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Health Worker Performance and Prevalence of Diarrhoea: A Cross-Sectional Study

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ABSTRACT: Diarrhea has been one of the major health issues, particularly among children, and the performance of healthcare workers in implementing effective diarrhea programs has been crucial for its prevention and treatment. The success of diarrhea control may be influenced by the performance of healthcare workers; however, implementation has remained suboptimal in some areas, including the Marawola Community Health Center, which has experienced fluctuating diarrhea incidence rates. The objective of this study was to analyze the influence of healthcare workers' performance in implementing diarrhea programs on the prevalence of diarrhea cases among children. This study employed quantitative design with a cross-sectional approach, conducted in the service area of the Marawola Health Center in 2024. The study sample consisted of 77 respondents selected using stratified random sampling. Data was collected through questionnaires, and analysis was performed using logistic regression. The results of the logistic regression analysis indicated that the performance of healthcare workers in implementing the diarrhea program significantly affected the incidence of diarrhea in children (p = 0.017), although the constant value was not statistically significant (p = 0.163). This suggests that other factors need to be considered in addition to healthcare worker performance when optimizing the diarrhea program for children. In conclusion, the performance of healthcare workers needs to be improved in the implementation of diarrhea programs for children. Strategies such as training, supervision, the use of technology, and community involvement can be implemented. Further research is needed to explore other factors influencing the effectiveness of these programs.

KEYWORDS: Diarrhoea; performance; health programmes; health workers

1. Introduction

Health workers have played a central role in disease control, including diarrhea, both in hospitals and community health centers. The effectiveness of health programs is determined not only by the availability of facilities and standard operating procedures but also by the performance of health workers in implementing appropriate management and establishing effective communication with patients and the community [1, 2]. Good communication contributes to increased patient satisfaction and adherence to treatment [3, 4].

Diarrhea has remained one of the leading causes of death, especially among children, and has contributed to malnutrition and recurrent infections [5]. Although effective diarrhea management is available, its implementation in various regions has remained suboptimal, requiring further study to identify the factors influencing its success [6]. The success of the program is highly dependent on the performance of health workers, communication skills, and patient trust in the services provided [7]. In addition, community involvement has been proven effective in reducing mortality rates due to diarrhea [8, 9]. However, gaps still exist in the implementation of recommended management guidelines [7, 10], along with the need to enhance the role of healthcare workers in community education to reduce the incidence of diarrhea [11, 12].

Although diarrhea control programs have been implemented, service coverage has remained volatile. Data from the Central Sulawesi Provincial Health Office showed that case coverage declined from 73.8% in 2017 to 64.16% in 2019, before rising again to 84.5% in 2021. However, disparities between regions persisted, with Sigi District (12%) showing lower coverage in 2021. In the Marawola Health Center service area, most diarrhea cases occurred in children and increased significantly, from 74 cases in 2022 to 279 cases in 2023. These findings indicate the need for more effective efforts in implementing health programs, particularly those related to childhood diarrhea.

Therefore, this study aimed to analyze the performance of health workers in implementing the diarrhea program for children. The results of this study are expected to provide recommendations for improving the effectiveness of the diarrhea control program and ensuring the optimization of health services for the community.

2. Materials and Methods

This study employed a quantitative cross-sectional design aimed at measuring the performance of health workers in implementing diarrhea programs, particularly for children. Research was conducted in 2024 in the service area of the Marawola Community Health Center. The study population consisted of 337 individuals with children aged up to 6 years who had experienced diarrhea. The sample was selected using stratified random sampling based on the Slovin formula, with a 5% margin of error, resulting in 77 respondents.

Inclusion criteria included individuals who were literate and resided in the study area, while the exclusion criterion was absent during the data collection period. The independent variable in this study was the performance of health workers in implementing the diarrhea program. The dependent variable was the incidence of diarrhea, assessed based on the condition of children aged up to 6 years in each participating household.

The independent variable was measured using a Likert-scale questionnaire consisting of 10 statements, with the following response options: Strongly Agree (4 points), Agree (3 points), Disagree (2 points), and Strongly Disagree (1 point). The dependent variable was measured through questionnaire-based interviews using a Guttman scale with a single question. Respondents who answered “Yes” were considered to have experienced diarrhea and were assigned a score of 1; those who answered “No” were considered not to have experienced diarrhea and received a score of 0. The data collected was analyzed using logistic regression at a 95% confidence level ($\alpha = 0.05$). Data processing was conducted using SPSS.

3. Results and Discussion

The results in Table 1 show that 53.25% of health workers did not perform optimally in implementing the diarrhea program, while 48.1% of children experienced diarrhea. Most respondents were female (66.23%) and had completed upper secondary education (46.75%).

Table 1. Frequency distribution of research variables.

Variables	Category	Frequency (n = 77)	Percentage (%)
Gender	Male	26	33.77
	Female	51	66.23
Parents' Education	Primary School	15	19.48
	Junior High School	15	19.48
	Senior High School	36	46.75
	Bachelor's Degree	11	14.29
Health Workers' Performance in Implementing Diarrhoea Programmes	Poor	41	53.25
	Good	36	46.75
Incidence of Diarrhoea	Diarrhoea	37	48.10
	No Diarrhoea	40	51.90

Table 2. The influence of health worker performance on the implementation of diarrhea programs and its impact on diarrhea incidence.

Variabel	Koefisien (B)	Standar Error (S.E.)	Wald	p-value	Odds Ratio (Exp(B))
Health Workers' Performance in Implementing the Diarrhoea Programme	1.139	0.477	5.707	0.017	3.125
Konstanta	-0.446	0.320	1.943	0.163	0.640

Based on the analysis results presented in Table 2, it was found that the performance of health workers in implementing the diarrhea program had a significant effect on the control of diarrhea cases, with a regression coefficient (B) of 1.139 and a p-value of 0.017 ($p < 0.05$), along with an odds ratio (OR) of 3.125. This means that each increase in healthcare workers' performance in implementing the diarrhea program is associated with a 3.125 times greater likelihood of effective diarrhea control. However, the constant value was not statistically significant ($p = 0.163$), indicating that other factors beyond healthcare workers' performance need to be considered in future research to optimize program implementation.

These findings underscore the importance of maintaining and improving health worker performance as a key strategy for reducing disease prevalence, specifically diarrhea among children aged ≤6 years. Supporting studies have shown that the competence and efficiency of health workers directly influence community health outcomes, particularly when integrated healthcare practices are applied to manage infectious diseases like diarrhea [13].

Moreover, supportive supervision has been shown to enhance the performance of community healthcare workers, an especially crucial factor in managing public health challenges such as diarrhea, where timely and comprehensive interventions are vital [14]. Feedback mechanisms further strengthen the correlation between healthcare worker performance and patient outcomes. Health workers who receive constructive feedback are

better equipped to manage cases like diarrhea, thereby improving community health metrics [15, 16]. Structured feedback and ongoing training have demonstrated increased effectiveness in managing childhood illnesses, including diarrhea [16].

System integration such as the Identify-Isolate-Inform framework has proven effective in helping healthcare workers regularly identify, isolate, and report cases of infectious diseases [17]. Such frameworks not only streamline workflows but also increase healthcare workers' confidence in their roles. Clinical decision support systems, for example, have been proven effective in guiding healthcare workers through treatment protocols for various infectious diseases [18]. Innovation in healthcare resources is needed to expand access to healthcare services, especially in underserved communities [19, 20]. Community-based health programs and trained lay health workers or volunteers can also reduce diarrhea incidence, particularly when intervention coverage is high and program adherence is sustained [21, 22].

Improvements in healthcare worker performance also foster greater community trust, encourage caregivers to seek services from trained personnel, and promote disease prevention through hygiene education and the use of preventive measures [15, 23]. Furthermore, trained public health workers have been shown to significantly improve sanitation and hygiene awareness among caregivers, which contributes to reductions in diarrheal disease [23, 24]. Enhanced training for health workers has been linked to decreased morbidity and mortality related to childhood illnesses, including diarrhea, by strengthening case management practices [25].

Effective training and interventions targeting health workers can lead to substantial reductions in diarrhea incidence among children. Multiple studies have demonstrated a correlation between higher health worker performance and lower proportions of diarrhea cases [26, 27]. This is particularly relevant for the Marawola Community Health Center, where optimizing health worker performance through ongoing training, supervision, and technology adoption, has strong potential to reduce the prevalence of diarrhea and improve child health outcomes.

4. Conclusions

This study confirms the critical role of health workers in the successful implementation of diarrhea control programs, particularly within the service area of the Marawola Community Health Center. The findings indicate that suboptimal performance by health workers is significantly associated with higher rates of diarrhea among young children. However, health workers must also consider and address other contributing factors that correlate with diarrhea incidence in the community. These findings highlight the importance of enhancing the capacity, competence, and accountability of healthcare workers as a key strategy for the effective implementation of public health programs. One limitation of this study is its cross-sectional design, which restricts the ability to draw causal inferences and confines the findings to a single primary healthcare facility, thereby limiting generalizability. As part of the recommendations, improving health worker performance and leveraging technology are practical strategies that could help reduce the prevalence of diarrhea among children.

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Author Contribution

Sudirman and Saiful Ambodale were responsible for the conceptualization and methodology of the study, as well as data analysis and writing. Mutmainah contributed across all stages of the research, including conceptualization, methodology, data collection, data analysis, and writing. Niluh Desy Purnamasari was involved in conceptualization, methodology, data collection, and writing. Desak Eka Susianawati participated in data collection and writing. Fitri Arni contributed to conceptualization, data collection, and writing.

Competing Interest

The authors declare that they have no competing interests related to the content of this article.

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