

IMPROVING ELDERLY DIGITAL HEALTH LITERACY THROUGH MOBILE JKN ASSISTANCE AT HELVETIA PRIMARY HEALTH CENTER MEDAN

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ABSTRACT

The utilization of BPJS Kesehatan thru the Mobile JKN application is one of the efforts to support the transformation of digital health services and improve the efficiency of family health financing. However, the utilization of the application among the elderly group is still low due to limited knowledge and skills in using digital services. This community service activity aims to enhance the knowledge and skills of the elderly in utilizing the Mobile JKN application at UPT community health center Helvetia Medan. The activity was carried out using an educative-participative approach thru community education methods, technology diffusion, training, mentoring, mediation, and advocacy. The target of the activity is 30 elderly participants of BPJS Kesehatan. Evaluation was conducted using a one group pre-test and post-test design, while participants' skills were assessed thru observation sheets during the practice of using the Mobile JKN application. The results of the community service activities showed that the average knowledge score increased from 3.43 ± 1.251 before education to 7.47 ± 1.697 after education, with statistical tests indicating a significant difference ($p < 0.001$). In addition, the majority of participants were able to use the basic features of the Mobile JKN application, such as downloading the application (96.7%), registering an account (90.0%), logging into the application (90.0%), and checking membership status (86.7%). This activity shows that education accompanied by practice and mentoring effectively improves the digital health literacy of the elderly in utilizing BPJS Kesehatan thru the Mobile JKN application. Similar programs need to be implemented continuously as part of the strategy to enhance access to digital health services for the elderly group

Keywords: *BPJS Kesehatan, Mobile JKN, Elderly, Community Empowerment.*

Introduction

One important step to improve the effectiveness of family health financing is community empowerment through the utilization of BPJS Kesehatan at the Helvetia Medan Health Center. The goal of the government's BPJS Kesehatan program is to improve access for the Indonesian people to more affordable healthcare services. Although BPJS has been available at community health center since 2014,

there are still several issues that hinder its implementation there. Some of these issues include the lack of public understanding about the benefits of BPJS, the lack of available services, and problems in claim administration, all of which negatively impact the program's performance.

One of the main challenges faced by Community health center Helvetia is the lack of public understanding about BPJS. Many people are registered with BPJS, but

they do not yet understand the benefits and procedures related to BPJS claims. They do not know that BPJS covers outpatient care, laboratory tests, and medications. They prefer to pay for treatment directly because of this, even tho BPJS can reduce costs (Alayda et al., 2024).

Another factor is the lack of effective BPJS socialization and training at the community health center. Many people do not know the best way to use BPJS services. Community health center often only issue leaflets or general announcements that are not interactive enough. Community-based health education shows better results in improving public understanding of the national health insurance program (Azmi et al., 2024). As a result, Community Health Center Helvetia must be more proactive by providing direct counseling or holding regular meetings at the community level.

One of the next obstacles is the BPJS claim administration process, which is often considered complicated and time-consuming, thus hindering the public from utilizing the available health services. The uncertainty in this process often makes the public reluctant to file claims, which ultimately reduces the benefits they can obtain from BPJS (Arimbi et al., 2022). To make the public more confident and comfortable using BPJS, community health centers must ensure that the claims process is carried out quickly and transparently.

Community Health Center Helvetia must take several actions to address this issue. First, the community health center must improve the quality of their infrastructure and facilities to support BPJS services, so that the community can clearly understand the benefits and procedures of BPJS. Second, the BPJS claim procedures should be simplified to make them more accessible to the public, and simplifying the BPJS claim administration process can increase the utilization rate of BPJS services by the community (Amran, 2023).

Most people, especially those from low-income groups, face financial problems. Although the government provides subsidies to low-income participants, many families choose not to enroll in the BPJS program due to the difficulty of paying the premiums. This affects the ability of the most needy communities to access healthcare. Therefore, additional local government policies should be created to help families struggling to pay BPJS premiums with subsidies.

Indonesia is advancing the digital transformation of healthcare services via the JKN Mobile application created by BPJS Kesehatan, which has 284.337.094 participants (BPJS Kesehatan, 2026). Nonetheless, the utilisation of JKN Mobile among the elderly is minimal due to restricted digital literacy and challenges in

navigating smartphone-based applications. Initial observations at the Helvetia Community Health Center in Medan indicate that the majority of senior patients continue to depend on manual registration and have not independently utilised the JKN Mobile application. This community service initiative seeks to enhance the knowledge and practical skills of the elderly in using the JKN Mobile application through teaching and direct mentorship.

This community service aims to improve elderly knowledge and digital skills in utilizing the Mobile JKN application through structured education, practical mentoring, and hands-on assistance. This is done with the goal of improving financing efficiency and increasing access to family health services at UPT community health center Helvetia Medan.

Method

This community service employed a participatory community education approach through health education, technology diffusion, training, mentoring, mediation, and advocacy. The activity was conducted at UPT community health center Helvetia Medan in July 2025 and involved 30 elderly BPJS Kesehatan participants who had limited experience in using the Mobile JKN application and still relied on manual health services.

The program was implemented in four stages: preparation, education, practical mentoring, and evaluation. During the preparation stage, the implementation team coordinated activities, obtained institutional permission, and prepared educational materials, including leaflets, presentation slides, tutorial videos, a validated 10-item knowledge questionnaire (score range 0–10), an observation checklist, and participant evaluation forms.

The education stage provided information on BPJS Kesehatan services, participants' rights and obligations, referral procedures, and the main features of the Mobile JKN application. This was followed by hands-on mentoring, during which participants practiced downloading the application, registering an account, logging in, checking membership status, selecting a primary healthcare facility, accessing online queue services, and using other basic Mobile JKN features under the guidance of trained facilitators.

Program evaluation used a one-group pre-test–post-test design. Knowledge was assessed using the validated questionnaire, while participants' practical skills were evaluated through direct observation by trained members of the implementation team. Data were analyzed using IBM SPSS Statistics version 20. Normality was assessed using the Shapiro–Wilk test, followed by a paired t-test for

normally distributed data or the Wilcoxon signed-rank test for non-normally distributed data at a significance level of 0.05. Practical skills were analyzed descriptively using frequencies and percentages.

Results

Table 1. Characteristics of Elderly Participants in Community Service at UPT Community Health Center Helvetia Medan (n = 30)

Characteristics	n	%
Age		
60 years	11	36.7
65 years	14	46.7
66 years	2	6.7
68 years	2	6.7
69 years	1	3.3
Gender		
Male	7	23.3
Female	23	76.7
Education		
Elementary School	1	3.3
Junior high school	12	40.0
Senior high school	17	56.7

Based on Table 1, the majority of participants in the community service activities are elderly individuals aged 65, totaling 14 people (46.7%), followed by those aged 60, totaling 11 people (36.7%). In terms of gender, most participants are female, totaling 23 people (76.7%), while males total 7 people (23.3%). From an educational aspect, the majority of participants have a high school education, totaling 17 people (56.7%), followed by junior high school with 12 people (40.0%), and elementary school with 1 person (3.3%). This indicates that the participants

in the activities are predominantly elderly women with a secondary education level.

Table 2. Differences in the Level of Knowledge of the Elderly about the Utilization of the JKN Mobile Application Before and After Education at UPT Community Health Center Helvetia Medan

Knowl edge	Mean ± SD	95% CI	Cohen's d	p-value
Pre-test	3.43 ± 1.251	4.033 (3.457-4.609)	2.62	<0.001
Post-tets	7.47 ± 1.697			

Based on Table 2, the mean knowledge score increased from 3.43 ± 1.251 before the educational intervention to 7.47 ± 1.697 after the intervention. The mean improvement was 4.033 points (95% CI: 3.457–4.609), indicating a statistically significant increase in participants' knowledge ($p < 0.001$). Furthermore, the intervention demonstrated a very large effect size (Cohen's $d = 2.62$), suggesting that the educational and mentoring program had a substantial impact on improving elderly knowledge regarding the utilization of the Mobile JKN application.





Figure 1. Community Service Activities of UPT Puskesmas Helvetia Medan

Table 3. Elderly Skills in Using Basic Features of the JKN Mobile Application After Assistance

Indicator	n	%
Downloading the Mobile JKN application	29	96.7
Opening the application	29	96.7
Account registration	27	90.0
Application login	27	90.0
Viewing participation status	26	86.7
Changing participant data	23	76.7
Choosing First-Level Health Facility	24	80.0
Taking an online queue	22	73.3
Viewing the service history	21	70.0
Finding the consultation or health information menu	20	66.7

Based on Table 3, the skills of the elderly after the assistance show that most participants are able to use the basic features of the Mobile JKN application. The highest ability is found in the indicators of downloading and opening the Mobile JKN application, with 29 people (96.7%) each. Furthermore, 27 people (90.0%) are able to register an account and log in to the application, and 26 people (86.7%) are able to view their membership status. However, more complex skills such as taking online queues, viewing service history, and finding the consultation or health information menu still have lower achievement rates, at 73.3%, 70.0%, and

66.7%, respectively. This indicates that assistance effectively improves the basic skills of the elderly, but the use of advanced features still requires ongoing education and support.

Discussion

The findings of this community service demonstrate that education combined with practical mentoring significantly improved elderly knowledge regarding the utilization of the Mobile JKN application. The increase in the mean knowledge score from 3.43 to 7.47, accompanied by a very large effect size (Cohen's $d = 2.62$), indicates that the intervention was highly effective in improving participants' understanding of digital health services. Interactive education allows participants to immediately practice newly acquired knowledge, thereby facilitating better comprehension and retention than passive information delivery. These results are in line with research that concludes that education about BPJS Kesehatan is effective in empowering the community to access affordable and quality healthcare services (Abrar et al., 2023).

Education specifically designed for the elderly is necessary so that they can understand and use the Mobile JKN application well (Lumi et al., 2024). The education needs to be conducted in simple language, accompanied by direct examples and repeated guidance so that the information can be more easily accepted. Education based on direct practice is more

effective in improving technology understanding among the elderly group (Apriliani et al., 2026).

The increasing understanding of the elderly regarding the use of the Mobile JKN application is expected to enable them to be more independent in accessing healthcare services. This not only helps speed up services but also improves the quality of life for the elderly in the digital era. Family support also remains an important factor in assisting the elderly in using applications, in addition to the need for integrated digital assistance programs at the clinic or community health center level. These efforts will ensure that the digital literacy that has been built is not only temporary but also sustainable and beneficial for the long-term well-being of the elderly (Magdalena et al., 2025).

The low utilization of community health center services can lead to delays in early detection and management of health issues, which ultimately increases the risk of diseases with higher severity levels (Oktadiana et al., 2024). This condition not only affects individual health but also has the potential to increase the burden on the overall healthcare system. Therefore, measures are needed to enhance public understanding and expand the accessibility of the Mobile JKN application so that more citizens are encouraged to use the available

services (Rumayar et al., 2025; Rinjani & Sari, 2022).

The results of community service for the elderly show that they are able to use the basic features of the Mobile JKN application. The highest ability is found in the indicators of downloading and opening the Mobile JKN application.

While the elderly are well-educated through community service, it shows that the comprehensive socialization of BPJS is not yet optimal, especially for the elderly who have not been reached by the BPJS Mobile JKN application features thru educational programs. These findings reinforce the need for intensive and inclusive community service programs, with an approach that is easily understood by various elderly individuals, including those with low digital literacy. A study at community health center Helvetia Medan shows that the implementation of the BPJS program is quite effective in reaching economically disadvantaged communities. This is consistent with the results of community service activities that strengthen participants' ability to use digital services effectively. Thus, community service contributes as a complementary strategy to strengthen the success of implementing digitalization of services in the field (Sitompul, 2022).

Involvement in providing feedback turns out to contribute to the improvement of service quality. Research states that active community participation, through reporting or feedback, encourages the improvement of BPJS responsiveness as well as service innovations

such as queue system improvements and the launch of mobile health service programs. This shows that community service not only improves literacy but also opens channels of dialog between the community and healthcare providers.

These findings align with other research indicating that practical digital literacy programs enhance older persons' proficiency in utilizing digital health devices. Jiang et al., (2024), It was discovered that direct demonstrations and frequent practice enhanced the elderly's confidence in using the Mobile JKN application. Wang & Luan (2022), discovered that ongoing mentoring yielded superior enhancements in digital health literacy compared to traditional health education alone. Comparable evidence has also been documented globally. Andersson & Gonzalez (2025), stressed that sufficient eHealth literacy is crucial for consumers to efficiently access, comprehend, and apply digital health information.

The current study revealed that elderly participants demonstrated greater proficiency in utilizing fundamental Mobile JKN features, such as downloading the application, accessing it, registering an account, and verifying membership status. In contrast, more sophisticated functions, including online queue registration, service history, and consultation features, exhibited diminished utilization rates. This

conclusion may be attributed to the increased complexity of these functionalities, necessitating elevated levels of digital proficiency and frequent program usage. According to Prasodjo, (2023), Older persons frequently encounter obstacles in embracing digital technology due to age-related cognitive decline, insufficient prior technological knowledge, and diminished self-efficacy in utilizing digital gadgets. Consequently, ongoing mentorship is crucial to facilitate the autonomous utilization of digital health services among senior individuals.

Enhancing digital health literacy in older individuals has significant ramifications for basic healthcare services. Enhanced utilization of the Mobile JKN application could diminish administrative obstacles, lessen waiting periods, boost access to healthcare information, and augment service efficiency at primary healthcare facilities. These findings endorse Indonesia's continuous digital health revolution and highlight the necessity of including community-based digital literacy initiatives into standard health promotion operations. Similar conclusions have been reported by Krisdiyanto et al., (2015), which recommends strengthening digital health literacy as one of the key strategies for expanding equitable access to digital health services.

Notwithstanding these favorable results, several restrictions must be recognized. This community service engaged merely 30 older individuals from a singular primary healthcare center and employed a one-group pre-test–post-test design devoid of a comparison group, so constraining the generalizability of the results. Furthermore, outcomes were evaluated immediately post-intervention without examining long-term knowledge retention or continued application usage. Future initiatives should incorporate larger sample sizes, do follow-up evaluations, and involve family members or community health volunteers to guarantee enduring enhancements in digital health literacy among the elderly.

Conclusions

The community service initiative "Community Empowerment through the Utilization of BPJS to Enhance Family Health Financing Efficiency at community health center Helvetia Medan" has effectively improved the knowledge and skills of the elderly in using BPJS Health via the Mobile JKN application. The instruction, simulation, and assistance offered enable the aged to comprehend the service flow, utilize fundamental Mobile JKN capabilities, and diminish reliance on manual administrative procedures at the health facility.

UPT community health center Helvetia Medan is recommended to implement frequent educational sessions on the utilization of BPJS and Mobile JKN, particularly targeting the elderly and their accompanying family members. Higher education institutions must persist in community-based mentoring programs to enhance health digital literacy and guarantee that the utilization of BPJS contributes to the sustainable efficiency of family health finance.

Study limitation This activity involved only 30 participants from one primary health center without a control group. Future programs should include larger samples and longer follow-up to evaluate the sustainability of digital health literacy improvements.

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