

## THE EFFECTIVENESS OF THE SIJAHE DIGITAL APPLICATION AS A TOOL FOR PHARMACISTS IN EDUCATION ON THE USE OF TRADITIONAL MEDICINE

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### ABSTRAK

Obat tradisional banyak yang memanfaatkan untuk *imunbooster* dengan merebus ataupun mengkonsumsi berupa rendaman ataupun bentuk olahan herbal lainnya. Apoteker membutuhkan akses cepat untuk mendapatkan informasi yang dibutuhkan untuk memberikan saran kepada masyarakat. Pemanfaatan teknologi informasi merupakan salah satu solusinya. Implementasi Aplikasi berbasis Digital bagi Apoteker dapat menjadi kunci utama penambah informasi yang akseptable. Tujuan riset ini adalah untuk menganalisis efektifitas aplikasi berbasis digital Sistem Informasi Jamu dan Herbal (Sijahe) untuk *tools* apoteker dalam edukasi masyarakat dalam menggunakan obat tradisional. Metode penelitian ini adalah kualitatif dengan pendekatan survey untuk mengambil data yang dilakukan pada tahun 2020. Populasi adalah seluruh apoteker di Indonesia yang berjumlah 121ribu dengan sample sebanyak 20 apoteker setiap provinsi besar dengan tehnik pengambilan sample dengan random sampling. yang. Uji efektifitas pada apoteker sebagai *agent of change*, terhadap 6 aspek pengembangan produk, yakni TI (Teknologi Informasi), Kualitas Informasi, Kualitas Pelayanan, Pengguna, Kepuasan Pengguna dan Keuntungan Bersih. Hasil pengembangan diperoleh aplikasi digital Si Jahe yang berisi data base penggunaan berbagai obat tradisional di Indonesia. Hasil survey secara kualitatif menunjukkan aplikasi SIJAHE memiliki dampak positif terhadap 6 aspek dan dapat diterima dengan baik. Keunggulan utama aplikasi SIJAHE adalah kualitas informasi yang sangat baik. Sementara, pada aspek konstruksi IT masih ada keterbatasan pada sistem interaksi yang masih dikembangkan, yakni masih ada bagian tertentu belum user friendly. Simpulan Aplikasi SIJAHE telah merubah persepsi dan kemampuan terhadap penggunaan obat herbal di tengah masyarakat. Peranan apoteker educator sumber informasi obat tradisional, memberikan pengaruh dengan adanya *tools* SIJAHE, melalui validasi data yang telah dilaksanakan

**Kata kunci** : Aplikasi Digital, Obat Tradisional

### ABSTRACT

Many traditional medicines use it for immunity booster by boiling or consuming it in the form of marinades or other forms of herbal preparations. Pharmacists need quick access to the information they need to provide advice to the public. Utilization of information technology is one solution. Implementation of Digital-based Applications for Pharmacists can be the main key to adding accessible information. The purpose of this research is to analyze the effectiveness of the digital-based application of the Herbal and Herbal Information System (Sijahe) for pharmacist tools in educating the public in using traditional medicine. This research method is qualitative with a survey approach to collect data to be carried out in 2020. The population is all pharmacists in Indonesia, totaling 121 thousand with a sample of 20 pharmacists in each major province using a random sampling technique. Which. Effectiveness test on pharmacists as agents of change, on 6 aspects of product development, namely IT (Information Technology), Information Quality, Service Quality, Users, User Satisfaction and Net Profits. The results of the development were obtained by the Si Jahe digital application which contains a data base on the use of various traditional medicines in Indonesia. Qualitative survey results show that the SIJAHE application has a positive impact on 6 aspects and is well received. The main advantage of the SIJAHE application is the excellent quality of information. Meanwhile, in the aspect of IT construction there are still limitations to the interaction system that is still being developed, that is, there are still certain parts that are not user friendly. Conclusion The SIJAHE application has changed the perception and ability to use herbal medicines in the community. The role of the pharmacist

*educator as a source of information on traditional medicines, influences the presence of SIJAHE tools, through data validation that has been carried out*

**Keywords** : *Digital Applications, Traditional Medicine*

## **INTRODUCTION**

Indonesia has more than 25,000-30,000 species of plants and has more than 17,000 islands and has more than 50 types of ecosystems or natural vegetation. The diversity of plants is a wealth and strength that is not owned by other countries. Regional diversity produces a variety of different local wisdoms in utilizing the surrounding natural biological plant resources to meet their medicinal needs (Wati et al, 2020)

At this time, traditional medicine has become a lot of public concern, supported by data that during the pandemic, many people used it for immunity boosters or to relieve complaints of mild symptoms (minor illness), especially women who boiled or consumed in the form of marinades or other forms of processed herbs (Suwarni S., Widayati A., Ayuningtyas ND,2022). Pain is one of the complaints in society ( Rizqi & Putra, 2021). Information technology plays an important role in the life of our society. The system is also important in the pharmaceutical field. Provision of information for high quality services. Health information technology is increasingly being used to support health services in collecting, documenting, and sharing information for patient care. The development of information systems is a key step towards the globalization of information in society by using information technology which is increasing and the trend of developing online-based applications using databases is still not widely developed in the pharmaceutical world (V.A.R.Barao et al, 2022).

Online-based applications in the medical field already exist and various other digital service systems. In this research, online digital applications specifically for traditional medicine are sourced from official government literature where pharmacists create content and can also be used by pharmacists, other health workers and the public. The list of selected medicinal plants in the digital application content is native to Indonesia which has met the criteria which include having minimum proven safety data with acute toxicity data (LD50), having minimum benefit data having preclinical data, quality is expressed by product compliance with the Indonesian Herbal Pharmacopoeia (FHI) ); and preparations in the form of modern formulations (Kementrian Kesehatan RI,2016)

Pharmacists are professional health workers who provide direct and responsible services based on their competence and are able to recommend the use of traditional medicines to consumers. Pharmacists, based on their knowledge, have obtained knowledge of traditional medicine only to make it easier during educational tools to be able to actively respond to and explain the use of traditional medicine in curative or preventive therapy in Indonesian society (Suwarni S., Widayati A., Ayuningtyas ND,2022).

Accurate information about traditional medicine is obtained from pharmacists directly or from the Information System on Jamu and herbs. The pharmacist's role will be maximized if the pharmacist himself upgrades his knowledge related to traditional medicine's efficacy, dosage, compounding method, processing method, cultivation method and how to combine it with conventional medicine. Sources of information on the use of drugs in the community in the community are friends, family, social media need to be aware of the validity of this information (Wati et al, 2020)

Empowerment strategies through digital traditional medicine application systems can provide solutions in empowering communities to use traditional medicines in Indonesia. Pharmacists have a strategic role as agents of change in community empowerment regarding the use of traditional medicines. The purpose of this research is to analyze the ability of

pharmacists as educators using digital-based applications to change people's perceptions of using traditional medicine

## **METHOD**

This research method is qualitative with a survey approach to take data conducted in 2020. The population is all pharmacists in Indonesia amounting to 121 thousand with a sample of 20 pharmacists in each major province with random sampling techniques. that. Test the effectiveness of pharmacists as agents of change, on 6 aspects of product development, namely IT (Information Technology), Information Quality, Service Quality, Users, User Satisfaction and Net Profits. The results of the development were obtained by the Si Jahe digital application which contains a data base on the use of various traditional medicines in Indonesia

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Sijahe development research is an online-based traditional medicine information application system. In this research, 6 research aspects were developed, namely Aspects of Technology Construction, Information Quality Aspects, Service Quality Aspects, User Aspects, User Satisfaction Aspects and Net Profit Aspects.

Aspects of development include the design of technological construction, which includes ease of use, functionality, data quality, portability, integrity and importance. How Information Quality is measured in terms of accuracy, timeliness, completeness, relevance and consistency. Service Quality is measured in terms of computer programs/applications (tangible) ease of access to Information Systems programs

Aspects of Use (User), Use of the system is usually voluntary and is measured as the frequency of use and dependence. User Satisfaction User satisfaction is measured in terms of content, accuracy, format, ease of use and timeliness. Net Benefit (net profit), net profit is measured from the increase in the benefit of improving health services. People who cannot understand health improvement applications without socialization, for example musculoskeletal disorders (Wardoyo et al, 2021). Therefore socialization needs to be done to improve health (Rosadi et al, 2021)

The observation instrument developed was made by a Research Team from the Nusaputera College of Pharmacy, Semarang and Sanata Dharma University, Yogyakarta. This observation sheet is in the form of survey questions about the role of pharmacists as agents of change in empowering communities to use traditional medicine using the Sijahe application.

## **RESULT**

Pharmacists as educators to empower the community in the use of traditional medicines must be able to educate starting from how to plant them, how to process them, to their proper and safe use. The community's enthusiasm is good, so pharmacists must take advantage of this

opportunity so that they can direct the community to use traditional medicine. Pharmacists who have to work on traditional medicine to direct and empower the community for better therapy. Pharmacists' knowledge must be increased so that they can better guide the public in the use of OT for efficacy and dosage. Provide education about the use of OT regarding dosage and efficacy. Explore unearthed herbs. Scientific evidence is needed for the use of OT, there is sustainability education, communication science is added so that it can communicate to change the mindset of the community and references to make recommendations. Pharmacists can build relationships with the community to provide the right information, increase knowledge in IEC with the right information so that good results are obtained, and the community is easier to trust. Pharmacists can develop and utilize Indonesian cultural plants, their knowledge can also be published later and they can synergize with other professions.

Pharmacists have a weakness when they have to become educators, namely the lack of knowledge about traditional medicine based on easily accessible scientific literature so that they can quickly provide information to the public. "An alternative to provide solutions to the problem of media accessibility for access to literature and validity of information is an information system about traditional medicines based on official literature," as stated by the respondent. The development of information technology in the health sector can be seen in a health agency in processing data with the presence of information technology. Health agencies use computer technology to obtain the information needed to convey or send data in the form of information. Even though the world of health and medicine is an information-intensive field, the adoption of information technology is relatively lagging behind. One of the uses of information technology in the health sector is in the pharmaceutical sector, or also called pharmaceutical informatics

Pharmacists hope that there will be easy access to be able to increase knowledge and skills to act as resource persons for education in efforts to empower the community in the use of traditional medicines. Pharmacists have an important role in serving the community in the pharmaceutical sector, especially traditional medicine, but access to knowledge improvement is currently lacking. Pharmacists need sources of scientific information that are easily and quickly accessed so that they are confident when pharmacists collaborate across other disciplines so that they can provide information on dosages/measures for using traditional medicines, processing methods, warnings when consuming traditional medicinal plants.

Traditional drug information system application development has been successfully developed and can be accessed on the <http://sijahe.com> domain. This application is interactive and open access so that it can be a means of empowering the wider community regarding the empowerment of traditional medicine in Indonesia. The application contains information on Indonesian medicinal plants, from the stages of cultivation to processing as traditional medicine. This application can be downloaded and installed from GooglePlay. Free use of the application can be used for anyone who has a Gmail account. In the application, there are various accesses to detailed and specific information regarding medicinal plants

Sijahe application development has been carried out by adopting various potentials of traditional medicine in various regions in Indonesia. This implementation provides a complete database interactively to become a place for literacy treatment of various diseases that are obstacles in society. The available facilities are also equipped with clear and accurate measurements, so that the implementation of treatment can be carried out independently by referring to the Sijahe application that was developed. In certain parts, this application also provides various actual information in the form of Breaking News. In this section, new things related to traditional medicine are provided in a systematic and easy-to-understand presentation. Users can ask various questions and searches in the features provided, so that users can get satisfactory and adequate services.

**DISCUSSION**

The developed application provides a change in perception in society. This is evident from the survey results. The phenomenon of sources of information on drug use in the community, namely friends, family, social media, has raised its own vigilance. Because there is a possibility that the content submitted is not correct and valid information. This of course can lead to pharmacological mis-information and can have an impact on the quality of public health in Indonesia. With the Sijahe application, discrepancies that occur in information can be confirmed and verified by experts or pharmacists. These are fundamental improvements and contributions that can be made so that the digital application of this information system can be accounted for and trusted as a database for the use of traditional medicine for the wider community.

According to the pharmacist's perception that the community, the use of herbs is not just a treatment measure, but rather is disease prevention/health maintenance. This habit is obtained from several sources of information that are less reliable. The difficulty for pharmacists in conveying correct information is a reference for providing information that is easily understood and easily accessible by people who already have good faith in traditional medicine. It is this reliable information that will be the pharmacist's job to provide education and information about the types of herbs, dosage, processing method and correct use for the properties needed.

In the current digital era, an official literature-based information system is urgently needed that can be accessed by pharmacists or the public. With the Sijahe application, changes and obstacles that have existed so far can be overcome properly. From interviews with 87 pharmacists in Indonesia, there was a positive response to the Sijahe application that had been developed. This application has strengths in the information presented, as well as the responses from several respondents who agreed and it is very good for the use of applications for traditional medicine. This research is in line with the application of the dedication that pharmacists as health workers must be able to become role models for utilizing traditional medicines in preventive or curative businesses with practical knowledge for traditional medicines. Health workers need a source of scientific information that is easy and fast to access so that they are confident when collaborating across other disciplines so that they can inform dosages/measures for using traditional medicines, processing methods, warnings at the time of consumption and teaching how to cultivate traditional medicinal plants because of health facilities (Suwarni S et al, 2022)

In certain parts, there are still limitations to this application, where there is a delay in the response of this part of the application to parts of the system being developed. For example, in the search session, buttons are still found that don't function smoothly and properly. This is due to imperfect application development factors and programming constraints. However, this can be noted and improved in the future by adding features that are more user friendly and easy for the general public to use.

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**CONCLUSION**

The Sijahe application has changed the perception and ability to use herbal medicines in the community. The role of the pharmacist educator as a source of information on traditional medicines, influences the presence of SIJAHE tools, through data validation that has been

carried out. The effectiveness test is proven to have a high acceptability impact on the SIJAHE application being developed. The next implementation is how this application is more user friendly and accommodates the latest information on all the potential of traditional medicinal plants in Indonesia

### UCAPAN TERIMAKASIH

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