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Nursing Care at by. Z and By. I *Thrush* Performed *Oral Hygiene Measures* in the Ade Irma Suryani Room of Arjawinangun Hospital

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Abstract
Background: Babies at a young age are susceptible to diseases. Immunity that has not yet formed makes it easier for babies to be infected with bacteria or fungi. Oral thrush is one of the most common infections. According to research conducted by Eranika in 2016, in Indonesia, around 2.4 million babies have oral thrush. There are many ways to deal with oral thrush; one is to maintain oral health through oral hygiene. Consistent oral hygiene measures in babies can reduce the risk of oral thrush, preventing serious problems.
Purpose: To moisturize the oral mucosa and reduce plaque in the mouth.
Method: Using qualitative methods with a case study approach. The subjects used in this case study were two infants with oral thrush. Data collection techniques use interviews, observation, and documentation.
Results: An assessment was conducted on infants with the same complaints. Both have a nursing diagnosis of oral mucosal membrane disorders. The intervention consisted of *oral hygiene measures.* After 5 days of implementation, there were significant changes in both subjects: appetite improved, drinking improved, they were not fussy, had a moist oral mucosa, reduced white plaques, and were clean.
Conclusion: *Oral hygiene* is effective in overcoming *oral thrush* in babies' mouths.

Keywords: Baby, Oral Thrush, Oral Hygiene

INTRODUCTION

Babies are susceptible to disease; the immunity that has not yet formed makes them more likely to be infected with bacteria or fungi. Oral thrush is one of the most common infections. *Oral thrush* in babies is generally caused by the overgrowth of *the fungus Candida albicans* in the oral cavity. *Oral thrush* is characterized by the presence of soft white plaques similar to milk clots, which, if wiped forcibly, can leave reddish marks or raw bleeding (Fatikasari, 2021).

Globally, the prevalence of *oral thrush* in infants is around 11-15%. Even in the United States, 30-37% of people are infected with oral thrush, and Candida albicans is the most common species, with a prevalence of 68.6% (Stecksen et al., 2015). According to research conducted by Eranika in 2016 in Fatikasari (2021), in Indonesia, around 2.4 million babies experience *oral thrush* (Fatikasari, 2021).

Predisposing factors of *oral thrush* in babies include infant immunity that is still vulnerable, newborn babies infected from the mother's vagina, unhygienic milk bottle nipples, unclean nipples, not washing hands when mothers breastfeed their babies, use of antibiotics or steroids, lack of parental knowledge, and inadequate oral hygiene. Babies who consume more formula milk from a bottle and have inadequate oral hygiene after breastfeeding may be at increased risk of *oral thrush* (Astuti et al., 2016; Fitzgerald, 2022; Juhairiyah, 2021).

Oral thrush in babies can be caused by unclean milk bottles that are then overgrown with mold. When a baby consumes milk from a contaminated bottle, the fungus can be transmitted through the baby's mouth and develop there, causing oral thrush. Therefore, it is important to clean the milk bottle properly (Juhairiyah, 2021).

There are many ways to deal with *oral thrush;* one is to maintain oral health through oral hygiene. Many people think oral hygiene is not a priority. However, it is essential, not only for adults but also for babies, because the mouth is the main entry point for bacteria and germs to enter the body. Consistent *oral hygiene* measures in babies can reduce the risk of oral thrush, preventing serious problems (Dera, 2018). In the management of *Oral Thrush,* in addition to performing *oral hygiene* and cleaning the milk bottle correctly, there is drug therapy that can be given, namely topical drugs nystatin, miconazole, and folic acid violet (1-2%), which are applied to the baby's mouth lesions (Vidia & Pongky, 2016).

Research on oral thrush in infants has examined clinical aspects, risk factors, and medical management. Oral thrush is a common Candida albicans fungal infection in infants, often due to immature immunity, the use of milk bottles, inadequate oral hygiene, and

antibiotics.

Previous research has generally focused on:

1. Prevalence and predisposing factors of oral thrush in infants (low immunity, bottled milk, formula, and antibiotics).
2. Medical/pharmacological management, such as the use of nystatin, miconazole, or fiberglass violet.
3. Oral hygiene education is a supportive measure, but it is often only discussed conceptually or as a small part of maternal and child health interventions.

In the field of nursing, oral hygiene has been known as a basic intervention to maintain the cleanliness of the oral cavity; however:

1. Its application in babies with oral thrush is still rarely studied in depth.
2. Most nursing research focuses on adult, elderly, or critical patients, not infants.
3. Nursing-based studies with a structured case study approach are still limited.

This article strengthens the state of the art by showing that consistently and standardized oral hygiene measures can improve the condition of the baby's oral mucosa and reduce oral thrush plaques within a relatively short time (5 days).

METHODS

This scientific paper uses a qualitative case study design. The subjects taken were infant patients who experienced *oral thrush* and two babies in the Ade Irma Suryani room of Arjawinangun Hospital, with inclusion criteria aged 0-12 months, who had white plaques in the mouth, used milk bottles, were willing to be part of case management for at least 5 days, and followed the entire series of activities. The implementation period for this case study is April 15 - May 4, 2024. According to the provisions, treatment is carried out for a minimum of 5 days. The data collection techniques used are interviews, observations, and documentation studies. The necessary data collection instruments include documentation formats for nursing care assessments, oral hygiene SOPs, observation guidelines, author as data collection tools, and physical examination tools. Data analysis is conducted using an unstructured qualitative approach, delivered in narrative form.

DISCUSSION

The main novelty of this article lies in the following aspects:

1. Specific Nursing Focus on Infants with Oral ThrushThis study places oral thrush as a major

nursing problem (disorder of the oral mucous membrane), not just a medical complication.

2. Implementation of Oral Hygiene as a Core Intervention, Not SecondaryOral hygiene is not only positioned as a supportive measure, but as the main intervention that evaluates its impact directly on improving oral thrush conditions.
3. A Structured Case Study Approach in Two Infants with Different Clinical ConditionsThis study compared the responses of two infants with different medical diagnoses (diarrhea and complex febrile seizures), but with the same nursing problem, thus enriching the understanding of clinical nursing practice.
4. Detailed and Applicable Description of Oral Hygiene ProceduresThe article presents the infant oral hygiene measures in a systematic manner, including duration, frequency, tools, and daily evaluations, which can be directly replicated in clinical nursing practice.

Thus, the novelty of this article lies in the strengthening of evidence for oral hygiene-based nursing practices in infants with oral thrush through structured, applicable clinical case studies.

Although the results show the benefits of oral hygiene, there are still several research gaps that can be addressed in future research:

1. Design Limitations and Number of Subjects study only uses a case study design with two subjects, thus:
   a. It cannot be generalized widely.
   b. Opens up opportunities for experimental or quasi-experimental quantitative research with larger samples.
2. No Comparison with Pharmacological Interventions study has not compared the effectiveness:
   a. Oral hygiene only
   b. Oral hygiene + antifungal therapy, so the relative effectiveness of each intervention has not yet been determined.
3. Not Measuring Parental Behavioral Factors in Depth. Research has not been studied systematically:
   a. Mother's level of knowledge
   b. Parents' adherence to milk bottle hygiene and oral hygiene at home
4. Limited Follow-Up The evaluation is only conducted for 5 days, so that:
   a. It is not yet known what the recurrence rate of oral thrush is after the patient goes home.
   b. The long-term impact of the implementation of routine oral hygiene is not yet known.

5. There Is No Standardization of Oral Thrush Scoring instruments. The improvement assessment remains descriptive, allowing further research to develop a nursing-based oral thrush assessment instrument or scale.

Overview of the Stages of the Nursing Process

The assessment results for subject 1 are for a client named By. Z is the third of three siblings, 2 months old, male. The client has an address in the Susukan area. The client was admitted to the hospital with his mother, Mrs. M, for a medical diagnosis of diarrhea. The assessment carried out by the author on 25-04-2024, the client's diarrhea has begun to improve. The complaint at the time of the assessment was that the client's mother said that there were whites on her child's tongue and palate. The client was fussy, often crying. The client's nutrition consists of breast milk and formula. Formula feeding is due to the mother's limited breast milk supply. When it is given through a milk pacifier bottle, the client drinks only a little because the client has diarrhea and dehydration. Client's elimination pattern: frequency of BOWEL movements 3x/day; yellow color; mushy consistency; BAK: no complaints. The client's personal hygiene pattern has never included *oral hygiene.* The results of the measurement of vital signs were obtained at a temperature of 36.6 °C, pulse 140x/min, SPO2 99%, RR 35x/min, CRT < 2 seconds. The author conducted a physical examination, focusing on the client's mouth, where white plaques were noted on the tongue and palate, and the client's oral mucosa was moist; the sucking and swallowing reflexes were good. Clients get several drug therapies, one of which is Anbacim 3 x 250 mg IV injectable antibiotics.

The results of the assessment obtained in subject 2 are for a client named By. I was the second child of two siblings, a female aged 7 months. The client has an address in the Tegal Gubug area. The client was admitted to the hospital with a medical diagnosis of complex febrile seizures and bronchopneumonia. The author assessed on April 29, 2024, that the client was no longer having seizures, but still had a fever and cough, and that the cough and fever had begun to improve. During the assessment, the client's mother complained of white spots on the inner cheeks and tongue; the client was fussy and often cried. The client's mother said the client lacked appetite and was reluctant to drink because of shortness of breath and cough. Types of breast milk and formula milk nutrition, giving formula milk to meet nutritional needs, how to give it through a milk pacifier bottle, and using a pacifier bottle from the age of 2 months. Personal hygiene patterns, clients have never been in *oral hygiene.* The results of the vital signs measurement were obtained at a temperature of 38.5 °C, pulse 150x/min, SPO2 96%, RR

48x/min, CRT < 2 seconds, good skin turgor, and warm acral areas. The author conducted a physical examination, focusing on the client's mouth. It was found that the client had white plaques on the inner cheek and tongue, moist oral mucosa, and good sucking and swallowing reflexes. The client also received drug therapy, one of which was injectable antibiotic IV Meropenem 2 x 350 mg.

An enforceable nursing problem is a disorder of the oral mucosal membrane. The nursing action plan is carried out by observing moisture, location, and signs of infection in the client's oral mucosa to determine the level of humidity and location, as well as signs of infection. The subsequent intervention is to monitor oral thrush signs and symptoms rationally, including the presence of white plaques on the oral mucosa and symptoms such as difficulty drinking and fussy children. The intervention focuses on performing oral hygiene actions rationally to maintain oral health and reduce infections. Nursing is performed 2 times a day for 2 minutes each for five consecutive days.

Evaluation was performed daily after *oral hygiene for* 5 consecutive days. During these 5 days, both subjects experienced significant changes. The results of the evaluation on the 1st to 2nd day of subject 1, who drank a little, showed that the client was still fussy; the oral mucosa was moist; there were no traces of milk residue in the mouth, but white plaques remained on the client's palate. While subject 2 drank a little, the client remained fussy; the oral mucosa was moist; no milk was noted in the mouth; however, white plaques remained on the client's inner cheeks. The results of the final evaluation in subject 1 after oral *hygiene for 5 days showed that* the client was not fussy, the oral mucosa was moist, and there were no white plaques in the client's mouth. In subject 2 after oral *hygiene for* 5 days, the client was not fussy, the oral mucosa was moist, there were no white plaques in the client's mouth.

Overview of the Implementation of Oral Hygiene Measures

Oral hygiene was implemented for five consecutive days with two subjects. The implementation is carried out 2 times a day, lasting 2 minutes each time. The description of the implementation *of oral hygiene measures* in infants begins with the author visiting the client and applying therapeutic communication to the client's family. Starting from saying greetings, introducing names, identifying clients, explaining the purpose and procedures of the action, allowing the client's family to ask questions, asking permission to perform *oral hygiene* measures, the family signs the *inform consent*, the contract takes about 5 minutes, the writer then prepares tools and materials such as fine gauze, penlight, clean gloves, bends, and

warm water with a warm temperature of 37ºC. After that, the author adjusts the bed to a 15-30 degree angle to prevent the baby from choking, then washes their hands for six steps to maintain hand hygiene, and uses clean gloves. Before implementing oral hygiene, the author conducted an examination using a penlight as observation data to assess the state of the oral mucosal membrane, including moisture, location, and signs and symptoms of *oral thrush.* After that, the author dipped the gauze in warm water until the gauze was wet and then squeezed it, the gauze was then wrapped around the fingers, the gauze began to be inserted into the baby's mouth slowly, gently wipe the baby's gums and oral mucosa with a circular motion then turn the gauze if it looks dirty and do *oral hygiene* againThis is done so that the mouth is maximally clean, throw the gauze and gloves into the crooked to avoid contamination to the environment, clean up the tools, wash your hands six steps to prevent germs from sticking to the hands, evaluate the actions taken from the client's response to changes after oral hygiene is carried out, do a time contract for the upcoming meeting, Give greetings and documentation record the results after oral hygiene is done. At the end, the author enters observation and evaluation data into nursing care to support the preparation of KTI.

Baby's Response to *Oral Thrush*

The implementation lasted 5 days; the response on day 1 for subject 1 included white plaques on the tongue and palate, a dirty mouth with milk stains, and fussy clients. After implementation, the client's oral mucosa is moist and free of milk residue, but white plaques on the client's tongue and palate remain. In subject 2, there were white plaques on the tongue and inner cheeks, a dirty mouth, fussy clients, and crying. After implementation, the client's oral mucosa was moist and free of milk residue, but white plaques on the client's tongue and inner cheeks remained.

The results of the 5th-day response for subject 1 showed no white plaques, only traces of milk, and the client was not fussy. After implementation, the oral mucosa is moist, and milk residue in the client's mouth is clean. In subject 2, there were small white plaques on the inner cheeks, a dirty mouth with milk stains, and the client was not fussy. After implementation, the oral mucosa is moist, free of milk traces, and the white plaques in the mouth are clean.

Gap Analysis on Both Subjects

The gap between the two subjects was different: subject 1 began treatment on April 24, 2024, while subject 2 began treatment on April 27, 2024. Subject 1 has a medical diagnosis of diarrhea, while Subject 2 has a medical diagnosis of complex febrile seizures. Subject 1 was 2 months old with male sex, while subject 2 was 7 months old with female sex. In subject 1, the white plaques are located on the tongue and palate and cleaned on day 4, while in subject 2, they are located on the inner tongue and cheeks and cleaned on day 5. Not only are there differences, but there are also similarities between the two subjects: both have the same complaints, drink little, and are fussy. Then the drinking began to improve on the fifth day.

The assessment of subjects one and two was carried out at the same hospital, namely Arjawinangun Hospital, and in the same room as Ade Irma Suryani. Subject 1 was 2 months old, and Subject 2 was 7 months old. In subject 1, white plaques were found on the tongue and palate, while in subject 2, white plaques were found on the tongue and inner cheeks. This is consistent with Wong's statement in Siti et al. (2017, p. 134) that oral thrush is characterized by the presence of white plaques on the tongue, palate, and inner cheeks. (Taufiqi, 2022) Also states that *oral thrush* or acute pseudomembrane candidiasis is a fungal infection that often occurs in infants. Then, Anggraeni (2017) further strengthens the claim that oral thrush is often found on the mucosa of the cheeks, tongue, and soft palate, appearing as clumped white plaques. Acute pseudomembranous candidiasis often infects babies due to a weak immune system.

The nutritional pattern in both subjects was obtained from the type of nutrition (breast milk or formula) and the method of administration (milk pacifier bottle). The personal hygiene patterns indicated that both subjects have never been involved in *oral hygiene*. This was discussed by Juhairiyah (2021). Babies who consume more formula milk using milk bottles and inadequate *oral hygiene* after breastfeeding can be at risk of increasing *oral thrush. Oral thrush* in babies can be caused by unclean milk bottles that are then overgrown with mold. When a baby consumes milk from a contaminated bottle, the fungus can be transmitted through the baby's mouth and develop there, causing oral thrush. Therefore, it is important to clean the milk bottle properly.

Antibiotic drug therapy was given to both subjects; subject 1 received an injection of IV Anbacim 3 x 250 mg, and subject 2 received an injection of IV Meropenem 2 x 350 mg. According to the statement (Vidia & Pongky, 2016), Candida albicans generally resides in

the oral cavity and can alter the balance of oral flora due to antibiotics or changes in systemic immunity, thereby weakening the body's immune response. After that, the fungus will develop and invade the mucosal tissue of the mouth.

CONCLUSION

Conclusion from the discussion "Nursing Care at By. Z and By. I with *Oral Thrush* Carried Out Oral *Hygiene* Measures in the Ade Irma Suryani Room of Arjawinangun Hospital". At the nursing process stage for the two subjects, focused data were obtained, and white plaques were observed in the oral mucosa. The nursing diagnosis raised is a disorder of the oral mucosa related to oral thrush. The nursing action plan taken is to carry out *oral hygiene measures*. Oral hygiene was implemented for five consecutive days. The final evaluation of the subject after 5 days of the problem showed that the white plaques were clean and the oral mucosa was moist. This shows that Oral thrush, or white plaques, can be cured by improving *oral hygiene.*

State-of-the-art research on oral thrush in infants has been extensive, but oral hygiene nursing interventions remain limited and are rarely the primary focus. Novelty: Oral hygiene is positioned as a core nursing intervention in infants with oral thrush through an applicable clinical case study. Research Gap: Studies with a quantitative design, large samples, therapeutic comparisons, and long-term evaluation are required.

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