

Research Article

Online-Based Healthcare Program for the Elderly: A Pilot Program

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Abstract. During the pandemic, health programs for the elderly in the community have been limited to prevent the transmission of COVID-19. However, health services still need to be provided for the elderly to maintain their health. This paper aimed to explain the health problems of the elderly and the participation of elders, the family, and community health workers in the revitalization of strategies for integrated health service activities for the elderly during the pandemic. The Community as Partner model was used in this study. A one-group pre-test/post-test pilot study was conducted. The activities included health assessments via telemedicine (video call), drive-through services for vital signs assessment and simple lab checks, home visits, and education via WhatsApp as needed. We also provided training to community health workers and nursing students. The pilot project ran from June 2020 to May 2021 with 184 community-dwelling elderly in Central Java. The evaluation included participant questionnaires and measurements before and after the program. Change in outcomes was assessed using Wilcoxon signed-rank tests. The study found health problems of the elderly included depression, hypertension, and joint stiffness. 100 elderly people participated in the online exercise activities accompanied by their families and felt a decrease in complaints of joint stiffness, and 84 others participated in health education and exercise activities in open areas, adhering to strict health protocols. Most of the participants said they were satisfied with the activities. The online health education and exercise activities were successfully adapted to be effective interventions.

Keywords: elderly, empowerment, health services

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1. Introduction

The health of the elderly today cannot be ignored because Indonesia is going through an aging population phase where there is a decline in fertility rates followed by an increase in life expectancy[1]. In 2019 the number of elderly people in Indonesia was 9.60 percent or around 25.64 million people, while in Central Java the population consists of 34.49 million people with the number of elderly 4.49 million people[2, 3]. With a global aging population, every part of community plays an active role in achieving a world where elderly people can live well [4].

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The government has launched services for the elderly through several levels as a tangible manifestation of social and health services for the elderly group which includes the elderly integrated health service post named *Posyandu*, health centers, and hospitals. *Posyandu* for the elderly is a service forum for the elderly in the community that focuses on health services on promotive and preventive efforts. However, since the Covid-19 pandemic, the activities of the elderly *posyandu* have been hampered by various policies to prevent COVID-19 transmission [5, 6].

In the Covid-19 pandemic, the elderly is one of the vulnerable groups who have high morbidity and mortality. [6] The elderly are also a population group that really needs access to health services because most of them have chronic/degenerative diseases [7]. An initial survey conducted by distributing online questionnaires for the elderly in Semarang and its surroundings showed that 96.6% of the elderly were at home during a pandemic situation. The pandemic has also disrupted the activities of the elderly (97.4%). This increases the risk of health problems in the elderly. For this reason, prevention of transmission through promotive and preventive efforts against COVID-19 for the elderly is a priority, includes at the community level. Efforts to maintain health and welfare for the elderly must continue to pay attention to health protocols during the pandemic era. This is what drives us to create health service innovations for the elderly through *POsyandu Lansia SecarA DARing* or *POL-SADAR* (The Online-Integrated Healthcare Post for Elderly).

Activities carried out in *POL-SADAR* utilize technology that is very familiar to the community and a fast service system that makes it easier for the elderly to gain access to quality health services. Technically, the activities in *POL-SADAR* include Online Assessment, Drive Thru Examination, Online Education, Home Visit if needed. This innovation optimizes the development of digital technology.

Digital technologies, such as online healthcare portals, enable elderly people to live independently at home for a longer period of time. The intention to use online healthcare portals depends on whether elderly people expect to enhance their capabilities for living independently by using them [8]. The purpose of these programs are to increase community participation in efforts to maintain the health of the elderly, especially during the pandemic by identifying the problems and health needs of the elderly, increasing the knowledge of the elderly in maintaining health during the pandemic, and training the abilities of the elderly and their families in improving their health.

2. Methods

The Online Post of Integrated Health Service for Elderly named Posyandu Lansia Daring (Pol-saDar) was an innovation of health service program in the community for elderly people. Pol-saDar was implemented as an academic-community partnership with University of Karya Husada Semarang and some Public Health Centers in Central Java as a community-based education. We invited nurses in Public Health Centers and also the community health worker carrying the service in community.

A pilot study was followed, a small-scale study to assess the primary outcome of a future full-scale study. In this study, a pilot quasi-experiment with pretest and posttest design was used. The study held on June 2020 in Public Health Centers of Semarang City and district of Semarang. The program also started in May 2021 in Public Health Centers at Bandarharjo and Batang. There were 184 community-dwelling elderly enrolled the program. The program is carried out for 5 weeks through the nursing process in the community based on Community as Partner Theory. We provided informed consent to participants before starting this program.

We conduct Pol-Sadar promotion directly through Public Health Centers and online through social media to enroll participants. The implementation of Pol-Sadar included: coordination with public health centers; coordination with community health workers; assessment of the health needs of the elderly through online forms, observations, and interviews; health checks (vital signs and simple blood laboratory), then the elderly people participated in implementation activities with strict health protocols (using masks, social distancing, washing hands). Activities that are carried out online but simultaneously are ROM exercises for the elderly who had complaints of stiffness during the pandemic. We made ROM exercise videos and uploaded on youtube. Health education was also carried out through WA and involves community health workers as a support system for the healthcare of the elderly. Activities carried out in the field are health education, recreation, and exercise that are packaged in a program named GELAS ESKRIM - GERAKAN LANSIA SEHAT dengan EDUKASI, REKREASI DAN SENAM SEHAT (Healthy Elderly Movement with Health Education, Recreation And Exercise).

3. Result

The activities of community empowerment were done on schedule. There were elderly people and 6 community health workers participated in the community program. The results of the distribution of the questionnaire showed that the most common disease

TABLE 1: The distribution of respondents

| Area of districts | Total respondents |
|-------------------|-------------------|
| Tembalang | 15 |
| Rowosari | 15 |
| Kedungmundu | 13 |
| Kramas | 12 |
| Semarang | 8 |
| Ungaran | 9 |
| gunung pati | 5 |
| Sambiroto | 9 |
| Tandang | 5 |
| Bulusan | 4 |
| Banyumanik | 5 |
| Bandarharjo | 42 |
| Batang | 42 |
| Total | 184 |

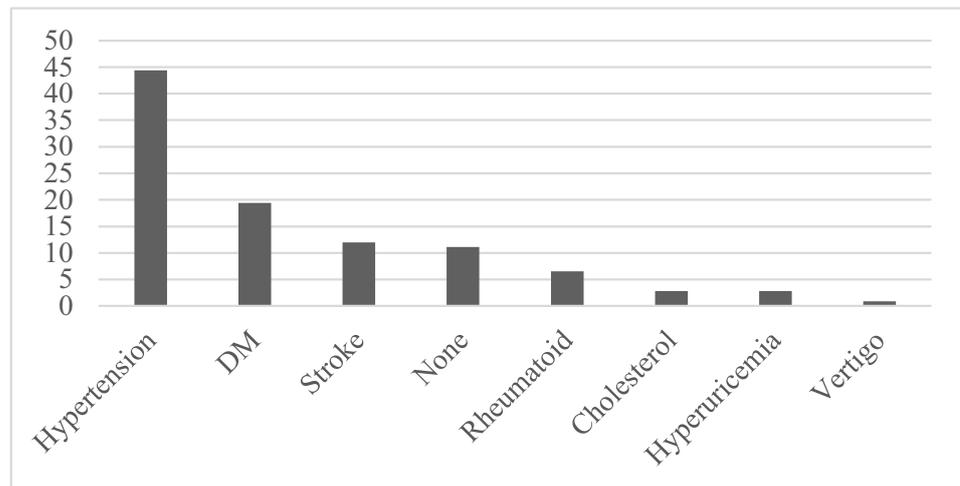


Figure 1: Health problems experienced by the elderly (n=184)

suffered by the elderly was hypertension (Figure 1) with a distribution of hypertension levels from pre-hypertension to grade II hypertension (Figure 2). The distribution of respondents can be seen in Table 1.

Meanwhile, the most common complaints in the last one month during the pandemic were joint stiffness (Figure 3).

After being taught ROM exercises to overcome joint stiffness, the elderly practiced ROM exercises independently. Evaluation of the implementation of ROM exercise independently by the elderly showed that 50% of the elderly did 1 time a day, while those who did it 2x a day were 46% in the morning and evening, and as many as 4% did not

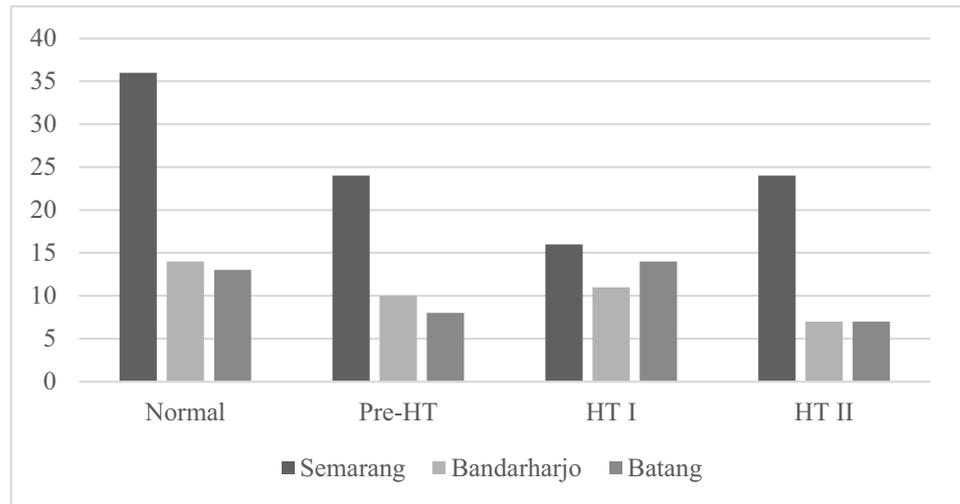


Figure 2: Distribution of HT patients in the elderly

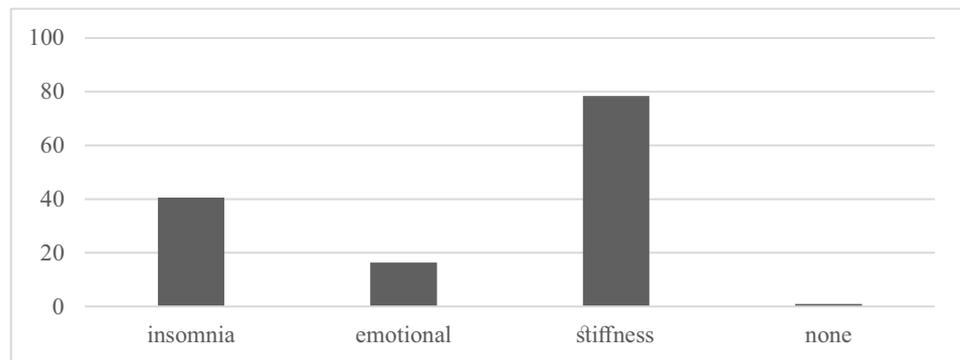


Figure 3: The most common problems in the last one month during the pandemic (n=184)

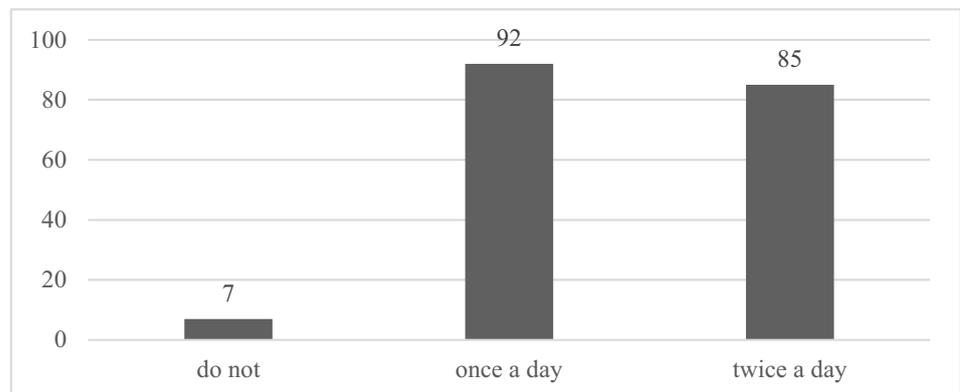


Figure 4: The frequency of the elderly doing ROM exercises (n=184)

do it routinely. Evaluation of the ability of the elderly in participating in ROM exercise activities can be seen in diagram 4.

After doing ROM exercises, 52% of the elderly did not feel any complaints of joint stiffness, 39% felt a little pain, 6% felt that it interfered with activities as much, while 3% of the elderly still felt that joint stiffness interfered with their activities. The ROM

TABLE 2: The five-week changes in health outcomes and health knowledge

| | Pre-test | Post-test | p-value* |
|----------------------------------------------------|----------|-----------|----------|
| Joint stiffness | | | |
| none | 96 | 12 | 0.001 |
| painless | 72 | 22 | 0.001 |
| low | 11 | 48 | 0.001 |
| moderate | 6 | 87 | 0.001 |
| annoying | 0 | 15 | 0.001 |
| unbearable | 0 | 0 | 0.001 |
| Knowledge of the elderly about hypertension | | | |
| Definition | 137 | 178 | |
| Risk factor | 131 | 142 | |
| Diit | 83 | 154 | |
| Tips | 77 | 113 | |
| Complication | 77 | 154 | |
| prevention | 24 | 124 | |
| obedience | 24 | 131 | |
| mean score | 92 | 166 | 0.001* |

*Wilcoxon signed-rank test



Figure 5: The implementation of “GELAS ESKRIM”.



Figure 6: The coordination and training for community health workers.

exercise was effectively decrease the joint stiffness (Table 2). The scores of the pre-test and post-test and analysis of increases in the knowledge of elderly people about hypertension showed in Table 2.



Figure 7: The introduction of Pol-Sadar in advocating to public health centers

4. Discussion

Elderly or elderly are part of the process of growth and development that develops from children, adults who eventually become old. Elderly is not a disease but an advanced stage of the life process marked by a decrease in the body's ability [9]. The elderly are a group that is more susceptible to being infected with Covid-19, which means it is even more important for the elderly to practice social distancing. In an effort to social distancing, the number of activities outside the house and people visiting the house must be very limited. Complete isolation indoors can reduce the mobility of the elderly and people who belong to vulnerable groups[10]. Besides being able to affect their physical health, this can also affect their mental health[11, 12].

Posyandu for the elderly as a community-based elderly health service that is carried out online can be an alternative in maintaining the health of the elderly during a pandemic. In this program, elderly cadres and families are involved in various activities that include health education, health consultations, and simple examinations for the elderly. Homevisit in the elderly is also possible in this program if needed. This program emphasizes on strengthening communities that include the elderly, elderly families, and community health workers in achieving goals. The quality of collaboration in this partnership has a positive impact on health promotion [6, 13]. In addition, programs that strengthen the community empowerment are very likely to bring more systematic and meaningful results if they are monitored as process evaluations and outcome evaluations[14].

During a pandemic, innovation in health services is needed that pays attention to health protocols to prevent disease transmission. The use of online media in an era where the development of information technology is increasingly affecting human life, provides convenience in participating, sharing, and creating positive relationships. However, online media has limitations in reaching passive participants, allowing inaccurate information, lack of interaction with participants, and also the limited ability of health professionals to use social media so that it does not guarantee the sustainability of the program. Health professionals need to design a social media-based health promotion model by integrating social media with health promotion strategies and health communication strategies[15, 16].

During the Covid-19 pandemic, people are prohibited from holding activities that gather large numbers of people. Based on the activities that have been carried out, it can be concluded that there is an increase in the average knowledge about hypertension. This increase in knowledge is expected to be the starting point for improving

health attitudes and behaviors in elderly[17]. The technology developed to promote health education for the elderly is very diverse and has proven to be effective for use in community interventions. Thus, the development of technology to promote health education is very useful in supporting the rapid growth of the elderly population. It was also added that telephone follow-up is a nursing intervention defined by the Nursing Interventions Classifications (NIC). Thus, because of these nursing interventions and their effectiveness in contributing to health care, the use of technology in health education for the elderly should be recommended[18].

One of the health problems that the elderly most often complain about is joint pain. This joint pain includes signs and symptoms of a decrease in the musculoskeletal system which is often called osteoarthritis. Joint pain caused from mild to severe scale can interfere with the activities of the elderly. The elderly cannot carry out activities comfortably, thereby reducing the quality of life of the elderly. The elderly become easily tired and limit their range of motion so that the joints become stiff and can cause disability[19]. Prevention efforts are carried out with health promotion strategies in the form of joint pain health education.

One of the physical activities that the elderly can do at home is active range of motion (ROM) exercises. ROM is the maximum amount of movement a joint can perform in any of the three body parts, namely sagittal, transverse, and frontal. Range of motion (ROM) exercises are exercises performed to maintain or improve the level of perfection of the ability to move joints normally and completely to increase muscle mass and muscle tone. ROM is divided into two types, namely active ROM and passive ROM. In active ROM and Pasir the movements are almost the same, but in a different way, if active ROM can be done independently, on the contrary with passive ROM which is done with the help of other people/nurses[20]. ROM has a significant effect on decreasing the level of joint pain scale in the elderly with osteoarthritis. Active ROM is also known to affect lower extremity muscle strength in the elderly with osteoarthritis[21, 22].

5. Conclusion

Health services for the elderly are needed, especially during a pandemic to maintain the health of the elderly. Posyandu for the elderly that is carried out online can be an alternative to provide safe community-based health services. Health education during the COVID-19 pandemic is needed to change the behavior of the elderly community by continuing to carry out activities at home. However, in its implementation, POL-SADAR (the Online-Integrated Healthcare Post for Elderly) requires the participation of

community health workers and also elderly families to be able to assist the elderly in consulting health with health workers (doctors, nurses, midwives). In addition, adequate tools are needed to participate in online activities such as smartphones and internet networks.

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7. Conflict of interests

The authors do not have any conflicts of interest to disclose.

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