



The Relationship of Parental Behavior in Perianal Care with the Degree of Diaper Rash in Children

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Abstract. Infants and young children exhibit distinct skin characteristics compared to adults, characterized by thinness and heightened sensitivity, rendering them more susceptible to infection, inflammation, and allergies. Diaper rash, a common dermatological issue among this demographic, frequently affects skin regions covered by diapers. In 2019, the prevalence of diaper rash in Indonesia was recorded at 7-35%, predominantly impacting children under the age of 3. This study aims to determine the correlation between parental behavior in perianal care and the severity of diaper rash in children. Employing a quantitative research approach with a correlational design, the study involved a deliberate selection of 51 participants. Data collection was conducted through surveys and observational sheets. Statistical analysis revealed a significant correlation ($p < 0.05$) between parental perianal care practices and diaper rash severity. The findings underscore the importance for parents to possess the ability to adequately and effectively care for their child's skin to prevent diaper rash.

Keywords: Behaviour, Perianal Care, Diaper Rash.

1. Introduction

Infants and young children have different skin characteristics that differ from adults. Due to their relatively thin and sensitive skin, children are more susceptible to infections, irritation, and allergies. The child's skin is still immature and operates at its highest efficiency. Diaper rash is a common dermatological issue that frequently affects children. Diaper rash is an inflammatory dermatological condition that affects the skin in areas often covered by diapers, commonly observed in infants or young children [1].

The World Health Organization (WHO) has reported that diaper rash is highly prevalent among babies, affecting approximately 25% of all newborns globally due to diaper usage. The age range at which newborns experience the highest frequency of diaper rash typically falls between 9 and 12 months. In 2019, diarrhea prevalence in Indonesia was recorded at 7-35%, predominantly impacting children under the age of 3, within a population of 4,746,438 individuals, comprising 2,322,652 women and 2,423,786 males [2]Dr. Krisnajaya, a crime specialist focusing on capacity-building and decentralization, estimates

that newborns (aged under five) constitute approximately 10% of the total Indonesian population. Thus, within a population ranging from 220 to 240 million individuals, there are at least 22 million newborns, with approximately one-third experiencing diaper rash.

Contributing factors to diaper rash include inadequate skin hygiene and excessively high or humid air temperatures [3]. Prolonged and constrictive use of diapers impedes airflow, leading to moisture buildup on the child's skin. This moist environment fosters bacterial growth, exacerbating skin irritation. Additionally, diaper rash can arise from elevated skin moisture levels, exposure to irritants like urine, stool, stool enzymes, and bile salts, friction between the skin and diaper, skin pH, nutritional status affecting fecal composition, pregnancy stage, antibiotic therapy, presence of diarrhea, and underlying medical conditions [4].

Previous study revealed that 55% of mothers who administered inadequate perianal care had infants with diaper rash, whereas only 15.1% of mothers who performed perianal treatments fairly accurately had infants with diaper rash. These findings strongly suggest a significant correlation between perianal care practices and the occurrence of diaper dermatitis in newborns [5]. Prior investigation also discovered that among the 10 women who made errors, 11.5% of their newborns (nine infants) experienced nappy rash. It was observed that some mothers possess knowledge of proper perianal care procedures but fail to implement them correctly. Additionally, certain women persist in using disposable diapers for their infants, despite the known association between such diapers and the development of diaper rash. These findings underscore a significant correlation between maternal perianal care practices and the occurrence of nappy rashes in infants [6].

Perineal infections in children can disrupt their sleep and cause discomfort, especially during urination (BAK) and large bowel movements (BAB). It is crucial to promptly change the diaper after the child urinates or has a bowel movement, as prolonged exposure to a moist diaper can lead to diaper rash. Regularly checking the diaper after each use by the child is essential to prevent urine and feces from adhering to the nappy. Diapers should be changed at intervals of 3 to 4 hours. Practicing appropriate perianal hygiene is vital to prevent the onset of diaper rash. Perianal care, which involves treating the area covered by a diaper, is essential in preventing the proliferation of *Candida* fungus, a contributing factor to diaper rash [7]. Diaper rash is classified into three levels: mild, moderate, and severe. Mild severity is marked by redness around the vaginal region, buttocks, and thighs. Moderate severity is characterized by the presence of erythema, papules, or macules, indicating minor and mild lesions in the vaginal, perianal, and gluteal regions. Severe severity entails a significant escalation in extensive erythema, encompassing the vaginal area, buttocks, and posterior thigh. This stage may also include papules containing pus, indicative of either a fungal infection (*Candida albicans*) or a bacterial infection (*Staphylococcus aureus*) [8].

Maintaining hygiene and dryness of the perianal region is crucial for effective treatment. It is advisable to change the diaper 3-4 times within a 24-hour period. Avoid using wet wipes

or cleansing agents containing alcohol and perfume when cleaning the diaper area, and refrain from rubbing the baby's skin. Instead, gently wash with water and avoid using adult products. Applying cream or petroleum jelly to the diaper area can also help. However, the use of diapers is not recommended as they can foster bacteria and fungus growth in the diaper region. Parents should diligently monitor the skin covered by the diaper to prevent any disturbances. Perianal care is essential in these efforts. Additionally, changing diapers 6-9 times within a 24-hour period is advised, and the use of wet wipes or cleansers containing alcohol and perfume should be avoided [9].

2. Method

The current study employs a quantitative correlational research design. The target population for this investigation comprises mothers with children aged 0-3 years admitted to Roemani Hospital Semarang. The total number of respondents involved in this study was 105, with a sampling method utilizing purposive sampling techniques to obtain a sample size of 51. Inclusion criteria for participation in the study stipulated that mothers must have children within the specified age range and utilize diapers for their infants. Data collection instruments included questionnaires and observation sheets. Questionnaires were distributed to respondents, who completed them in accordance with provided instructions. Additionally, observation sheets were utilized by the researcher to record the perianal condition of the children. Ethical considerations were paramount throughout the research process, ensuring the protection of respondent identities, obtaining informed consent from both participants and researchers, and safeguarding the security and confidentiality of participant information. Ethical approval for this study was granted under protocol number 151/KE/08/2023.

3. Result

The variable under investigation in this study is the correlation between parental behavior in perianal care and the severity of diaper rash in children. Table 1 demonstrates that a significant proportion of parents demonstrated satisfactory perianal care practices, with 45 mothers (88.2%) receiving positive ratings. Moreover, the data reveals that the majority of children did not experience frequent episodes of diaper rash, as reported by 43 children (84.3%). Bivariate analysis was performed on these two variables using the contingency coefficient test.

Table 1. Parental behavior and degree of diaper rash

Variable		f	%
Parental behavior	Good	45	88.2%
	Not good	6	11.8%
	Severe	43	84.3%

Degree of diaper rash	Moderate	2	3.9%
	Mild	5	9.8%
	No diaper rash	1	2.0%

The findings of this study indicate that one child exhibited well-being with a mild severity of diaper rash (2.2%), while 43 children were free from diaper rash (95.6%). Conversely, five children demonstrated poor perianal care behavior, with a moderate degree of diaper rash (83.3%), and none of these children were without diaper rash. The data analysis utilizing the Contingency Coefficient yielded a $p\text{-value} < 0.05$. Thus, it can be inferred that there exists a statistically significant relationship between parental behavior in perianal care and the severity of diaper rash in children (Table 2).

Table 2. The relationship of parental behavior in perianal care with the degree of diaper rash in children

Degree of diaper rash	Parental behavior		<i>P-Value</i>
	Good	Not good	
Severe	1	0	0,000
	2.2%	0.0%	
Moderate	0	5	0,000
	0.0%	83.3%	
Mild	1	1	0,000
	2.2%	16.7%	
No diaper rash	43	0	0,000
	95.6%	0.0%	

4. Discussion

The findings of the study on parents' behavior in perianal care for children predominantly indicate positive practices. Most respondents consistently avoid using rough clothes and fabrics on their child's skin, recognizing the child's thin and sensitive skin, which heightens susceptibility to infections, irritations, and allergies. However, some respondents exhibited inadequate perianal care behavior, such as using scrap materials in the child's perianal area. It is noteworthy that using scraps is discouraged as they may contain asbestos, a mineral known to cause cancer [1]. The age of the parents emerges as a significant factor influencing their behavior. Older age correlates with enhanced cognitive abilities and mindset. [10]. Advancing age is associated with increased mental faculties and broader knowledge [11]. Education is another influential factor shaping parental behavior [10] Individuals with higher educational attainment often demonstrate more consistent childcare practices aligned with child development principles. Conversely, parents with lower educational backgrounds may possess limited knowledge and understanding of children's evolving needs. This is attributed to the notion that higher education correlates with enhanced knowledge [6].

Additionally, parental occupation emerges as a significant factor influencing parental behavior. The study findings reveal that the majority of parents are employed as housewives. As homemakers, these parents typically have more time to dedicate to their children, fostering greater familiarity with childcare practices [12].

According to the observations, most respondents did not experience diaper rash, but still some suffered from mild, moderate, and severe diaphragm rash. A diaper rash is a skin problem of irritation and inflammation in the diaper area, i.e. the pelvis, lower abdomen, buttocks and genitals that is commonly found in babies and children using diaper. Diaper rash is one of the diseases that are frequently suffered by infants and children where diapers appear as a result of inadequate treatment [13]. The most important factor in preventing diaper rash is the frequent replacement of child diapers. Research has found that most parents have done the right behavior by changing diapers when diapers are dirty. Too long contact with urine or stool causes irritation. Proper management is changing diapers every hour for newborn babies and every 3-4 hours for older babies. Replacing the diaper regularly (every 1-3 hours) is important in preventing diaper rash, as it helps reduce the amount of time the skin is exposed to moisture. Moist skin will be more prone to friction so that the skin is easy to scratch resulting in irritation of diaper rash. The results of the research have been carried out that the behavior of parents is still frequently given to the area of the child's pelvis where the delivery of the pelvis should not be done. Giving the area covered by the diaphragm will make the perianal area moist so easy to cause irritation. The use of direct splicing on the genitals or cleansing tissue is carcinogenic (cancer-causing) in the ovaries [1].

Diarrhea is also one of the causes of diaper rash where the stools that are attached to the folds cause the skin to become moist and easily irritable. Like the results of a study that has been conducted where most respondents have diarrhea. Diarrhea is an abnormal state of fecal excretion characterized by increased volume and dilution of stools and the frequency of urination more than 3 times a day in neonates more than 4 times per day with or without blood mucus. When a child has diarrhea there will be an accumulation of stools and urine, this will cause damage to skin tissue, skin damage caused by diarrhea will increase the risk of infection and affect physical and physical health [14]. Studies have shown that there is a significant relationship between the behavior of parents in perianal care and the degree of diaper rash in children. The findings of this study align with a previous investigation titled "Relationship of Knowledge and Actions of Mothers in Perianal Care with the Occurrence of Diaper Rash in Babies Aged 0-12 Months at RSUD Dr. H. Abdul Moeloek Bandar Lampung." In the previous study, out of 68 mothers (87.2%) who implemented correct treatment practices, 24 babies (30.8%) experienced diaper rash. Conversely, among the 10 mothers (12.8%) who administered incorrect treatment, nine babies (11.5%) developed diaper rash.

Despite the available research on proper behavior in perianal care for children, some mothers are aware of these practices but do not consistently implement them correctly. For instance, some mothers may not promptly change diapers when they become wet or soiled,

even though soiled diapers, exposed to urine and feces, are known contributors to diaper rash. Both feces and urine serve as skin irritants, and if feces are not promptly cleaned and are allowed to mix with urine, they can lead to the formation of ammonia. Ammonia increases the skin's pH level, resulting in skin irritation [15].

This study is in line with previous study [13], it is known that there is a significant relationship between mother's behavior in the use of one-time diapers and the occurrence of diaper rash. Based on the above results it can be concluded that with the behavior of parents in good perianal care can prevent the occurrence of diaper rash in children.

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