

Original Article

Latrine Quality Associated with Diarrhoea Incidence in Mekarsari Health Centre Area, Lebak Regency

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ABSTRACT

The World Health Organization defines sanitation as the provision of facilities and services for the disposal of human excreta, such as urine and feces, including family latrines. In 2019, the percentage of families in Banten province using latrines was 70.5%, lower than the national average of 72.3% for those using permanent sanitary latrines. Sanitation is related to environmental health, which influences public health. Poor sanitation conditions have negative impacts on various aspects of life, ranging from the degradation of community environmental quality to the contamination of drinking water sources, the increase in diarrheal diseases, and the emergence of other illnesses. Diarrheal diseases are potential endemic diseases with outbreaks often resulting in fatalities in Indonesia. The prevalence of diarrhea in 2018, diagnosed by healthcare professionals, was 6.8%, and based on self-reported symptoms, it was 8%. This study aims to determine the relationship between the quality of family latrines and the occurrence of diarrhea in the Mekarsari Community Health Center area, Lebak Regency, using a cross-sectional study design. The study population consists of all families with family latrines (goose-neck latrines) in the Mekarsari Community Health Center area, with a sample size of 88 families. Statistical chi-square tests were conducted at an alpha level of 0.05. The results indicate that nearly all respondents (93.2%) were male, predominantly in the productive age group (96.6%). The majority of respondents had low levels of education (67%), and almost all were non-civil servants (97.7%). Monthly income for most respondents (73.9%) was below the Lebak Regency Minimum Wage (< Rp 2,944,665). A proportion (17%) of families still had low-quality latrines, and some family members suffered from diarrhea (13.6%). There is a significant association between latrine quality and the occurrence of diarrhea ($p=0.005$). Families with low-quality latrines are over seven times more likely to suffer from diarrhea compared to those with high-quality latrines ($OR=7.44$). Empowerment through health education and support is necessary to enable families to understand, accept, and adopt behaviors to improve, construct, and maintain family latrines, thus ensuring diarrhea-free households.

Keywords: Family latrine quality, diarrhea

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INTRODUCTION

Good sanitation is a crucial element for supporting human health. The World Health Organization (WHO) defines sanitation as the provision of facilities and services for the disposal of human excreta, such as urine and feces. The term also encompasses the maintenance of hygienic conditions through waste management and wastewater treatment. Family latrines are among the facilities for the disposal of human waste. In Indonesia, the percentage of families using permanent sanitary latrines in 2019 was 72.3%, while in Banten province, it was 70.5%¹. Sanitation is closely linked to environmental health, which significantly influences public health. Poor sanitation conditions have negative impacts on various aspects of life, including the degradation of community environmental quality, contamination of drinking water sources, increased incidence of diarrhea, and the emergence of several diseases. Diarrheal diseases are potential endemic diseases and often lead to fatalities in Indonesia. The prevalence of diarrhea in 2018, diagnosed by healthcare professionals, was 6.8%, and based on self-reported symptoms, it was 8%¹.

This situation is deeply concerning due to the health implications for families and communities^{2,3}. Various efforts have been and continue to be made by the government in collaboration with communities; however, the results still require continuous efforts and hard work. One of the approaches to improving environmental quality, including enhancing facilities for the disposal of human waste, is through community empowerment^{4,5,6}. Community empowerment aims to enhance community capabilities, motivation, and participation in supporting community welfare efforts through the utilization of available community resources^{7,8,9,10}.

The research problem addressed in this study is the relationship between the quality of family latrines and the occurrence of diarrhea in the Mekarsari Community Health Center area, Lebak Regency. Specifically, this research aims to determine: 1) the characteristics of respondents (age, gender, education, occupation, and income), 2) the quality of family latrines, incidence of diarrhea, and 3) the relationship between the quality of family latrines and the occurrence of diarrhea. Considering the conditions and impacts

resulting from the low quality of facilities for the disposal of human waste (family latrines), it is essential to conduct research whose results can be utilized by Community Health Centers in empowering families and by the Health Department in planning community health programs at the district/city level.

METHOD

This study adopts a cross-sectional design. The population consists of all families with family latrines (pour-flush latrines) in the Mekarsari Community Health Center area, Lebak Regency. The sample size is determined to be 88 families. Data analysis proceeds in two stages: univariate analysis followed by bivariate analysis using the chi-square test at a significance level of 0.05.

Ethical approval for this research has been obtained from the Research Ethics Committee of Politeknik Kesehatan Semarang under the reference number 0690/EA/KEPK/2023.

RESULTS

Table 1. Distribution of Respondent Characteristics by Age, Sex, Occupation, and Income in Mekarsari Health Center Area, Lebak Regency.

| Characteristics | f | % |
|--|----|------|
| Age | | |
| Elderly | 3 | 3,4 |
| Productive Age | 85 | 96,6 |
| Gender | | |
| Male | 82 | 93,2 |
| Female | 6 | 6,8 |
| Education | | |
| Low (< SMA) | 59 | 67,0 |
| High (≥ SMA) | 29 | 33,0 |
| Occupation | | |
| Non-civil servant | 86 | 97,7 |
| Civil Servant | 2 | 2,3 |
| Income | | |
| < Lebak's regional minimum wage (< Rp 2.944.665) | 65 | 73,9 |
| ≥ Lebak's regional minimum wage (≥ Rp.2.944.665) | 23 | 26,1 |

Table 1 above, shows that almost all respondents were in the productive age category (96.6%), with almost all (93.2%)

males. Most (67%) had low education (< SMA) with almost all (97.7%) non-civil servant jobs, and most (73.9%) monthly income was below the minimum wage (< Rp. 2,944.6).

Table 2. Distribution of Respondents According to the Quality of Latrines, and the Incidence of Diarrhea in the Mekarsari Health Center Area, Lebak Regency

| Variable | f | % |
|----------------------------|---|---|
| Quality of Family Latrines | | |

| | | |
|-----------------------|----|--------|
| Not Qualified | 15 | 17 % |
| Qualified | 73 | 83 % |
| Incidence of Diarrhea | | |
| Diarrhea | 12 | 13,6 % |
| No Diarrhea | 76 | 8 % |

Table 2 above shows that there are still 17% of families with unqualified latrines. Table 2 also shows that there are still respondents who suffer from diarrhea (13.6%).

Table 3. Distribution of Latrine Quality and Incidence of Diarrhea in Mekarsari Health Center Area, Lebak Regency.

| Latrine Quality | Incidence of Diarrhea | | Total | p-value | OR |
|-----------------|-----------------------|----------------|-----------------|---------|------|
| | Diarrhea | No Diarrhea | | | |
| Not Qualified | 6 (40,0 %) | 9 (60,0%) | 15 (100,0 %) | 0,005 | 7,44 |
| Quality | 6 (8,2 %) | 67 (91,8 %) | 73 (100,0 %) | | |
| Total | 12 (13,6 %) | 76 (86,4 %) | 88 (100,0 %) | | |

Table 3 above shows that 40.0% of family members who suffered from diarrhea occurred in families with unqualified family latrines. This proportion is higher than that of families with good-quality latrines (8.2%). Statistical test results showed a significant relationship between latrine quality and the incidence of diarrhea with a value of $p = 0.005$. ($p < \alpha$). The OR value of 7.44 means that families who have unqualified latrines have more than seven times the risk of suffering or getting diarrhea compared to families who have qualified latrines to suffer from diarrhea.

DISCUSSION

1. Characteristics of Respondents

The characteristics of the respondents varied. Respondents of productive age are an asset in the development of public health, especially in efforts to improve the quality of family latrines. With productive age, families can make efforts to improve family latrines by fulfilling the requirements of healthy latrines such as the availability of sufficient water, improving the distance between latrines and clean water sources, keeping latrines clean, and the like. Similar to age, respondents are male heads of households and this gender can be

utilized to look after, repair, and maintain the latrine in such a way that the family latrine is categorized as a quality latrine. Most (67%) of the respondents have low education (< high school). Low education should not be a barrier in realizing quality latrines, because the technology in making family latrines is not a complicated technology from the preparation stage to the end. Through consultation and technical assistance from health workers at the Puskesmas, it is possible to realize quality family latrines^{11,12,13}. Respondents almost entirely (97.7%) worked as non-civil servants (laborers, private sector, entrepreneur) with most of their income (73.9%) below the minimum wage of Lebak district (Rp. 2,944,665).

With the limitations of some families who do not yet have quality family latrines, through efforts to set aside funds gradually from existing income, it is possible that a small portion of families who do not yet have latrines that meet health requirements can be realized. It is important to support and empower families through health education and mentoring so that families are able to realize their environmental health through quality family latrine health efforts¹⁴.

2. Quality of Family Latrines, Incidence of Diarrhea.

The results of this study show that the quality of family latrines is significantly associated with the incidence of diarrhea (p-value = 0.005) where families who have unqualified family latrines have a risk of more than seven times suffering or getting diarrhea compared to families who have quality latrines to suffer diarrhea. This study is in line with research conducted by Kasman and Ishak¹⁵, which found that latrine ownership and latrine condition were associated with the incidence of diarrhea (p-value=0.000). This is a concern that the quality of latrines should be a concern for every family, although it is not the only cause that allows family members to get or suffer from diarrhea. However, it is important to establish that maintaining good latrine quality contributes significantly to the incidence of diarrhea. It is therefore important to foster family empowerment in the ownership of quality latrines or those that meet health standards so that quality latrines will contribute to reducing the incidence of diarrhea in family members.

CONCLUSION

The characteristics of the respondents varied significantly, with nearly all falling into the productive age category, predominantly male, and with a majority having low levels of education and mostly non-civil servant occupations, coupled with incomes below the UMR of Lebak Regency. Furthermore, families with inadequate or substandard family latrines were identified, alongside the presence of family members suffering from diarrhea.

The quality of family latrines is significantly associated with the occurrence of diarrhea (p = 0.005). Families with substandard family latrines face a risk of more than seven times higher of suffering from or being affected by diarrhea compared to those with quality latrines.

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