AND DISCUSSION

Caries is a multifactorial disease. Several factors influence the occurrence of caries, one of which is the family factor. Family factors include family healthy behavior, parental health status, and socio-economic status (FDI, 2015). Socioeconomic status is a comprehensive measure of economic and social status, which is considered as a potential structure and quantified using measures of education, income, and employment.

The results of research by Fadia IV, *et al.*, 2022 stated that most of the children's parents had low education. With low education, parents have limitations in getting jobs, so parents have low income to meet their daily needs, meaning that with a low level of education, parents will also have a low level of knowledge about dental and oral health. The low income of these parents affects the maintenance and oral health services for their children. This is due to the high cost of dental and oral health services.

This statement is reinforced by the results of research by Harsyaf CC, 2018 which stated that there were 81.8% of children with dental caries and came from families with low economic status. In line with Harsyaf CC, 2018, the results of Aryanita MA, *et al.*, 2018 stated that families with high levels of family income have children with dmft (decayed, missing, and filled primary teeth) of 1.7 which indicates that the caries index of families with high economic status is included in the low category. Meanwhile, children with low parental income levels have a dmft value of 3.5 which indicates that the caries index from families with low income levels is included in the high category.

In general, families with high levels of economic status will have many opportunities to access health information, come to dental and oral health services, and receive dental and oral health consultations, which can contribute to caries prevention in early childhood (Liu M, *et al.*, 2022). In a study by Zhang T, *et al.*, 2021 added that family economic status is the strongest factor that correlates with dental and oral health in children.

The low level of parental income and knowledge has an impact on the high prevalence of dental caries in children and also the high dmft (decayed, missing, and filled primary teeth). This is in accordance with the opinion of Susi S, *et al.*, 2012 which states that children with parents who earn enough have the opportunity to obtain health services. Parents with adequate income will enable them to provide better health services to their children. Meanwhile, parents with low economic status will find it difficult to meet their basic needs, let alone provide dental and oral health services to their children.

In his research regarding the relationship of family economic status to the level of parental knowledge about maintaining oral and dental health in Talang Kelapa Village, Oktaria WD, 2021 concluded that the low economic status of parents indicates knowledge about oral and dental health in children is also low. In addition, there is a significant relationship between parental education which can affect the level of knowledge about oral and dental health.

Whereas parents with higher education and socio-economic status, the higher the knowledge about dental and oral health in early childhood. This is in line with the research of Jyoti NP, *et al.*, 2019 which states that parents who have high economic status have a good level of knowledge about dental and oral health, so that the severity of caries in their children is low and very low. On the other hand, parents with low economic status have a low level of knowledge, and have children with high levels of caries severity.

Many factors influence the occurrence of caries, one of which is the attitude or behavior that does not pay attention to dental and oral hygiene. Lack of knowledge regarding the maintenance of dental and oral health is one of the main causes. Harsyaf CC, 2018 in their research, stated that 52.8% of parents belong to a low education level. Parents' level of education will help to have better awareness and concern so that it influences healthy living behavior. Parents with higher education tend to have better knowledge and know more about dental health problems, so that they systematically have better health status.

The level of education of parents can also affect the level of concern and knowledge about oral and dental health (Sulistin AW and Widajadnya IN, 2015). Many respondents were found to have dental caries with low parental income, namely 81.2%, compared to moderate parental income, namely 42.9%. besides that, the results of respondents who had dental caries with

bad parental attitudes were also obtained, namely 85% compared to moderate and good parental attitudes, namely 42.9% and 50% as evidenced by the statement that it is permissible to exchange toothbrushes with friends, not to replace toothbrushes if the fur has bloomed so that this attitude has an unfavorable impact on children resulting in caries in children.

CONCLUSION

Based on the outcome of this study, it can be concluded that: Parents' economic status can affect the level of knowledge and concern for dental and oral health to avoid caries in early childhood. The healthy lifestyle adopted by parents is able to minimize the risk of being affected by caries in early childhood. Caries is able to affect the quality of life of early childhood without any education on parental concern for caries in early childhood.

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