

The Relationship of the Use of Powder in the Genetalia Area of Babies Aged 0-9 Months to the Event of Diaper Rash at PMB Fadilah, Bulukagung Madura Village

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ARTICLE INFO

Keywords: Genetalia Area,
Diaper Rash, Babies Aged 0-9
Months

Received : 09, September

Revised : 23, September

Accepted: 28, September

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ABSTRACT

Diaper rash or often called diaper rash is a bright red rash caused by irritation of the skin exposed to urine or feces that lasts a long time under a child's diaper. This study analyzed the relationship between the use of loose powder in the genital area of infants aged 0-9 months to the incidence of diaper rash in PMB Fadilah, Bulukagung Village, Madura. Correlation research, cross sectional, population of 23 infants aged 0-9 months with diaper rash, 23 infants sampled, purposive sampling, observation data collection, checklist measuring instrument, chi square analysis, (0.05). The results of statistical analysis with the chi square test, the results obtained = 0.000 with a level of 0.05 which means = 0.000 < 0.05, so there is a relationship between the use of loose powder in the genital area of infants aged 0-9 months to the incidence of diaper rash.

INTRODUCTION

Diaper rash or often called diaper rash is a bright red rash caused by irritation of the skin exposed to urine or feces that lasts a long time under a child's diaper. Baby's skin is still sensitive because its functions are still developing, especially in the epidermis or the outermost layer of the skin (Muslihatun, 2016). Diaper rash or diaper rash is a symptom or sign of redness on the baby's skin in areas that are often covered with diapers and other skin folds. This disease generally occurs in the area around the buttocks due to the use of disposable diapers that are rarely changed, too tight or too long. Usually the rash is not dangerous, but can cause pain and cause anxiety in the baby, every baby who uses diapers has the potential to suffer from diaper rash (Handy, 2011).

As an effort to prevent this diaper rash from occurring, it is important to take care of areas covered by diapers (around the genitals, buttocks, and inner groin). Changing diapers after wetting and defecating, avoiding tight plastic diapers or pants that trap moisture, keeping skin dry, loosening diapers (Muslihatun, 2016). Based on data released by the World Health Organization (WHO) in 2016, the prevalence of skin irritation (diaper rash) in infants was quite high, 25% of 1,000,000 visits by outpatients.

The incidence of diaper rash in Indonesia reaches 35% which afflicts baby boys and girls aged under three years. Expert of the Minister of Health for Capacity Building and Decentralization, dr.Krisnajaya, estimates that the number of children under five years old in Indonesia reaches 10 percent of the population (Tina, 2017). Powder can also cause diaper rash and make diaper rash worse because the powder that is located in the groin will mix with sweat which can lead to the growth of bacteria (Cahyu, 2015).

Based on the results of the initial survey at PMB Fadilah, Bulukagung Madura Village, of the 15 babies, 12 of them had diaper rash and most of them were caused by the use of loose powder. Based on the data above, the researcher is interested in conducting a study entitled "The effect of using loose powder in the genital area of infants aged 0-9 months on the incidence of diaper rash". At PMB Fadilah, Bulukagung Village, Madura.

THEORETICAL REVIEW

A. Baby Concept

1. Definition

A baby is a small child who has just been born. Infancy starts from the age of 0-12 months. Infants have an age limit of 0 to 1 year, then it is further divided into early neonatal period aged 0 to 7 days, advanced neonatal period 8 to 28 days, post-neonatal period aged 29 to 1 year. The first year is an amazing time for baby's development (Muslihatun, 2016).

2. Baby Growth

Infant Development Includes Three Things Namely :

- a. Physical Growth. For Example : Increase in Weight and Height.
- b. Intellectual Development. For Example : Communication skills, playing skills, arithmetic and reading skills.

- c. Emotional Growth. For Example : the ability to manage anger and desire, the ability to form baby bonds, the ability to manage anxiety, etc.

3. Baby Development

Baby development is :

- a. Pre- Birth. There is a very rapid growth in the organs and tissues of the body.
- b. Neonatal Period. There is a process of adjustment to life outside the womb and almost little aspects of physical growth are changing.
- c. Infancy. Development occurs in accordance with the environment that influences it and has the ability to protect and avoid things that threaten him.
- d. Childhood. There is a rapid development in aspects of the nature, attitude of interest and how to adjust to the environment. (Sudarti, 2016).

B. Diaper Rash

1. Diaper Rash Meaning

Diaper rash is a bright red rash caused by irritation of the skin that has been exposed to urine or feces for a long time under a child's diaper. Baby's skin is still sensitive because its functions are still developing, especially in the epidermis or the outermost layer of the skin (Muslihatun, 2016).

Diaper rash is a symptom or sign of redness on the baby's skin in areas that are often covered with diapers and other skin folds. This disease generally occurs in the area around the buttocks due to the use of disposable diapers that are rarely changed, too tight or too long. Usually the rash is not dangerous, but can cause pain and cause anxiety in the baby, every baby who uses diapers has the potential to suffer from diaper rash. (Handy, 2011).

2. Causes of Diaper Rash

The cause of the rash can appear because the baby has been wearing a wet diaper for too long, so that the bottom becomes moist and makes it easier for fungus to grow. It could also be caused by materials that are not suitable for baby's skin. The cause of diaper rash or diaper rash in infants is too late to change diapers, especially when the baby defecates because baby stools are more acidic than baby urine.

Bacteria and ammonia in the baby's stool and urine can produce substances that can injure and irritate the baby's skin. And diaper rash can be due to poor diaper quality or too small because of the possibility that the diaper or baby diaper that has been used so far is not of good quality or size is too small, diaper rash that is not treated immediately causes the condition to get worse such as small blisters that blister and

break If it's broken, the baby will be susceptible to infection (Muslihatun, 2016).

3. Signs and Symptoms

Signs and Symptoms of diaper rash with the characteristics of the skin in the diaper area looking red, swollen and inflamed on the buttocks, thighs, and genitals. In certain cases, acne occurs. Diaper rash is irritating to the baby and if left untreated can develop into something more serious, including certain infections. Some other symptoms of diaper rash are baby feeling uncomfortable, crying more often and loudly, and showing general displeasure..

- a. Irritation of the affected skin, appearing as erythema
- b. Eruptions on prominent contact areas such as the buttocks, genitals, lower abdomen and upper thighs.
- c. In more severe cases vesicular erythematous papillae, ulceration may occur. (Tina, 2017)

4. Pathophysiology

Moist skin is caused by using the wrong diaper, such as prolonged use, dirty, too tight, not immediately replaced or cleaned so that friction occurs easily, easily absorbs irritants, easy growth of germs that cause the skin to become chafed and the pH increases due to feces and urine, causing inflammation of the diaper rash (red spots/red spots, wetness, blisters, scaly, swelling, itching, pain, and making the baby fussy).

C. Baby Powder or Powder

1. Meaning of Powder

The basic ingredient commonly used in baby powder is corn starch to replace talc. This material has dust-free properties such as talc, absorbent so that it can act as a moisturizer, and is good for baby's skin. However, this material can agglomerate in the folds of the baby's skin and cause bacterial decomposition (Tina, 2017).

2. Powder Composition

a. Talc

Chemically, talc is magnesium silicate ($3\text{MgO} \cdot 4\text{SiO}_2 \cdot \text{H}_2\text{O}$). It is the basic ingredient of all kinds of modern powder formulations. Its remarkable properties are its spreadability and low covering strength.

b. Kaolin

The color of the kaolin used should be as bright as possible. The base material must be properly purified to remove all impurities and coarse particles. Not all aluminum silicates can be classified as kaolin, but the 3 groups below specifically have the same formula ($\text{Al}_2\text{O}_3 \cdot 2\text{SiO}_2 \cdot 2\text{H}_2\text{O}$) and can be called kaolin: nacrite, dickite, and kaolinite. Because kaolin is hygroscopic, its use in face powders generally does not exceed 25%.

c. Chalk (Kalsium Karbonat)

Calcium carbonate is used to reduce light from the talc and has good coating strength. It helps for perfume absorption and is also grease resistant. And absorb sweat. When this base is used in excess, the powder can give a dry feeling, but proper use is helpful in face powder formulas.

d. Magnesium Karbonat

Magnesium carbonate has good absorbent properties and has been shown to have good perfume distribution properties. The density is part of the magnesium carbonate coating, a quality which contributes to the development of the finer type of powder.

e. Metal Stearate

Zinc stearate, which is used most often also has a calming effect. Overuse, stearate can cause blemishes and acne effects on the skin. In sufficient quantities (4-15%) zinc stearate provides adherent properties to face powder.

f. Zink Oksida, Titanium Oksida

Overuse of this material can produce a mask-like effect which is undesirable; too little makes the powder can not stick to the body. However, excessive use can cause dry skin.

g. Rice Starch

The use of starch has given rise to the problem of being easily decomposed by bacteria, because it contains nutrients suitable for bacteria. The brightening and absorbing properties are attributed to starch which can now also be provided by calcium carbonate and other compounds in face powder formulas.

h. Silika and Silikat

The use of fine silicates such as magnesium trisilicate helps in powders because they have excellent absorbing properties of water and oil.

i. Dye

The amount of dye required depends on the degree of type used in the formula. The opacity of the oxide and the transparency of the talc greatly affect the amount of dye desired.

j. Prargance

If the base ingredients are delicate ingredients, the selected fragrance will be less of a problem in finishing the face powder formulation.

k. Metallic Soap

In addition to increasing adhesion (adhesive power), metal soap also increases the degree of water repellency and produces a soft product. The commonly used amounts are 3% and 10%; large amounts of this produce a blotchy effect on the skin, thereby reducing the "slip" nature of the other ingredients.

l. Preservative

The use of additives in powders used around the eye area should be controlled, in general, microbial limits are more concerned for the ingredients used in these products.

3. The Dangers of Loose Powder for Babies

Most talcum powder products feature talc as the base ingredient. Talc is a kind of mineral rock that has been through a process of mining and grinding to become fine grains. Through this process, some mineral particles similar to asbestos remain. These particles are what make talc dangerous. If a person (especially a baby) often inhales it, these very small particles can be left in the lungs and cause respiratory infections, pneumonia, and even death. Based on a number of negative consequences, the American Academy of Pediatrics prohibits the use of talc-based powders in infants. In addition, recently a new issue has emerged which mentions that the use of talc-based powder in the genital area of female babies can cause ovarian cancer.

METHODOLOGY

This study uses a frequency distribution table and chi square. Data collected systematically and manually by calculating the data obtained. Then the editing and tabulating were carried out and then the data was entered by SPSS 16. After being processed, then an analysis was carried out using SPSS 16 with the statistical test used in this study chi square, to find out whether there was a difference between the independent variable and the dependent variable with a significant value of $\alpha = 0.05$, that is, when tested statistics show $p < \alpha$ then H_0 is rejected (there is an effect of giving loose powder on the genital area of infants aged 0-9 months on the incidence of diaper rash. The conclusion in the study was based on the results of statistical analysis, namely if the results were $p \leq \alpha$ then there was an effect of giving loose powder to the genital area of infants aged 0-9 months on the incidence of diaper rash.

RESULTS

1. Frequency Distribution of Respondent's Age

Table 1. Frequency Distribution of Infant Age in PMB Fadilah, Bulukagung Village, Madura

Age	Frequency	Percentage (%)
1 - 3 month	7	25
4 - 6 month	5	20
7 - 9 month	11	55
Amount	23	100%

(Source : Primary Data 2021)

Based on Table 1, the frequency distribution of the most common age babies is 6-9 months, which is 11 (55%) babies in PMB Fadilah, Bulukagung Village, Madura out of 23 babies.

2. Frequency Distribution of Baby's Gender

Table 2. Frequency Distribution of Baby's Gender in PMB Fadilah, Bulukagung Village, Madura

Gender	Frequency(f)	Percentage (%)
Female	14	55
Male	9	45
Amount	20	100%

(Source : Primary Data 2021)

Based on Table 2, the gender frequency distribution was mostly female, with 14 (55%) babies in PMB Fadilah, Bulukagung Village, Madura from 23 babies.

3. Frequency Distribution of Use of Loose Powder in the Baby's Genital Area

Table 3. Distribution of the Frequency of Use of Loose Powder in the Baby's Genital Area in PMB Fadilah, Bulukagung Village, Madura

Use of powder	Frequency (F)	Percentage (%)
Given powder	16	80
Not given powder	7	20
Amount	23	100%

(Source : Primery Data 2021)

Based on Table 3, the distribution of the frequency of using loose powder in the baby's genital area was almost entirely given loose powder, as many as 16 (80%) babies from 23 respondents.

4. Frequency Distribution of Occurrence of Diaper Rash in Infants

Table 4. Distribution of the Frequency of Diaper Rash in Infants in PMB Fadilah, Bulukagung Village, Madura

Diaper Rash Incident	Frequency (f)	Percentage (%)
Light	5	15
Currently	0	0
Heavy	18	85
Amount	23	100%

(Source : Primary Data 2021)

Based on Table 4, the frequency distribution of most of them experienced severe diaper rash, namely 18 (85%) infants from 23 respondents.

5. Distribution of Cross Tabulation Frequency of the Relationship Between the Use of Powder in the Baby's Genital Area and the Incidence of Diaper Rash

Table 5. Distribution of the Frequency of Cross Tabulation of the Relationship Between the Use of Loose Powder in the Baby's Genital Area to the Incidence of Diaper Rash in PMB Fadilah, Bulukagung Village, Madura

<i>Diaper Rash Incident</i>	Heavy		Currently		Light		amount
	F	%	F	%	F	%	%
Use of powder							
Given powder	18	85%	0	0%	16	80%	100%
Not Given	5	15%	0	0%	7	20%	100%
Total	23	100%	0	0%	23	100%	100%
Chi-Square Tests $p = 0,000 \alpha (0,05)$							

(Source : Primary Data 2021)

Based on Table 5, the distribution of the frequency of cross tabulation of the relationship between the use of loose powder in the baby's genital area and the incidence of diaper rash shows that 18 (85%) babies who experienced severe diaper rash were given loose powder. With Chi Square analysis with an error rate of = 0.05. The results of the Chi Square test showed a significant value of 0.000 < 0.05 H₁ was accepted, then there was a relationship between the use of loose powder in the genital area of infants aged 0-9 months to the incidence of diaper rash in PMB Fadilah, Bulukagung Village, Madura.

DISCUSSION

1. Use of Loose Powder on The Baby's Genital Area

Based on Table 3, the distribution of the frequency of use of loose powder in the genital area, almost entirely of infants were given loose powder, namely 16 (80%) infants from 23 respondents, while infants who were not given loose powder in the genital area were 7 (20%) infants from 23 respondents.

Giving powder is one of the habits that parents often do after bathing their baby and putting powder on the baby's body. Research from Godrej Indonesia on baby products found that 92% of mothers in Indonesia use baby powder regularly after bathing them or when changing diapers (Cahyu, 2015). Like in PMB Fadilah, Bulukagung Madura Village, Bandang Laok Kokop Polindes, Bangkalan Regency, most mothers have given powder to the baby's genital area and baby's body with the reason that the baby smells good and is a habit of the past. Even though loose powder can be dangerous for babies who have allergies / infections and babies who do have sensitive skin, as stated by [5]. That the provision of loose powder in addition to worsening diaper rash can affect the baby's breathing and can cause lung disease in infants.

2. Diaper Rash Incident

Based on Table 4, the distribution of the frequency of the incidence of diaper rash in infants was 23 respondents and 5 (15%) infants had mild diaper rash, 0 (0%), while those with severe diaper rash were 18 (85%).) baby. From table 3.5 we can conclude that more respondents experienced severe diaper rash events due to the administration of loose powder in the genital area compared to the incidence of diaper rash who were not given loose powder in the baby's genital area where this indicates that the baby has skin disorders that arise due to inflammation in the genital area. areas covered by diapers, namely the genital area, around the anus, buttocks, groin, and lower abdomen.

Diaper rash (diaper rash) is a disorder commonly found in infants. This disorder mostly affects infants aged less than 15 months, especially in the age range of 8-10 months. Diaper rash is one of the many skin problems that often occur in infants and toddlers due to the use of diapers, which is about 7-35% occurring in infants in the first 2 years of life. Diaper rash can start in the newborn period when first wearing a diaper.

As is the case in PMB Fadilah, Bulukagung Madura Village, most of the babies who experienced diaper rash and were given talcum powder to the baby had severe diaper rash and were given loose powder on the grounds that the baby smelled good and was not worried about aggravating the diaper rash.

This loose powder is dangerous especially for babies who have allergies / infections and also for babies who have sensitive skin. Powder can also cause diaper rash and make diaper rash worse because the powder that is located in the groin will mix with sweat which can lead to the growth of bacteria. For babies who have sensitive skin, the possibility of diaper rash is higher, as well as babies who have allergies to diaper materials or brands that are not suitable for baby's skin can trigger diaper rash (Endang, 2016)

3. The Relationship between the Use of Loose Powder in the Genital Area of Infants Aged 0-9 Months to the Incidence of Diaper Rash

Based on the results of cross tabulation table 3.5, it can be seen that there is a relationship between the use of loose powder in the genital area of infants aged 0-9 months to the incidence of diaper rash.) infants, most of whom experienced severe diaper rash. And 0 (0%) experienced mild diaper rash. Meanwhile, of the 23 babies who had diaper rash and were not given loose powder in the genital area, 5 (20%) babies did not worsen the incidence of diaper rash (mild). From these data, those who experienced diaper rash and were given loose powder in the genital area were more than those who had diaper rash and were not given loose powder in the baby's genital area.

This disorder mostly affects infants aged less than 15 months, especially in the age range of 8-10 months. Diaper rash usually stops after your child gets potty training around 2 years of age. Babies who are only breastfed show a lower incidence of diaper rash compared to babies who are fed formula milk and solid foods (Muslihatun, 2016).

Based on the results of statistical analysis with the chi square test, the results obtained = 0.000 with a level of 0.05 which means = 0.000 < 0.05 then there is a relationship between the use of loose powder in the genital area of infants aged 0-9 months to the incidence of diaper rash, which means H1 accepted and H0 rejected.

Based on the data obtained, the provision of loose powder in the genital area of infants aged 0-9 months tends to be more babies who experience diaper rash and are still given loose powder in the genital area than babies who experience diaper rash and are not given loose powder in the genital area. given the powder tends to aggravate the diaper rash and make the baby more sick or fussy because of infection / allergies. Meanwhile, babies who are not given loose powder will make the diaper rash not get worse.

CONCLUSIONS AND RECOMMENDATIONS

Most of the babies in the genital area were given loose powder at the age of 0-9 months at PMB Fadilah, namely 15 babies (80%). Almost the majority of infants aged 0-9 months who experienced diaper rash worsened the diaper rash, as many as 15 infants (80%). There is a relationship between the use of loose powder in the genital area of infants aged 0-9 months to the incidence of diaper rash with the value of Chi-Square Tests = 0.000 (0.05). Based on the data obtained, the provision of loose powder in the genital area of infants aged 0-9 months tends to be more babies who experience diaper rash and are still given loose powder in the genital area than babies who experience diaper rash and are not given loose powder in the genital area. given the powder tends to aggravate the diaper rash and make the baby more sick or fussy because of infection / allergies. Meanwhile, babies who are not given loose powder will make the diaper rash not get worse and the baby will be calmer even though it has not fully recovered.

ACKNOWLEDGMENT

It is expected that parents can improve and maintain baby's hygiene and keep the baby's diaper changing pattern by changing diapers more than 6 times/day. It is expected that parents can improve and maintain baby's hygiene and keep the baby's diaper changing pattern by changing diapers more than 6 times/day.

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