Chelonian Conservation And Biology

Vol. 19No.1 (2024) | https://www.acgpublishing.com/ | ISSN - 1071-8443

DOI:doi.org/10.18011/2024.01(1). 1214-1228

IMPROVING POSYANDU SERVICE PERFORMANCE THROUGH THE USE OF SMARTPHONE APPLICATIONS: LITERATURE REVIEW

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ABSTRACT

Introduction: Posyandu, or Integrated Service Post, is the government's effort to make maternal and child health services more accessible to Indonesians. This literature review aims to identify and describe the performance of posyandu services using smartphone applications,

Method: The research method is a systematic review using techniques such as PICOT and journal search terms via MESH. The literature sources in this study mostly come from online journal databases that provide Indonesian and English journal articles in PDF format, such as Pubmed, Proquest, Google Scholar, and ScienceDirect, as well as other sources, such as books. Researchers wrote keywords according to MESH (Medical Subject Heading), namely "service", "smartphone", and "posyandu," and selected full text.

Research result: Of the 120 journals that reviewed the abstracts, there are 20 journals consisting of review journals and journals related to the use of smartphones in posyandu services. So, the 10 remaining journals will be read in full-text

Discussion: Smartphones are modern technological devices that make it easier to communicate, obtain information, and do work quickly and comprehensively. The use of smartphones in the world of health is considered effective in increasing access to health services, especially posyandu services.

Conclusion: The use of smartphones and applications in posyandu services accelerates the achievement of targets in the form of posyandu and is effective in increasing access to health services.

Keywords: Smartphone, Posyandu, Service

INTRODUCTION

Human resources for health (HRH) encompasses many jobs promoting or improving human health. The UN Sustainable Development Goals (SDGs) and the WHO Health Workforce 2030 strategy have drawn attention to the importance of HRH for achieving policy priorities such as universal health coverage (UHC). Comparable and standardized data sources are used to estimate HRH density globally and examine the relationship between HRH cadre subsets and UHC effective coverage performance.(Haakenstad et al., 2022)While the Global Strategy on Human Resources for Health: Workforce 2030 is primarily aimed at Member State planners and policymakers, its contents are of value to all relevant stakeholders in the health workforce area, including public and private sector employers, professional associations, education and institutions of training, trade unions, bilateral and multilateral development partners, international organizations, and civil society (Organization, 2016).

The community has an important role to play in improving the maximum quality of health services to the community so that people can increase awareness, will, and ability to live healthily so that the highest degree of health can be realized as an investment in the development of human resources that are socially and economically productive and as an element of general welfare as stated in referred to in the Preamble to the 1945 Constitution of the Republic of Indonesia. Health as a Human Right must be realized in the form of providing various health services to the entire community through the implementation of comprehensive health development by the Government, Regional Government, and the community in a directed, integrated, and sustainable manner, fair and equitable, as well as safe, high quality and affordable for the community. Health efforts must be implemented by responsible health workers with high ethics and morals, expertise, and authority whose quality must continuously be improved through continuous education and training. , certification, registration, licensing, guidance, supervision, and monitoring so that the implementation of health efforts fulfills a sense of justice and humanity. It is to developments in health science and technology (Indonesian Ministry of Health, 2020).

The government's responsibility regarding health service facilities is also regulated in Article 17, Article 19, and Article 21 of Law Number 17 of 2023 concerning Health, where it is stated in Article 17 that "To improve and maintain the highest level of health, the government is responsible for providing access to information, education, and health service facilities. This is stated in Article 19: "The government is responsible for the availability of all forms of quality, safe, efficient and affordable health care. Meanwhile, Article 21, paragraph (1) states, "The government regulates the planning, procurement, utilization, development, and supervision of the quality of health workers in the context of providing health services."(Indonesian Ministry of Health, 2023)

Posyandu, or Integrated Service Post, is the government's effort to make it easier for the Indonesian people to obtain maternal and child health services. The main goal of posyandu is to prevent an increase in maternal and infant mortality rates during pregnancy, childbirth, or afterward through community empowerment. The role of cadres dramatically influences the quality and development of service quality and the scope of posyandu activities. Posyandu cadres

are part of voluntary, capable community members who always have time to participate in posyandu activities(Neno et al., 2021). According to the Minister of Health Regulation (2019), Posyandu cadres are people selected and trained to mobilize the community to participate in community empowerment in the health sector. Formation of cadres using cadres from community participation through counseling, training, and guidance so that they are able to solve problems and carry out their duties by utilizing existing resources to achieve optimal service(Didah, 2020; Neno et al., 2021).

Health development and the success of a posyandu cannot be separated from the role and hard work of posyandu cadres. To support the achievement of quality posyandu activities, increasing cadre knowledge is supported. It is hoped that increasing cadre knowledge can improve cadre performance so that quality and quality services can be achieved (Tanwir Djafar, 2019). Performance is the result of work in terms of quality and quantity achieved by an employee in carrying out his duties according to his responsibilities(Faroman Syarief, 2022). Insufficient availability of health human resources, both in number, type, and quality and unequal distribution, impacts low community access to quality health services (Education et al., 2019). Apart from that, quality health services cannot be separated from the performance of health workers; good or bad services provided to patients will affect the level of patient satisfaction (Anindita & Indrawati, 2020).

The cadres' performance influences Posyandu's success, and high motivation in Posyandu activities will improve the cadres' performance. So, to solve the above problems, you can use a decision support system. Decision support systems are interactive information systems that provide information, modeling, and data manipulation. They are used to assist decision-making in certain situations.

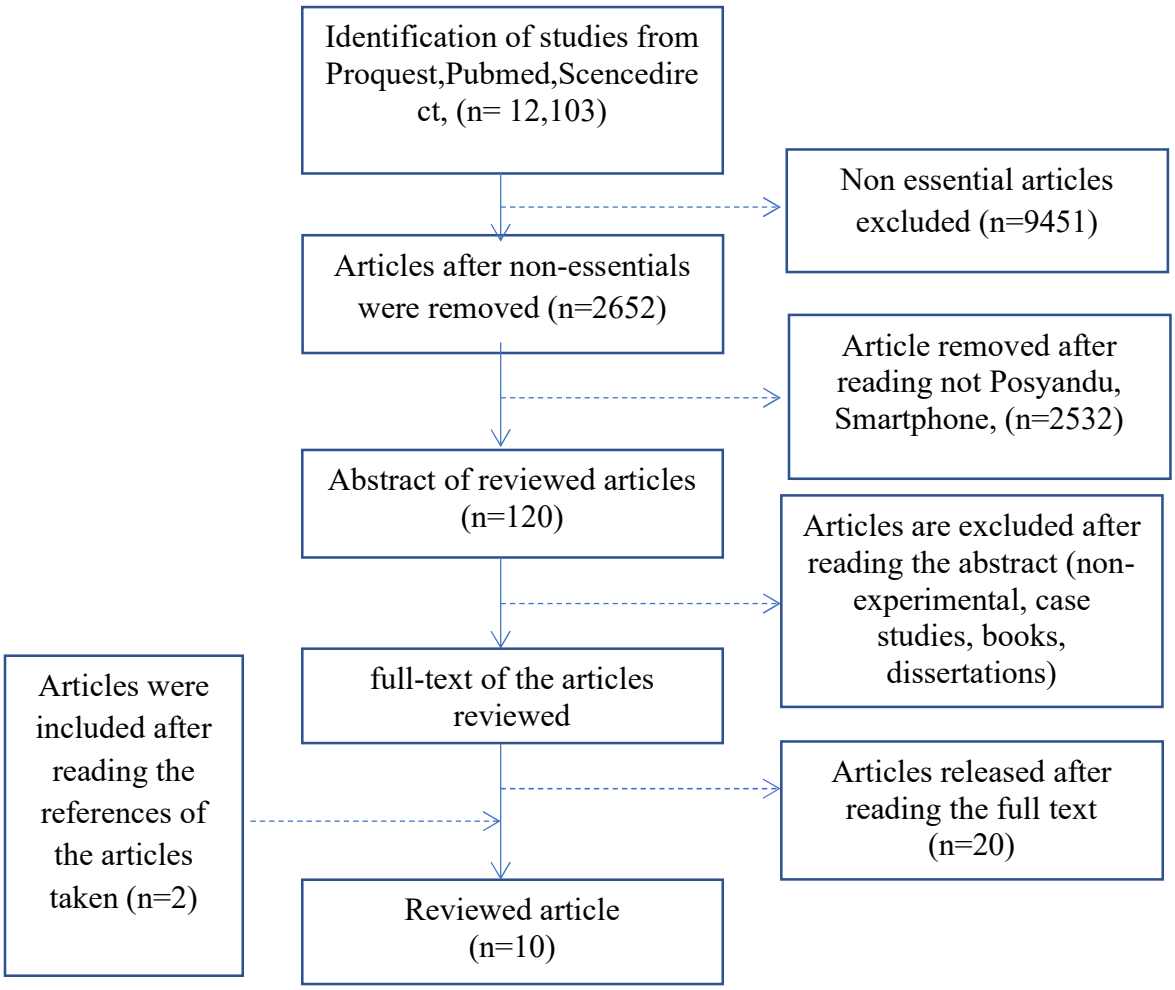
The aim of this literature review is to identify and describe the performance of posyandu services through the use of smartphone applications.

METHOD

In this research, the method used is a systematic review using techniquesPICOT and journal search terms via MESH. The literature sources in this study mostly come from online database journals, which provide Indonesian and English journal articles in PDF format, as well as articles indexed by Scopus and scientific studies at home and abroad, with several sources, such as Pubmed, Proquest, Google Scholar and ScienceDirect, and Other sources such as Books. Researchers wrote down keywords according to MESH (Medical Subject Heading), namely "service", "smartphone", and "posyandu" and selected full text.

Of the 12,103 journals identified in three databases (Pubmed, Proquest, and ScienceDirect), 9,451 are entirely unrelated to the topic. Moreover, of the 2654 journals remaining after limiting journal publication years in the last ten years, 2,532 journals have been released, leaving 120 remaining. Of the remaining 120 journals, a review of the abstracts was carried out, and only the journals were taken; this was related to utilization. Smartphones are in posyandu services, so 20 journals have been published, consisting of review journals and journals related to the use of smartphones for health services. So, the 10 remaining journals will be read in full text.

Figure 1. Data Extraction Process Based on PRISMA



RESULTS

Table. 1

Results of Literature Review Concerning: Use of Smartphones in Posyandu services

No	Author/Year	Title	Objective	Method	New Results and Findings
1	Widarti, Widarti Rinawan, Fedri R Susanti, Ari Indra Fitri, Hironima N[38]	Differences in Posyandu Cadres' Knowledge Before and After Training on Using the Posyandu Application	Knowing the difference in cadres' knowledge before and after training regarding the use of the iPosyandu application	Cross-Sectional study	There are differences in cadres' knowledge after participating in training on using the iPosyandu application. Cadres who have good knowledge increase by 100%

2	Rakhman, Shinta Oktaviana/2019[42]	Nfc Technology On Integrated E-Ktp For Health Service Post In Indonesia Based Android	implementation of integrated posyandu applications with Android-based field-based communication (NFC) technology	Experimental study	This Android-based posyandu application makes it easier for officers to record data using an Android smartphone.
3	Wiyono, Nuri/2020[9]	Android-Based Posyandu Information System Prototype	Utilization of Android-based smartphone applications to support Posyandu operational activities	Experimental study	Information System Prototype Android Based Posyandu Manage member data and toddlers and see their development. healthy
4	Sara Rizvi Jafree, 1 Nadia Bukhari, 2 Anam Muzamill, 3 Faiza Tasneem, 4 Florian Fischer/2021[24]	Digital health literacy intervention to support maternal, child, and family health in primary healthcare settings of Pakistan during the age of coronavirus: Study protocol for a randomized controlled trial	Digital health literacy intervention, using smartphones and the internet, for disadvantaged women through female community health workers	Randomized controlled trial	Increasing health literacy in women of reproductive age is known to improve the health of mothers, children, and families.
5	Meilani Putri Efendy, Debi Setiawan/2021[10]	Four Healthy Five Perfect Food Application Design To Prevent Stunting	Realizing a tool for detecting nutritional value in children in the form of a design model that will be used by millennial mothers today	Thinking design	Evaluation results from the audience using Google Forms, Received a response of 17% repaired, and 83% continued to the stage. implementation or application
6	Ana Veria Setyawati, Vilda Agus Herlambang, Bambang[40]	Mobile Health Nutrition Book Design to Prevent Stunting in Children <5 Years	Develop a mobile book design to help mothers monitor their children's growth and development.	SDLC prototyping model with usability testing	Based on the results, a mobile health nutrition book can be produced and used on mobile phones with the Android platform.
7	Zhao, H., Deng, S., Liu, Y., Xia, S., Lim,	Promoting smartphone users' avoidance intention:	To investigate the role of health beliefs (i.e., perceived susceptibility,	Cross-sectional Study	This study shows that HBM is valuable in explaining and promoting users' smartphone avoidance intentions,

	ETK, & Tan, C.W. (2022)	The role of Health beliefs	perceived severity, perceived benefits, perceived barriers		expanding the extant literature on HBM and smartphone avoidance.
8	Wicaksono, KE, & Satiti, IAD (2020)[41]	The use of Nutrition Management for Stunting Children (MNBS) Smartphone Application to Increase the Growth of Stunting Children	To analyze the effect of Stunting Toddler Nutrition Management (MNBS) to increase the growth of children under five years of age with stunting conditions	Experimental study	There is an influence of the Stunting Toddler Nutrition Management (MNBS) smartphone application on the growth of toddlers with stunting.
9	Yuliet, Sri Novita Mulyono, Sigit (2020)[32]	Effectiveness of Smartphone Applications as a Means of Supporting Posyandu Activities	To see the effectiveness of smartphone applications as a means of supporting Posyandu activities	Literature Review	The analysis results show that many smartphone application models can be applied to Posyandu activities. They have been proven to improve the systematic, effective, and efficient management of Posyandu administrative data for toddlers and make it easier for cadres to monitor toddlers' development and make reports.
10	Ika Devi Perwitasari, Jodi Hendrawan, (2020)[5]	Design And Development Of Baby -Based Development And Monitoring E -Posyandu System	Android-based application developed to assist posyandu administration services in the form of baby data collection.	UML (Unfinished Modeling Language)	The Android application makes it easier to present information and facilitates parents to monitor their baby's immunization schedule. The posyandu web admin is greatly helped by the existence of an admin system for each posyandu

Table 2 Related Research

No	Author/Year	Title	Method	Feature
1	(Imam, Soleh, M; Ragil, 2017)	Web Based Yandu Pos Application Development	Waterfalls	Toddler Weighing Page, Toddler Weighing Data Input Page, Toddler Weighing Chart
2	(Yuliet & Mulyono, 2020)	Effectiveness of Smartphone Applications as a Means of Supporting Posyandu Sri Activities	Literature Review And Analysis Study	Android Application Baby Care, M Posyandu, SMS Gateway, and Use of Social Media.
3	(Sutabri Et Al., 2020)	Android-Based Digital Posyandu Application Design	Prototype	Maleoapps Application, Profile/Identity Features, Admin Contact and Information
4	(Rithmaya & Yutanto, 2021)	Increasing the Capacity of Internal Posyandu Cadres Management and Financial Database Management of Posyandu Balita Sakinah Rw 08 Gunung Anyar	Waterfalls	Posyandu System Management, Posyandu Master Data, Registration of Pregnant Women, Posyandu Activity Reports.
5	(Hubaedah Et Al., 2021)	Implementation of Digital Smart Care for Health Cadres as an Effort to Prevent Stunting	Preparation, Implementation, Evaluation.	Digital Smart Care (Si Jacks). The Application Features include Identifying the Number of Toddlers and Providing Information on Facilities and Infrastructure.
6	(Ramadan; Et Al., 2022)	Implementation of Qr-Code Based Kms Electronic Application in Posyandu Rumpun Bambu Bandung Regency	Preparation, Implementation, Evaluation	E-Kms with database features per cadre, babies, baby data, weight, or growth charts.
7	(Anita Et Al., 2022)	Android-Based E-Posyandu Application in Mungkajang District	Waterfalls	Features: User Page, Kih Notes, Schedule, Contact, Immunization Schedule, Baby Data List, Posyandu List and Baby Family Records.
8	(Damayanti & Jannah, 2022)	Utilization of the Epok Application (E-Posyandu Health) in Monitoring the Growth and Development of Toddlers	Pretest, Application Introduction, Monitoring Scales with Application, Assistance, Application User Assessment, Posttest	Android application with baby/toddler data monitoring features, communication via WhatsApp, and an Epok application assessment.

DISCUSSION

1. Digital Transformation in the Health Sector

In this modern era, technological developments are very rapid, including Development of information and communication technology (Vaterlaus et al., 2021). One proof of technological development is the existence of smartphones, often called smartphones. These are mobile phones that run an operating system and are permanently connected to the Internet (Lee et al., 2012).

Information technology can provide convenience in the work processes carried out by humans (Information Technology in Making Best Employee Evaluation Decisions Dodoan Ariando Butar-Butar et al., 2020).Technological developments have now penetrated various areas of life, including health. Now, many patients can get health services more easily without going directly to a health service location. Now, we can get enough health services through online information technology using our smartphones. Now that we have entered the millennium era, our health sector has experienced many developments (Cholik, 2021).Research conducted by(Doswell et al., 2013). This explains the importance of developing mobile health devices such as smartphones for people in the current era. Due to the development of the times, everything in this world is developing rapidly, including in the health sector. Nowadays, everything can be accessed via smartphone. Smartphones can help someone increase their knowledge, which is related to improving health services to the community in particular. Several studies have been conducted related to the use of smartphones in the health sector, including Models of smartphone use in revealing the interaction behavior of older adults with neurological diseases.(Ceolini et al., 2022), Developing a smartphone Application for the transdiagnostic treatment of emotional disorders(Osma et al., 2022), Use of smartphone applications for medical image recognition that health workers need to know(Susanto et al., 2022), Development and validation of a scale to evaluate the impact of smartphone use on healthcare professionals(Altamimi et al., 2020), Smartphone use for point-of-care testing of human metabolites(Zhang et al., 2022), Smartphone-based telerehabilitation healthcare use with patients with Chronic Obstructive Pulmonary Disease in India(Bairapareddy et al., 2021).

Health services are also transforming from conventional to urban health services characterized by convenience and speed. Several community-based health services are slowly using modern tools as urban characteristics. Posyandu, which has a role as a guardian of the health status of mothers and children, is increasingly being asked to increase institutional creativity and adopt digital systems in services to the community. Posyandu is also required to carry out the noble mission of eliminating stunting as a very complex public health problem (Yuliet & Mulyono, 2020).

Smartphones are modern technological devices that make communicating, obtaining information, and working more quickly and comprehensively easier. Smartphone devices have various standard applications built into them, but for the development of use, they collaborate with various general and specific applications. General applications are applications that are widely

known to the public and are used for various purposes, such as WhatsApp, Facebook, Twitter, etc. Some use special applications for specific purposes, such as rumahsakit.com, medicin.com, etc (Seo et al., 2021).

2. Use of smartphones for Posyandu Services

In the field of health software technology, the most widely used communication software or applications with the help of video, these applications are Zoom, GMeet, and WhatsApp. Social media, such as Twitter, Instagram, Facebook, and YouTube, as well as systems and applications such as Google Trends and Geographic Information Systems, help track, discover, and analyze outbreaks in everyday life. In terms of everyday use of digital technology, the most prominent activities are tracking, analyzing data, predicting/forecasting, and diagnosing viruses, and digital solutions that significantly protect and support public health(Wiyono, 2020; Jafree et al., 2021)

The use of smartphones in the world of health is considered effective in increasing access to health services (Free et al., 2010). Mobile technology, such as smartphones, can improve health care by providing assessments and interventions that reach people in everyday life. However, further assessment is needed for people with serious mental illness to make meaningful use of smartphone technology, and interventions need to be tailored for this population (Deye et al., 2016). Likewise, with the treatment of patients who experience mental disorders, where mobile health applications (mHealth/smartphones) provide new methods for interacting with patients and can help patients manage their mental health conditions.(Atallah et al., 2018;Donker et al., 2013).Most frequently used technologies categorized into education, health care, work, and daily use to provide an overview of the benefits of digital technology during the pandemic(Iyengar et al., 2020).

The use of smartphones and applications used in posyandu services further accelerates the achievement of targets in the form of smart posyandu (Wijayanto, 2012)SMART means achieving the goal of using Specific, Measurable, Achievable, Relevant, and Timebound. Smart posyandu is also called smart posyandu because it utilizes smartphone applications in institutional posyandu services and adapts to the social and cultural status of the community.(Yuliet & Mulyono, 2020;Ika Devi Perwitasari, 2020).

CONCLUSION

The use of smartphones and applications in posyandu services accelerates the achievement of targets in the form of posyandu and effectively increases access to health services.

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