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The Effectiveness of Posyandu Services in Improving Health Quality in Jenggot Village, Krembung District, Sidoarjo Regency

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ABSTRACT

Objective: *This study aims to examine the implementation of Posyandu (Integrated Health Post) services in improving the health quality of children under five in Jenggot Village, Krembung District, Sidoarjo Regency. The study is grounded in the vital role of Posyandu as a community-based health service supporting national efforts to reduce stunting rates and improve maternal and child health.* ***Method:*** *A descriptive qualitative method was employed, utilizing data collection techniques such as observation, interviews, and documentation. The analysis draws upon Duncan's theory of organizational effectiveness, focusing on three key indicators: goal attainment, integration, and environmental adaptation.* ***Results:*** *The findings indicate that Posyandu services operate regularly and involve various stakeholders – including health volunteers, the Community Health Center (Puskesmas), and the local community – yet effectiveness remains suboptimal due to challenges regarding volunteer communication and a manual record-keeping system. The Posyandu demonstrates adaptability to residents' needs, evidenced by schedule adjustments and health education tailored to local requirements.* ***Novelty:*** *The novelty of this study lies in its application of classical effectiveness theory to evaluate Posyandu service performance and its emphasis on the digitalization of record-keeping systems as a strategic measure to enhance the efficiency and quality of health services at the village level.*

INTRODUCTION

Health is a fundamental right of every member of society and an investment as stated in Article 28H paragraph (1) of the 1945 Constitution, and therefore it needs to be pursued and improved by all components of the nation so that people can enjoy a healthy life. In addition, health is not solely the responsibility of the government, but rather a shared responsibility that involves interconnected efforts between the government and society. The high demand for health services is greatly needed by every individual, especially children. In the era of globalization, Indonesia is highly focused on advancing the country by realizing a healthy, developed, and prosperous society. Progress has occurred in various fields of science and has produced positive achievements, particularly in the fields of science and technology in medical services, which can improve the quality of health among toddlers and ultimately contribute to the increasing number of toddlers and children.

Therefore, in addressing these issues, the Posyandu program is needed, where Posyandu serves as a center of activity for mothers in fulfilling health services for their toddlers and family planning needs. Posyandu is managed and organized by the government with the aim of enabling communities to receive health services with

technical support from health workers in order to achieve the Norm of a Small, Happy, and Prosperous Family (NKKBS). According to the Department of Health, the establishment of Posyandu aims to accelerate the reduction of infant and under-five mortality rates as well as birth rates, while simultaneously improving the community's ability to develop health-related activities and other supporting activities according to their needs.

The operation of Posyandu for toddlers is carried out through Posyandu activities organized by the community in cooperation with parties responsible for the health sector [1]. One of the efforts undertaken by Posyandu for toddlers to improve health and prevent diseases among toddlers is to regularly monitor their health condition by bringing them to Posyandu for health examinations. One form of service provided by Posyandu for toddlers is the use of the Health Monitoring Card (Kartu Menuju Sehat/KMS). The KMS is expected to serve as a reference for improving the health of toddlers on a regular basis. Regular health monitoring can improve the health status of toddlers and help detect diseases at an early stage [1].

Posyandu plays an important role in improving the health status of the community, particularly toddlers, through promotive and preventive services that involve active community participation and support from health workers. The success of Posyandu implementation is strongly influenced by the involvement of cadres, parental awareness, and cross-sectoral support at the local level. In addition to serving as a means of monitoring toddler growth and development, Posyandu also contributes to addressing stunting, which remains a national challenge. This condition is reflected in the national stunting prevalence, which decreased from 21.5% in 2023 to 19.8% in 2024. Although the prevalence has declined, the government still faces the need to achieve a stunting prevalence target of 18.8% in 2025 and 14.2% in 2029. The challenge of reducing stunting can also be seen in several priority provinces with large numbers of stunted toddlers. In 2024, West Java recorded approximately 638,000 stunted toddlers, followed by Central Java with 485,893 toddlers and East Java with 430,780 toddlers. These data indicate that efforts to improve toddler health and prevent stunting still require strengthening community health services, including through the optimization of Posyandu activities [2].

Table 1. Achievements and Targets for Reducing the National Stunting Rate and Challenges Faced by Priority Provinces

Year	National Stunting Prevalence (%)	Reduction Target (%)	Required Reduction (%)	Notes
2023	21,5	—	—	Baseline prevalence figure for calculating stunting reduction

Year	National Stunting Prevalence (%)	Reduction Target (%)	Required Reduction (%)	Notes
2024	19,8	—	—	A 1.7 percentage point reduction from the previous year
2025 (target)	—	18,8	1,0	Further reduction required to meet the 2025 target
2029 (target)	—	14,2	7,3 from 2023	Final target in accordance with the 2020–2024 RPJMN

Source: Ministry of Health of the Republic of Indonesia (2024).

Table 2. Priority Provinces with the Largest Number of Stunted Toddlers (2024)

No.	Province	Number of Stunted Toddlers (persons)
1	West Java	638.000
2	Central Java	485.893
3	East Java	430.780

Source: Ministry of Health of the Republic of Indonesia (2024).

Considering the important role of Posyandu in maintaining and improving the health status of toddlers, it is necessary to review the effectiveness of its implementation. Effectiveness is not only assessed based on final outcomes, such as improvements in children's health status, but also based on how efficiently the service process is carried out. Effectiveness can also be assessed based on the appropriate utilization of facilities such as the Health Monitoring Card (Kartu Menuju Sehat/KMS) and the ability of Posyandu to adapt to the needs and conditions of the community. Therefore, an understanding of effectiveness as proposed by Gibson et al., Martani and Lubis, and Duncan in Steers can serve as a basis for evaluating Posyandu performance, particularly in the context of community health services.

According to the Great Dictionary of the Indonesian Language (Kamus Besar Bahasa Indonesia), effectiveness is defined as something that has an effect, namely a consequence or influence, and can also be interpreted as producing results, being effective, and coming into effect. In another sense, effectiveness originates from the word effective, which refers to the achievement of success in attaining predetermined objectives. Effectiveness can be measured using several indicators based on the perspectives of experts. James L. Gibson et al. stated that effectiveness in the context of organizational behavior represents an optimal relationship among production, quality, efficiency, flexibility, satisfaction, excellence, and development [3]. They emphasized that effectiveness is related to the final results of a managerial and operational process that has been implemented.

According to Martani and Lubis, there are three approaches to measuring effectiveness, namely the resource approach, the process approach, and the goals approach [4]. The resource approach measures effectiveness based on the inputs possessed by an organization. The process approach measures effectiveness by examining the extent to which program implementation and all internal organizational activities are carried out effectively. Meanwhile, the goals approach measures effectiveness by focusing on the outputs or results achieved by an organization in accordance with the initial plan.

Meanwhile, according to Duncan as cited by Richard M. Steers, there are three measures of effectiveness, namely goal achievement, integration, and adaptation [5]. Goal achievement refers to the overall efforts to achieve objectives, which must be viewed as a process. Goal achievement requires stages, both in terms of achieving parts of the objectives and based on periods, so that the final objectives can be achieved optimally. Factors related to goal achievement include the time period and the targets that serve as concrete objectives. Integration refers to the measurement of an organization's ability to conduct socialization, develop consensus, and establish communication with various other organizations. Integration also involves the socialization process carried out by an organization toward its environment and related parties. Adaptation refers to an organization's ability to adjust to its environment. Adaptation can be measured through the process of recruiting and placing personnel, as well as the organization's ability to respond to changes in its environment [5].

The problem occurring in Jenggot Village is the low level of community participation in toddler Posyandu activities, with many parents often not bringing their children to Posyandu. This condition causes the functions of Posyandu as a health service facility, such as monitoring children's growth and development, providing nutritional counseling, immunization, and early detection of child growth and development problems, to not operate as expected. This problem arises due to several factors, such as low parental awareness, activity schedules that do not correspond with the community's available free time, an uncomfortable location, unfriendly Posyandu staff, and less attractive services. Low community participation can also cause the monitoring process of toddlers' health conditions in Jenggot Village to be less optimal. This condition may increase the risk of nutritional problems and delays in immunization among toddlers. If this condition continues, government programs in the field of child health may become less effective. This problem also has the potential to have long-term impacts on the quality of health among future generations in Jenggot Village. Therefore, an evaluation of the effectiveness of Posyandu services is needed so that various obstacles in their implementation can be identified and improved.

Based on the three theories discussing effectiveness, the researcher decided to use Duncan's theory as cited by Steers (1985) as a reference for assessing the success of Posyandu services in improving the quality of health in Jenggot Village, Krembung District, Sidoarjo Regency. This theory was selected because it has three indicators that are relevant to the research conditions, namely goal achievement, integration, and

adaptation. These three indicators can be used to examine the extent to which Posyandu activities are able to achieve the objectives of toddler health services, establish communication and community involvement, and adapt services to the needs of the community in Jenggot Village.

RESEARCH METHOD

This study uses a qualitative approach, which is a research method that produces data in the form of information obtained through observation, interviews, and documentation. A qualitative approach is used to gain a deeper understanding of the implementation and effectiveness of the Toddler Posyandu program in Jenggot Village. In this study, the researcher interprets the data by giving meaning, translating, and organizing the information obtained so that it can be easily understood. Data interpretation is conducted based on the conditions and perspectives of the community that is the focus of the research. The researcher directly conducts fieldwork to observe the implementation of Posyandu activities and interacts directly with the selected informants. The informants in this study consist of the Posyandu midwife in Jenggot Village, Posyandu cadres, and mothers who have toddlers in Jenggot Village. The data collection techniques used in this study are interviews, observation, and documentation. Data analysis is conducted through the stages of data reduction, data presentation, discussion, and conclusion drawing. In analyzing the effectiveness of the Toddler Posyandu program, the researcher uses Duncan's effectiveness theory, which consists of three indicators, namely goal achievement, integration, and adaptation.

The informants in this study were selected based on their involvement and knowledge regarding the implementation of the Toddler Posyandu program in Jenggot Village. The Posyandu midwife provides information regarding the implementation of health services and Posyandu activities conducted in the village. Posyandu cadres provide information regarding the implementation of activities, services to the community, and the level of participation of mothers and toddlers in Posyandu activities. Mothers who have toddlers provide information regarding their experiences, understanding, and involvement in participating in Posyandu activities. The data obtained from the informants are then systematically analyzed to obtain an overview of the effectiveness of the Toddler Posyandu program. The data reduction stage is carried out by selecting and focusing on information related to the research focus. Furthermore, the reduced data are presented in narrative form so that patterns and relationships among the information obtained can be identified. The final stage is drawing conclusions based on the analysis of the effectiveness of the Toddler Posyandu program in Jenggot Village.

Based on Duncan's theory of effectiveness, program effectiveness can be assessed through three main indicators, namely goal achievement, integration, and adaptation. These three indicators are used to determine the extent to which the Toddler Posyandu program has been implemented in accordance with the established objectives and is able to meet the needs of the community.

1. Goal Achievement: Goal achievement refers to the ability of a program to achieve the objectives that have been established. In this study, goal achievement is assessed based on the extent to which the Toddler Posyandu program is able to provide health services to toddlers and support the improvement of maternal and child health. This indicator also examines the implementation of activities such as monitoring toddler growth and development, weighing, recording on the KMS, providing information regarding nutrition and immunization, as well as early detection of health problems among toddlers.
2. Integration: Integration refers to the ability of a program to establish relationships and cooperation with the parties involved in its implementation. In this study, integration is assessed based on cooperation among midwives, Posyandu cadres, the village government, mothers who have toddlers, and the community in supporting the implementation of Posyandu activities. Integration is also related to communication and coordination among the parties involved so that Posyandu activities can be carried out regularly and in accordance with the needs of the community.
3. Adaptation: Adaptation refers to the ability of a program to adjust to the conditions and needs of the community environment. In this study, adaptation is assessed based on the ability of Posyandu to adjust its services, implementation schedule, methods of delivering information, and activities provided to the conditions and needs of mothers and toddlers in Jenggot Village. The ability of cadres and health workers to deal with various conditions within the community is also taken into consideration in assessing the adaptation process of the Posyandu program.

RESULTS AND DISCUSSION

Results

Based on research findings derived from interviews and direct field observations, the effectiveness of Posyandu services in improving public health quality in Jenggot Village, Krembung District, Sidoarjo Regency, demonstrates that service delivery has successfully aligned with public health goals, fostered integration among health volunteers, health professionals, village government, and the community, and maintained adaptability to community needs. Posyandu services focus not only on the execution of health activities but also on community engagement in accessing services and utilizing available health facilities. Service implementation encompasses goal achievement, coordination and stakeholder involvement, and the tailoring of services to local conditions and community needs. Through this implementation, Posyandu services are expected to support the improvement of public health quality in Jenggot Village.

This study employs the organizational effectiveness framework proposed by Duncan (cited in Steers, 2020:53), which emphasizes three key indicators: goal achievement, integration, and adaptation. Using these indicators, the study evaluates the extent to which Posyandu services in Jenggot Village effectively achieve health service

objectives and deliver tangible benefits to the community. The results and discussion regarding each of these indicators are presented in the following section.

Discussion

Achievement of Objectives

The achievement of objectives focuses on the extent to which the Posyandu (Integrated Health Post) fulfills its primary goal: improving public health, particularly for children under five [1]. The achievement of this objective is reflected in the ability of Posyandu to provide basic health services that are accessible, routine, and responsive to the health needs of the community. In practice, Posyandu serves as one of the community-based health service facilities that supports promotive and preventive efforts, particularly through regular monitoring of children's growth and development. Therefore, the effectiveness of Posyandu cannot only be assessed from whether activities are carried out according to schedule, but also from the extent to which these activities contribute to achieving the expected health service targets and provide benefits that can be felt directly by the community.

Interviews with Posyandu volunteers, health workers, and community members indicate that routine activities—such as weighing, immunization, and nutrition education—are proceeding well. The implementation of weighing activities allows volunteers and health workers to monitor children's growth and identify potential nutritional problems at an early stage. Immunization activities also contribute to preventive health efforts by providing protection against various diseases that can affect children under five. Meanwhile, nutrition education provides parents and caregivers with information regarding appropriate nutritional intake and the importance of maintaining children's growth and development. The implementation of these activities indicates that Posyandu has fulfilled several basic functions as a community-based health service and has provided services that are relevant to the health needs of children and families in the village.

In addition to the implementation of routine activities, the achievement of objectives is also influenced by the availability of supporting resources and the quality of service provided by Posyandu volunteers. Adequate facilities and equipment are needed to ensure that health monitoring activities can be conducted accurately and efficiently. The attitude of volunteers toward community members is also an important component because friendly, respectful, and communicative service can encourage community members to participate actively in Posyandu activities. Furthermore, educational activities need to be scheduled consistently and communicated clearly so that parents and caregivers have sufficient opportunities to attend and obtain health information. These aspects are important because the achievement of Posyandu objectives is not only related to the completion of routine activities, but also to the community's experience and level of participation in the services provided.

However, in terms of overall goal achievement, the service cannot yet be considered fully effective. Shortcomings exist regarding target alignment, including limited facilities, a lack of friendliness among volunteers, and scheduling issues with

educational sessions that cause community members to miss them—often due to conflicting commitments elsewhere. Limited facilities, particularly regarding measurement and weighing equipment, can become an obstacle to the optimal implementation of child growth monitoring. When the available equipment is inadequate, the service process may become less efficient and potentially reduce the comfort of both volunteers and community members. At the same time, the friendliness of volunteers is an important social aspect of service delivery because community members are more likely to feel comfortable, respected, and willing to return when they receive positive interpersonal treatment.

Scheduling issues with educational sessions also indicate that the implementation of Posyandu services still needs to consider the daily activities and availability of community members. Health education is an important component because the information provided can increase parents' knowledge regarding nutrition, immunization, child growth, and other preventive health measures. However, when educational sessions are conducted at inconsistent times, community members who have work, household responsibilities, or other commitments may be unable to attend. As a result, the benefits of the educational component cannot be received equally by all community members. This situation shows that achieving the objectives of Posyandu requires not only the availability of health programs but also appropriate planning and adjustment to the conditions of the community being served.

This was highlighted by a community member serving as an informant, who stated:

> *"Posyandu activities here are quite good. However, facilities remain limited, particularly regarding measurement and weighing equipment. Furthermore, the scheduling for educational sessions is inconsistent, causing us to miss them, as we sometimes have other commitments."*

The informant's statement reinforces the findings from the interviews and observations, particularly regarding the gap between the implementation of routine Posyandu activities and the achievement of optimal service objectives. Although the main activities have been conducted, limitations in facilities, service attitudes, and activity scheduling remain factors that can influence the effectiveness of services. This indicates that the achievement of objectives should be viewed comprehensively, including both the fulfillment of technical health service targets and the ability of Posyandu to provide services that are comfortable, accessible, and responsive to community needs. Improvements in these areas are therefore necessary to ensure that the objectives of Posyandu can be achieved more consistently and sustainably.

Based on the data obtained, it can be concluded that Posyandu activities have structurally met most basic health service targets. The implementation of routine services, including weighing, immunization, and nutrition education, indicates that the main functions of Posyandu have been carried out and that the service has contributed to community-based health efforts. Nevertheless, this success is not yet fully optimal due to lingering challenges regarding social aspects and community trust in service providers.

The limitations identified in the field demonstrate that the effectiveness of Posyandu is determined not only by the availability of programs but also by the quality of implementation and the extent to which services correspond to community expectations and needs. Therefore, in addition to enhancing technical competence, training volunteers in communication ethics and adopting a participatory approach with the community are crucial steps toward sustainably improving the effectiveness of Posyandu services. Strengthening facilities, improving the consistency of educational schedules, and involving community members in service planning can further support the achievement of Posyandu objectives and increase community participation in the future [6].

Integration

Integration reflects the extent to which the Posyandu is able to establish cooperation and communication with various stakeholders involved in the implementation of community-based health services. Integration is important because Posyandu does not operate independently, but requires coordination between health workers, village government, community leaders, cadres, and community members to ensure that health programs can be implemented effectively. The integration process can be seen from the continuity of communication, coordination of activities, division of roles, and active participation of stakeholders in supporting Posyandu programs. Effective integration also enables the available resources, information, and responsibilities to be distributed appropriately among the parties involved. Therefore, strong integration becomes an important foundation for maintaining the continuity and effectiveness of Posyandu services at the village level.

Observations indicate that the Posyandu in Jenggot Village has fostered strong relationships with the Community Health Center (Puskesmas), village officials, and community leaders. This relationship is reflected in the routine communication and coordination carried out in the implementation of various health activities. Routine coordination is conducted to ensure the success of health programs, including supplementary feeding (PMT) activities, health education, and height and weight measurements. Through this coordination, each stakeholder can understand their respective responsibilities and provide the necessary support according to their role. Health workers provide technical guidance and health services, while Posyandu cadres assist in implementing activities and communicating health information to the community. Meanwhile, village officials and community leaders contribute by facilitating activities and encouraging community participation.

The integration between Posyandu and the Puskesmas also plays an important role in supporting the implementation of health programs. Coordination with health workers enables cadres to obtain information and guidance related to health services, particularly those concerning child growth and development, immunization, nutrition, and health education. This cooperation allows Posyandu activities to be implemented in accordance with health service procedures while remaining adapted to the conditions of the local community. In addition, communication with village officials provides institutional support for the implementation of Posyandu activities, including the

coordination of schedules, facilities, and community involvement. The existence of these relationships demonstrates that Posyandu has become part of a broader community health service network rather than functioning as an isolated activity.

Cross-sectoral activities—such as cadre training conducted by medical personnel and collaboration with family planning (KB) programs and maternal-child health initiatives—demonstrate inter-agency synergy in strengthening community-based services. Cadre training provides opportunities for volunteers to improve their knowledge and skills so that they can perform their responsibilities more effectively when providing services to the community. Cooperation with family planning programs also strengthens the continuity of services related to maternal and child health, while collaboration with maternal-child health initiatives expands the scope of health information and services received by families. Such cross-sectoral cooperation demonstrates that the effectiveness of Posyandu depends on the contribution of multiple institutions and community groups that share responsibility for improving public health.

Furthermore, the active role of PKK (Family Welfare Empowerment) members as volunteers reflects a level of social participation that supports program sustainability. They serve not merely as participants but also as implementers and key disseminators of information at the neighborhood (RT) and hamlet (RW) levels. Their involvement enables health information and announcements regarding Posyandu activities to reach community members more quickly and broadly. Through their social networks, PKK members can encourage parents and families to participate in Posyandu activities and remind them about scheduled health services. This role is particularly important because community-based health programs require active participation from local residents to ensure that the programs remain relevant and sustainable.

The involvement of PKK members and other community representatives also illustrates that integration is not limited to formal cooperation between institutions. It includes social relationships and informal communication that develop within the community. The use of communication channels such as resident WhatsApp groups provides an efficient means of disseminating information regarding vaccination schedules, health education, and other Posyandu activities. This form of communication allows information to be distributed more quickly and reduces the possibility of community members being unaware of upcoming activities. At the same time, direct communication between cadres and residents creates opportunities for community members to provide feedback regarding the services they receive and the health needs they encounter in their daily lives.

This is reinforced by a statement from one of the informants:

> *"We always coordinate with the village midwife and the Puskesmas. Whenever there is a scheduled vaccination or health education session, we immediately disseminate the information to residents, often utilizing resident WhatsApp groups."* (Interview with the PKK chairperson, who oversees the cadres, 2025)

This statement illustrates that communication among stakeholders is conducted continuously and is directly connected to the implementation of Posyandu activities. The

rapid dissemination of information through resident WhatsApp groups demonstrates the utilization of available communication facilities to increase community access to information. It also shows that PKK members and Posyandu cadres have an active role in bridging communication between health workers and community members. Therefore, information regarding health services does not only move from health institutions to cadres, but is also distributed through community networks that are already familiar to residents.

The statement also illustrates that integration among stakeholders goes beyond mere formality or administrative procedure; it has evolved into active, mutually supportive collaboration. Such collaboration is a key factor in the Posyandu's success, as it clarifies the division of tasks, facilitates information dissemination, and enhances the efficiency of resource utilization. When communication and coordination are maintained effectively, potential obstacles in the implementation of activities can be identified and addressed more quickly. Cooperation also allows stakeholders to complement one another according to their respective capacities, thereby reducing the burden on individual parties. In this way, integration contributes not only to the implementation of individual Posyandu activities but also to the sustainability of community-based health services.

Based on these findings, it can be concluded that the integration process within the Posyandu operations in Jenggot Village is well-established. The harmonious working relationships among various stakeholders, combined with active community involvement, demonstrate that effective communication and collective action serve as vital foundations for the sustainability and effectiveness of health services at the village level. The cooperation between Posyandu cadres, health workers, village officials, PKK members, community leaders, and residents has supported the implementation of various health programs and facilitated the dissemination of health information. Nevertheless, maintaining this integration requires continuous communication, regular coordination, and active participation from all stakeholders. Strengthening these collaborative relationships will further support the ability of Posyandu to respond to community needs and improve the quality and effectiveness of health services in Jenggot Village.

Adaptation

The adaptation indicator refers to the Posyandu's ability to interpret and respond to the social dynamics of the local environment and the community's actual needs. Adaptation is an important aspect of organizational effectiveness because community health services operate in an environment that is constantly changing and characterized by different social, economic, and health conditions. Therefore, Posyandu needs to be flexible in organizing its activities so that the services provided remain relevant and accessible to the community. Adaptation can be reflected in the ability of Posyandu to adjust service schedules, modify health education methods, utilize available technology, and develop services according to the health problems experienced by residents. The ability to make such adjustments demonstrates that Posyandu does not merely

implement predetermined programs, but also considers the actual circumstances and preferences of the community.

In practice, the Jenggot Village Posyandu demonstrates flexibility by scheduling activities at times that are more convenient for residents and by providing specialized nutrition consultation services for stunted toddlers. Adjusting the schedule according to residents' availability represents an effort to reduce barriers to participation, particularly for community members who have work or other daily responsibilities. This adjustment is important because the effectiveness of Posyandu services is not only determined by the availability of health programs, but also by the extent to which residents are able and willing to access those services. By considering residents' free time, Posyandu attempts to create more accessible and community-oriented services. This indicates that the implementation of Posyandu activities has taken into account the social conditions of the local community.

The provision of specialized nutrition consultation for stunted toddlers also demonstrates the Posyandu's responsiveness to specific health problems within the community. Stunting requires continuous attention because its prevention and management involve not only routine growth monitoring but also appropriate nutritional knowledge and family involvement. Through nutrition consultation, parents and caregivers can obtain information related to children's nutritional needs and receive guidance that is more directly related to their children's conditions. This form of service adaptation illustrates that Posyandu is capable of identifying particular community health needs and responding through services that are more specific and targeted. Consequently, Posyandu functions not only as a place for routine health measurements but also as a community-based service that can respond to emerging health concerns.

Educational outreach methods have also been made more interactive—utilizing educational visuals and live demonstrations—while data recording is conducted digitally. The use of educational visuals makes health information easier to understand, particularly for community members who may have different levels of educational background and health literacy. Meanwhile, live demonstrations provide residents with opportunities to observe directly how certain health practices should be carried out. This approach can make health education more engaging and encourage residents to become more actively involved during service activities. The adjustment of communication methods therefore represents an important form of adaptation because health information needs to be delivered using approaches that are understandable and relevant to the characteristics of the target community.

In addition to adapting service schedules and educational methods, the Jenggot Village Posyandu has also begun utilizing digital technology in its administrative activities. Data recording is conducted digitally using Microsoft Excel, particularly for compiling monthly reports. The use of digital recording provides an alternative to conventional manual administration and can make the process of organizing and compiling Posyandu data more systematic. Digital records can also facilitate the storage, retrieval, and compilation of information needed for routine reporting. This is

particularly useful because Posyandu activities generate various types of information related to service attendance, child growth, immunization, and other health activities. The availability of organized data can support cadres and health workers in monitoring developments and preparing reports more efficiently. As one of the health volunteers noted:

> *"We communicate health education activities and schedules for Posyandu and immunization sessions via WhatsApp, and we handle data recording digitally using Excel. We align the schedule with residents' days off to encourage higher attendance. However, while recording for toddler services is still done manually, we also use Excel to compile monthly reports."* (Interview with a volunteer, 2025)

The statement demonstrates several forms of adaptation implemented by the Jenggot Village Posyandu. First, the use of WhatsApp as a communication medium shows that Posyandu has adjusted its information dissemination strategy to the communication habits of residents. Information regarding health education, Posyandu schedules, and immunization activities can be distributed more quickly through a communication platform that is commonly used by community members. Second, adjusting the activity schedule according to residents' days off indicates that the Posyandu considers the daily routines and availability of the community when organizing its services. This approach is expected to encourage higher attendance and increase community access to health services.

The statement also demonstrates that the adaptation process is still developing gradually, particularly in relation to administrative digitalization. Although toddler service records are still conducted manually, the data are subsequently compiled using Excel for monthly reporting. This indicates that the Posyandu has begun transitioning from fully manual administration toward a combination of manual and digital systems. Such a transition reflects an effort to utilize technology according to the available resources and capabilities of cadres. Rather than immediately implementing a complex digital system, the Posyandu is using a relatively accessible application that can be operated by existing personnel. This gradual approach allows cadres to become familiar with digital data management while continuing to maintain the recording procedures that are already being implemented.

Figure 1. Routine Posyandu Data Recording

The routine data recording activity shown in Figure 1 illustrates the adaptation of Posyandu administration to the increasing need for organized and accessible health information. Data recording is an important part of Posyandu services because accurate information is required to monitor community health conditions and support the preparation of periodic reports. The use of Excel provides cadres with a practical tool for compiling and organizing data without requiring highly complex technological infrastructure. In this context, digitalization serves not only as an administrative innovation but also as an adaptation mechanism that enables Posyandu to improve the management of information according to its existing resources and capabilities.

Studies across various regions have shown that digitizing record-keeping systems accelerates processes and improves data accuracy [7]. For instance, the Excel-based digitization model in Jenggot has resulted in faster data recording. Digital recording also makes it easier to organize information systematically, reduce repetitive manual calculations, and retrieve previously recorded data when needed. In the context of Posyandu, these advantages can support cadres in preparing monthly reports and monitoring service activities more efficiently. However, the effectiveness of digital recording remains dependent on the consistency of data entry, the ability of cadres to operate the system, and the availability of adequate supporting facilities. Therefore, digitalization needs to be accompanied by continuous assistance and capacity building for Posyandu cadres [8].

The adaptation process in Jenggot Village can also be seen from the combination of technological and social approaches. Technology is used to facilitate communication and administrative activities, while social adaptation is reflected in the adjustment of service schedules and the modification of health education methods. These two forms of adaptation complement each other in ensuring that Posyandu services remain accessible and responsive to residents. The use of WhatsApp facilitates communication, interactive education improves the delivery of health information, and flexible scheduling encourages participation [9]. At the same time, the use of Excel supports the administrative side of service delivery. This combination indicates that adaptation at the Jenggot Village Posyandu is not limited to the adoption of technology but also includes adjustments to the way services are delivered to the community [10], [11], [12], [13].

Nevertheless, the findings indicate that the adaptation process still faces several limitations. The use of manual recording for toddler services shows that the digitalization process has not yet been implemented comprehensively across all Posyandu activities. The coexistence of manual and digital recording may result in duplication of work and requires cadres to perform additional data compilation. In addition, differences in the ability of cadres to operate digital applications may affect the consistency and quality of data management [14]. Therefore, further improvement is needed to ensure that digitalization can be implemented more uniformly and efficiently.

Although the Jenggot Village Posyandu is responsive to social needs and capable of tailoring services to community preferences, there remains a need to develop a comprehensive digital system. Implementing technologies such as web- or mobile-based

recording applications would enhance administrative efficiency and data accuracy, while also supporting faster, more informed decision-making. A more integrated system could allow data from different Posyandu activities to be stored in a single database, reducing the need for repeated manual recording and making information easier to access when required. Such a system could also facilitate monitoring of children's growth, immunization status, nutritional conditions, and participation in Posyandu activities. However, implementation should be adjusted to the capacity of cadres and the availability of technological infrastructure so that the system remains practical and sustainable.

Based on these findings, it can be concluded that the adaptation process at the Jenggot Village Posyandu has been implemented relatively well. The Posyandu has demonstrated its ability to adjust service schedules, develop more interactive health education methods, respond to specific nutritional problems, utilize WhatsApp for communication, and gradually adopt digital data recording through Excel. These efforts demonstrate that Posyandu is capable of responding to changes in community needs and utilizing available resources to maintain the accessibility and effectiveness of its services. Nevertheless, further adaptation is still required, particularly in developing an integrated digital recording system and strengthening the technological capacity of cadres. Continuous adaptation, supported by adequate training, technology, and coordination, will enable the Jenggot Village Posyandu to provide more efficient, responsive, and sustainable community health services [15].

CONCLUSION

Fundamental Finding: This research shows that the Posyandu service in Jenggot Village has been quite effective in supporting the improvement of the quality of public health, especially for toddlers. This can be seen from the consistent implementation of activities, such as routine weighing, immunizations, and nutritional education, and good cooperation between Posyandu cadres, Community Health Centers, and other elements of society. **Implication:** Posyandu is also able to adapt to residents' needs through flexible scheduling and a communicative, educational approach. **Limitation:** However, the effectiveness of the service still faces problems in the aspect of limited facilities, the unfriendly attitude of cadres, and outreach activities due to time not being in accordance with the schedule. So the results do not represent general conditions in other regions that have different social backgrounds and infrastructure. In addition, the data obtained is qualitative in nature and is not equipped with numerical data or statistical measurements that could strengthen the validity of future study findings. **Future Research:** Apart from that, there is a need to explore the use of digital technology in the recording and reporting system at Posyandu to improve the effectiveness and quality of services.

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