

The 'Pentol Bakar' Application as an Innovative Approach in Mental Health Emergencies: A Scoping Review

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Abstract

Mental health disorders is a complex issue that requires serious attention. The "Pentol Bakar" application was developed to evaluate Pentol Bakar as an innovation in patient pick-up services for mental health emergencies and to assess the strengths and weaknesses of the service, as well as to conduct a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis of the Pentol Bakar service for patients with mental health issues at RSJD Dr. Amino Gondohutomo. The literature search method in this study is a scoping review, involving searching for journals or research articles through search engines, then using the PCC framework to create inclusion and exclusion criteria for the journals. The process of article searches and selection then used PRISMA-ScR. This review found a total of 893 articles, and the only five articles met the inclusion criteria. The analysis showed that the "Pentol Bakar" application had some shortcomings for patients and/or their families, including limited exposure to and understanding of technology and the application, inadequate mobile phones for downloading the application, inability to pay for the service, and difficulty for healthcare workers in obtaining detailed information about the patient's condition. On the positive side, the application made it easier to handle psychiatric emergencies, provided broader access to services, and made hospital services more efficient. This study explores the outcomes related to psychiatric emergency handling, including the SWOT analysis. These findings are expected to contribute positively to improving the quality of mental health services at the relevant institution.

Keywords: Application, Emergencies, Medical Services, Mental Health.

INTRODUCTION

Hospitals can improve the efficiency of health services through digital technology, from patient registration to care management and health data management. In health services, hospitals can improve the quality of health services through the implementation of electronic medical records (RME), telemedicine, online queuing systems, and other health applications (Kementrian Kesehatan RI, 2024). In Indonesia, internet usage increased to 50% of the population (120 million people) in 2018 (Arjadi et al., 2018). One alternative to overcome this barrier is the utilisation of internet-based health services, which can reach young people who are vulnerable to mental health problems as well as communities in areas with limited access to services (Abas & Sukihananto, 2023). Therefore, internet-based interventions have the potential to be an effective strategy in reducing disparities in access to mental health services. With technological advances, internet-based interventions can provide more equitable access to mental health services, reduce service gaps, and help communities overcome stigma and access difficulties. Digital interventions allow for wider engagement, so individuals with mental health disorders can get early support and essential information in a more affordable and welcoming environment.



At RSJD Dr Amino Gondohutomo, there is the PENTOL BAKAR application, which is a patient pick-up application. RSJD Dr Amino Gondohutomo is a mental hospital located in Semarang. Preliminary studies in this hospital have implemented internet-based technological innovations with the 'Pentol Bakar' (Press the Button in Case of Mental Emergency) application available at the Emergency Unit (ER). This application consists of several features. The way this application works is when a patient experiences a mental health emergency at home. The Emergency Button, which is the core feature of the app, is an emergency button that can be pressed by the patient, their family or carers who can directly open the Pentol Bakar app and press the 'On' button. This information will then be directly connected to the ER of Amino Mental Hospital, so that hospital staff immediately pick up the patient for a mental health assessment and take him to the ER for further treatment.

Mental health emergencies at home are often characterised by unpredictable and dangerous behaviours such as aggression, delusions, or hallucinations, which can be harmful to oneself or others, requiring immediate intervention. The state of mental health problems is still a complex issue and requires serious attention in the community. Data from the Health Research and Development Agency (Litbangkes) in 2016 noted that as many as 1,800 people committed suicide, or at least 5 people every day. For this reason, the Pentol Bakar app was developed to improve response to emergency situations, allowing patient families to report alarming conditions quickly and efficiently. This innovation not only speeds up the treatment process, but also provides a sense of security for patients and their families as they know that help is immediately accessible when needed (Mavrogiorgou et al., 2011). Thus, the Pentol Bakar app has the potential to improve the quality of mental health services in the community and reduce the negative impact of emergencies that occur at home.

Based on the prevalence of mental health disorders in Indonesia, as well as advances in digital technology that enable innovation in the provision of physical and mental health services, the researchers were interested in analysing the use of the Pentol Bakar app in RSJD Dr. Amino Gondohutomo, Semarang, Central Java. The selection of the scoping review method for this study was suitable for identifying research trends as well as gathering evidence from multiple sources before developing further studies (Munn et al., 2018). A more in-depth explanation of the methodology can provide a stronger foundation for the research, ensuring that the review not only describes the innovation but also highlights important aspects such as implementation challenges as well as recommendations for the future development of digital health services. This study aims to understand the Pentol Bakar application as an innovative patient pick-up service in mental health emergencies, assess the strengths and weaknesses of the service, and conduct a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis of the Pentol Bakar service for patients with mental health problems at RSJD Dr Amino Gondohutomo.

METHODS

The method used in this research is a scoping review. The scoping review method was chosen because the reference sources used vary, coming from journal articles and official websites. Scoping review is a method used to identify literature in-depth and comprehensively by identifying and presenting an overview of the evidence on a topic, as well as noting the existing gaps in the research (Lockwood & Tricco, 2020). A scoping review aims to answer questions from the specified research topic by using various sources of similar research articles, which are then grouped and concluded (Widiasih et al., 2020). In the process of conducting a scoping review, several steps need to be undertaken by researchers. This process refers to the framework initially developed by Arksey and O'Malley (2005), and later refined by Levac, Colquhoun, and O'Brien (2010). These steps include: Formulating research questions that align with the study's objectives, searching various sources to find relevant literature, selecting literature based on its relevance to the topic, organizing and mapping the collected literature, drafting a report that includes the analysis of the selected literature, and consulting with experts in the related field (Ebidoor & Ikhida, 2024).

The literature search method in scoping review research is in the form of searching for journals or research articles through search engines such as PubMed, Science Direct, and Scopus. The keywords used to help search the literature are: 'Mental Health Emergency' AND "Ambulance Service" AND "Emergency Medical Services Application". The strategy employed by researchers in searching for articles or journals is to use the PCC framework, which includes Population, Concept, and Context. This framework serves as a guide in establishing inclusion and exclusion criteria, enabling the desired coverage or scope to be achieved in the research. (Peters et al., 2017). Through the PCC framework, the research question formed is: "How is the use of the PENTOL



BAKAR application developed as an Innovation for the Patient Pick-up Service with mental health emergencies at RSJD Dr. Amino Gondohutomo, Central Java Province?”.

Table 1. Framework PCC

Population (P)	1. Patients with mental health emergencies 2. Healthcare workers who handle mental health issues - General public.
Concept (C)	Ambulance service innovation as a response to mental health emergencies.
Context (C)	Operation and implementation of ambulance services in psychiatric hospitals.

Based on the PCC framework, the inclusion and exclusion criteria in the literature search can be formulated as follows:

Table 2. Inclusion and Exclusion Criteria

Inclusion	Exclusion
1. Psychiatric patients experiencing mental health emergencies.	1. Psychiatric patients who do not experience mental health emergencies.
1. Use of ambulance services for picking up psychiatric patients.	2. Patients with physical disorders.
2. Research that discusses technological innovation in mental health services.	3. Research discussing mental health emergency services without ambulance services.
3. An article discusses the effectiveness, benefits, advantages, and disadvantages of mental health emergency application services.	
4. Research articles with publication in the last 5 years (2019-2024).	4. Research papers published before 2019.
5. Articles written in Indonesian and English.	5. Articles written in languages other than Indonesian and English.

In conducting the scoping review, researchers independently searched for literature through trusted databases, analyzing the articles found to identify differences and avoid duplication. The process of searching and selecting articles uses PRISMA-ScR, developed by the EQUATOR Network to enhance the quality and transparency of research reporting. Search results are selected based on inclusion criteria through the analysis of research titles and article abstracts. Selected articles are entered into an article synthesis matrix table. The analysis results are summarized to produce outputs that refer to the research objectives or questions and discuss the implications for future research, practice, and policy. The results of the scoping review can be submitted for consultation with relevant parties, although this is optional (Widiasih et al., 2020).

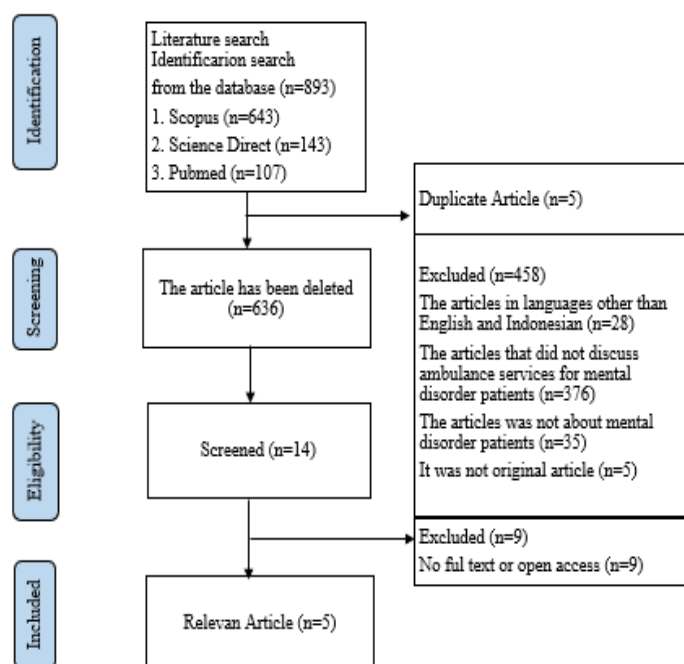


Figure 1. PRISMA-ScR Flow Diagram

RESULTS

Literature Identity in the Study

Table 3. Literatur Identity

No	Author	Year Publication	Language	Title	The Name of Journal	Access Type	Indexed Journal Databases
1.	Harriet Elizabeth Moore, Aloysius Niroshan Siriwardena, Mark Gussy and Robert Spaight	2023	English	Mental health emergencies attended by ambulances in the United Kingdom and the implications for health service delivery: A cross-sectional study	Journal of Health Services Research & Policy	Full text, open access	Scopus
2.	Joshua Moskovitz MD, Joshua Sapadin BA, Michael Guttenberg DO	2019	English	Interfacility ambulance transport of mental health patients	Journal of the American college of Emergency Physician Open	Full text, open access	Pubmed
3.	Lizbet Todorova, Anders Johansson, Bodil Ivarsson.	2021	English	A Prehospital Emergency Psychiatric Unit in an Ambulance Care Service from the Perspective of Prehospital Emergency Nurses: A Qualitative Study	Healthcare (Basel)	Full text, access open	Pubmed
4.	M. Colla G.A. Oliveira G.D. Santos	2019	English	Operations Management in Emergency Medical Services: Response Time in a Brazilian Mobile Emergency Care Service	Procedia Manufacturing	Full text, access open	Science direct
5.	Torus et al	2021	English	The growing field of digital psychiatry: current evidence and the future of apps, social media, chatbots, and virtual reality. World psychiatry	World Psychiatry	Full text, access open	Scopus

Table 4. Extracted Data from Studies on Mental Health Emergency Services

Title	Purpose	Method	Research Findings	Similarities	Uniqueness
Mental health emergencies attended by ambulances in the United Kingdom and the implications for health service	Explain about the epidemiology of mental health emergencies handled by East Midlands Ambulance	Desain cross-Sectional Using routine observational retrospective data from EMAS	The data analysis results show anxiety (38.0%), overdose (21.2%), depression (15.0%), and suicide attempts (8.6%). In terms of pickup, the records show treated and transported (59.9%), patients refusing care/ transport (17.1%), treated and discharged (12.5%), no care needed (5.2%), and referred to a general practitioner (3.4%), indicating opportunities to enhance the provision of emergency medical	a. Mental health emergency services b. Hospital background Respondents are patients	Epidemiology of services health emergency

Interfacility ambulance transport of mental health patients	Highlighting several hazards to help minimize risks faced by EMS and identifying best practices currently used during the transfer of mental health patients between facilities.	Writing Method: Using the article review method. This journal examines various aspects related to interfacility transport for mental health patients by emergency medical services (EMS).	services and collaboration between primary healthcare services and mental health professionals. The dispatch triage includes referring phone calls to healthcare professionals for consultation. Additionally, it is important to distinguish between physical and mental health emergencies and refer patients to appropriate services early in the emergency response cycle. Protecting EMS personnel from injury is crucial to maintaining a healthcare system that can manage the increasing demands of emergency psychiatric services. Some recommended tips include assessing agitation and risk of violence, using telemedicine, restraints, and sedation. Injuries that frequently occur during the transfer of care are a major concern. Therefore, minimizing transportation, such as through the use of telemedicine, is highly recommended.	a. Mental health emergency b. Hospital background c. Materials for medical personnel and patients	Materials for medical personnel in carrying out emergency response
A Prehospital Emergency Psychiatric Unit in an Ambulance Care Service from the Perspective of Prehospital Emergency Nurses: A Qualitative Study	Discussing and evaluating the care pathways	Descriptive Qualitative	This study found that a pilot project The Prehospital Emergency Psychiatric Unit (PAP) pilot project in Sweden, which involved collaboration between prehospital emergency nurses (PENs) and specialist psychiatric nurses (PNs), had a positive impact on the management of mentally ill patients in emergency situations. The nurses involved reported an improvement in their ability to manage psychiatric patients due to joint training, access to patients' medical records, and co-operation with the police. The LAP enabled nurses to more accurately assess patients' conditions and reduced the need to transport patients to hospital, often providing on-the-spot care. The project also increased health workers' confidence in dealing with psychiatric patients who often require a specialized approach, created a sense of security for patients and families, and reduced the stigma	a. Mental health emergency services b. Hospital background c. Materials for medical personnel	Patient ambulance service responsiveness and emergency service management

Operations Management in Emergency Medical Services: Response Time in a Brazilian Mobile Emergency Care Service	Operations Management in Emergency Medical Services: Response Time in Mobile Emergency Care Services in Brazil	Literature review	of mental illness in the community. This study found limitations in internal processes and the quality of information needed for decision-making in ambulance dispatch. The results contribute to quantitative research on EMS with a focus on developing countries, as well as being relevant for exploring the specifics of operations management and its application in safety services.	a. Mental health emergency services b. Materials for medical personnel	Patient ambulance service responsiveness and emergency service management
The growing field of digital psychiatry: current evidence and the future of apps, social media, chatbots, and virtual reality. World psychiatry	This study found limitations in internal processes and the quality of information needed for decision-making in ambulance dispatch. The results contribute to quantitative research on EMS with a focus on developing countries, as well as being relevant for exploring the specifics of operations management and its application in safety services.	Literature review with iPARISH framework	This study provides an overview of the use of Digital Health Technologies (DHT) in delivering easily accessible and continuous mental health care interventions. It discusses the relevance of recent technological advancements, including digital phenotypes and remote interventions.	a. Mental health emergency service b. Hospital background c. Materials for medical personnel	Effectiveness, benefits, advantages, and disadvantages of service-based

Data Analysis

Table 5. Data Analysis Result

No	Title	Data Analysis Result and Discussion
1.	Mental health emergencies attended by ambulances in the United Kingdom and the implications for health service delivery: A cross-sectional study	The findings showed that anxiety, overdose, depression, and suicide attempts were the main reasons for emergency calls, with most patients eventually receiving treatment and being transported to a medical facility (59.9%). However, the proportion of patients who refused transport or did not require immediate treatment (17.1% and 5.2%) highlights the need for an improved triage system. EMS services should therefore be more effective in sorting out patients who need ongoing mental health care and directing them to appropriate primary care from the outset. By involving psychologists and psychiatrists in the triage process of emergency calls, operators can more accurately determine referrals, allowing ambulance services to focus on truly urgent cases. This system optimisation will

2. Interfacility ambulance transport of mental health patients	improve the efficiency of emergency services and ensure that patients receive the right interventions according to their needs. The findings suggest that injuries sustained by EMS personnel during transport of patients with mental health disorders are of serious concern. To reduce this risk, strategies such as assessment of the patient's level of agitation, use of telemedicine, and appropriate restraint and sedation methods are needed. The implication for emergency services is the need to refine transport protocols to make them safer for staff and patients. Reducing the frequency of transport by optimising the use of telemedicine may help avoid unnecessary transfers. In addition, evaluation of patient risk prior to transport and implementation of injury prevention strategies can improve efficiency and keep medical personnel safe in the emergency healthcare system.
3. A Prehospital Emergency Psychiatric Unit in an Ambulance Care Service from the Perspective of Prehospital Emergency Nurses: A Qualitative Study	Research shows that collaboration between emergency nurses and specialist psychiatric nurses in the Prehospital Emergency Psychiatric Unit (PAP) project in Sweden has a positive impact on the management of mentally ill patients in emergency situations. With joint training, access to medical records, and co-operation with the police, nurses can more accurately assess a patient's condition and often provide treatment on the spot without the need to transport the patient to hospital. The implication for emergency services is the need for a more integrated approach to the management of psychiatric patients, such as strengthening cooperation between medical personnel and security forces and adapting the ambulance environment to make it more comfortable for patients. With changes such as changing the ambulance bed to a small chair, patients feel safer and psychologically supported, which reduces the stigma attached to mental illness. These strategies increase the confidence of medical personnel and patients, ensure more effective care, and create an emergency care system that is more responsive to mental health needs.
4. Operations Management in Emergency Medical Services: Response Time in a Brazilian Mobile Emergency Care Service	This study found several weaknesses in the internal systems and quality of information used in decision-making for ambulance dispatch. This has an impact on mental health emergency services and the effectiveness of medical personnel in providing rapid response to patients. The results of this study contribute to quantitative research on EMS with the implication that improvements are needed in the operational management of EMS, especially in developing countries, to make the ambulance dispatch process more efficient and data-driven. In the operational context, systems can be developed to improve patient and medic safety and ensure more optimised services for mental health conditions and other emergencies.
5. The growing field of digital psychiatry: current evidence and the future of apps, social media, chatbots, and virtual reality. World psychiatry	Digital Health Technology (DHT) is increasingly used for the clinical management of long-term mental health problems. This research suggests that digital health technologies (DHTs) can help provide more accessible and sustainable mental health interventions. Recent technological advances, such as digital phenotyping and remote interventions, allow individuals to self-manage symptoms as a complement to usual care. In the healthcare system, it is necessary to integrate these technologies to improve relapse risk prediction and provide timely interventions. By utilising data from smartphones, medical personnel can respond more quickly to patients' conditions and prevent them from worsening. Further research is needed to refine the use of DHT to make mental health services more efficient and reach more patients without relying on face-to-face encounters.

DISCUSSION

Mental Health Emergency "Pentol Bakar"

Handling psychiatric emergencies requires proper assessment, safety assurance, immediate attention to the client, and risk evaluation related to violence, loss of control, aggression, self-harm, suicide, or homicide. In psychiatric emergency situations, treatment is generally focused on managing behavior and symptoms (Cucu Rokayah, 2023). RSJD Amino has an innovation related to handling psychiatric emergencies, which is the "Pentol Bakar" application that focuses on picking up patients with psychiatric emergencies.



Handling psychiatric emergencies requires proper assessment, safety assurance, immediate attention to the client, and risk evaluation related to violence, loss of control, aggression, self-harm, suicide, or homicide. In emergency situations, treatment usually focuses on managing behavior and symptoms. RSJD Amino has an innovation in the form of the "Pentol Bakar" application, which focuses on picking up patients with psychiatric emergencies.

Based on an interview with one of the healthcare workers at RSJD Amino Gondohutomo, it was found that there are two options for patient pickup. The first option includes 3 nurses and 1 driver, and the second option includes 1 doctor, 2 nurses, and 1 driver. Additionally, the process of picking up psychiatric emergency patients begins with the patient's family contacting a WhatsApp number directed from the application. Subsequently, the healthcare workers verify the patient's information, including the patient's condition, mental health history, and other details based on information from the family. The healthcare team picking up the patient wears personal protective equipment such as vests, safety helmets, and carries other medical support tools like restraint straps and injection sets (syringes, sedatives like diazepam).

After all preparations are complete, the team along with the ambulance leave for the pick-up location. Once the team arrives at the location, they analyze the patient's condition and administer the necessary measures (strap-on, drug injection, etc.) according to the patient's condition. The usual first treatment is to inject a sedative to relax the muscles, so most patients become unconscious. After the patient was treated, the team took the patient to Amino Gondohutomo Mental Hospital for further treatment.

In one month, there are approximately 10 uses of the Pentol Bakar application. In its implementation in the field, it is also assisted by related parties, such as social services to handle patients in each region. The majority of users of this service are people in Brebes, Tegal, Kendal, Pemalang, Pekalongan, Demak, Rembang, Jepara, Pati and surrounding areas.

Advantages and Disadvantages of Using the Pentol Bakar Application

The Pentol Bakar application developed by RSJD Dr. Amino Gondohutomo has both advantages and disadvantages in its usage. The Pentol Bakar application has the following disadvantages:

1. Patients and/or their families are less exposed to information about the Pentol Bakar application.
2. Patients and/or their families are still less familiar with technology.
3. The mobile phones owned by patients and/or their families are inadequate to download the Pentol Bakar application.
4. Patients and/or their families prefer to contact the hospital through WhatsApp rather than using the application.
5. Patients and/or families who are unable to pay for the cost of pentol bakar services.
6. Healthcare workers find it difficult to understand the detailed condition of patients with mental emergencies.

In addition to the shortcomings of the Pentol Bakar application, of course, this application has various advantages, namely:

1. Opening innovations regarding digital-based health services, especially in the Central Java region.
2. Facilitate patient/family management of psychiatric emergencies.
3. Greater access to services.
4. Services at the hospital become more efficient because they already know the patient's condition beforehand.
5. Accelerate the response of health workers in managing psychiatric emergencies.

As based on the analysis of various articles conducted by Koh et al., (2022) Mental health care apps have major potential to provide timely support, reduce mental health care costs, combat stigma in help-seeking, and improve therapeutic outcomes. However, this study also identified several challenges, such as user engagement issues, security in emergencies, and breaches of privacy and confidentiality.

To overcome these challenges, the application needs collaboration with stakeholders in Central Java to facilitate the development of this application. So that emergency services can also monitor symptoms remotely with the concept of developing real time personalized intervention strategies with strong system application security protection. Furthermore, it can also provide opportunities to develop direct communication features with medical personnel to accelerate emergency response.

Advantages and Disadvantages of Ambulance Services for Patients with Mental Disorders

Digital-based psychiatric emergency services have the potential to enhance mental health care in various ways, such as (Torous et al., 2021):

1. Capture continuous, dense, and diverse mental health data for use in diagnosis and monitoring.
2. Analyzing data, especially through digital paradigms, to generate actionable insights and predictions at the individual level clinically.
3. It offers a wide range of interventions that are often beyond the app itself, by facilitating connections to clinical services, peer support, personalized resources, emergency services, and even new therapies.

The risks and challenges associated with transporting mentally ill patients by emergency medical services (EMS) include that patients with mental health conditions often exhibit aggressive or uncontrollable behavior during transport, increasing the risk of injury to EMS personnel. To date, there are no uniform guidelines or standards for transporting mentally ill patients and differences in regulations between institutions add to confusion in practice, increasing the risk of injury (Moskovitz et al., 2020).

Thus, in line with the review conducted in this study, the PENTOL application as an innovation requires improvement of the transport protocol on the application to make it safer for staff and patients. In addition, the protocol must be adhered to by providers and emergency services. In order to effectively improve protocol adherence, education strategies and improving app services by providing reminders regarding procedures (Ebben et al., 2018). Expanding education on app guidelines could be a future solution to improve knowledge for providers and patients or families regarding the PENTOL App service guidelines and app usage guidelines.

Moore et al.'s study (2023) describes the epidemiology of mental health emergencies treated by East Midlands Ambulance National Health Trust (EMAS). There were 102,079 medical records of mental health emergencies treated by ambulance services in the East Midlands that contained characteristics of mental health emergencies, including records of Dispatch, Primary Impression, and Outcome. Dispatch is determined by the description given by the '999' caller of the patient's condition. Primary Impression is determined by the paramedic attending the emergency based on the initial diagnosis of the patient's condition, and thus tends to be more specific than Dispatch. Mentally ill patients are often recorded in Dispatch as physical problems, such as anxiety problems often misperceived as respiratory problems because the patient is short of breath (Moore et al. 2023).

The management of mental health emergencies often involves misidentification of the initial condition, with emergency calls more often classifying the problem as a physical condition, such as respiratory distress, rather than mental health. The mental health problems most commonly identified by paramedics at the scene are anxiety, intentional drug overdose, and depression. This suggests that primary clinical judgement is more accurate in predicting treatment outcomes. Anxiety is often the main predictor of why patients are brought to hospitals that provide mental health services (Moore et al. 2023).

Pentol Bakar Application Recommendations Based on SWOT Analysis

The use of telepsychiatry is a potential solution to reduce the need for transfers between facilities by providing remote psychiatric services that have been shown to reduce hospitalization and ED wait times and improve EMS efficiency. Some of the proposed recommendations include developing screening criteria for EMS personnel to determine if patients should be transported directly to mental health facilities, promoting the use of telepsychiatry, standardizing best practices in risk assessment prior to transport, implementing a brief meeting between healthcare professionals before initiating transport, as well as establishing uniform safety equipment

for patient restraints and creating a database to track injuries and refusals to transport patients in mental health facilities (Moskovitz, Ba, and Do 2020).

Another recommendation is to improve the capability of EMS personnel through training to better recognize mental health emergencies and involve mental health specialists in the triage process. This aims ensuring patients can be appropriately identified and referred to appropriate services early, thereby improving effectiveness and safety in the management of mental health emergencies (Moore et al. 2023).

Furthermore, Cook (2019) proposed a collaborative model involving multidisciplinary teams consisting of paramedics, mental health nurses and police officers. This model has proven to be effective in some areas of the UK, such as the West Midlands, where such collaboration has reduced Emergency Department readmission rates. Through this approach, paramedics are able to conduct assessments and direct referrals to mental health services, ultimately improving the quality of care and reducing pressure on the emergency services system. Collaboration between ambulance services and mental health services is necessary to ensure that the appropriate and most effective care is provided as quickly as possible.

In addition to collaboration, the recommendation for emergency service personnel is to emphasize providing them with specific training. As most of them do not remember receiving specialized training on how to deal with critical incidents during their initial education. In addition, mental health services also need to provide mentoring for novice paramedics so that they are better prepared to deal with stressful emergency situations (Loef et al., 2021).

Another recommendation was also made by Todorova et al., (2022) where the ambulance service in Sweden does not use beds, but uses chairs and resembles a small room to create a sense of comfort for psychiatric patients. In addition, it is also necessary to collaborate with police agencies to secure the pick-up place to increase patient comfort.

Situational analysis related to the effectiveness of using pentol bakar also needs to be studied further, a simple SWOT analysis related to the application will provide many new views so that the application can be more useful in the future, the following SWOT situational analysis of the pentol bakar application:

Table 6. SWOT Analysis		
External		Threats (T)
	Opportunity (O) There is a large gap between people who need care and their access to care (Salsabilah, Shaluhiah, and Mustofa 2023). This is evidenced by the fact that there are still provinces that do not have Mental Hospitals, while only 40% of General Hospitals have mental service facilities (Ministry of Health of the Republic of Indonesia, 2022). The PENTOL BAKAR innovation can make it easier for patients who have difficulty accessing mental health services.	PENTOL BAKAR has a service tariff that is not cheap so it is possible for people who have a poor economy to be reluctant to use this application.
Internal		
Strength (S)	Strategic Plan (SO)	Strategic Plan (ST)
1. This application can facilitate people who need mental emergency treatment from specialized mental	1. Cooperate with related parties such as institutions. 2. Neighboring communities. 3. Increase promotion of app use in collaboration with health facilities	1. Diversification of payment options and financing schemes: including instalments or cost assistance programmers 2. Expanding the scope of target users by adding additional services such

health hospitals through an emergency button.	4. Utilize social media to promote app usage and create promotional programmers.	as online mental health consultations (<i>telemedicine</i>)
2. This app is available on the play store and registration is easy to complete.		
3. Enable Emergency Medical Service team to locate patients with psychiatric emergencies.		
Weaknesses (W)	Strategic Plan (WO)	Strategic Plan (WT)
1. Not all people use	1. Development of Additional Features on the App: Integrate additional features such as initial screening of mental health conditions, psychiatric emergency categories, and estimated ambulance arrival times to make the app more functional and informative for users.	1. Collaboration with Government to.
2. The PENTOL BAKAR application is only an intermediary for selecting the use of ambulance services and then directly diverted to the number WhatsApp.	2. Provision of Alternative Access for Non-Smartphone Users: Provide SMS-based emergency call services or hotlines for people who do not have smartphones so that they can still access the services offered.	2. Improving Service Accessibility: Work with local governments to provide financial support or subsidies for the poor, to make service rates more affordable.
3. Other necessary features such as screening the condition of mental patients, categories of psychiatric emergencies that can be understood by laypeople, and automatic estimates of distance and time to arrive are not yet integrated in this application.	3. Strengthen User Education on Mental Health: Provide in-app educational modules that teach how to assess basic psychiatric conditions and understand available emergency services, to help laypeople make informed decisions in emergencies.	3. User Service Optimization: Improve the service process by providing a direct line of communication with medical staff through the app without having to be redirected to WhatsApp, to provide a more responsive and integrated service.
		4. Socialization and training programmer on the use of Application: Conduct education and training campaigns for communities, especially in areas with limited access to healthcare, on how to use the PENTOL BAKAR app and the importance of access to mental health.

Pentol Bakar's innovation in managing psychiatric emergencies has shown significant impact in mental health services, especially in improving access and efficiency in managing patients with emergency conditions. With a structured pick-up system, the app speeds up the response of health workers, enables early intervention, and ensures the safety of patients and medical personnel during the transport process.

However, several challenges remain, such as the lack of public understanding of the app, technological limitations for patients' families, and difficulties for medical personnel in obtaining detailed patient information prior to pick-up. This points to the need for increased socialization, technology education, and the development of more comprehensive operational standards to ensure the effectiveness of the service.

In addition, the influence of health policies is also a factor that needs to be further explored. With the increasing use of digital-based emergency services, the government and relevant institutions need to consider regulations that support these services, including subsidy costs for underprivileged patients and strengthening cooperation with social services.

More broadly, apps like Pentol Bakar can serve as an innovative model for other regions looking to develop technology-based psychiatric emergency services. If implementation challenges are overcome, such apps have the potential to reduce the stigma attached to mental health help-seeking, improve patient outcomes, and move the mental health system towards a more inclusive and effective digital transformation. The use of WhatsApp is preferred by patients so it is important to continue to evaluate and develop features in the PENTOL BAKAR application in order to optimally meet user needs.

It is recommended to application regulators and emergency service providers in the future to analyze and evaluate regularly by paying attention to the aspects of 'Usability', "Effectivity", and 'Acceptance'. 'Usability' has more impact on "Acceptability" than 'Effectiveness'. With a high level of 'Usability' will further increase the level of acceptance. If application users consider the application to be very effective, they can still reject its use if Usability is inadequate. So, an application must not only be effective but must also be easy to use (Sullivan et al., 2024). In addition, the lack of user knowledge regarding the use of the application can be improved through training and counselling to health workers and application users, it is hoped that understanding of the importance of emergency management can also be improved.

CONCLUSION

In this study, researchers explored the PENTOL BAKAR application, which was developed as an innovative pick-up service for psychiatric emergency patients at RSJD dr. The findings of this study are related to the effectiveness of using the application in handling psychiatric emergencies, thus accelerating the response of health workers in handling psychiatric emergencies. Through the literature review methodology, the researcher was able to determine the results of the exploration related to the handling of psychiatric emergencies, which included SWOT analysis and interviews with stakeholders. The researcher was able to identify the strengths and weaknesses of the app and provide valuable inputs for further development such as feature development and evaluation of the app, expansion of education related to the use of the app and training of officers is required going forward. For hospitals, the app can improve the flow of emergency care through the emergency button so that they can respond to patients more quickly, while for health workers it can intervene in a more timely manner, reduce the risk of delayed treatment, and improve the accuracy of services, and for health policy makers it can be a reference in making and considering regulations related to the use of this digital technology in the future. These findings are expected to make a positive contribution in improving the quality of mental health services in related institutions.

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