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Assessment of health status, utilization, and out-of-pocket expenditure among the elderly in Ngestiharjo, Bantul, Yogyakarta

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ABSTRACT

Background: As the population ages, it is increasingly crucial to develop community-centered health interventions. This study aims to describe and assess sociodemographic information, health characteristics, health utilization, and out-of-pocket expenses among older people in Ngestiharjo Village, Bantul, Yogyakarta. It was part of an initiative to empower community health workers to understand and address the health needs of older people.

Methods: A cross-sectional survey was conducted from April to July 2023 involving 330 participants, with a targeted sample size of 356 elderly individuals. Data on sociodemographics, health status, health utilization, and expenditure were collected through interviews with older people or their companions.

Results: Preliminary data showed that most participants were female (58.77%), married (64.91%), and primarily received health information from health workers (47.37%). Hypertension and joint and bone diseases were prevalent, with 16.67% likely experiencing depression. 11.4% of the respondents were hospitalized in the past year, with an average of 2.15 hospitalizations. Private hospitals (69.23%) were the most common healthcare facilities used for hospitalization, and 76.92% consistently utilized health insurance. The average out-of-pocket expenditure for hospitalization was 437,500 IDR. Community health centers (36.36%) and private hospitals (45.45%) were predominantly used for outpatient care, and 77.27% always used health insurance. The average out-of-pocket expenditure for outpatient care was 126,200 IDR.

Conclusions: The study underscores the importance of empowering community health workers to effectively disseminate health information, fortify integrated health posts, manage common health issues, and tackle barriers to healthcare utilization and expenditures among older people.

Keywords: elderly; health utilization; out-of-pocket expenditure; community health; community health workers; Ngestiharjo, Bantul, Yogyakarta.

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INTRODUCTION

The demographic landscape has been undergoing a rapid and significant shift towards an aging population. This shift is particularly pronounced in the Special Region of Yogyakarta, Indonesia, which boasts the highest proportion of elderly individuals, accounting for nearly 16% of the population.[1] Over the last 50 years, socio-economic development in most areas has been accompanied by a significant decline in fertility rates, and increases in life expectancy are just as dramatic. This phenomenon has caused a rapid change in worldwide population demographics: the proportion of older adults in the general population has increased substantially in a relatively short time.[2]

The elderly population requires special attention due to their declining health status and often faces barriers to healthcare services due to transportation and physical constraints.[3] Disparities in geographic access, health facilities, human resources, health, and economic status of the community resulted in disparities in inpatient health care utilization. Achieving Universal Health Coverage (UHC) in Indonesia is a challenge.[4]

Despite improvements in national health insurance coverage, Indonesians still bear a significant portion of their healthcare costs out-of-pocket, accounting for over 30% of current health expenditure.[5] These payments can be financially burdensome, forcing vulnerable individuals to choose between healthcare and other necessities, potentially pushing them into poverty.[6,7]

Community health workers play a crucial role as frontline responders in assessing the health status of their communities, especially the elderly.[8] In Indonesia, Posyandu is a health post established in every village that employs volunteer community health workers called "*Kader*". In addition to various other duties, Community health workers conduct monthly welfare sessions at the Posyandu, providing services such as immunization, family planning, and the elderly.[9]

Our study examines and evaluates sociodemographic information, health characteristics, health utilization, and out-of-pocket expenses among the elderly in

Ngestiharjo Village, Bantul, Yogyakarta. This research is part of a broader initiative to empower community health workers to understand and address the health needs of the elderly.

METHOD

We conducted a cross-sectional survey from April to July 2023 involving 347 participants out of a targeted sample size of 356 elderly individuals. This target sample size was based on the sample size calculation[10], suggesting a need for 354 participants for a population of 4000. Respondents were distributed across 12 hamlets in Ngestiharjo urban village. The inclusion criteria were elderly individuals aged 60 years and above residing in Ngestiharjo. The exclusion criteria included those who could not speak Indonesian or were too ill to participate without a representative. To ensure representativeness, we adjusted the number of samples from each hamlet according to its population proportion, using a proportional allocation strategy. The selection of respondents was done through systematic random sampling.

We collected data on sociodemographics, health status, healthcare utilization, and expenditure by interviewing elderly individuals or their companions. A precisely tailored questionnaire for the elderly was employed, featuring questions on consumption and expenditure derived from previous studies. For assessing health status, we utilized various tools, including the Older People's Quality of Life Questionnaire (OPQOL-35), Abbreviated Mental Test (AMT), Geriatric Depression Scale (GDS), and Activities of Daily Living (ADL) scale. Hypertension classification followed the JNC - VII 2003 guidelines: Normal (BP < 120/80 mmHg), Pre-hypertension (BP 120-139/80-89 mmHg), Grade 1 Hypertension (BP 140-159/90-99 mmHg), Grade 2 Hypertension (BP > 160/100 mmHg), and Isolated Systolic Hypertension (BP > 140/< 90 mmHg). Nutritional status was classified based on BMI according to WHO criteria: Underweight (BMI <18.5 kg/m^2), Normal (BMI 18.5 – 22.9 kg/m^2), Overweight at Risk (BMI 23 – 24.9 kg/m^2), Obese I (BMI 25 – 29.9 kg/m^2), and Obese II (BMI ≥30 kg/m^2). Descriptive statistical analysis, including frequency tables, means, and standard deviations, was performed using STATA 17 software.

Figure 1. Data collection preparation in Ngestiharjo village with community health workers regarding the questionnaire before fieldwork.

Before data collection, we trained community health workers and conducted a pilot study with 20 respondents (Figure 1). The purpose of this pilot was to refine the questionnaire based on feedback regarding the questions and language. Data collection began after receiving ethical clearance from the Ethics Commission of the Faculty of Medicine, Public Health and Nursing, Gadjah Mada University on 4th June 2023 (Ref No.: KE/FK/0582/EC/2021).

RESULT

In the sociodemographic profile of our respondents (Table 1), the predominant age group was 60-69 years (57.4%) of participants. Females comprised 58.21% of the population, while males accounted for 41.79%. The most common educational background was primary school completion (42.07%). A majority of respondents were married (62.25%). The prevalent occupations included housekeeping (21.33%) and unemployment (25.65%). Most participants lived with their family (78.67%), with a significant number also living with their partner (24.50%).

In the health and clinical characteristics of our elderly respondents (Table 2), over half (53.6%) primarily relied on health workers for health information, followed by community health workers (30.26%) and electronic media (26.22%). Participation in Integrated Health Posts (Posyandu) was limited, with 59.94% not involved, suggesting potential barriers or lack of awareness about these programs. Family plays a crucial role in healthcare decisions, with 41.79% of the elderly depending on their children for such decisions, while 37.75% decided independently.

Health complaints were absent in 46.69% of participants. The most common health issues were hypertension (21.33%) and joint and bone diseases (19.88%). The body mass index (BMI) of the respondents was generally within the normal range (58.77%), but a considerable number were overweight (22.44%). Finally, blood pressure measurements revealed that a high prevalence of respondents were in the pre-hypertension (14.73%) and hypertension stage 1 (27.13%) categories.

Table 3 sheds light on healthcare utilization, expenditure, and barriers the elderly face. Only 10.66% of respondents

Table 1. Sociodemographic of respondents

Characteristics	n	%
Age		
60-69	199	57.40
70-79	111	32.00
80-89	33	9.51
90-99	4	1.15
Gender		
Male	145	41.79
Female	202	58.21
Education		
Illiterate	47	13.54
Primary school	146	42.07
Middle school	60	17.29
High school	53	15.27
University or higher	41	11.82
Marital status		
Married	216	62.25
Single	6	1.73
Widow	102	29.39
Widower	23	6.63
Main occupation		
Housekeeping	74	21.33
Unemployed	89	25.65
Private Sector Employee	8	2.31
Entrepreneur	23	6.63
Civil Servant	2	0.58
Military/Police	1	0.29
Laborer	63	18.16
Retiree	69	19.88
Daily Worker	6	1.73
Other	12	3.46
Living with		
No one else (alone)	18	5.19
Family	273	78.67
Partner	85	24.50
Caregiver or assistant	2	0.58
Other	7	2.02

were hospitalized last year, averaging 1.59 hospitalizations per person. Most hospitalizations (67.57%) occurred in private hospitals, indicating a preference or need for private healthcare. Most (62.16%) used health insurance for hospitalization, yet the average out-of-pocket cost was still high at 3,123,913 IDR. Notably, 2.31% of respondents needed but did not seek hospitalization last year, mainly due to cost (50%) and perceived non-severity of their condition (37.50%).

For outpatient care, 18.44% sought services in the last month, averaging 1.36 visits, predominantly to private hospitals (37.5%) and community health centers (29.69%). While 65.63% used health insurance for outpatient care, the average out-of-pocket expenditure was 201,024 IDR. Furthermore, 4.32% avoided needed outpatient care, primarily due to feeling their condition was not severe enough (40%), transportation issues (26.67%), and cost constraints (20%). These findings highlight that even with insurance, accessibility, and financial challenges continue to hinder healthcare access for the elderly.

Table 4 reveals that while a large portion of the elderly population maintains good cognitive and functional health, there are significant concerns related to cognitive disorders, depression, and functional dependency, necessitating targeted interventions in these areas. AMT highlights cognitive health concerns in a notable subset of the population. The results indicate that most respondents (86.06%) exhibited normal cognitive function. However, there were instances of moderate cognitive disorders (10.3%) and severe disorders (3.64%). GDS underscores the prevalence of mental health issues, specifically depression, among the elderly. A significant majority (80%) of the participants showed no signs of depressive disorder.

Nonetheless, a considerable proportion (15.76%) demonstrated a high probability of depression, and 4.24% were found to have a depression disorder. The ADL reflect varying levels of dependency among the elderly, with a majority maintaining independence but a significant minority requiring varying degrees of assistance. Most respondents (75.15%) were found to be independent in their daily activities. However, there were instances of mild (22.12%), moderate (0.91%), and severe (0.61%) dependency, with a small percentage (1.21%) showing total dependency.

The quality of life of the elderly population was assessed using the Older People's Quality of Life Questionnaire (OPQOL-35). Table 5 showed the mean scores of the elderly respondents for the nine domains of quality of life. The highest mean score was for the social relationship domain (4.11), indicating that the respondents had high satisfaction and support from their family, friends, and society. Meanwhile, the lowest mean score was for the financial circumstances domain (3.20), indicating that respondents had low income and financial security. The mean scores for other domains were moderate, suggesting that the elderly respondents had a mixed perception of their quality of life in various aspects, such as their culture and religion.

DISCUSSION

Several key findings and implications can be drawn based on the data collected and analysed in this study. Most elderly respondents were between 60 and 69 years old, with females representing a more significant proportion. Most respondents were married, and their

Table 2. Health and clinical characteristics

Characteristics	n	%
The main source of health information		
Health worker	186	53.60
Print media (newspaper or magazine)	16	4.61
Community health workers	105	30.26
Electronic media	91	26.22
Social Media	21	6.05
Other	8	2.31
Involved in Integrated health posts (Posyandu)		
Yes	139	40.06
No	208	59.94
Current health complaints		
No complaint	162	46.69
Hypertension/High blood pressure	74	21.33
Diabetes Mellitus	39	11.24
Joint and bone disease	69	19.88
Muscle disease	22	6.34
Stroke	14	4.03
Heart disease	16	4.61
Cancer	0	0
Asthma/Lung disease	11	3.17
Kidney failure	0	0
Mental disorder	2	0.58
Other	66	19.02
The person responsible or making the (main) decision regarding health services for the elderly		
Myself	131	37.75
Partner	45	12.97
Child	145	41.79
Companion	19	5.48
Other	7	2.02
Body mass index*		
< 18.5 underweight (<18.5)	21	9.95
Normal (between 18.5 and 24.9)	124	58.77
Overweight (between 25 and 29.9)	48	22.75
Obese (>= 30)	18	8.53
Blood pressure measured**		
Normal (systolic <120 & diastolic <80)	51	38.64
Pre-Hypertension (systolic >=120 & systolic <=129 & diastolic <80)	19	14.39
Hypertension stage 1 (systolic>=130 & systolic <=139 & diastolic >=80 & diastolic <=89	37	28.03
Hypertension stage 2 (systolic>=140 & systolic <=180 & diastolic >=90 & diastolic <=120	24	18.18
Crisis hypertension (systolic>180 & diastolic >120)	1	0.76

*WHO classification
**JNC-VII 2003 Guidelines

primary occupations were housekeeping and unemployment. Most respondents lived with their families, indicating the importance of familial support in elderly care.[11–13]

Regarding health and clinical characteristics, most respondents identified health workers as their primary source of health information, highlighting the significant reliance on healthcare professionals for health-related information among the elderly population.[14,15] Less than half of the respondents reported no health complaints, with hypertension and joint and bone diseases being the most common health issues. This underscores the prevalence of chronic, non-communicable diseases in this population, a finding that aligns with global trends.[16]

The data reveals a complex interplay of healthcare utilization, expenditure, and access among the elderly. A small proportion of the respondents had been

Table 3. Health Utilisation and Expenditure

Characteristics	N observation	n / mean	% / SD
Had been hospitalized (n/%)			
Yes		37	10.66
No		310	89.34
if yes, number of hospitalizations (in the last year) (mean / SD)	37	1.59	1.89
Healthcare facilities for hospitalization (n / %)			
Private practice doctor		1	2.7
Private clinic		3	8.11
Community health centre		6	16.22
Private hospital		25	67.57
Public hospital		5	13.51
Use health insurance for the hospitalization? (n / %)			
Always		23	62.16
Sometimes		4	10.81
Rarely		3	8.11
Never		7	18.92
Out of pocket on healthcare services for the hospitalization? (mean/ SD)	23	3,123,913	10,400,000
Ever been sick and needed to be hospitalized in the last year but did not access healthcare services? (n / %)			
Yes		8	2.31
No		339	97.69
State the reason (can be more than one) (n / %)			
Transportation constraints		1	12.5
Cost constraints		4	50
No suitable healthcare facilities available		0	0
Dissatisfied with healthcare facility services		0	0
Not sick enough to go to a healthcare facility		3	37.5
Had outpatient care in the last month (n / %)			
Yes		64	18.44
No		283	81.56
if yes, number of outpatient care (in the last month) (mean / SD)	64	1.36	0.86
Healthcare facilities where you had outpatient care (n / %)			
Private practice doctor		13	20.31
Private clinic		6	9.38
Community health centre		19	29.69
Private hospital		24	37.5
Public hospital		4	6.25
Others		3	4.69
Using health insurance for outpatient care (n / %)			
Always		42	65.63
Sometimes		7	10.94
Never		15	23.44
Spending on healthcare services for outpatient care? (mean/ SD/ min/ max)	42	201,024	476,082
Ever been sick and needed outpatient care in the last month but did not access healthcare services (n / %)			
Yes		15	4.32
No		332	95.68
State the reason (n / %)			
Transportation constraints		4	26.67
Cost constraints		3	20
No suitable healthcare facilities available		1	6.67
Dissatisfied with healthcare facility services		2	13.33

Characteristics	N observation	n / mean	% / SD
Not sick enough to go to a healthcare facility		6	40
Others		1	6.67

Table 4. Health Status

Instruments	n	%
Abbreviated Mental Test (AMT)		
Severe disorders	12	3.64
Moderate disorders	34	10.3
Normal	284	86.06
Geriatric Depression Scale (GDS)		
No depressive disorder	264	80.00
There is a high probability of depression	52	15.76
There is a depression disorder	14	4.24
Activity of Daily Living (ADL)		
Independent	248	75.15
Mild dependency	73	22.12
Moderate dependency	3	0.91
Severe dependency	2	0.61
Total dependency	4	1.21

Table 5. Quality of Life

Instruments	Mean
OPQOL-35	
Life overall	3.76
Life motivation	3.88
Health	3.27
Social relationship	4.11
Independence, control over life, freedom	3.39
Home and neighbourhood	3.96
Psychological and emotional well-being	3.81
Financial circumstances	3.20
Leisure and activities	3.62

hospitalized in the past year, with an average of 1.61 hospitalizations per person. Most of these hospitalizations occurred in private hospitals, indicating a preference or need for private healthcare services. Despite the need for hospitalization, a few respondents reported not accessing healthcare services when sick and needing to be hospitalized in the last year. The primary reasons were cost constraints and the perception that they were not sick enough to go to a healthcare facility. This suggests that accessibility and cost are significant barriers to healthcare utilization among the elderly population, a finding that is consistent with previous research.[17] This is in line with other research that states that income-related inequities and inequalities about the utilization of healthcare services are prominent. Remarkably, the source of income and economic status of the family, decision-makers in the family, the severity of illness, cost of treatment, source of information, availability and type of health facilities, the distance of nearest health facility, attitudes of health worker, living alone and lack of someone to take elderly to hospitals and feelings of better treatment available elsewhere rather than formal health institutions were the factors significantly associated with health-seeking behavior among elderly.[18]

The health status of the elderly population was assessed using OPQOL instruments. The overall perception of life quality was moderately high, which resonates with the finding that most respondents reported being happy most of the time. Nonetheless, there was an acknowledgment from participants about life occasionally evoking feelings of sadness. On the health front, while many participants felt energetic, pain and health constraints in daily activities were reported as limiting factors. This echoes the notion that despite the majority being independent, a significant segment expressed some dependence daily. This finding is corroborated by data from the UK, where 86.9% of adults believed they could rely on people in their lives if they had a severe problem.[19] These findings highlight the importance of mental health and daily living activities in the overall health status of the elderly, and the need for interventions addressing these aspects.[20] The findings also revealed that participants regard cultural and religious beliefs as important. Another source also recognizes the positive influence of cultural participation on an individual's quality of life, suggesting that such engagements and beliefs could significantly influence one's perception of life quality.[21-23]

The study has several strengths. It employed a systematic random sampling method to ensure that the selected sample is representative of the elderly population in the Ngestiharjo urban village. The study also conducted a questionnaire pilot to gather feedback and make necessary improvements. However, the study also has limitations. The cross-sectional design of the study limits the ability to draw causal inferences. The reliance on self-reported data may also introduce recall bias. Future research should consider using longitudinal designs and objective measures of health status to overcome these limitations.

CONCLUSION

This study provides valuable insights into the health status, healthcare utilization, and expenditure among the elderly population in the Ngestiharjo urban village. The findings highlight the need to enable community health workers to deliver health information, strengthen integrated health posts, address common health problems, and overcome obstacles to health utilization and expenditure among the elderly. These findings also have important implications for health policy and practice, such as interventions for chronic disease management, mental

health, and daily living activities and strategies to improve healthcare for the elderly population.

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CONFLICT OF INTERESTS

The authors stated that they have no conflict of interest in this paper.

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AUTHOR CONTRIBUTION

FH Contributed to the study's conceptualization, design, literature search, data analysis, and statistical analysis. He was also involved in manuscript preparation, editing, review, and served as the guarantor of the study. APM and TH both contributed to the conceptualization and design of the study. They were involved in data acquisition and analysis, as well as manuscript preparation and review. EJ contributed to the study's conceptualization and was involved in data acquisition and analysis. She also participated in the review of the manuscript.

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