

The Role of Literacy in Predicting Intention to Provide Exclusive Breastfeeding to Pregnant Women in Gunung Anyar, Surabaya: A Review of the Theory of Planned Behavior

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ABSTRACT

Background: Optimal dental health and toddler growth are greatly influenced by the mother's nutritional status and exclusive breastfeeding, which is important in the process of tooth mineralization. In the Gunung Anyar area, Surabaya, it was recorded that out of 164 babies, only 117 babies received exclusive breastfeeding with an achievement of 71.34%, so it has not reached the national target of 80. . In relation to the practice of exclusive breastfeeding, health literacy plays an important role in shaping mothers' intentions in providing exclusive breastfeeding. Nutritional health literacy includes functional, interactive, and critical literacy that plays a role in understanding nutritional needs, the benefits of exclusive breastfeeding, and its impact on child growth and development, including tooth development. Based on the Theory of Planned Behavior, this literacy has the potential to shape attitudes, subjective norms, and perceptions of maternal behavioral control which ultimately determine the intention to provide exclusive breastfeeding. Objective: To analyze the effect of nutritional health literacy (functional, interactive, and critical) on the components of the Theory of Planned Behavior.

Method: An analytical observational study with a cross-sectional design on 44 pregnant women using accidental sampling. Data were collected using a nutritional literacy questionnaire based on the Nutbeam theory and the Theory of Planned Behavior questionnaire. Data analysis used univariate tests and multiple linear regression. Results: Interactive literacy significantly influenced perceived behavioral control, but did not significantly influence attitude toward behavior and subjective norm. Meanwhile, functional literacy and critical literacy did not influence the three components of the Theory of Planned Behavior. In addition, perceived behavioral control significantly influenced mothers' intention to provide exclusive breastfeeding. Attitude toward behavior and subjective norm components did not show a significant influence on mothers' intention to provide exclusive breastfeeding. Conclusion: Interactive literacy is the main factor that predicts increased perceived behavioral control or self-confidence of pregnant women which then predicts the intention to provide exclusive breastfeeding..

Keyword : *Nutritional health literacy, pregnant women, exclusive breastfeeding, Theory of Planned Behavior, toddler tooth growth*

ABSTRAK

Latar Belakang: Kesehatan gigi dan pertumbuhan balita yang optimal sangat dipengaruhi oleh status gizi ibu serta pemberian ASI eksklusif yang penting dalam proses mineralisasi gigi. Wilayah Gunung Anyar, Surabaya, tercatat dari 164 bayi hanya 117 bayi yang mendapat ASI eksklusif dengan capaian 71,34%, sehingga belum mencapai target nasional sebesar 80. . Dalam kaitannya dengan praktik pemberian ASI eksklusif, literasi kesehatan memegang peranan penting untuk membentuk niat ibu dalam pemberian ASI eksklusif. Literasi kesehatan gizi meliputi literasi fungsional, interaktif, dan kritis berperan dalam pemahaman kebutuhan gizi, manfaat

ASI eksklusif, serta dampaknya terhadap tumbuh kembang anak termasuk perkembangan gigi. Berdasarkan Theory of Planned Behavior, literasi ini berpotensi membentuk sikap, norma subjektif, dan persepsi kontrol perilaku ibu yang pada akhirnya menentukan niat dalam pemberian ASI eksklusif. Tujuan: Menganalisis pengaruh literasi kesehatan gizi (fungsional, interaktif, dan kritis) terhadap komponen Theory of Planned Behavior. Metode: Penelitian observasional analitik dengan rancangan cross-sectional pada 44 ibu hamil menggunakan accidental sampling. Data dikumpulkan menggunakan kuesioner literasi gizi berdasarkan teori Nutbeam dan kuesioner Theory of Planned Behavior. Analisis data menggunakan uji univariat dan regresi linier berganda. Hasil: Literasi interaktif berpengaruh signifikan terhadap perceived behavioral control, akan tetapi tidak berpengaruh signifikan dengan attitude toward behavior dan subjective norm. Sedangkan literasi fungsional dan literasi kritis tidak berpengaruh terhadap ketiga komponen Theory of Planned Behavior. Selain itu perceived behavioral control, berpengaruh signifikan terhadap niat ibu dalam memberikan ASI eksklusif. Komponen attitude toward behavior dan subjective norm tidak menunjukkan pengaruh signifikan terhadap niat ibu dalam memberikan ASI eksklusif. Simpulan: Literasi interaktif merupakan faktor utama yang memprediksi peningkatan perceived behavioral control atau kepercayaan diri ibu hamil yang kemudian memprediksi niat pemberian ASI eksklusif.

Kata kunci : Literasi kesehatan gizi, ibu hamil, ASI eksklusif, Theory of Planned Behavior, pertumbuhan gigi balita.

1. INTRODUCTION

Exclusive breastfeeding for the first six months of life is the most effective nutritional intervention to support optimal child growth and development.

Breast milk contains essential nutrients such as protein, calcium, phosphorus, and vitamin D, which play a vital role in enamel mineralization and the development of primary teeth, while also providing significant immunological protection for infants. 1,2 Therefore, exclusive breastfeeding directly contributes to a child's general and dental health.

Globally, exclusive breastfeeding coverage has only reached around 44–50%, still below the Global Nutrition Targets set by the World Health Organization (WHO) 3, 4. In Indonesia, the achievement of exclusive breastfeeding has also not met the national target of 80% as stated in the 2020–2024 National Medium-Term Development Plan (RPJMN) 5. This condition indicates that efforts to promote and support exclusive breastfeeding still need to be strengthened.

Surabaya City is an area with high coverage of maternal health services, as indicated by the achievement of antenatal care visits and optimal distribution of iron tablets. 6 However, exclusive breastfeeding coverage remains below the national target. In 2021, exclusive breastfeeding coverage in Surabaya City was recorded at 72.9%, while in Gunung Anyar District it only reached 71.34%. 7 This gap indicates that the utilization of health services is not fully proportional to the practice of exclusive breastfeeding.

One of the factors that plays a crucial role in the practice of exclusive breastfeeding is maternal nutritional health literacy. Health literacy is defined as an individual's ability to access, understand, assess, and use health information to make informed decisions.8,9 Mothers with good nutritional health literacy tend to have a better understanding of nutritional needs during pregnancy and the benefits of exclusive breastfeeding for child growth and development, including dental health.

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According to the Nutbeam framework, health literacy consists of functional, interactive, and critical literacy.^{10,11} These three dimensions not only influence mothers' understanding of health information but also play a role in shaping attitudes toward behavior, subjective norms, and perceived behavioral control in implementing health behaviors.

Dalam Theory of Planned Behavior (TPB), niat merupakan prediktor utama perilaku, yang dibentuk oleh sikap terhadap attitude toward behavior (sikap), subjective norm (norma subjektif), dan perceived behavioral control (kontrol perilaku) ¹². Literasi kesehatan gizi ibu hamil diperkirakan berkontribusi dalam membentuk ketiga komponen tersebut. Penelitian sebelumnya menunjukkan bahwa sikap positif dan kontrol perilaku yang baik berhubungan signifikan dengan peningkatan niat ibu untuk memberikan ASI eksklusif, sementara dukungan sosial berperan dalam memperkuat norma subjektif ^{13,14}.

METHOD

This study used a descriptive literature review approach to examine the epidemiology and clinical factors of anterior uveitis. Data sources were obtained from three major electronic databases namely Google Scholar, PubMed and ScienceDirect. The search process was conducted using keywords such as anterior uveitis, clinical symptoms and epidemiology in English and Indonesian. Inclusion criteria in this study include articles published in national and international scientific journals that are relevant to the topic of discussion and have full access. Articles that did not meet the inclusion criteria such as short reviews without empirical data, case reports or articles with

limited access were excluded from the analysis. The data obtained were then qualitatively analyzed to identify common patterns, risk factors and key clinical manifestations relevant to anterior uveitis. The analysis process also included comparison of epidemiologic data and clinical factors from different studies at both national and international levels to provide a comprehensive understanding.

2. RESULT

Epidemiology of anterior uveitis

Several studies related to the epidemiology of anterior uveitis have mixed results in Indonesia and in various countries. In a study conducted by Theodora in general, it was found that anterior uveitis in the west has a prevalence of 90% of all uveitis cases in primary care settings and 50-60% in tertiary referral centers but in some cases of anterior uveitis there is no definite cause or idiopathic (Tsirouki et al., 2018). In a study conducted by Ayu et al at Sanglah Denpasar General Hospital, it was found that anatomically it showed that most experienced anterior uveitis, namely with a percentage of 80% with the average age of sufferers being 45-64 years and the largest gender was male with a percentage of 54.55% (Ayu et al, 2016). Similarly, research conducted by tomas and leif, precisely in southern Sweden, found that patients were diagnosed with anterior uveitis with a percentage of 93% (Bro & Tallstedt, 2019). Likewise, research conducted by Made at Dr. Mohammad Hoesin Palembang General Hospital found that the epidemiology of anterior uveitis was mostly found at the age of 45-64 years with a percentage of 43.3% and gender found a balanced percentage between men or women, namely 50% (Astuti et al., 2022). In a study

conducted by Reis in Portugal, it was found that the classification of anterior uveitis had the largest percentage also at 47.5% with the highest age, namely 47.86% and for this study it has different results regarding gender with the previously discussed research, in this study the female gender has the most diagnoses (Reis & Figueira, 2021). In a study conducted by Colby et al. in Australia, it was found that anterior uveitis had the highest epidemiology, namely 75%. (T et al., 2019). In contrast to research conducted in China by Hao, it was found that the majority of uveitis was panuveitis with gender found to be female who had the most diagnoses (Hao et al, 2021). In a retrospective study analysis of anterior uveitis patients conducted in Taiwan by Hsiao showed that 41.2% of aqueous humor samples were positive for herpesviridae with cytomegalovirus (Hsiao et al., 2019).

Etiologies related to anterior uveitis have different epidemiologies in various studies. In a study conducted by Theodora, it was stated that the main cause of uveitis is usually unknown in 30 - 60% of patients, anterior uveitis is one of the uveitis diseases that is often considered idiopathic compared to other uveitis diseases (Tsirouki et al., 2018). In a study conducted by Reis, it was found that the majority of anterior uveitis disease was idiopathic with a percentage of 32.1% (Reis & Figueira, 2021). Similarly, research conducted by Colby et al. found that idiopathic or unidentified causes with a percentage of 60.2% (T et al., 2019). Likewise, research conducted in southern Sweden by Tomas and Leif found that the majority of uveitis diseases were idiopathic or without a related diagnosis with a percentage of 86% (Bro & Tallstedt, 2019). In contrast to research conducted in China by Tianyu Hao, it was found that ankylose spondylitis was the most common etiology of anterior uveitis with a

percentage of 26.34% (Hao et al, 2021). In contrast, research conducted in Spain by Aparicio found that autoimmune etiology was most common and suffered by children while idiopathic was the highest prevalence for adults (Aparicio, A.G, 2020).

Clinical characteristics of anterior uveitis

In a study conducted by Ayu at Sanglah Hospital, Denpasar, it was found that the most common main complaint of uveitis patients was visual disturbances in the form of blurred eyes with a percentage of 77% with several uveitis patients having more than one main complaint (Ayu et al, 2016). Similarly, research conducted by Made at Dr. Mohammad Hoesin Palembang Hospital found that the most clinical symptoms found were visual disturbances in the form of blurred eyes with a percentage of 96.7% with the most clinical signs in the form of keratic precipitates (Astuti et al., 2022).

Research conducted in Taiwan by Hsiao found 40% of anterior uveitis patients had increased intraocular pressure and glaucoma (Hsiao et al., 2019). In a study conducted in Japan, it was found that acute anterior uveitis was the most common form found with a percentage of 21.8% followed by herpes disease with a percentage of 20.7%, anterior uveitis patients suffering from herpes were significantly older and had higher intraocular pressure than acute anterior uveitis patients (Okazawa et al., 2023). In a study conducted in China by analyzing the clinical characteristics of 2000 patients although it was found that panuveitis was the most dominant, but for anterior uveitis cases it was found that ankylose spondylitis had the most cases, namely 207 cases with a percentage of 26.34% followed by fuchs syndrome and viral uveitis (Hao et al,

2021). In a study conducted in Southern Sweden by Tomas, it was found that herpes zoster was a common disease associated with anterior uveitis with a percentage of 4.9%. Juvenile idiopathic arthritis is the most common diagnosis for people aged 0-19 years, in contrast to herpes zoster which is the most common diagnosis for adults in the age range 20-over 60 years (Bro & Tallstedt, 2019).

3. DISCUSSION

Differences in the prevalence and etiology of anterior uveitis across countries reflect the complex interactions between genetic, environmental, socioeconomic and health system factors that influence the clinical manifestations of anterior uveitis disease. Variations in the epidemiology of anterior uveitis across countries can be explained by geographical differences, genetics, local disease patterns and access to healthcare. In Western countries, the high prevalence of anterior uveitis, reaching 90% in primary care settings, may be due to better reporting systems and more advanced diagnostic facilities (Tsirouki et al., 2018). In Southern Sweden, the high prevalence (93%) can be attributed to high early detection and reporting of uveitis cases (Bro & Tallstedt, 2019). In contrast, data from China showing a predominance of panuveitis over anterior uveitis (Hao et al., 2021) reflects differences in the distribution of risk factors, such as infections or autoimmune disorders. A Taiwanese study showing 41.2% of aqueous humor samples of anterior uveitis patients were positive for herpesviridae suggests the importance of viral infections as a cause in the region (Hsiao et al., 2019).

Most cases of anterior uveitis are idiopathic, with different percentages in different countries. For example, in Portugal (32.1%), Southern Sweden

(86%) and Australia (60.2%). This could be due to limitations in detecting specific causes, lack of reliable biomarkers or patient referral patterns. In contrast, in China, ankylosing spondylitis was the leading etiology of anterior uveitis (26.34%) (Hao et al., 2021), reflecting the high prevalence of certain autoimmune diseases in the region. In Spain, autoimmune uveitis is more common in children, while idiopathic is predominant in adults, suggesting differences in etiology by age (Aparicio et al., 2020).

The signs and symptoms of anterior uveitis provide important diagnostic clues to the underlying etiology. The most common symptom found in some studies is visual disturbance in the form of blurred or opaque eyes. This is caused by inflammation of the iris and ciliary body, which increases protein levels in the aqueous humor and results in impaired corneal transparency, causing blurred vision. There are several other symptoms related to anterior uveitis, namely throbbing pain that spreads to the temples or periorbital region, which is often associated with increased intraocular pressure. The absence of mucopurulent fluid can also help distinguish anterior uveitis from other types of anterior segment inflammation. It is difficult to detect symptoms in chronic anterior uveitis (Harthan et al., 2016). Intraocular pressure in acute and chronic anterior uveitis tends to decrease due to damage to the ciliary body, but can increase through open or closed angle mechanisms. This increase in intraocular pressure is common in some intraocular infections, such as herpes simplex, varicella-zoster, cytomegalovirus and epstein-barr in unilateral cases, and sarcoidosis and tuberculosis in bilateral cases with posterior synechiae. Other factors that may lead to increased intraocular pressure include response to steroids, obstruction in the trabecular meshwork,

extensive posterior synechiae, progression of anterior synechiae, lens-induced uveitis, or hyphema glaucoma uveitis syndrome in pseudophakic patients (Xie et al., 2024).

CONCLUSION

Anterior uveitis is a common inflammation of the anterior segment of the eye that can be caused by various factors, including idiopathic, infectious and autoimmune. The main symptoms include visual disturbances such as blurred vision, pain and increased intraocular pressure. Early diagnosis and proper treatment are essential to prevent serious complications such as secondary glaucoma or permanent damage to the eye. Differences in the prevalence and etiology of anterior uveitis suggest the influence of genetic, geographical and environmental factors, making a comprehensive diagnostic approach essential. Based on a review of the literature, anterior uveitis is the most common type of uveitis globally with varying prevalence in different regions, influenced by geographical, genetic and socio-economic factors. Most cases of anterior uveitis are idiopathic, although other etiologies such as infections and autoimmune diseases are also found, depending on the geographical region. Prompt and appropriate treatment is required to prevent complications such as secondary glaucoma, posterior synechiae and keratopathy. This entire review shows that while the diagnosis of anterior uveitis can be made through history taking and physical examination, determining the specific etiology is often challenging. Therefore, a comprehensive diagnostic approach, including advanced ophthalmologic

examination and biomarkers, is required to improve clinical outcomes and prevent serious complications.

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