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# Awareness, Self-Efficacy, and Accessibility of Community-Based Healthcare Services Among Older Adults in Timor-Leste

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**Keywords**:
Awareness, Self-Efficacy, Community-Based, Older Adults, Utilization, Healthcare Services.

**Abstract:** This study aimed to determine predictors of accessibility to community health services among older adults and to examine the relationship between knowledge, self-efficacy, and use of these services. A quantitative, descriptive-correlational, and cross-sectional research design was used. Participants were selected by probabilistic random sampling in identified communities to ensure representativeness. Data were collected using a structured questionnaire that assessed knowledge about available services, confidence in access to care, and perception of accessibility. Descriptive statistics were used to determine the levels of the main variables, while correlational, comparative, and regression analyses were applied to examine relationships, demographic differences, and predictive factors. The results indicated that knowledge and self-efficacy were significantly associated with accessibility to community health services. Higher levels of knowledge and greater self-efficacy correlated with a better perception of access to care. The selected demographic variables also showed significant differences in accessibility. Knowledge and self-efficacy emerged as significant predictors of accessibility to health services. The results of this study underscore the importance of strengthening health education, capacity-building strategies, and community interventions to improve equitable access to health services among older adults.

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## INTRODUCTION

The World Health Organization acknowledges a critical global need to address the unique healthcare requirements of aging populations. This includes understanding the difficulties older adults encounter in maintaining their physical and mental health. Despite this recognition, concerns persist regarding the adequacy of meeting these needs, particularly concerning older adults' awareness of community-based healthcare services, their confidence in utilizing them, and the accessibility of these services.

In Asia, where the older adult population is growing rapidly, awareness, self-efficacy, and accessibility of community-based healthcare services are crucial for their use. Lam (2022)

emphasizes the importance of these factors. Complementing this, research in Singapore by Kwong and Leung (2022) demonstrates that community programs effectively enhance older adults' knowledge of diabetes and their self-care practices for type 2 diabetes. Furthermore, research by Seah et al. (2022) in Southeast Asia identifies factors that help or hinder older adults' access to healthcare, including physical access, service acceptability, cost, transportation, and social/family support. In contrast, (Mohd Rosnu et al., 2022) observe limited awareness and demand for integrated health and social care services among older adults in China. Consequently, promoting awareness, fostering self-efficacy, and ensuring accessibility are crucial for enhancing community-based healthcare services for older adults across Asia.

In Timor-Leste, these difficulties are made worse because older adults do not fully understand the available community-based healthcare services. Studies by Johnson et al. (2019) and Miles et al. (2020) emphasize this widespread lack of awareness, which leads to underuse of preventive care and delays in seeking medical interventions. This issue is further complicated by limited sharing of health information and inadequate outreach, especially in rural and underserved urban areas. Furthermore, older adults in Timor-Leste face challenges managing their health within a community setting due to a lack of self-efficacy, or confidence. As Bandura's foundational work (1997) shows, self-efficacy strongly influences health behaviors. Older adults who lack confidence in accessing community-based healthcare services may be less likely to engage in preventive care. This further worsens existing health inequalities, particularly for those with limited financial resources and those living in rural or underserved areas.

The concept of accessibility, encompassing physical access, financial access, and access to information, further complicates these issues. In Timor-Leste, physical access to community-based healthcare services is hindered by factors such as limited transportation and an uneven distribution of healthcare facilities. This means older adults in impoverished or geographically isolated regions receive delayed or no medical care.

Despite the vital role of community-based healthcare services in improving awareness, self-efficacy, and accessibility for older adults in Timor-Leste, there is a notable gap in research on this topic. Although interventions focused on promoting self-care and health education have shown promise for improving the well-being of older adults in Timor-Leste (Nuwa & Kiik, 2021; Wong et al., 2019), persistent problems like a lack of patient transport and financial barriers still prevent equitable access to hospital care. Targeted research is crucial to address these gaps and develop sustainable, culturally appropriate healthcare programs. Therefore, this study aims to address this void by investigating older adults' awareness, self-efficacy, and accessibility of community-based healthcare services in Timor-Leste. By thoroughly detailing the challenges older adults encounter, this research intends to guide the creation of specific interventions and policy recommendations, ultimately contributing to improved well-being for older adults in Timor-Leste and elsewhere.

This study assessed the levels of awareness, self-efficacy, and accessibility of community-based healthcare services among older adults in Timor Leste. It also examined the relationships between awareness, self-efficacy, and accessibility, as well as differences in accessibility based on demographic characteristics such as age, gender, marital status, socioeconomic status, religion, and occupation. In addition, the study aimed to identify the key factors that predict accessibility to community-based healthcare services among older adults.

This study benefits several stakeholders. For older adults, it helps identify barriers to accessing community-based healthcare services and supports the development of interventions to improve their health and quality of life. For the community, improved healthcare access allows older adults to remain healthy and actively contribute to society.

For nursing practice, the findings help nurses improve communication, strengthen patients' self-efficacy, and promote accessible healthcare services for older adults. In nursing education, the study provides insights that can enhance curricula and prepare students to address the needs of an aging population. The study also contributes to nursing research and future researchers by providing evidence and a reference for further studies on improving healthcare accessibility for older adults.

This study examines the levels of awareness, self-efficacy, and accessibility of community-based healthcare services among older adults in Timor-Leste. It addresses specific questions related to these three key areas. First, the study explores awareness by investigating how important older adults consider community-based healthcare to be, how personally relevant these services are to them, and what barriers prevent them from knowing about them. This will provide a thorough understanding of the factors influencing older adults' knowledge of local healthcare. Second, the study assesses self-efficacy by examining confidence in navigating healthcare systems, belief in personal control over health, and willingness to advocate for personal health needs. Third, the research investigates the accessibility of community-based healthcare services, focusing on aspects such as immunizations, screenings, and health education. By analyzing these components, the study aims to offer a detailed perspective on healthcare accessibility for older adults in Timor-Leste. Additionally, it explores potential differences in the accessibility, availability, and use of these services based on demographic factors, including age, gender, marital status, socioeconomic status, religion, and occupation.

While this study is comprehensive, it has certain limitations. The findings may not apply beyond Timor-Leste, limiting the broader relevance of the research. Since the study is cross-sectional, it captures data at only one point in time, meaning it cannot establish cause-and-effect relationships. Furthermore, using a mixed-methods design may present challenges in smoothly combining qualitative and quantitative data. However, integrating diverse data sources also strengthens the depth and breadth of the study's insights.

## LITERATURE REVIEW

### Awareness of Community-Based Healthcare Services

Understanding older adults' awareness of community-based healthcare services is important to ensure equitable access to care. Studies show that awareness levels among older adults vary widely across countries. For example, Zhang et al. (2023) reported awareness ranging from low to moderate, while Denton et al. (2008) found that many older adults did not consider community services as viable care options for dementia support. These findings highlight the need for stronger health education and community outreach programs.

In Asia, awareness is influenced by cultural, social, and economic factors. Wang et al. (2022) found low awareness among older adults in Changsha, China, while Banerjee et al. (2022) reported limited knowledge of dementia care resources in Taiwan. These studies emphasize the importance of culturally appropriate education and community engagement.

In Timor-Leste, research on awareness remains limited. Some programs such as peer education models (Arini & Primastuti, 2023) and Elderly Posyandu initiatives (Smith et al., 2020) show potential in increasing awareness and participation. However, more research is needed to understand awareness levels and barriers among older adults in the country.

**Self-Efficacy in Community-Based Healthcare**

Self-efficacy refers to older adults' confidence in their ability to access and use healthcare services. It involves psychological and behavioral factors such as confidence in navigating healthcare systems and advocating for personal health needs.

Studies show that technological confidence improves older adults' ability to access healthcare services (Johnson & Smith, 2019). Supportive communication from healthcare professionals also strengthens confidence and service utilization (Brown et al., 2021).

Bandura's Social Cognitive Theory emphasizes that individuals with higher confidence in managing their health are more likely to adopt positive health behaviors (Bandura, 1997). Similarly, Carter and Johnson (2022) found that enhancing self-efficacy encourages participation in community healthcare programs. Social support networks also play an important role in helping older adults express their healthcare needs (Mitchell et al., 2020).

**Relationship Between Awareness and Accessibility**

Research consistently shows that awareness influences the utilization of healthcare services. Siconolfi et al. (2022) reported that limited knowledge of home- and community-based services reduces service use. Similarly, Fu and Guo (2022) highlighted the relationship between community environments and service accessibility.

In Asia, barriers such as limited service availability, long waiting times, and inconsistent care reduce accessibility (Mohd Rosnu et al., 2022). Increasing awareness through educational programs and community engagement can improve healthcare utilization among older adults (Thipayasothorn et al., 2020; Ho et al., 2022).

In Timor-Leste, geographical and transportation barriers significantly affect healthcare access (Price et al., 2016). Education level and household resources also influence awareness and healthcare utilization (Smith et al., 2020). However, research examining the relationship between self-efficacy and accessibility remains limited.

**Demographic Factors Affecting Accessibility**

Several demographic variables influence access to community healthcare services among older adults.

1. Age. Age influences healthcare access and utilization, particularly among adults aged 80 and above (Jirathananuwat, 2023). Accessibility also varies between urban and rural areas (Ma & Shen, 2023).
2. Gender. Gender differences affect service utilization, with women generally using community-based services more frequently than men (Jirathananuwat, 2023; Ilinca et al., 2022).
3. Marital Status. Widowed or single older adults are more likely to use community healthcare services due to reduced family support (Jirathananuwat, 2023).

4. Socioeconomic Status. Economic conditions significantly affect healthcare access. Limited resources are associated with poorer health outcomes and reduced service utilization (Yang et al., 2023; Ma & Shen, 2023).
5. Religion. Religion does not significantly influence healthcare accessibility among older adults (Ma & Shen, 2023; Chen et al., 2022; Siconolfi et al., 2022).
6. Occupation. Occupation is generally not a major determinant of healthcare access compared to factors such as insurance coverage and healthcare needs (Jirathananuwat, 2023; Luan et al., 2023).

Despite existing studies, there remains a research gap in understanding how these demographic factors influence healthcare accessibility among older adults in Timor-Leste.

**Theoretical Framework**

This study is guided by two main theories: the Health Belief Model (HBM) and Andersen's Behavioral Model of Health Service Utilization.

The Health Belief Model explains health behavior based on perceived susceptibility, severity, benefits, barriers, cues to action, and self-efficacy (Rosenstock et al., 1988; Champion & Skinner, 2008). Individuals are more likely to seek healthcare services when they believe they are at risk of health problems and perceive benefits in taking action. Self-efficacy, introduced by Bandura (1977), plays a crucial role in influencing health-related decisions.

Meanwhile, Andersen's Behavioral Model explains healthcare utilization through three factors: predisposing factors, enabling factors, and need (Andersen, 1995). Predisposing factors include demographic characteristics such as age and gender. Enabling factors involve resources such as income, social support, and service availability. Need refers to an individual's perceived or actual health condition (Babitsch et al., 2012).

Together, these models explain how awareness, self-efficacy, and accessibility influence older adults' use of community-based healthcare services.

**Definition of Terms**

1. Accessibility – The ease with which older adults in Timor-Leste can physically, financially, and informationally access community-based healthcare services.
2. Awareness – The level of knowledge older adults have about available community-based healthcare services and how to access them.
3. Community-Based Healthcare Services – Healthcare programs delivered within local communities to address the specific health needs of older adults.
4. Community-Based Healthcare – A healthcare delivery model that provides services directly within communities rather than centralized institutions.
5. Older Adults – Individuals aged 65 years and above living in Timor-Leste.
6. Self-Efficacy – Older adults' confidence in their ability to access, navigate, and utilize community-based healthcare services.

## METHOD

**Research Design**

This study employed a quantitative descriptive correlational research design to examine

the levels of awareness, self-efficacy, and accessibility of community-based healthcare services among older adults in Timor-Leste. The descriptive approach was used to describe existing conditions and trends, while correlational analysis determined the relationships among the variables (Calderon & Gonzales, 2017).

**Population and Sampling Technique**

The study included older adults living in Timor-Leste, particularly in the districts of Baucau, Viqueque, and Lospalos, who had previously used community-based healthcare services. Participants were selected using convenience sampling, which involves choosing respondents based on their availability and willingness to participate.

**Instrumentation**

Data were collected using a structured survey questionnaire developed based on relevant literature and previous studies (Patel & Patel, 2023). The instrument consisted of three main sections:

1. Awareness of community-based healthcare services (32 items) adapted from Perng & Watson (2012).
2. Self-efficacy related to the use of healthcare services (Likert-scale questionnaire; Cronbach's alpha = 0.85) (Albebeisi et al., 2021).
3. Accessibility to community-based healthcare services (42 items) measuring access to preventive, emergency, diagnostic, and palliative care (Perng & Watson, 2012).

Responses were measured using a 5-point Likert scale ranging from strongly disagree to strongly agree. Content validation was conducted by a panel of experts, including nursing specialists, a statistician, a methodologist, and a public health expert.

**Data Gathering Procedure**

Data collection was conducted over three months. The questionnaire was translated from English to Tetun and validated through a pilot study. After obtaining approval from the university and the Research Ethics Committee, participants were recruited and informed consent was obtained. Questionnaires were then distributed to eligible participants in the selected districts. All collected data were treated with strict confidentiality and securely stored.

**Informed Consent and Voluntary Participation**

Participants were informed about the purpose, procedures, risks, and benefits of the study before participation. Informed consent ensured that participation was voluntary, and respondents had the right to withdraw from the study at any time without negative consequences.

**Data Analysis**

Quantitative data were analyzed using Microsoft Excel and SPSS version 21.0. Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarize the data. Pearson correlation, t-tests, and one-way ANOVA were applied to examine relationships and differences among variables. The study involved 300 survey respondents and

10 interview participants from Baucau, Viqueque, and Lospalos.

## RESULTS AND DISCUSSION

### Level of Awareness on Community-Based Healthcare Services

Table 1. Level of Awareness of Older Adults on Community-Based Healthcare Services

| Item | SD | Mean | Equivalent Scaled Response | Verbal Interpretation |
|---|---|---|---|---|
| *Community - based health care services is…* | | | | |
| A11. Promoting a healthy lifestyle among us. | 0.474 | 3.77 | Agree | High |
| A6. Focused on providing older adult patients with relief from symptoms of pain. | 0.466 | 3.72 | Agree | High |
| A9. Essential for maintaining our good health. | 0.477 | 3.72 | Agree | High |
| A2. Preventing the progression of our health issues. | 0.475 | 3.71 | Agree | High |
| A5. Maintaining the quality of life of older adult patients with serious illness. | 0.486 | 3.70 | Agree | High |
| A7. Aiming to provide care for older adults living with a life-limiting illness. | 0.559 | 3.70 | Agree | High |
| A1. Promoting the overall well-being of older adults like me. | 0.498 | 3.69 | Agree | High |
| A12 Having an interdisciplinary approach to patients care. | 0.501 | 3.68 | Agree | High |
| A3 Providing an extra layer of support to the seriously ill patient and their family. | 0.548 | 3.66 | Agree | High |
| A8 Aiming to provide care for someone living with a life-limiting illness | 0.514 | 3.66 | Agree | High |
| A10 Essential for maintaining good health | 0.502 | 3.66 | Agree | High |
| A13 In promoting a healthy lifestyle. | 0.495 | 3.66 | Agree | High |
| A14 Preventing the progression of health issues. | 0.517 | 3.65 | Agree | High |
| A4 In addressing the specific | **0.522** | **3.61** | Agree | High |

| | | | |
|---|---|---|---|
| health needs of older adults like me. | | | |
| **Overall Mean** | **3.69** | Agree | High |

Response Scale: 5.00 – 4.51 Strongly Agree / Very High 4.50 – 3.51 Agree / High 3.50 – 2.51 Somewhat Agree / Moderate 2.50 – 1.51 Disagree / Low 1.50 – 0.50 Strongly Disagree / Very Low

Table 1 shows that older adults demonstrated a high level of awareness of community-based healthcare services, with an overall mean score of 3.69. The highest agreement was related to the belief that these services promote a healthy lifestyle among older adults (M = 3.77, SD = 0.474). High awareness was also observed regarding the role of community-based healthcare in relieving symptoms and pain (M = 3.72, SD = 0.466), maintaining good health (M = 3.72, SD = 0.477), and preventing the progression of health problems (M = 3.71, SD = 0.475).

Older adults also recognized the importance of these services in maintaining quality of life for seriously ill individuals (M = 3.70, SD = 0.486) and providing care for life-limiting conditions (M = 3.70, SD = 0.559). However, slightly lower awareness was observed regarding services that address specific health needs of older adults (M = 3.61, SD = 0.522). Overall, the consistently high scores indicate that older adults have a positive and informed perception of community-based healthcare services, particularly in relation to health promotion, disease prevention, and quality-of-life support.

These findings are supported by previous studies showing that greater awareness of community-based services increases service utilization and improves health outcomes among older adults (Moroz et al., 2020). Awareness of symptom management services also enhances participation in chronic disease and palliative care programs (Hamer et al., 2020). Additionally, preventive and early intervention services are widely recognized as essential components of community-based care for older populations (Eze et al., 2023), although awareness of specialized geriatric services remains limited (Feng et al., 2020).

**Degree of Self-Efficacy on Accessibility of Community- Based Healthcare Services**

Table 2. Degree of Self-Efficacy of Older Adults on Community-Based Healthcare Services

| Item | SD | Mean | Equivalent Scaled Response | Verbal Interpretation |
|---|---|---|---|---|
| *I am confident…* | | | | |
| SE17. I know where to seek information when availing healthcare services in my community. | 0.887 | 2.95 | Moderately Agree | Moderately High |
| SE3 I am confident in my ability to utilize different community-based healthcare options that align with my health objectives. | 0.902 | 2.90 | Moderately Agree | Moderately High |
| SE9 navigating the complexities utilizing | 0.871 | 2.90 | Moderately | Moderately |

| | | | | |
|---|---|---|---|---|
| community-based health services. | | | Agree | High |
| SE5 that by actively participating in community-based healthcare, I can enhance my overall control over my health outcomes. | 0.909 | 2.87 | Moderately Agree | Moderately High |
| SE4 in my ability to adopt and sustain health-promoting behaviors that positively impact my well-being. | 0.835 | 2.83 | Moderately Agree | Moderately High |
| SE16 I have no difficulty scheduling appointments for healthcare services in my community. | 0.905 | 2.82 | Moderately Agree | Moderately High |
| SE2 in my ability to explore_community-based healthcare | 0.906 | 2.80 | Moderately Agree | Moderately High |
| SE13 I have the power to influence and take control of my overall health through active engagement with community-based healthcare. | 0.950 | 2.78 | Moderately Agree | Moderately High |
| SE10 asking for assistance to access healthcare services. | 0.881 | 2.76 | Moderately Agree | Moderately High |
| SE7 navigating the complexities associated with scheduling appointments to receive healthcare services based in the community where I live in. | 0.853 | 2.74 | Moderately Agree | Moderately High |
| SE1 in my ability to understand and navigate the various healthcare systems available within my community. | 1.029 | 2.73 | Moderately Agree | Moderately High |
| SE12 I have the skills necessary to communicate with healthcare professionals within community healthcare settings. | 0.931 | 2.71 | Moderately Agree | Moderately High |
| SE8 navigating the complexities associated with understanding information about community-based healthcare services | 0.946 | 2.68 | Moderately Agree | Moderately High |
| SE15 I have the skills necessary to communicate with healthcare professionals within community healthcare settings. | 0.872 | 2.66 | Moderately Agree | Moderately High |
| SE6 in advocating for personalized care that aligns with my unique health circumstances and preferences. | 0.962 | 2.65 | Moderately Agree | Moderately High |
| SE11 in my ability to speak up and | 0.986 | 2.64 | Moderately | Moderately |

| | | | | |
|---|---|---|---|---|
| advocate for necessary adjustments or modifications to community-based healthcare services. | | | Agree | High |
| SE14 I feel assured that I can effectively use technology and online resources to access information about community-based healthcare services. | 0.858 | 2.63 | Moderately Agree | Moderately High |
| **Overall Mean** | | **2.77** | Moderately Agree | **Moderately High** |

Legend:
5.00 – 4.51 Strongly Agree / Very High
4.50 – 3.51 Agree / High
3.50 – 2.51 Somewhat Agree / Moderate
2.50 – 1.51 Disagree / Low
1.50 – 0.50 Strongly Disagree / Very Low

Table 2 indicates that older adults demonstrated a moderately high level of self-efficacy regarding community-based healthcare services, with an overall mean of 2.77. The highest mean score was related to confidence in identifying sources of information about community-based healthcare services (M = 2.95, SD = 0.887). Respondents also showed relatively high confidence in using appropriate healthcare options and navigating service processes (M = 2.90, SD = 0.902; M = 2.90, SD = 0.871), as well as gaining better control over their health outcomes through participation in community-based healthcare (M = 2.87, SD = 0.909).

Moderately high scores were also found for maintaining health-promoting behaviors (M = 2.83, SD = 0.835), scheduling appointments (M = 2.82, SD = 0.905), and exploring available healthcare services (M = 2.80, SD = 0.906). However, lower scores were observed in areas such as navigating healthcare systems, communicating with healthcare professionals, and requesting assistance (M ≈ 2.66–2.74). The lowest score was related to confidence in using technology and online health resources (M = 2.63, SD = 0.858), indicating ongoing digital literacy challenges among older adults.

Previous studies support these findings, showing that older adults often experience moderate confidence in accessing community healthcare but face barriers related to digital literacy, healthcare system navigation, and communication with providers (Nguyen et al., 2021). Self-efficacy tends to improve when community-based programs provide personalized guidance and strong support from healthcare workers (Luu et al., 2022). Higher self-efficacy is also associated with better health outcomes and greater participation in preventive care (Nageso et al., 2020).

## Degree of Accessibility on Community-Based Healthcare Services

Table 3. Degree of Accessibility of Community-Based Healthcare Services among Older Adults in Timor Leste

| Item | SD | Mean | Equivalent | Verbal |
|---|---|---|---|---|

| | | | **Scaled Response** | **Interpretation** |
|---|---|---|---|---|
| Acc3 I can go to a government hospital nearby for medical care | 0.750 | 3.45 | Moderately Agree | Moderately High |
| Acc1 The primary medical provider is the one dealing with most of my routine health care issues | 0.895 | 3.21 | Moderately Agree | Moderately High |
| Acc6 The primary medical provider coordinate care with specialists I may need to see. | 1.070 | 3.11 | Moderately Agree | Moderately High |
| Acc4 I can go to a public health nurse nearby for health education | 1.025 | 2.99 | Moderately Agree | Moderately High |
| Acc2 I go to my primary doctor for my yearly physical exam | 1.069 | 2.97 | Moderately Agree | Moderately High |
| Acc13 Diet counseling for older adults at high risk for chronic disease | 0.909 | 2.94 | Moderately Agree | Moderately High |
| Acc5 A public health midwife attends to my health needs | 1.007 | 2.91 | Moderately Agree | Moderately High |
| Acc14 Cholesterol screening | 1.011 | 2.75 | Moderately Agree | Moderately High |
| Acc8 HIV Screening | 1.003 | 2.75 | Moderately Agree | Moderately High |
| Acc7 Hepatitis screening | 1.015 | 2.74 | Moderately Agree | Moderately High |
| Acc12 Obesity screening and counseling | 0.919 | 2.70 | Moderately Agree | Moderately High |
| Acc10 Sexually transmitted infection prevention counseling | 0.930 | 2.67 | Moderately Agree | Moderately High |
| Acc9 STD screening (syphilis, chlamydia, gonorrhea) | 1.054 | 2.55 | Moderately Agree | Moderately High |
| Acc11 Routine immunizations for older adults (pneumonia) | 0.831 | 2.34 | Moderately Agree | Moderately High |
| Acc16 Diabetes Type 2 screening for overweight | 0.805 | 2.37 | Disagree | Low |
| Acc15 Blood pressure screening | 0.683 | 2.36 | Disagree | Low |
| Acc21 Depression screening | 0.694 | 2.35 | Disagree | Low |
| Acc19 Alcohol misuse screening and counseling | 0.633 | 2.31 | Disagree | Low |
| Acc22 Domestic violence and interpersonal violence screening and counseling for all women | 0.700 | 2.31 | Disagree | Low |
| Acc18 Abdominal Aortic Aneurysm | 0.629 | 2.29 | Disagree | Low |

| Screening | | | | |
|---|---|---|---|---|
| Acc25 Ambulance | 0.775 | 2.26 | Disagree | Low |
| Acc17 Colorectal cancer prevention | 0.851 | 2.24 | Disagree | Low |
| Acc28 Urine and Stool tests | 0.648 | 2.23 | Disagree | Low |
| Acc20 Tobacco use screening and cessation intervention for tobacco users | 0.558 | 2.15 | Disagree | Low |
| Acc23 Osteoporosis screening for women over 60 based on risk factors | 0.761 | 2.15 | Disagree | Low |
| Acc24 Urinary Tract or other infection screening | 0.871 | 2.11 | Disagree | Low |
| Acc26 Emergency Doctors | 0.713 | 2.10 | Disagree | Low |
| Acc29 Urine and Stool tests | 0.618 | 2.10 | Disagree | Low |
| Acc27 Rescuers | 0.701 | 2.06 | Disagree | Low |
| Acc30 X-rays | 0.873 | 2.02 | Disagree | Low |
| Acc32 Laboratory tests (Blood test, glucose, thyroid, lipid profile, BUN, Creatinine, etc..) | 0.686 | 1.98 | Disagree | Low |
| Acc31 Ultrasounds | 0.720 | 1.85 | Disagree | Low |
| **Overall Mean** | **0762** | **2.48** | Disagree | **Low** |

Legend:
4.51 – 5.00 Strongly Agree / Very High
3.51 – 4.50 Agree / High
2.51 – 3.50 Moderately Agree / Moderate
1.51 – 2.50 Disagree / Low
0.50 – 1.50 Strongly Disagree / Very Low

Table 3 shows that older adults in Timor-Leste generally experience limited access to community-based healthcare services, with an overall mean accessibility score of 2.48. The most accessible service was government hospitals (M = 3.45, SD = 0.750), followed by primary medical providers for routine health issues (M = 3.21, SD = 0.895). Moderate accessibility was also observed for care coordination with specialists (M = 3.11, SD = 1.070), public health nurse education (M = 2.99, SD = 1.025), and annual physical examinations (M = 2.97, SD = 1.069). Some preventive services such as diet counseling (M = 2.94) and midwife-based care (M = 2.91) were moderately available but inconsistent.

However, most services showed low accessibility, particularly preventive screenings for type 2 diabetes (M = 2.37), blood pressure (M = 2.36), depression (M = 2.35), alcohol misuse (M = 2.31), and domestic violence (M = 2.31). More specialized screenings such as abdominal aortic aneurysm (M = 2.29), colorectal cancer (M = 2.24), and osteoporosis (M = 2.15) were even less accessible. The lowest accessibility was reported for essential diagnostic and emergency services, including rescue services (M = 2.06), X-rays (M = 2.02), laboratory tests (M = 1.98), and ultrasounds (M = 1.85), indicating major gaps in healthcare infrastructure.

Previous studies show that older adults are often affected by transport barriers and

fragmented services, limiting their access to preventive care and timely treatment (Jenkins et al., 2022). Limited laboratory and imaging capacity also restricts chronic disease management in aging populations (Lum et al., 2020). Accessibility can improve when governments strengthen primary care networks, mobile diagnostics, and healthcare workforce capacity (Hamer et al., 2020).

### Awareness and Accessibility of Community-Based Healthcare Services

Table 4. Test of Relationship between Awareness and Accessibility of Community-Based Healthcare Services among Older Adults

| Correlation Matrix | | | |
|---|---|---|---|
| | | **Awareness_Mean** | **Accessibility_Mean** |
| Awareness_Mean | Pearson's r | — | |
| | Df | — | |
| | p-value | — | |
| | Spearman's rho | — | |
| | Df | — | |
| | p-value | — | |
| Accessibility_Mean | Pearson's r | 0.517*** | — |
| | Df | 298 | — |
| | p-value | < .001 | — |
| | Spearman's rho | 0.495*** | — |
| | Df | 298 | — |
| | p-value | < .001 | — |

Note. * p < .05, ** p < .01, *** p < .001

The Pearson correlation analysis showed a moderately strong positive relationship between awareness and accessibility of community-based healthcare services ($r = 0.517$, $p < .001$). This indicates that higher awareness among older adults is associated with better access to healthcare services. The result was supported by the Spearman's rho value (0.495, $p < .001$), confirming the significance of the relationship.

Previous studies support this finding, showing that older adults with greater health literacy and awareness of community health resources are more likely to use preventive care and healthcare services (Imoto et al., 2020). Increased awareness also improves access to community clinics and screening programs in resource-limited settings (Lum et al., 2020) and helps reduce psychological, informational, and logistical barriers to healthcare utilization (Nguyen et al., 2021).

### Self-Efficacy and Accessibility of Community-Based Healthcare Services

The findings in Tables 5. and 6. show a clear and meaningful link between how confident older adults feel about managing their health and how easily they can access healthcare services in their communities.

Table 5.

| Descriptives | | | | |
|---|---|---|---|---|
| | | | Shapiro-Wilk | |
| | **Mean** | **SD** | **W** | **P** |
| Self-Efficacy | 2.77 | 0.470 | 0.974 | < .001 |
| Accessibility | 2.48 | 0.298 | 0.990 | 0.044 |

The Shapiro–Wilk test indicated that the data for self-efficacy (W = 0.974, p < .001) and accessibility (W = 0.990, p = 0.044) were not normally distributed. Despite this, the Pearson correlation (r = 0.529, p < .001) showed a moderately strong positive relationship, indicating that older adults with higher self-efficacy tend to report better access to community-based healthcare services. This result was supported by Spearman's rho (0.490, p < .001), confirming the reliability of the relationship.

Previous studies also show that higher self-efficacy among older adults increases their likelihood of seeking preventive care and utilizing community-based health services (Nageso et al., 2020). Interventions that strengthen self-efficacy, such as health literacy programs and service navigation support, can improve access and service utilization (Smith et al., 2020), while also helping overcome barriers related to transportation, system complexity, and communication (Wang et al., 2021).

Table 6.

| Correlation Matrix | | | |
|---|---|---|---|
| | | **Self-Efficacy** | **Accessibility** |
| Self-Efficacy | Pearson's r | — | |
| | Df | — | |
| | p-value | — | |
| | Spearman's rho | — | |
| | Df | — | |
| | p-value | — | |
| Accessibility | Pearson's r | 0.529*** | — |
| | Df | 298 | — |
| | p-value | < .001 | — |
| | Spearman's rho | 0.490*** | — |
| | Df | 298 | — |
| | p-value | < .001 | — |

Note. * p < .05, ** p < .01, *** p < .001

**Difference in Accessibility to Community-Based Health Care Services in terms of Age, Gender, Marital Status, Socioeconomic Status, Religion, and Occupation**

1. Age

   The results in Table 7. reveal that there is no significant difference in the accessibility of community-based healthcare services between the two age groups of older adults, 55 to 69 years and 70 to 95 years.

Table 7. Difference in Accessibility to Community-Based Health Care Services in terms of Age

| **Independent Samples T-Test** | | | | | **Verbal Interpretation** |
|---|---|---|---|---|---|
| **Mean** | | **Statistic** | **Df** | **p** | |
| Accessibility | Student's t | -1.15 | 298.00 | 0.253 | Not Significant |
| | Welch's t | -1.14 | 294.18 | 0.253 | Not Significant |

Note. $H_a$ μ70 to 95 ≠ μ55 to 69

The independent samples t-test showed no significant difference based on age in access to community-based healthcare services (t = -1.15, df = 298, p = 0.253). Welch's t-test produced similar results (t = -1.14, df = 294.18, p = 0.253), while Levene's test (F = 2.54, p = 0.112) confirmed equal variances between groups. These findings indicate that age does not significantly influence older adults' access to community-based healthcare services.

Previous studies support this result, showing that older adults in low-resource settings experience similar barriers to healthcare access regardless of age, including transportation challenges, limited healthcare professionals, and uneven facility distribution (Nguyen & Santos, 2021; Rodriguez & Tan, 2022; Lopez & Chan, 2023; Diniz & Amaral, 2024). Efforts to improve infrastructure, community outreach, and patient navigation tend to benefit all older adults equally (Garcia & Cruz, 2025).

2. Gender

Table 8. Assumptions

| **Homogeneity of Variances Test (Levene's)** | | | | | **Verbal Interpretation** |
|---|---|---|---|---|---|
| **Mean** | **F** | **Df** | **df2** | **P** | |
| Accessibility | 2.54 | 1 | 298 | 0.112 | Not Significant |

Note. A low p-value suggests a violation of the assumption of equal variances

3. Marital Status

Table 9. Difference in Accessibility to Community-Based Health Care services in terms of Marital Status

| **One-Way ANOVA (Welch's)** | | | | | **Verbal Interpretation** |
|---|---|---|---|---|---|
| **Mean** | **F** | **df1** | **df2** | **p** | |
| Accessibility | 6.90 | 3 | 5.16 | 0.030 | Significant |

Welch's ANOVA showed a significant difference in perceived accessibility across marital status groups (F(3, 5.16) = 6.90, p = 0.030), indicating that at least one group differs from the others. The Shapiro–Wilk test confirmed normality (W = 0.99, p = 0.187), while Levene's test indicated unequal variances (F = 4.39, p = 0.005), supporting the use of Welch's ANOVA.

Table 10.

| Mean | Marital Status | N | Mean | SD | SE | Verbal Interpretation |
|---|---|---|---|---|---|---|
| Accessibility | 1 (Single) | 34 | 2.51 | 0.19 | 0.03 | Significant |
| | 2 (Married) | 158 | 2.54 | 0.29 | 0.02 | Significant |
| | 3 (Widow) | 106 | 2.41 | 0.32 | 0.03 | Significant |
| | 5 (Divorced) | 2 | 2.13 | 0.13 | 0.09 | Not Significant |

Married older adults reported the highest accessibility scores (M = 2.54, SD = 0.29), followed by single (M = 2.51, SD = 0.19) and widowed individuals (M = 2.41, SD = 0.32), while divorced older adults had the lowest scores (M = 2.13, SD = 0.13). Tukey's post-hoc test showed that the only significant difference was between married and widowed older adults (mean difference = 0.13, p = 0.003), with married individuals reporting better access.

These findings suggest that marital status, particularly being married, may improve healthcare access due to stronger social support, assistance with daily tasks, and shared resources. Previous studies similarly show that married older adults are more likely to attend checkups and preventive services (Sun et al., 2021), while widowed or single individuals often face barriers such as transportation and healthcare system navigation (Sen et al., 2022). Strengthening community and peer support systems can help improve access for older adults without spousal support (Zazzara et al., 2021).

Table 11.

| Normality Test (Shapiro-Wilk) | | |
|---|---|---|
| | **W** | **p** |
| Accessibility_Mean | 0.99 | 0.187 |

Note. A low p-value suggests a violation of the assumption of normality

Table 12.

| Homogeneity of Variances Test (Levene's) | | | | |
|---|---|---|---|---|
| | **F** | **df1** | **df2** | **p** |
| Accessibility_Mean | 4.39 | 3 | 296 | 0.005 |

Table 13. Tukey Post-Hoc Test for Accessibility and Marital Status

| Tukey Post-Hoc Test – Accessibility_Mean | | | | | |
|---|---|---|---|---|---|
| | | **1 (Single)** | **2 (Married)** | **3 (Widow)** | **5 (Divorced)** |
| 1 (Single) | Mean difference | — | -0.03 | 0.10 | 0.38 |
| | p-value | — | 0.946 | 0.334 | 0.279 |
| 2 (Married) | Mean difference | | — | 0.13 | 0.41 |

| | | | | |
|---|---|---|---|---|
| | p-value | — | 0.003 | 0.198 |
| 3 (Widow) | Mean difference | | — | 0.28 |
| | p-value | | — | 0.525 |
| 5 (Divorced) | Mean difference | | | — |
| | p-value | | | — |

4. Socioeconomic Status

Table 14 shows that family income significantly affects older adults' access to community-based healthcare services (Welch's F(2, 26.16) = 9.19, p < 0.001), indicating meaningful differences in accessibility across income groups. The Shapiro–Wilk test confirmed normality (W = 0.99, p = 0.072), while Levene's test showed equal variances (F = 1.10, p = 0.335), supporting the use of standard post-hoc comparisons.

Table 14.

| One-Way ANOVA (Welch's) | | | | |
|---|---|---|---|---|
| | **F** | **df1** | **df2** | **p** |
| Accessibility | 9.19 | 2 | 26.16 | <.001 |

Older adults with a monthly family income of $150–$240 reported the highest accessibility (M = 2.66, SD = 0.23), followed by those earning $250 or more (M = 2.61, SD = 0.34), while the lowest accessibility was reported by those earning $50–$140 (M = 2.46, SD = 0.29). Tukey's post-hoc test showed a significant difference between the $50–$140 and $150–$240 groups (mean difference = -0.20, p = 0.002), while other group comparisons were not statistically significant. These results suggest that higher family income is associated with better access to community-based healthcare services, whereas the lowest-income group faces greater difficulties.

Table 15. Group Descriptives

| | **Gross Family Income** | **N** | **Mean** | **SD** | **SE** |
|---|---|---|---|---|---|
| Accessibility | 1 ($50 to $140) | 260 | 2.46 | 0.29 | 0.02 |
| | 2 ($150 to 240) | 26 | 2.66 | 0.23 | 0.05 |
| | 3 ($250 and above) | 14 | 2.61 | 0.34 | 0.09 |

Research shows that older adults with lower incomes often experience delays in medical care, use fewer preventive services, and participate less in community health programs (Cheng et al., 2020). Even small increases in household income can improve transportation, medication affordability, and appointment attendance, making healthcare feel more accessible and improving health outcomes (Brown & Hoque, 2023). Additionally, financial hardship combined with geographic distance and limited health literacy further increases healthcare access inequalities among older adults (Calimag, 2021).

Table 16.

| Normality Test (Shapiro-Wilk) | | |
|---|---|---|
| | **W** | **P** |
| Accessibility | 0.99 | 0.072 |

Note. A low p-value suggests a violation of the assumption of normality

Table 17.

| Homogeneity of Variances Test (Levene's) | | | | |
|---|---|---|---|---|
| | F | df1 | df2 | P |
| Accessibility | 1.10 | 2 | 297 | 0.335 |

**Test of Difference in the Accessibility to community-based health care services among older adults in terms of Occupation**

Table 18 shows that occupation does not significantly affect older adults' access to community-based healthcare services. An independent samples t-test produced t = 0.54, df = 298, p = 0.586, indicating no statistically significant difference in perceived accessibility between occupational groups ($p > 0.05$). This suggests that older adults experience similar levels of healthcare access regardless of their employment status or occupation.

Table 18.

| Independent Samples T-Test | | | | | |
|---|---|---|---|---|---|
| | | **Statistic** | **Df** | **P** | **Interpretation** |
| Accessibility_Mean | Student's t | 0.54 | 298.00 | 0.586 Not Significant | |

Note. $H_a$ μ2 ≠ μ4

Studies show that older adults, whether retired or working part-time, often face similar barriers to healthcare access, such as transportation difficulties, shortages of healthcare professionals, and limited community outreach (Aroogh & Shahboulaghi, 2020). Research also indicates that improving local health facilities, mobile or home-based care, and health literacy programs benefits older adults across all occupational backgrounds (Al-Hanawi et al., 2021). Although previous occupation may influence income and social networks, its direct impact on healthcare accessibility remains limited when community services prioritize universal access and strong outreach initiatives (Argento et al., 2020).

**Model that Best Predicts the Accessibility of Community-Based Health Care Services among Older Adults**

Multiple regression analysis showed that awareness and self-efficacy significantly predict older adults' access to community-based healthcare services, explaining 42% of the variation in accessibility ($R^2 = 0.42$). The overall model was significant ($F(2, 297) = 108.51$, $p < .001$), indicating a large effect size ($\eta^2 = 0.42$).

Both variables were significant positive predictors. Awareness had a stronger influence

(b = 0.48, β = 0.40, t(297) = 8.56, $p < .001$, $\eta^2_p = 0.20$), while self-efficacy also contributed significantly (b = 0.26, β = 0.41, t(297) = 8.93, $p < .001$). Overall, higher awareness and confidence in navigating healthcare systems increase older adults' perceived accessibility to community-based healthcare services, with awareness showing a slightly stronger effect.

Table 19.

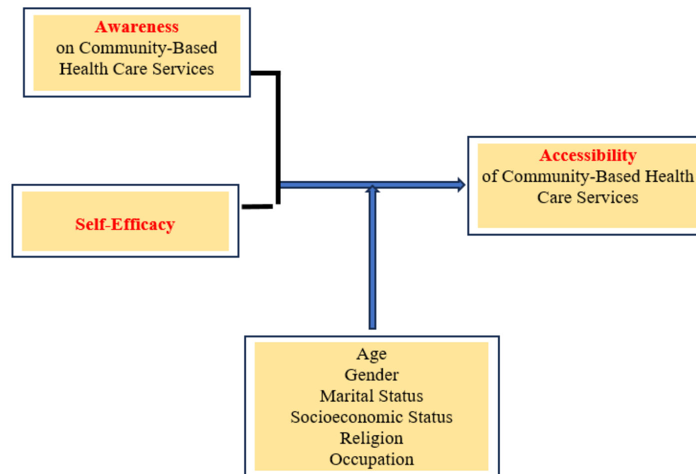
| Model Fit | | | | | |
|---|---|---|---|---|---|
| **$R^2$** | **Adj. $R^2$** | **df** | **df (res)** | **F** | **P** |
| 0.42 | 0.42 | 2 | 297 | 108.51 | <.001 |

Most regression assumptions were met. Residuals were normally distributed, confirmed by the Kolmogorov–Smirnov test (p = 0.900) and Shapiro–Wilk test (p = 0.819). However, the Breusch–Pagan test indicated heteroscedasticity (BP = 17.95, $p < .001$). To address this, bootstrapped BCa confidence intervals were applied, ensuring reliable coefficient estimates. Overall, with significant predictors, strong effect sizes, and largely satisfied assumptions, the regression model is considered reliable for explaining accessibility among older adults.

Table 20.

| | **SS** | **df** | **F** | **P** | **$\eta^2$p** | **$\omega^2$** | **$\omega^2$p** | **$\varepsilon^2$** | **$\varepsilon^2$p** |
|---|---|---|---|---|---|---|---|---|---|
| Model | 11.20 | 2 | 108.51 | <.001 | 0.42 | 0.42 | 0.42 | 0.42 | 0.42 |
| Awareness_Mean | 3.78 | 1 | 73.29 | <.001 | 0.20 | 0.14 | 0.19 | 0.14 | 0.20 |
| SE_Mean | 4.12 | 1 | 79.82 | <.001 | 0.21 | 0.15 | 0.21 | 0.15 | 0.21 |
| Residuals | 15.32 | 297 | | | | | | | |
| Total | 26.52 | 299 | | | | | | | |

Research shows that greater awareness helps older adults use and navigate healthcare services more effectively (Alibudbud, 2021). Likewise, higher self-efficacy increases confidence in seeking care, managing health conditions, and overcoming barriers to healthcare access (Al-Hanawi et al., 2021). Programs that improve health literacy and self-efficacy can significantly enhance older adults' access to preventive services, diagnostic tests, and chronic disease management (Brown & Hoque, 2023).




This model explains that awareness, self-efficacy, and service accessibility influence individuals' use of community-based healthcare services. In addition, personal characteristics such as age, gender, marital status, socioeconomic status, religion, and occupation may also affect health perceptions, health-seeking behavior, and access to services.

## CONCLUSION

Older adults showed high awareness of community-based healthcare services (M = 3.69), recognizing their importance for health promotion and disease management. Their self-efficacy was moderately high (M = 2.77), indicating moderate confidence in using healthcare services, although difficulties remain in communicating with providers and using technology.

However, overall accessibility was low (M = 2.48). While access to hospitals (M = 3.45) and primary care providers (M = 3.21) was moderate, access to specialized screenings, diagnostic tests, and emergency services was limited, particularly for ultrasounds (M = 1.85) and laboratory tests (M = 1.98).

Significant positive relationships were found between awareness and accessibility ($r = 0.517$, $p < .001$) and self-efficacy and accessibility ($r = 0.529$, $p < .001$). Marital status and family income significantly influenced accessibility, while age and occupation did not. Multiple regression analysis showed that awareness and self-efficacy significantly predicted accessibility, explaining 42% of the variance ($R^2 = 0.42$).

Older adults are generally aware of healthcare services and feel moderately confident in using them, but actual access remains limited, especially for specialized and diagnostic services. Awareness and self-efficacy are key factors influencing healthcare access, while marital status and income also play important roles. In contrast, age and occupation have no significant effect on accessibility.

### Recommendations

Healthcare policymakers and community health organizations should strengthen health education, community outreach, and programs that improve older adults' health literacy and self-efficacy.

In nursing education and practice, training should emphasize community health, elderly care, health promotion, communication skills, and the use of digital health tools. Nurses should

also lead community outreach programs and prioritize vulnerable groups, particularly low-income and widowed older adults, by improving access to transportation, mobile clinics, and preventive services.

Future nursing research should explore interventions that enhance health literacy, self-efficacy, and healthcare accessibility, using long-term and mixed-method studies to support evidence-based health policies.

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