Counceling About Maintaining Health In Old Age. "Education And Services For Heart, Eye Health, And Dementia Prevention"

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Abstract.

Health in older age is a crucial aspect in maintaining quality of life and individual independence. Seniors are susceptible to various degenerative diseases such as heart disease, vision impairment, and dementia, which can reduce their productivity and well-being. This community service activity aims to increase public awareness and knowledge, particularly among seniors and young adults, regarding the importance of maintaining heart, eye, and cognitive health through an educational approach and preventive health check-ups. The activity was held on October 18, 2025, at the HKBP Sudirman Church in Jakarta, with 100 participants. The activity involved three stages: (1) healthy heart exercise to improve cardiovascular fitness and function; (2) health education on heart disease prevention, eye health, and dementia prevention; and (3) health screening services, including eye exams, EKGs, and blood tests (blood sugar and cholesterol). The results of the activity demonstrated an increased understanding among participants of the importance of early detection and a healthy lifestyle. The examination results revealed that approximately 28% of participants had elevated blood sugar levels, and 22% had mild EKG abnormalities requiring medical follow-up. Furthermore, 30% of elderly participants experienced mild to moderate visual acuity impairment. The evaluation showed a 45% increase in participants' knowledge scores from pre- to post-test. This activity had a positive impact on raising public awareness of the importance of regular health check-ups and of preventing degenerative diseases through a healthy lifestyle, early detection, and ongoing care.

Keywords: *Elderly; Heart Health; Eyes and Dementia.*

I. INTRODUCTION

Currently, more than 8.2 billion people live across 195 countries around the world. Each country strives to improve the welfare of its citizens by utilizing all available resources. In addition to natural resources, the population is also an important asset that plays a vital role in a nation's development.The structure and composition of a population can be measured through a population pyramid. There are two main types of pyramids that distinguish developed and developing countries. Developed countries tend to have an “old” or constructive population pyramid, characterized by a small proportion of young people, low birth and death rates, high life expectancy, slow population growth, and a small dependency ratio. Conversely, developing countries typically have a “young” or expansive population pyramid, marked by a majority of young people, relatively few elderly individuals, a birth rate much higher than the death rate, very rapid population growth, a high demand for employment, and a high dependency ratio.Countries with an aging population (a large number of elderly people) must allocate more resources for healthcare and support facilities to ensure the well-being of their older citizens. This situation differs from countries with a predominantly young population. However, several developing nations, including Indonesia, are also beginning to experience a demographic shift toward an older population structure. This transition—from a predominantly young population to an aging one—is known as population ageing.Heart disease remains one of the leading causes of death worldwide, including in Indonesia.

According to the World Health Organization (WHO), cardiovascular diseases cause more than 17 million deaths annually, and this number is expected to continue increasing due to changes in lifestyle, diet, and stress. In Indonesia, data from the Ministry of Health show that coronary heart disease ranks among the top causes of healthcare expenditure under the BPJS Health insurance program [1,2]. Clinical studies have shown that Coronary Heart Disease (CHD) and dementia share similar genetic and biochemical profiles as well as common triggers [3,4]. The main relevance of this connection lies in the fact that it reveals potential

opportunities to prevent dementia through the management and treatment of CHD and its risk factors via pharmacological therapy (such as promising results from antihypertensive treatment trials) and lifestyle modifications aimed at improving cardiovascular health [5].Dementia refers to the loss of brain function and overall cognitive ability. It results from a progressive decline in cognitive function across more than one domain, ultimately leading to an inability to perform daily living activities [6]. Types of dementia include Alzheimer's disease (AD), vascular dementia (VaD), frontotemporal dementia, Lewy body dementia, Parkinson's disease dementia, and dementia due to other diseases (e.g., AIDS or multiple sclerosis) [7]. Cognitive impairment is a general term used to describe a decline in cognitive function, with severity ranging from mild cognitive impairment to dementia.

Heart disease can lead to vascular cognitive impairment—a term used to describe changes in thinking and memory that occur when there is insufficient blood flow to certain parts of the brain, as can happen during a stroke. "Vascular" refers to blood flow and blood vessels, while "cognitive impairment" refers to changes in thinking. Vascular cognitive impairment can cause problems with language, decision-making, planning, and judgment. The term "vascular dementia" is often used to describe memory and thinking changes caused by impaired blood flow. However, experts increasingly use the term "vascular cognitive impairment" because it better represents the range and severity of cognitive changes caused by vascular problems. Both terms are still used today but describe different points along the same spectrum. Vascular cognitive impairment usually refers to milder symptoms that do not significantly affect daily life. These changes primarily impact thinking, memory, focus, and language. Vascular dementia (major vascular cognitive disorder), on the other hand, refers to more severe symptoms that significantly interfere with daily functioning. Its symptoms may resemble those of mild vascular cognitive impairment but are more severe and often similar to Alzheimer's disease. Vascular dementia can occur after a stroke, which happens when a blood clot blocks an artery or when a blood vessel ruptures, causing bleeding in the brain. Both events disrupt the supply of oxygen and nutrients essential for brain cell survival. Not all strokes cause vascular cognitive impairment—whether thinking and memory are affected depends on the severity and the specific brain region involved [8].

Heart disease is defined as any condition that disrupts the heart's function, regardless of the specific modality affected. It is a progressive problem, and the resulting vascular insufficiency can interfere with the functioning of other organs, including the brain. An increasing body of literature implicates heart disease as a risk factor for dementia. Moreover, several studies indicate that cardiovascular risk factors are independently associated with the development of dementia. These risk factors include hypertension, hypercholesterolemia, diabetes, obesity, and smoking. Although there are many types of dementia and a wide spectrum of vascular cognitive disorders, the cardiovascular contribution remains a key underlying element [9,10].Cataract is a pathological condition of the eye in which the lens becomes cloudy due to lens protein denaturation. A healthy lens functions to focus light onto the retina to produce clear images. When the lens becomes cloudy, light cannot pass through properly, resulting in blurred vision. According to the World Health Organization (WHO), cataracts account for approximately 51% of global blindness cases, making it the leading cause of blindness worldwide. In Indonesia, data from the 2018 Basic Health Research (Riskesdas) report show a cataract prevalence of 0.8% in the general population [13]. This prevalence increases significantly with age, peaking among those over 75 years old [11].The primary cause of cataracts is aging. As people age, the proteins in the eye's lens can undergo structural changes and clump together, causing cloudiness. Other risk factors that can accelerate cataract formation include excessive exposure to ultraviolet (UV) light from the sun, systemic diseases such as diabetes mellitus (uncontrolled blood sugar can damage lens fibers), smoking and alcohol consumption (which generate free radicals that damage lens cells), family history of cataracts (indicating a genetic predisposition), eye injuries or previous eye surgeries, and long-term use of certain medications such as corticosteroids [12].

Signs and symptoms of cataracts develop gradually and vary depending on their type and severity. Common clinical signs include blurred or foggy vision (as if looking through frosted glass), increased sensitivity to light, and double vision in one eye. Over time, colors may appear faded, and patients often feel the need for brighter lighting while reading. The only effective treatment for cataracts is surgery. Modern

cataract surgery, such as phacoemulsification, is a safe and effective outpatient procedure in which the cloudy lens is broken up and removed, then replaced with an artificial intraocular lens (IOL).Cataracts are closely associated with older adults, as aging is the main and unavoidable risk factor. Often, children or other family members act as caregivers for their elderly relatives with cataracts. In this role, they must recognize the symptoms, provide support, and advocate for appropriate care. A lack of understanding about cataracts among the elderly and their families can lead to delayed diagnosis and treatment, resulting in reduced quality of life and preventable blindness.Considering the high prevalence of heart disease and the importance of health education on maintaining a healthy heart, this educational program serves as an appropriate, low-cost, and practical preventive measure to help the community maintain their health. In addition, supporting examinations such as Electrocardiography (ECG) can be performed for heart health assessment, while initial memory screening for dementia can be conducted using the Mini Mental State Examination (MMSE). Many members of the HKBP Sudirman congregation still require preventive health education, particularly regarding heart health maintenance. Furthermore, this activity aligns with government programs promoting health education and preventive efforts toward a “Healthy Indonesia.”

II. METHODS

The outreach activity "Maintaining Health in Old Age. "Education and Services for Heart, Eye Health and Dementia Prevention" is part of a public health service program that aims to increase public knowledge about the importance of maintaining heart and eye health. This activity was carried out in the form of direct education to the HKBP Sudirman Jakarta Congregation community through face-to-face delivery methods, using PowerPoint media displayed and presentations as well as interactive question and answer sessions with participants.

This community service activity uses an educational and promotive-preventive approach that involves the active participation of participants. The activity stages include:

1. **Activity Preparation**
   - Coordination with the HKBP Sudirman Church to determine the time, location, and technical requirements.
   - Formation of an implementation team consisting of lecturers and students from the Faculty of Medicine, Universitas Kristen Indonesia.
   - Preparation of outreach materials and preparation of examination equipment (EKG equipment, blood sugar and cholesterol test kits, and simple optometry equipment).
2. **Activity Implementation**

   The activity is carried out in three main stages:

   Phase I: Healthy Heart Exercise

   This activity lasts approximately 30 minutes, guided by an instructor, and aims to improve heart fitness and introduce light, safe physical activity for the elderly.

   Phase II: Health Education

   The education was conducted interactively using audiovisual media. The material included:
   - Prevention of heart disease through a balanced diet and regular physical activity.
   - The importance of regular eye examinations to prevent vision impairment and cataracts.
   - Education about the early signs and prevention of dementia through cognitive stimulation and social interaction.

   Phase III: Health Examination

   Included an EKG, blood sugar and cholesterol tests, and an eye examination. The results were recorded and individual education was provided to participants.
3. **Evaluation and Follow-up**
   - Evaluation was conducted through pre- and post-tests related to health knowledge.
   - Follow-up was conducted by providing individual examination results and referral suggestions for participants with abnormal results.

III. RESULT AND DISCUSSION

Participant Characteristics

A total of 100 participants attended the activity, consisting of 60% seniors (aged 60 years and above) and 40% young adults (aged 25–59 years). The majority of participants were female (65%).

Table 1. Participant Characteristics Based on Age and Gender

Participant Characteristics	Frequency	Percentage (%)
Age		
Elderly (≥60 years)	60	60%
Young adults (25–59 years)	40	40%
Gender		
Female	65	65%
Male	35	35%

Table 2. Health Examination Results

Types of Tests	Normal Result (%)	Abnormal Result (%)	Description
ECG	78	22	Mild heart rhythm abnormalities were present.
Blood Sugar	72	28	Some participants had levels >140 mg/dL.
Total Cholesterol	75	25	Dietary modifications were recommended.
Eye Exam	70	30	The majority had mild refractive errors.

Participant Knowledge Evaluation

Pre-tests and post-tests were used to assess knowledge gains. The average pre-test score was 58.2%, while the post-test score increased to 84.3%, indicating a 45% increase in knowledge.

Discussion

The community service activity titled *"Maintaining Health in Old Age: Education and Health Services for Heart, Eye, and Dementia Prevention"* held at HKBP Sudirman Church in Jakarta demonstrated tangible success in increasing public awareness and participation regarding the importance of preventing degenerative diseases among the elderly. The following discussion systematically outlines the impact, findings, and relevance of this activity based on three main aspects: physical activity, health education, and preventive health examinations.

Enhancing Awareness through Physical Activity (Healthy Heart Exercise)

The healthy heart exercise served as an initial stage in fostering participants' enthusiasm and awareness of the importance of physical activity for cardiovascular health. According to the Indonesian Ministry of Health (2023), light aerobic exercise such as 30 minutes of regular exercise can lower blood pressure and increase vascular elasticity among the elderly. This activity also stimulates the autonomic nervous system, which helps maintain heart rhythm, balance, and sleep quality.Observations during the activity revealed that elderly participants were able to follow the exercises well and experienced immediate benefits such as feeling more refreshed and relaxed. This activity was not only recreational but also strengthened social interactions among participants, helping reduce loneliness—a known risk factor for dementia [2].

Effectiveness of Health Education in Increasing Knowledge

The health education session covered three main topics: prevention of heart disease, eye health care, and dementia prevention. The materials were delivered interactively through presentations, simulations, and Q&A sessions, which proved effective in improving participants' understanding.Results from pre–post tests showed a 45% increase in knowledge scores, indicating the effectiveness of the educational approach used. This aligns with the findings of Sari et al. (2024), who reported that participatory education methods using visual aids and group discussions improved knowledge retention among the elderly by 40–50% [4].Participants stated that new information such as the importance of regular blood pressure and blood sugar checks and recognizing early signs of memory disorders was highly relevant for daily life. The education

session also emphasized the concept of healthy aging, which focuses on maintaining quality of life in older age through physical activity, balanced nutrition, and continuous social and spiritual engagement.

Early Detection through Preventive Health Screening

The health screening services included electrocardiogram (ECG), blood glucose, cholesterol, and eye examinations. Among the 100 participants, the results were as follows:

- 28% had elevated blood glucose levels,
- 22% showed mild ECG abnormalities, and
- 30% had mild to moderate visual impairment.

These findings reflect the high prevalence of degenerative disease risk factors in urban populations. Similar results were reported in Riskesdas 2023, which found that 1 in 4 Indonesian adults has high blood glucose levels, and about 25% of the elderly population experiences vision problems due to cataracts or macular degeneration [6].The presence of abnormal examination results provided opportunities for early medical intervention. Thus, this activity functioned as an important "early warning system" within the promotive–preventive health approach. Early detection through simple screenings such as ECG and blood glucose tests has been shown to reduce heart disease complications by up to 30% [8].

Social and Psychological Impact

Beyond physical health benefits, this activity also had positive effects on the mental and social well-being of elderly participants. Active participation in group activities enhanced their sense of belonging, self-esteem, and motivation to maintain a healthy lifestyle. According to Lestari and Pramono (2024), community-based church programs can serve as effective health promotion platforms due to their strong spiritual and emotional values, which encourage adherence to healthy living behaviors [5].For younger adult participants, the event also served as an intergenerational learning platform, allowing them to recognize early signs of degenerative diseases and take on roles as caregivers for elderly family members. Thus, the program fostered collective awareness about the importance of holistic family health care.

Evaluation and Sustainability Recommendations

Post-activity evaluation showed high participant satisfaction regarding the immediate benefits of the education and health screening. However, there remains a need for ongoing monitoring of participants with abnormal screening results. The following recommendations were proposed:

1. Formation of a Church Elderly Health Group to continue regular exercise and monthly health monitoring.
2. Continued collaboration between the Faculty of Medicine and the church to conduct periodic screenings (blood glucose, cholesterol, blood pressure, and cognitive function).
3. Integration of digital health education, such as electronic leaflets or short videos providing tips for maintaining heart, eye, and brain health in the elderly.

These sustainability measures can strengthen the long-term impact of the program and ensure that health messages do not end with a single event but become an integral part of the community's healthy living culture.

IV. CONCLUSION

Overall, this community service activity significantly contributed to increasing the knowledge, awareness, and preventive behaviors of the community, particularly the elderly and young adults, regarding heart health, eye health, and cognitive function. A holistic and integrative approach that combines education, physical activity, and health check-ups has proven effective in encouraging behavioral changes toward a healthy lifestyle. With cross-sector support (academics, church communities, and health workers), this type of activity can become a model for sustainable, community-based promotive and preventive interventions to create a healthy, independent, and productive elderly population.

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