

A Model of Disaster Management for The Elderly

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Abstract – Disaster management involves planning, coordinating, and executing various measures to prevent, reduce, and respond to disasters, as well as to recover from their aftermath. Its main objective is to safeguard human lives, property, and the environment from the harmful effects of disasters. Elder adults are among the most vulnerable groups in society due to their increased risk of reduced physical mobility, chronic illnesses, weakened sensory perception, and financial or social constraints. These factors hinder their ability to adequately prepare for disasters, making it more difficult for them to adapt when such events take place. So that the elderly having special need in emergencies. Planning and coordinated public health and emergency preparedness are essential to meet these special needs. Global climate change related to the shocks and stresses for the elderly that the surrounding should remain age-friendly during the situation. The government should have the policy to mitigate, how to prepare for disaster. The challenges posed by climate change significantly heighten the vulnerability of older adults, particularly when combined with unfavorable social determinants of health. By utilizing the Sustainable Development Goals (SDGs) as a foundation for policy development in climate action, as well as advancements in industry, innovation, and infrastructure, sustainable cities and communities can be created. This approach helps to reduce inequalities and enhance the overall health and well-being of aging populations. Beside the policy and infrastructure improvement, the government and stakeholders should also maintain preparedness and early warning system, evacuation and shelter planning, healthcare and medical support and social and economic support.

Keywords: *Disaster, Elderly, Management, Government Policy*

1. INTRODUCTION

The elderly population in Indonesia has experienced a significant increase in recent decades. Based on data from the Central Statistics Agency (BPS), in 2020, the number of elderly people in Indonesia aged 60 years and above reached around 26 million people, or about 10.9% of the total population of Indonesia. This figure is expected to continue to increase in line with the increase in life expectancy and progress in the health sector. Factors that affect the increase in the number of elderly people in Indonesia including:

- Increased Life Expectancy: With improvements in access to health and medical care, the life expectancy of the Indonesian people is increasing.
- Declining Birth Rate: Smaller families and declining birth rates contribute to an increase in the proportion of the elderly.
- Urbanization: Many elderly people live in cities after their children move or work in big cities, causing changes in lifestyle and social support.

The increase in the number of elderly people in Indonesia is the biggest challenge that must be faced by the government and society. This challenge is getting more difficult due to the impact of increasing population growth. Population distribution based on gender, 138.45 million people in Indonesia are male. This number is more than the female population of 135.75 million people.

Table of Estimated Number of Elderly Population in Indonesia 2010 2045

Year	Number of Elderly (People)	In percent (%)
2010	18 million	9,77
2020	26 million	11,34
2035	48,2 million	15,8
2045	57 million	17,9

Source: Central Bureau of Statistics (BPS: 2020)

Based on Indonesia Longitudinal Aging Survey held by Asian Development Bank (ADB:2023) it shows that “More than half of older respondents reported living in multigenerational households with their spouse, children and/or grandchildren and maintaining active relationships through frequent communication and mutual support, but the proportion of older people living alone increases with age. In addition, 14% of older women reported living alone, with some having limited contact with their children and communities. The median number of children among pre-older respondents has almost halved compared to older cohorts (from 4 to 2 children). Moreover, the number of widows and widowers among older people rises rapidly with increasing age.

The report also highlights the increased vulnerability of older women. Some older women are even more at risk of economic insecurity and social isolation. These changing family structures and other supportive environments for older people, as revealed by the data, call for a greater need for policies that ensure the well-being of older people in different dimensions of their social and economic lives.”.

Among of the elder people need the long-term caregiver for adequate support because their functional difficulties. According to The Administration for Community Living (ACL: 2024) [1] there are four domains key issues facing older adults today these are:

- a. Benefits access
- b. Age-Friendly Communities
- c. Preventing elder abuse
- d. Improving access to healthcare and long-term health service

In recent years the frequency and severity of natural disasters have escalated, with 2024 marking one of the most impactful years to date. Natural disaster such us floods, hurricanes, landslides and others happened. The increasing intensity of these disasters is closely linked to climate change. The challenges posed by climate change significantly heighten the vulnerability of older adults, particularly when combined with unfavorable social determinants of health. By utilizing the Sustainable Development Goals (SDGs) as a foundation for policy development in climate action, as well as advancements in industry, innovation, and infrastructure, sustainable cities and communities can be created. This approach helps to reduce inequalities and enhance the overall health and well-being of aging populations.

2. THEORITICAL FRAMEWORK

a. Elderly Population in Indonesia

As people grow older, their physiological and cognitive abilities naturally decline, making them more susceptible to health problems and increasing their reliance on others. This dependence varies in severity, ranging from mild frailty to a complete inability to carry out daily tasks without help. According to the WHO (2012), the health challenges faced by elderly individuals in low- and middle-income countries stem from various illnesses, such as heart disease, stroke, vision impairment, and hearing loss.

The increasing number of older adults also underscores the need for a stronger social protection system. Many seniors lack pension benefits or sufficient financial assistance, compelling them to continue working despite physical limitations. This emphasizes the importance of government policies aimed at improving the well-being of the elderly population.

While advancements in development have led to an increase in average life expectancy, Indonesia's healthy life expectancy remains relatively low. A thriving population should not only achieve longevity but also maintain good health to support the advancement of social services. (*Elderly Population Statistics 2023*).

On a global scale, life expectancy represents the estimated number of years a person is likely to live based on current mortality rates. The latest 2023 report from the United Nations (UN) indicates that the global life expectancy is 70.8 years for males and 76.0 years for females, with an overall average of 73.4 years. (*United Nations via World Population*).

Elderly individuals who are neglected are those aged 60 and above who reside in disadvantaged conditions and do not receive proper care or attention from their families and communities. They often life in isolation, face physical disabilities, endure discrimination and exploitation, and have difficulty accessing essential social services.

Neglected elderly individuals can be categorized into two groups. The first group consists of economically neglected seniors, who lack the financial means to fulfill basic necessities like food and medical care. This condition may result from poverty or the inability to work. The second group includes socially neglected seniors, who suffer from loneliness, social isolation, and the absence of close family or friends. Seniors in this situation often feel abandoned and unsupported, which negatively impacts their overall well-being.

b. Disaster Management for the Elderly Population

Disaster management for elderly individuals requires a more sensitive and specialized approach, considering their physical, psychological, and social vulnerabilities. Older adults have unique needs compared to other age groups, such as limited mobility, chronic illnesses, and difficulties accessing information and services. Therefore, it is essential to ensure that disaster management mechanisms effectively reach and protect this group.

Disaster Management Mechanisms for the Elderly include this several process:

- a. *Planning and Preparedness.* At the planning and preparedness stage, it is crucial to include older adults in emergency response strategies by Mapping Vulnerable Elderly Populations with (a) Identifying At-Risk Seniors: Conducting assessments to identify elderly individuals requiring special attention, including those in nursing homes, those with medical conditions, and those living alone and (b) Collaboration with Social Institutions and Families: Partnering with nursing homes, community organizations, and families to ensure elderly individuals receive proper care and attention.
- b. *Developing an Inclusive Emergency Plan,* by (a) Emergency plans should address the specific needs of the elderly, such as accessible shelters, assistive devices (medical supplies, wheelchairs, medications), and psychosocial support; ((b) Evacuation strategies should consider mobility limitations and prioritize assisting elderly individuals in emergencies and (c) Disaster simulation exercises involving the elderly will enhance their preparedness and that of their families.
- c. *Education and Awareness* by (a) Disaster Education: Providing elderly individuals with easy-to-understand disaster preparedness information through appropriate media, such as readable brochures, face-to-face training, or audiovisual materials and (b) Technology Utilization: Implementing user-friendly early warning applications or alternative communication channels to keep older adults informed during disasters.

3. RESULT AND DISCUSSION

Older adults are among the most vulnerable groups in society due to their increased risk of reduced physical mobility, chronic illnesses, weakened sensory perception, and financial or social constraints (1) These factors hinder their ability to adequately prepare for disasters, making it more difficult for them to adapt when such events take place. So that the elderly having special need in emergencies. Planning and coordinated public health and emergency preparedness are essential to meet these special needs (3). Global climate change related to the shocks and stresses for the elderly that the surrounding should remain age-friendly during the situation (4). The government should have the policy to mitigate, how to prepare for disaster (5). The challenges posed by climate change significantly heighten the vulnerability of older adults, particularly when combined with unfavorable social determinants of health.

By utilizing the Sustainable Development Goals (SDGs) as a foundation for policy development in climate action, as well as advancements in industry, innovation, and infrastructure, sustainable cities and communities can be created. This approach helps to reduce inequalities and enhance the overall health and well-being of aging populations. The government and stakeholders could take several steps as below.

• Elderly-Friendly Mitigation and Infrastructure

Mitigation strategies should focus on developing infrastructure that accommodates the needs of older adults, including:

- ✓ Easily Accessible Shelters: Emergency shelters must be designed with elderly-friendly features, such as wheelchair-accessible pathways, properly equipped restrooms, and comfortable sleeping areas.

- ✓ **Disaster-Resilient Structures:** Enhancing the durability of homes and public facilities to minimize injury risks for the elderly, including constructing earthquake-resistant buildings, implementing efficient drainage systems to prevent flooding, and reducing fire hazards.

During disaster response, older adults should be a priority in rescue and recovery efforts.

- **Evacuation and Medical Assistance for the Elderly**

Elderly-Focused Evacuation by (a) Priority Evacuation: Seniors with mobility challenges should be evacuated first, ensuring their medical and psychological needs are addressed and (b) Accessible Evacuation Facilities: Evacuation vehicles must be equipped to accommodate wheelchairs and medical requirements, and emergency responders should be trained to assist elderly individuals with diverse health conditions.

- *Comprehensive Medical Support*, by (a) Availability of Medications: Older adults with chronic illnesses such as hypertension, diabetes, or heart disease need continuous medical care and an adequate supply of essential medications during emergencies and (b) On-Site Medical Services: Emergency shelters should have medical teams on standby to provide regular health check-ups and address elderly-specific medical concerns.
- *Psychosocial Support for the Elderly*, including (a) Emotional and Mental Well-Being: Older adults are highly susceptible to stress, anxiety, and trauma in the aftermath of disasters, highlighting the need for dedicated psychosocial support. And (b) Companion Assistance: Implementing volunteer or caregiver programs to provide emotional support and companionship to elderly individuals during and after a crisis
- *Post-Disaster Recovery* also needed. after a disaster, recovery efforts should prioritize the unique needs of elderly individuals. This part including
 - ✓ **Health and Social Recovery**
 - Older adults often require extended recovery periods, both physically and mentally, necessitating long-term healthcare services such as physiotherapy and rehabilitation.
 - Social reintegration programs should facilitate their reconnection with family members and communities.
 - ✓ **Housing and Shelter Rehabilitation**
 - Many elderly individuals may be displaced due to disasters. Recovery initiatives should focus on repairing and rebuilding their homes while ensuring they meet elderly friendly safety standards.
 - ✓ **Support Throughout the Recovery Process**
 - Seniors who experience the loss of family members or close friends often need additional emotional and social support.
 - Social Support Programs: Providing companionship initiatives and social assistance to help elderly individuals cope with loneliness and trauma.

Enhancing disaster resilience among older adults or elderly empowerment involves empowering them through:

- **Disaster Preparedness Training:** Educating seniors on how to prepare for emergencies, including storing essential supplies such as water, medications, and food, and responding effectively to disasters at home.
- **Encouraging Active Participation:** Engaging older adults in community groups or disaster response organizations to foster a sense of involvement and solidarity.

By implementing these disaster management strategies, governments and communities can ensure that elderly populations receive the necessary support and protection before, during, and after disasters.

4. CONCLUSIONS

Older adults are particularly vulnerable during disasters due to several factors:

- 1) *Health Conditions:* Many older adults have chronic illnesses or disabilities, which can be exacerbated during emergencies.
- 2) *Social Isolation:* A significant number of elderly individuals live alone, lacking immediate assistance during crises.
- 3) *Sensory Impairments:* Diminished vision or hearing can hinder their ability to receive timely warnings or navigate hazardous situations.

- 4) *Economic Constraints*: Limited financial resources may prevent adequate disaster preparedness, such as securing emergency supplies or transportation.
- 5) *Increased Emotional Stress*: Experiencing a disaster can be particularly traumatic for older adults, leading to anxiety, depression, or PTSD.

These factors underscore the importance of tailored disaster preparedness and response strategies to protect the elderly population. To effectively manage disasters for the elderly population, the government should implement a comprehensive strategy that addresses their unique vulnerabilities. Key actions include:

- 1) Preparedness & Early Warning Systems
- 2) Evacuation & Shelter Planning
- 3) Healthcare & Medical Support
- 4) Social & Economic Support
- 5) Policy & Infrastructure Improvements

Disaster management mechanisms for the elderly must be designed with careful consideration of their physical, psychological, and social vulnerabilities. Through thorough planning, accessible infrastructure, and a swift, elderly-sensitive response, we can minimize the risks and impacts of disasters on this group. Additionally, empowering older adults in disaster preparedness and post-disaster recovery will enhance their resilience in facing future disasters. By implementing these measures, the government can enhance the resilience of elderly populations and reduce their risks during disasters.

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