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# QUALITY OF LIFE OF THE ELDERLY IN DISASTER-PRONE AREAS

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**ABSTRACT**

**Background:** Elderly are inherently vulnerable, facing a decline in physical and cognitive functions that significantly impacts their quality of life (QoL). QoL is a vital, multidimensional concept influenced by physical health, psychological state, independence, social relationships, personal beliefs, and environment. A satisfactory QoL is conducive to the maintenance of independence and a positive outlook among elderly individuals, fostering a sense of respect and overall well-being. However, it is important to note that disaster conditions, such as floods, are high-risk, unexpected events that drastically affect QoL by causing loss, physical injury, and psychological trauma. Songgorunggi Village, Sukoharjo, Central Java, is a known flood-prone area that suffered significant impact. Nevertheless, some elderly residents have exhibited adaptive and resilient coping mechanisms. **The objective** of this study was to provide a comprehensive description of the QoL experienced by the elderly population in this disaster-prone region. **The method** employed a descriptive analytical research design utilising the established *WHOQOL* questionnaire. **The results** indicated that the majority of the elderly participants were female, and 65.5% elderly reported a poor quality of life. In **conclusion**, The QoL experienced by the elderly population in the disaster-prone area of Songgorunggi village has been determined to be poor.

**Keywords**

**Elderly, *quality of life*, disaster-prone area**

## INTRODUCTION

The elderly are defined by an age threshold of over 60 years. Statistics Indonesia (BPS) employs a three-tier classification system for the elderly population, categorising individuals into the following age groups: the young-old (ages 60–69), the middle-old (ages 70–79), and the oldest-old (ages 80 and above) (Paende, 2019). This group possesses special needs that differentiate them from other age groups (Manungkalit, Sari and Prabasari, 2021). The elderly are predisposed to a decline in both physical and cognitive abilities. This condition has been shown to have a significant impact on the quality of life of

those affected (Chamelia, Fitriah and Arpandy, 2023).

The concept of quality of life (QoL) is complex and multidimensional, with the approach to QoL being unique for every individual (Amanati and Wibisono, 2022). A satisfactory and meaningful life for the elderly is dependent on a good quality of life (QoL). The quality of life (QoL) is influenced by various factors, including physical health, psychological state, level of independence, social relationships, personal beliefs, and the environment (Fitria and Prameswari, 2021).

Maintaining an adequate quality of life (QoL) for elderly individuals is of paramount importance, as it has been demonstrated to positively impact their physical and mental health. It has been demonstrated that elderly individuals who experience a sense of contentment in their lives have a tendency to exhibit better health and greater prosperity. A satisfactory quality of life (QoL) enables individuals to experience life to its fullest, engage in preferred activities, allocate time for relationships with significant others, and attain a sense of fulfilment (Fadhlia and Sari, 2022). Moreover, it has been demonstrated that this approach fosters independence in activities of daily living, financial management, and decision-making. A positive quality of life (QoL) has also been shown to facilitate feelings of respect and value in elderly individuals, thereby upholding their right to adequate treatment, involvement in decision-making processes that affect them, and the perception of being a valuable member of society (Anitasari and Fitriani, 2021).

Disaster conditions are unpredictable events that pose a risk of impacting individuals—including the elderly—from physical, psychological, and socioeconomic aspects (Agustin and Handayani, no date). Disasters can significantly affect the QoL of the elderly, leading to the loss of shelter, possessions, and loved ones. They can also cause physical injury and psychological trauma, making it difficult for affected elderly individuals to recover and rebuild their lives. Nevertheless, not all elderly individuals struggle when facing disasters. Songgorunggi Village in the Nguter sub-district, Sukoharjo, Central Java, is an area situated along the Bengawan Solo River, making it high-risk for floods. The region experienced a significant flooding event in 2024. It has been demonstrated that elderly people who experience disasters, such as floods, tend to exhibit elevated levels of stress, anxiety, depression, and an increased risk of developing post-traumatic stress disorder (PTSD). (Law, Marinova, Ewins and Marks, 2025)

Stuart's concept of adaptive stress refers to an individual's response to stress and the process of adaptation on a holistic level. This theoretical framework posits that stress arises from disturbances in an individual's adaptive systems, precipitated by internal or external factors. The consequences of such disturbances can manifest as either healthy adaptation or maladaptation. One of the external factors that have been demonstrated to exert an influence on stress levels is that of disaster conditions. Stuart's theory posits that the experience of stress in the elderly is influenced by a number of predisposing factors. These include age, physical health, the presence of social support networks, and the perception of stressors. It is asserted that these factors can exacerbate the psychological impact of a disaster. (Song, Atun, Blanford and Anthonj, 2025). Therefore, this study aims to examine the quality of life among the elderly in a disaster-prone area.

## METHOD

### Research Design, Location, and Time

The present study employed a descriptive analytical research design, with the aim of exploring the quality of life (QoL) among the elderly in a disaster-prone area. The research was conducted in Songgorunggi Hamlet, Nguter District, Sukoharjo, and was carried out from March to June 2025.

### The Population and the Sample

The population under study comprised all residents domiciled in Songgorunggi Hamlet, with a total population of 524 individuals. The sample

comprised respondents residing in areas susceptible to flooding. The sample size was determined using the Slovin formula due to the population size being less than 10,000. The formula employed is as follows:

n=1+N(e)2N

Where:

n = Sample size
N = Population size (524)
e = Margin of error (0.1)

Based on the formula, the sample size calculation is:

n=1+524(0.1)2524
n=1+524(0.01)524
n=1+5.24524
n=6.24524
n≈83.9→rounded to 84

Therefore, the calculated sample size for this study is 84 respondents.

**Sampling Technique**

The sampling technique employed was purposive sampling, which involves the selection of respondents based on specific criteria predetermined by the researchers.

Inclusion Criteria:

1. Citizens aged 60 years or older.
2. Residing in the Songgorunggi area.
3. Willing to participate as a respondent.

Exclusion Criteria:

1. Elderly individuals with critical illness.
2. Elderly individuals with mental disorders.

Instrument and Measurement

This study utilized the *WHOQOL-BREF* questionnaire to measure quality of life. The *WHOQOL-BREF* is the abbreviated version of the *WHOQOL-100* and has been previously tested for validity and reliability in its Indonesian version for assessing QoL in the elderly (Salim et al., 2007), showing a Cronbach's α value of >0.7.

The questionnaire consists of 26 questions:

a. 24 questions cover four domains:
   1. Physical Health (7 questions: items 3, 4, 10, 15, 16, 17, 18).
   2. Psychological (6 questions: items 5, 6, 7, 11, 19, 26).
   3. Social Relationships (3 questions: items 20, 21, 22).
   4. Environment (8 questions: items 8, 9, 12, 13, 14, 23, 24, 25).
b. 2 general questions address overall QoL (item 1) and general health (item 2).

Each question is scored on a 1 to 5 scale, where a higher score indicates better quality of life. The QoL measurement results were categorized based on the mean value of the accumulated answers, using the following ordinal scale:

Very Poor: mean 1.0 - 1.5
Poor: mean 1.6 - 2.5
Less/Moderate: mean 2.6 - 3.5
Good: mean 3.6 - 4.5
Very Good: mean 4.6 - 5.0

## RESULTS

Table 1.1 Respondent characteristics based on gender

| No | Category | Frequency | Percentage (%) |
|---|---|---|---|
| 1. | Male | 34 | 40,5 |
| 2. | Female | 50 | 59,5 |
| Total | | 84 | 100 |

The table above shows that the majority of respondents were female, at 59.5%.

Table 1.2 Respondent characteristics based on quality of life

| No | QoL | Frequency | Percentage (%) |
|---|---|---|---|
| 1 | Good | 29 | 34,5 |
| 2 | Poor | 55 | 65,5 |

## DISCUSSION

The respondents involved in this study included both male and female elderly individuals, with the majority being female (59.5%). Gender has been demonstrated to influence the perception of external stimuli, and is reported as a demographic factor influencing human quality of life (Fridolin, Musthofa and Suryoputro, 2022). As indicated by the findings of preceding research, female subjects frequently report a lower quality of life. This phenomenon may be attributed to various factors, including life stages that affect women's physical condition. The physical changes and decline in appearance and fitness experienced from

adolescence through early adulthood can have a significant impact on an elderly woman's perception of her own quality of life (Manungkalit, Sari and Prabasari, 2021). Moreover, within the context of the Javanese culture that is pervasive in the research locale, women occupy a pivotal position. This cultural context imposes numerous roles and responsibilities driven by moral and cultural demands. The greater the burden placed on an individual, the more it affects their quality of life (Paende, 2019).
Quality of life (QoL) is defined as an individual's beliefs and perceptions regarding their current state of well-being. The assessment of QoL is based on the individual's internalised value standards. Quality of life (QoL) measurement is a multifaceted concept that encompasses various dimensions, including physical, psychological, social, and economic aspects (Papeo, Immaculata & Rukmawati, 2021). The elderly are predisposed to a diminished QoL, a consequence of the numerous life changes they undergo. The majority of these changes correspond with the indicators employed to measure QoL (Fridolin, Musthofa and Suryoputro, 2022).

An additional factor that has been identified as a contributing element to the substandard quality of life experienced by the elderly is the presence of anxiety. Anxiety in this demographic is precipitated by alterations in roles, physical status, and health conditions. This anxiety has the potential to disrupt the elderly person's perception of their own existence across a range of domains, including physical, social, and economic aspects (Bellaputri, Purba and Qodariah, 2022).

A review of the research location reveals that the majority of elderly individuals residing in the Songgorunggi area have reported experiencing various physical complaints. The aforementioned complaints included body aches, insomnia, rigidity in the hands and feet, as well as dental and digestive issues. These physical conditions have been demonstrated to exert a direct influence on the individual's perception of their quality of life in the physical domain.

Furthermore, the area of Songgorunggi is predisposed to flooding. The anxiety experienced by the elderly is known to be exacerbated by changing weather conditions and the risk of disaster. This finding is consistent with Stuart's stress adaptation theory (Adelia and Supratman, 2023), which posits that stressors can have both internal and external origins. It is evident that external conditions, such as the imminent threat of environmental danger, have the capacity to engender feelings of threat in individuals, thus giving rise to feelings of anxiety.

A number of studies focusing on elderly populations in disaster-prone areas of Indonesia have identified various factors that influence quality of life (QoL). The health status of patients is widely regarded as a significant predictor of quality of life (QoL). A plethora of sociodemographic factors have been identified as being associated with QoL in disaster-affected areas. These factors include age, gender, marital status, education and occupation. Of these factors, age is often cited as the most dominant factor influencing QoL. Moreover, the risk of falling is found to have a substantial impact on the quality of life of elderly individuals.

## CONCLUSIONS

The majority of respondents in Songgorunggi Hamlet were female (59.5%), suggesting a potential for gender bias in the data. The majority of elderly respondents exhibited a quality of life that was categorised as "poor" (65.5%).

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