

Empowering Women in Pioneering Oral Health Initiatives for Elderly with Hypertension

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ABSTRACT

Background: An epidemiology study at Menur Public Health Center revealed that the highest case of hypertension was found in the late elderly (56-65 years) in the period of September-October 2023, most of them have dental and oral problems. Based on data, most elderly (41.82%) don't seek any treatment when they experience toothache due to limited access and lack of individual awareness. Therefore, an empowerment program of periodic basic oral screening by cadres in Posyandu is needed for early detection to overcome possible obstacles when visiting the dentist experienced by elderly with hypertension. **Objectives:** To provide training for cadres in Posyandu Werda Asih regarding basic oral screening through the "Srikandi" program to improve oral health-seeking behavior for elderly with hypertension. **Method:** The program was conducted by providing direct training to cadres through guidebooks and posters. The program was evaluated using post-test related to basic oral screening and checklist sheet for skills. **Results:** After training, all cadres in Posyandu Werda Asih for the Elderly (100.00%) had a good level of understanding with an average score of 14 (the lowest score was 13 (18.18%), the highest score was 15 (18.18%)). The skills evaluation showed that all cadres (100%) were able to conduct all of the examination. **Conclusion:** According to post-test and checklist results, the "Srikandi" program can improve cadres' understanding and ability to perform basic oral screening. This will allow cadres to identify early dental and oral health issues and promote oral health-seeking behavior in the elderly with hypertension.

Keywords: Health cadre, Hypertension in elderly, Oral health-seeking behavior, Oral screening, Women empowerment.

INTRODUCTION

Hypertension, or an abnormal increase in blood pressure, is a major health problem nowadays due to its high prevalence throughout the world. Hypertension is thought to be the cause of about 7.5 million deaths or 12.8% of total annual deaths worldwide (Singh et al., 2018). In East Java, hypertension is a major concern, with an estimated 11,686,430 people aged ≥ 15 suffering from the condition, with the proportion of men and women at 48.38% and 51.62%, respectively. In comparison to Riskesdas (2013), which found a prevalence of 26.4%,

Riskesdas (2018) shows a considerable increase in the prevalence of hypertension in East Java at 36.3% (East Java Provincial Health Service, 2021).

According to the data from the Menur Public Health Center polyclinic register report for September-October 2023, hypertension cases ranked fourth among the five most frequent diseases, totaling 229 cases. In terms of distribution, hypertension was most commonly experienced by the late elderly age group (56-65 years) with a total of 153 patients, followed by the oldest elderly age group (>65 years) as many as 96 patients, early elderly (46-55 years) as many as 73



patients, late adults (36-45 years) as many as 30 patients, and young adults (26-35 years) as many as eight patients (Menur Public Health Center, 2023).

Based on these data, a preliminary survey was conducted on elderly people with hypertension in the Nginden Jangkungan and Semolowaru areas. The results showed that most elderly people with hypertension neither routinely took their prescription for hypertension nor visited the health center for examinations. The oral cavity examination among the elderly found several dental and oral problems, including loose teeth, missing teeth, calculus, gingival recession, residual roots, and poor oral hygiene.

Dental problems in the elderly, especially tooth loss, cause chewing and swallowing difficulties, resulting in dietary changes that result in reduced nutritional intake, such as vitamins and fiber. Low fiber consumption can reduce potassium and increase sodium levels, which is a risk factor for hypertension (Marito et al., 2022). In addition, tooth loss can be associated with inflammatory conditions in the gingival, alveolar, and periodontal tissues. Inadequate dental and oral care can lead to local infections, which may increase the risk of hypertension by causing systemic inflammation and endothelial dysfunction (Woo et al., 2021). Longitudinal research conducted by Woo et al. (2021) found that tooth loss can increase the risk of hypertension. The prevalence of periodontal disease increases with age, especially when it is not balanced with good dental and oral health behaviors. Unmaintained dental and oral hygiene causes an accumulation of food residue, therefore supporting the role of bacteria in causing disease (Sopianah, 2018).

Based on our preliminary survey results, most elderly people in the Menur Public Health Center area (41.82%) do not seek any treatment, whether self-medication, herbal or alternative medicines, or dental health service facilities, when they experience tooth and oral problems. Some reasons why elderly people do not seek dental treatment from dental and oral health services include laziness, cost constraints, bad experiences with dentists, no time, limited access to transportation, embarrassment, lack of self-confidence because many teeth are missing, and complaints of pain, which

then goes away on its own, and treatment is contraindicated due to hypertension.

Dental problems are often ignored because they are not considered serious or life-threatening, so elderly people are reluctant to have their teeth and mouth checked at a health service facility (Janto et al., 2022). Apart from that, limited access and transportation are some of the obstacles most often encountered by elderly people with dental problems that cannot be resolved by medical personnel (Gopalakrishnan et al., 2019).

To address health issues and enhance the social welfare of the elderly population, the central government, through regional governments, has established integrated service posts called Posyandu for the Elderly (Ainiah et al., 2021). Posyandu for the Elderly program was created based on *Republic of Indonesia government regulation no. 43 of 2004* regarding the implementation to improve the social welfare of the elderly. Posyandu for the elderly has various roles, including preserving their health at the highest possible level, improving communication between the elderly, assisting in their physical and mental well-being, assisting in the early detection of diseases and other health issues in the elderly, and enhancing their psychological state through improved social interaction with others (Latumahina et al., 2022).

Local community members willingly participate in Posyandu as health cadres who were trained to assist in health activities organized by the Public Health Centers (*Pusat Kesehatan Masyarakat, Puskesmas*) with the task of being able to promote health to the community (Yulis et al., 2022). Health cadres have the potential to become change agents since they have close contact with the local communities, and they have been established as community health counselors by the government (Ministry of Health, Republic of Indonesia, 2019). At Posyandu Werda Asih for the Elderly, all the cadres are women who live in the surrounding area and actively manage elderly health activities every month. Therefore, through the assistance of women cadres at Posyandu Werda Asih, basic dental and oral examinations can become an important program to be held periodically as an early detection to overcome various obstacles in visiting the dentist.

The objective of this study is to determine the impact of the "Srikandi" training program on empowering women as cadres at Posyandu Werda Asih, specifically focusing on their understanding and skills in carrying out basic dental and oral examinations for the elderly. Additionally, this study aims to ascertain how the "Srikandi" training program improves cadres' abilities in early detection of dental and oral diseases to encourage oral health service-seeking behavior in elderly with hypertension.

METHODS

Program Outline

The empowerment program in this study is known as the "Srikandi" (*Screening Gigi Kader Mandiri*) program, which means dental screening by cadres independently. The empowerment program involves training cadres in Posyandu Werda Asih to carry out dental and oral screening for the elderly. This program aims to improve the behavior of seeking dental and oral health services. It is expected to help change the behavior of the elderly, who tend not to treat their dental and oral problems to the dentist.

Target

The program targeted all health cadres at Werda Asih Elderly Posyandu. According to Yulis et al. (2022), health cadres are local community members or volunteers who were trained to assist in health activities organized by the local Community Health Centers (*Pusat Kesehatan Masyarakat, Puskesmas*) with the task of being able to promote health to the community. Health cadres have the potential to become change agents since they have close contact with the local communities, and they have been established as community health counselors by the government (Ministry of Health, Republic of Indonesia, 2019).

Subjective Norm

Cadres were chosen as the subjective norm in this study because they have an important role in improving health quality through elderly health promotion activities at Posyandu, which include health education, recording body mass index (BMI) on the *Kartu Menuju Sehat* (KMS), completing personal health monitoring books, and managing exercise. The role and duties of cadres are considered to be able to help health workers by influencing the elderly's visits

to the Posyandu because the services provided are pleasant, friendly, and provide information and health education that is clear and easy to understand, which is expected to motivate the awareness of the elderly to come to the Posyandu (Setyoadi *et al.*, 2013).

Objectives of the Program

The empowerment program was created to provide training to cadres at the Posyandu Werda Asih regarding basic oral screening as an early detection of dental and oral problems in the elderly. Through this program, cadres will be trained in both aspects, knowledge and skill, regarding dental and oral cavity conditions and examination techniques. Then, by encouragement from cadres, the program aims to increase awareness of the elderly to seek treatment for dental and oral diseases at the dentist.

Planning and Design

The empowerment program was designed based on epidemiological research results from October 30 to November 18, 2023. After determining priority problems, an empowerment program was prepared as an intervention for these problems. The health promotion media chosen for the empowerment program were guidebooks and "Srikandi" posters, developed from the Australian Institute of Health and Welfare (AIHW) Caring for Oral Health Assessment Tool in Australian Residential Care (2009). The "Srikandi" guidebook contains explanations and photos related to dental and oral problems found in the elderly, which are divided into nine sections, which include lips, tongue, gums and mucosa, saliva, teeth, dentures, oral cavity, toothache, and tooth loss. Each section is divided into three categories of condition: healthy, preservation condition, and sick. In the guidebook, there are also procedures for carrying out screening, which includes procedures for dental and oral examinations as well as how to fill out the assessment sheet for the "Srikandi" examination form. The "Srikandi" poster contains explanations and photos of dental and oral problems found in the elderly, which are designed more concisely and can be used as a reference that can be seen directly when the screening is taking place.

Before implementing the empowerment program, a strategic planning method was carried out first by

conducting a SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis. This analysis is useful for determining strategies and identifying influencing factors in a program.

Ethical Clearance

All described procedures had been evaluated and authorized by the Universitas Airlangga Faculty of Dental Medicine Health Research Ethical Clearance Commission (Certificate number: 1276/HRECC.FODM/XI/2023).

Implementation

The implementation of the "Srikandi" program was on Wednesday, 6 December, 2023, at the Posyandu Werda Asih for the Elderly, Nginden Jangkungan and the program was attended by 10 cadres. The program is implemented as basic dental and oral examination training using the "Srikandi" media guidebook to improve the abilities of Posyandu cadres to perform dental and oral screening for the elderly. This is expected to improve the behavior of elderly individuals in seeking out dental and oral health services by enabling them to detect abnormalities in their oral cavities at an early age through the program.

Evaluation

Following the implementation of the empowerment program, evaluation was carried out to measure the level of

knowledge and skills that the cadres have acquired. The evaluation of cadres' knowledge is carried out by assessing their understanding through post-test questions presented in question sheets related to basic dental and oral examinations. The post-test questions are arranged in nine sections containing pictures of the oral cavity's condition, and cadres are asked to categorize them into one of three categories: healthy, changed conditions, and unhealthy. Subsequently, a skills assessment is also conducted on cadres using a skills checklist containing 10 steps for carrying out basic oral screening. The cadres' skills in conducting basic oral screening are observed and assessed to determine whether they can perform the screening correctly and completely according to the 10 steps.

RESULTS AND DISCUSSION

The "Srikandi" program was held on Wednesday, December 6th, 2023, at the Posyandu Werda Asih for the Elderly, Nginden Jangkungan. The number of cadres who received intervention through this empowerment program was 10 cadres out of a total of 11 cadres invited (90.9% of arrivals) and all cadres were women.

Respondent Characteristics

Table 1. Distribution of Respondents Based on Age and Education Level.

Age	Level of Education				Total
	Elementary School	Junior High School	Senior High School	Bachelor	
40-45 years old	0 (0%)	1 (10%)	0 (0%)	0 (0%)	1 (10%)
46-50 years old	0 (0%)	1 (10%)	2 (20%)	0 (0%)	3 (30%)
51-55 years old	1 (10%)	2 (20%)	0 (0%)	0 (0%)	3 (30%)
56-60 years old	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
61-65 years old	0 (0%)	1 (10%)	0 (0%)	1 (10%)	2 (20%)
66-70 years old	0 (0%)	1 (10%)	0 (0%)	0 (0%)	1 (10%)
Total	1 (10%)	6 (60%)	2 (20%)	1 (10%)	10 (100%)

The characteristics of respondents in this empowerment program vary from age 43 to 68 years with different

educational backgrounds, as shown in table 1. The majority of Posyandu Werda Asih cadres fall into the age group of 46-50



years and 51-55 years, respectively, with an average of three people per group. In terms of educational background, the cadres predominantly have completed education at secondary school level, with a frequency of six people.

The empowerment program can be considered successful when cadres acquire the understanding and skills needed to perform basic oral screening. Evaluation of the cadres' understanding and skills was carried out with post-test and assessment

during oral screening simulation using a checklist and the "Srikandi" examination form.

Post-test Results

The results of the evaluation of the cadre's understanding about basic oral screening is obtained through a post-test consisting of nine points regarding findings of conditions in the oral cavity which have been explained to cadres using the "Srikandi" guidebook.

Table 2. Distribution of Cadres' Understanding Categories Based on Post-Test Scores.

Category	Score Range	Frequency	Percentage
Poor	0-6	0	00.00%
Fair	7-12	0	00.00%
Good	13-18	10	100.00%
Total			100.00%

As can be seen in Table 2, there two levels of assessment regarding cadres' understanding of the conditions in the oral cavity: good, moderate, and poor. Based on the table, it can be seen that all cadres in Posyandu Werda Asih for the Elderly (100.00%) have a good level of understanding with an average score of 14. The lowest score from the post-test was 13 (two people; 18.18%), while the highest score from the post-test was 15 (two people; 18.18%). This result shows that all cadres have a good understanding of basic oral and dental examinations. Cadres' skills in performing basic oral examinations are evaluated using a checklist assessment

derived from observations made during dental and oral screening simulations by using a guidebook and the "Srikandi" assessment sheet.

Skills Evaluation Result

Cadres' skills in basic dental and oral examinations are evaluated through an assessment checklist obtained based on observations when cadres carry out oral screening simulations using the "Srikandi" guidebook and assessment sheet. Oral screening skills carried out by cadres are assessed from the patient's preparation until recording the results of the examination.

Table 3. Distribution of Cadres' Skills Based on Skill Evaluation Result.

Aspect	Frequency		Percentage
	Accomplished	Unaccomplished	
Preparation for examination	10	0	100.00%
Dental and oral examination	10	0	100.00%
Recording of inspection results	10	0	100.00%

Based on Table 3, it was found that all cadres in Werda Asih Posyandu (10 people; 100%) were able to carry out each

stage of the examination following the criteria assessed in the skills aspect.





Figure 1. Documentation of “Srikandi” Program: (A) Presentation of the “Srikandi” guidebook and a poster; (B) Direct demonstration of basic oral screening; (C) Cadres’ evaluation session; (D) “Srikandi” Guidebook and Poster.

Empowerment activities for health cadres began with presenting the materials contained in the “Srikandi” guidebook using the guidebook and a poster (Figure 1A), followed by a direct demonstration of basic oral screening for the elderly (Figure 1B). At the end of the activity, an evaluation of the cadres’ understanding and skills was carried out with post-test and assessment of the cadres during oral screening simulation using a checklist and the “Srikandi” examination form (Figure 1C).

The media used in the “Srikandi” program were in the form of guidebooks and posters (Figure 1D), targeting the cadres of the Posyandu Werda Asih for the Elderly. These posters and guidebooks are physical media that are easy to use, store, and carry when conducting the screening program. The “Srikandi” guidebook contains a guide to identifying dental and oral problems in the elderly that includes explanations and photos that are easy to understand. The dental and oral problems are divided into nine sections, which include lips, tongue, gingiva and mucosa, saliva, teeth, dentures, oral cleanliness, and tooth pain and tooth mobility. Each section is then divided into three condition categories which are healthy, transitional

condition, and unhealthy. The guidebook also contains the basic dental and oral examination procedure and how to fill out the “Srikandi” examination form. The “Srikandi” poster contains explanations and photos of dental and oral problems found in the elderly, similar to the guidebook, in a more concise form and can be read directly when the screening is taking place.

The basic dental and oral health screening training provided by the implementation team through the “Srikandi” program is designed so that the cadres can carry out independent basic dental and oral examinations on the elderly periodically to increase the oral health-seeking behavior in the elderly. Oral health-seeking behavior is an important element in overall health and significantly impacts the quality of life and the health system. A study suggests that inadequate oral health-seeking behavior results in poor oral health outcomes, increased morbidity and mortality, and poor oral health statistics (Uguru et al., 2021).

Referring to Lawrence Green’s theory (1991), healthcare-seeking behavior is influenced by three factors: predisposing factors, which include knowledge, attitudes, and perceptions; enabling factors, which include health facilities, health personnel, and health resource affordability; as well as reinforcing factors, which include social support, family, and the surrounding environment (Pakpahan et al., 2021). Implementers intervene in reinforcing factors through the “Srikandi” program, such as the support from cadres in performing basic oral and dental examinations for the elderly.

Based on the two evaluation results, it can be seen that the “Srikandi” counseling and training program is effective in increasing cadres’ understanding and skills in carrying out dental and oral examinations, thereby effective in promoting awareness and behavior of the elderly in seeking dental and oral health services. The effectiveness of this training program is supported by research by Heningtyas et al. (2020) who conducted a similar community empowerment program through training dental and oral health cadres in Pendul Village, Yogyakarta Special Region Province (DIY) in measuring the DMF-T

index for their respective family members. Based on the results of the data recap, data on dental caries status in the form of the DMF-T index from 37 respondents was produced properly and correctly. Arini et al. (2019) conducted a basic dental and oral health examination training program for cadres in Kukuh Village, Tabanan Regency and showed results in the form of an increase in dental and oral health knowledge by 62.9%, an increase in brushing teeth skills by 100%, and an increase in early detection skills for cavities by 100% after training. These various studies prove that the potential of training programs for cadres can be an effort to improve dental and oral health that is effective in the long term because cadres can motivate and educate the community to maintain dental and oral health and seek health services when experiencing dental and oral complaints (Hidayat et al., 2017).

To identify and analyze aspects that influence the implementation of the "Srikandi" program, the SWOT (Strength, Weakness, Opportunity, Threat) method is applied in the planning process. The SWOT analysis acknowledges the critical external and internal factors involved in achieving a program's objectives. While external factors are outside the program's control, internal aspects relate to characteristics that the program can regulate (Benzaghta, 2021). The strength factor is that there has been no training for cadres in the Menur Community Health Center working area regarding early basic dental and oral health checks for the elderly as in the "Srikandi" program. The media used in this program is designed with contrasting colors and a font size large enough so that it is easy to read for the cadres. Apart from that, the "Srikandi" guidebook, which is a printed pocketbook, does not require internet access so it is practical, easy to carry, and easy to store. Then, to make it easier for cadres to understand, this media guidebook is designed to be attractive and accompanied by pictures that can make it easier for cadres to determine the condition of the oral cavity when screening the dental and oral of the elderly. The weakness of the "Srikandi" program is the limited tools that cadres have for screening, such as mouth mirrors, sondes, and tweezers. Furthermore, the cadres receive a lot of new information so it takes time to understand how to do basic dental

and oral examinations for the elderly. The "Srikandi" program has the opportunity to be continued by cadres in the Posyandu Werda Asih for the Elderly activities which are held regularly for 1-3 months. Posyandu cadres can implement dental and oral screening activities following the training provided with a guidebook as a reference in carrying out examinations. The threat of the "Srikandi" program is human error from cadres in understanding the information provided, as well as negligence in keeping the guidebook.

The "Srikandi" guide book can be distributed to the Posyandu Werda Asih Nginden Jangkungan and can be easily applied as a dental and oral screening guide for elderly people at every Posyandu for the Elderly activity. Cadres who have participated in the empowerment program in the form of "Srikandi" training regarding basic dental and oral screening for the elderly can educate the elderly about the condition of their teeth and mouth when abnormalities occur, thus encouraging the elderly to seek health services. Therefore, the "Srikandi" program can be implemented well by Posyandu Werda Asih for the Elderly cadres because it is an innovative and practical program that runs sustainably.

CONCLUSION

The empowerment of women as cadres in the Posyandu Werda Asih through the "Srikandi" training program can increase the understanding and ability of the cadres in carrying out basic dental and oral examinations in the elderly as shown in the evaluation result of post-tests and checklist assessments. With the "Srikandi" training program, the cadres can carry out early detection of dental and oral diseases and, as a result, can encourage and increase oral healthcare-seeking behavior in the elderly with hypertension.

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