

Integrated Healthcare Center in the elderly community in Indonesia: An analysis of Indonesian Family Life Survey Data

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Abstract: The percentage of the elderly (60+ years) in Indonesia was 10.82% in 2021 and is projected to increase to 19.9% by 2045. The elderly have the highest risk of degenerative diseases like hypertension, diabetes, and stroke. To mitigate these risks, the elderly must undergo regular health checkups at the Integrated Healthcare Center (IHC). However, the utilization rate of IHC among the elderly in Indonesia is currently below the government target (70%). This study aimed to identify individual and clinical characteristics that influence the use of IHC among the elderly. This study used a cross-sectional design and analyzed data from the 2014 Indonesian Family Life Survey (IFLS-5), which included 5,581 respondents aged 45 or older. The dependent variable was IHC utilization, while the independent variables were age, gender, education level, employment status, location, health insurance, smoking status, hypertension, diabetes, stroke, blood pressure, central obesity, and body mass index (BMI). Univariate, bivariate, and multivariate analyses were conducted using STATA 13. The study findings revealed that IHC utilization was 5.38%. The elderly aged 60–74 years (OR=2.01; 95%CI=1.55-2.61) and 75+ years (OR=3.35; 95%CI=1.99–5.64), women (OR=3.45; 95%CI=2.26–5.27), those with low (OR=1.76; 95%CI=1.05-2.94) and medium education (OR=2.09; 95%CI=1.19–3.69), having health insurance (OR=1.87; 95%CI=1.44–2.42), residing in urban areas (OR=1.32-2.35), and those with hypertension (OR=1.59; 95%CI=1.23-2.07) and central obesity (OR=2.56; 95%CI=1.85–3.54) were more likely to be concerned about visiting IHC. Stratification analysis based on gender showed that the influence of IHC utilization among male was diabetes mellitus (adj OR=2.64; 95%CI=1.28-5.45), therefore among female were hypertension (adj OR=1.51; 95%CI=1.21-2.02) and normal BMI (adj OR=2.63; 95%CI=1.17-4.75). The Indonesian government needs to raise awareness among the elderly regarding the importance of using IHC as a preventive measure.

Keywords: elderly, utilization, integrated healthcare center, IFLS, secondary data

INTRODUCTION

By 2050, the global percentage of older persons (aged 60 and above) is predicted to exceed 2 billion (Kowal & Byles, 2015), with Europe, North America, and Asia accounting for 34%, 28%, and 25%, respectively (Stewart Williams et al., 2020; United Nations, 2017). Despite this, the

shift in a demographic that initially occurred in high-income nations is now accelerating in low-income countries (Beard et al., 2016; United Nations, 2017). In fact, between 2015 and 2025, the number of elderly persons aged 50 and over is predicted to increase by 20% in poor and middle-income nations, but only 8% in high-income ones (United Nations, 2017). Likewise, in Indonesia, the elderly population accounted for 10.6% of the total population in 2021 and is projected to rise to 19.9% by 2045 (Central Bureau of Statistics Republic of Indonesia, 2021).

Unprecedented growth in the elderly population brings its complex effects and impacts, and induces challenging pressure on the current healthcare system. In the Indonesian context, the elderly population would put further pressure on the current healthcare system (Bajenaru et al., 2020; Rahmawati & Bajorek, 2015). With deteriorating physical function and growing morbidity from various diseases, older individuals require healthcare services at a much higher rate compared to other age groups (Lee et al., 2015). To illustrate, one-third of healthcare spending in the United States is allocated to older adults. Globally, there is a rising acknowledgment of the necessity to assess healthcare service utilization and improve healthcare systems to effectively address the health needs of an aging population (Jiang et al., 2018).

Healthcare utilization refers to the act of seeking healthcare services from healthcare providers. Numerous theoretical models have been developed to understand healthcare utilization, offering different perspectives such as economic, psychosocial, behavioral, and epidemiological viewpoints. These models aim to identify the variables that influence healthcare utilization and the extent to which they do so (Hulka & Wheat, 1985). Prior research focusing on the elderly population has identified several key determinants of healthcare utilization, including higher education level (Hidayati et al., 2018), employment status (Trisfayeti & Idris, 2022), possession of health insurance (Zeng et al., 2021), urban location (Pratono & Maharani, 2018; Zeng et al., 2021), and co-morbidity (Foguet-Boreu et al., 2014; Lee et al., 2015).

To ensure the well-being of the elderly and promote their independence and productivity from social and economic perspectives, the Government of Indonesia has a responsibility to guarantee the availability of healthcare facilities, facilitate group development, and provide health maintenance services as outlined in the National Action Plan for Elderly Health for the years 2016 to 2019 (Ministry of Health of the Republic of Indonesia, 2016). As part of this effort, the government has established integrated health services specifically designed for the elderly, which involve the participation of community health workers. These services serve as a platform for community empowerment in the health sector and are technically supported by primary healthcare services

known as Public Health Centers (Pusat Kesehatan Masyarakat/ Puskesmas). Community healthcare services form an integral part of the overall continuum of healthcare services in many countries (Rahmawati & Bajorek, 2015).

In Indonesia, the Integrated Healthcare Center (IHC) for the elderly is a national program that has been in place since 1997 and is based on community health workers (CHWs). Its primary objective is to promote healthy aging by focusing on screening and managing chronic diseases within low socioeconomic population subgroups (National Commission for Elderly, 2010). However, the current utilization rate of the IHC among the elderly in Indonesia falls below the government's target of 70% (Trisfayeti & Idris, 2022). This study aimed to investigate how individual and clinical characteristics influence the utilization of these services among the elderly. The findings of this study provide valuable reference data for policymakers to enhance healthcare accessibility for the elderly. Additionally, the results can contribute to the development of health management and healthy aging programs for older individuals in Indonesia and other developing countries experiencing similar demographic changes.

METHOD

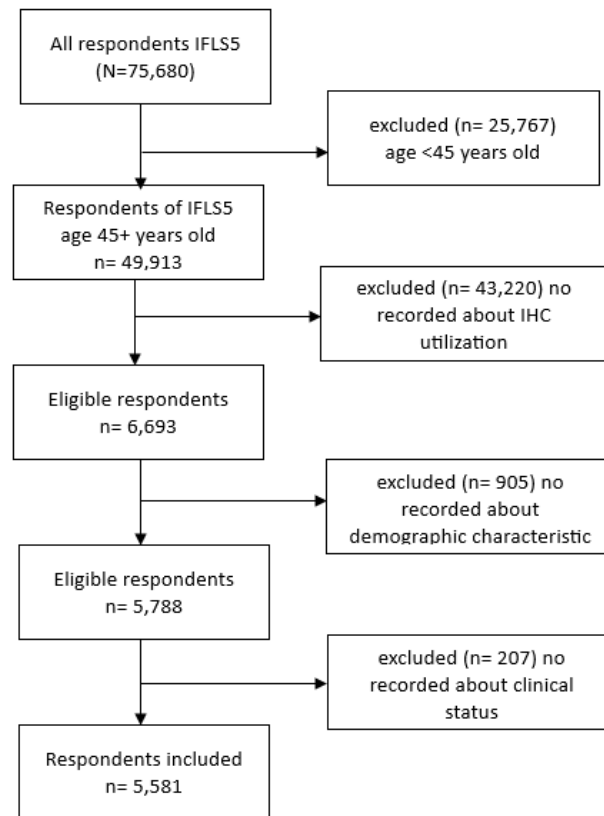
Data source

An open-access and rich dataset from Indonesian Family Life Survey (IFLS), which was conducted by RAND, was used in this research. The IFLS is a longitudinal survey representing 83% of the Indonesian population in 1993. The survey has five waves of data collected in 1993, 1997, 2000, 2007-2008, and 2014-2015. The IFLS survey aims to provide multifactorial data on economic and non-economic behavioral variables and outcomes such as food consumption, health status, and insurance utilization (RAND Corporation, 2014). More information about the setup and available data can be found online (<https://www.rand.org/well-being/social-and-behavioral-policy/data/FLS/IFLS.html>). This particular study focuses on the fifth wave of IFLS (wave 5), conducted in 2014–2015, using a cross-sectional study design

Study sample

In total, 75,680 respondents participated in the Fifth Wave of IFLS. Data on demographic variables and clinical status were merged with those respondents. This study only selected individuals 45 years old and older (n=49,913). Those who lacked supporting data, such as demographic data and clinical status, were excluded from this analysis. As a result, only 5,581

respondents were included in the data analysis. The flowchart respondents are presented in Figure 1. The sampling method considered the heterogeneity of the population and represents four out of the five largest islands of Indonesia; Sumatra, Java, Kalimantan, and Sulawesi.



Picture 1. Flowchart of Respondents

Measurements

with their sources presented in Table 1.

Table 1. Variables source in IFLS5

No	Variable	Book	Variable name
1	IHC utilization	3B	RJ04b
2	age group	US	US03
3	gender	US	US01
4	education level	3A	DL06
5	working status	3A	TK01
6	health insurance ownership	3B	AK01
7	smoking behavior	3B	KM01-KM04
8	location	K	SC05

No	Variable	Book	Variable name
9	Island	K	SC01
10	hypertension	3B	CD type A
11	diabetes mellitus	3B	CD type B
12	stroke	3B	CD type H
13	blood pressure	US	US07aa-US07c1
14	central obesity	US	US06a
15	body mass index	US	US06=weight; US04=height

Dependent variable

IHC utilization is derived from the question “In the past 4 weeks, did you visit a Posyandu for the elderly?”. Respondents categorized with “yes” and “no” visit the IHC.

Independent variables

The demographic characteristic included age, gender, educational level, working status, health insurance ownership, smoking behavior, and location (urban/rural). Age was subdivided into 3 groups: 45-59 years (middle), 60-74 years (elderly), and 75+ (old) (Ahmad et al., 2001). Educational level was separated into 3 groups: primary-junior high school (low), senior high school (medium), and diploma/undergraduate/postgraduate (high). Respondents also reported current job status and health status ownership with “yes” and “no” answer (Hafidz et al., 2022). Smoking behavior was defined as current, former, and never smoking. Former smokers included subjects who smoked regularly and then stopped, current smokers were those who smoked regularly at the time of the survey, and never smokers were those who had never smoked at all (Hartopo et al., 2023).

Clinical status

At the clinical status, we explore NCD (hypertension, diabetes mellitus, and stroke). Occurrence of NCD was derived by questionnaire, asking whether or not participants had been diagnosed with any of the following chronic conditions: hypertension, type 2 diabetes mellitus, and stroke. A history of those NCDs was defined as “yes” if they had been diagnosed and “no” if the respondent had never been diagnosed (Kementarian Kesehatan, 2018). Blood pressure was

categorized into two group: normal if systolic less than 140 mmHg, diastolic: less than 90 mmHg and high blood pressure if systolic: 140 mm Hg or higher, diastolic: 90 mm Hg or higher (Unger et al., 2020). Central obesity based on waist circumference was determined by waist circumference (>90 cm in men and >80 cm in women). BMI was calculated as weight (kg)/height (m²) and classified into categories of underweight (BMI < 18.5), normal weight (BMI 18.5–22.9), overweight (BMI 23–24.9), and obese (BMI \geq 25) (Harbuwono et al., 2018).

Statistical analysis

The descriptive analysis was provided as a percentage of all variables. Next, bivariate analysis was conducted to know the association between IHC utilization and all independent variables using chi-square tests (significantly $p < 0.05$). Then, a multivariate analysis was performed for variables with $p < 0.25$. We used regression logistics and then we presented the results using Odd Ratio (OR) with a 95% Confidence Interval (CI). Two models were generated from the findings of the multivariate study to identify significant independence for IHC utilization. Model one included all variables (demographic characteristics and clinical status), and model two included clinical status variables. We also do stratification analysis by gender. $P < 0.05$ was considered indicative of statistical significance. Stata 13 (Stata Corp., College Station, TX) was used for all data analysis.

RESULTS

Table 2 depicts the characteristic of 5,581 subjects in this study population extracted from IFLS5. The respondents who visited IHC were 300 people (5.38%). Most respondents ranged in age 45 to 59 years old (59.20%), and the majority were male (50.56%). They were mostly educated at low education level (77.69%), which included elementary and junior high school. A high percentage (69.29%) of individuals who work performed in this study population. Health insurance was owned by 49.22% of respondents. Regarding smoking behavior, those who had never smoked at all have a high percentage (56.33%). Most of the respondents came from Java Island (58.23%) and lived in urban areas (58.88%).

At the clinical status, several individuals had been diagnosed with hypertension (26.02%), diabetes (6.92%) and, stroke (1.99%). The majority of individuals were high blood pressure (50.44%), indicated as central obesity (48.29%) and normal BMI (37.02%).

Table 2. Characteristic respondents

No	Variable	n	%
1	IHC utilization		
	yes	300	5.38%
	no	5,281	94.62%
2	age group (years old)		
	45-59	3,304	59.20%
	60-74	2,030	36.37%
	75+	247	4.43%
3	gender		
	male	2,822	50.56%
	female	2,759	49.44%
4	education level		
	high	494	8.85%
	medium	751	13.46%
	low	4,336	77.69%
5	working status		
	working	3,867	69.29%
	not working	1,714	30.71%
6	health insurance ownership		
	yes	2,747	49.22%
	no	2,834	50.78%
7	smoking		
	current	1,878	33.65%
	former	559	10.02%
	never	3,144	56.33%
8	location		
	urban	3,286	58.88%
	rural	2,295	41.12%
9	island		
	Sumatera	1,276	22.86%
	Java	3,250	58.23%
	Balinese Ntt	558	10.00%
	Kalimantan	262	4.69%
	Sulawesi	235	4.21%
10	hypertension		
	yes	1,452	26.02%
	no	4,129	73.98%
11	diabetes		
	yes	386	6.92%
	no	5,195	93.08%
12	stroke		
	yes	111	1.99%
	no	5,470	98.01%
13	blood pressure		
	yes	2,815	50.44%
	no	2,766	49.56%

No	Variable	n	%
14	central obesity		
	yes	2,695	48.29%
	no	2,886	51.71%
15	body mass index		
	normal	2,066	37.02%
	underweight	625	11.20%
	overweight	923	16.54%
	obese	1,967	35.24%

Table 3 show the correlation between demography characteristics and clinical status with IHC utilization. Several variables were significantly associated with IHC utilization at demography characteristic. Female (OR=3.92; 95%CI=2.98-5.16), having low education (OR=1.48; 95%CI=1.11-3.33), not working (OR=2.00; 95%CI=1.60-2.49), having health insurance (OR=1.91; 95%CI=1.52-2.41), never smoking (OR=3.91; 95%CI=2.77-5.51), living in urban areas (OR= 2.17; 95%CI=1.67-2.81), hypertension (OR=1.74; 95%CI=1.39-2.18), diabetes (OR=1.55; 95%CI=1.08-2.21), central obesity (OR=2.17; 95%CI=1.71-2.74), body mass index status (normal, overweight, obese) were more likely to be concerned about visiting IHC.

Table 3. Respondent's characteristics in demography and clinical status by IHC utilization

No	variable	IHC utilization				OR	95% CI	p value
		no (n=5,281)		yes (n=300)				
		n	%	n	%			
1	age group (years old)							
	45-59	3,171	60.05	133	44.33	ref		
	60-74	1,885	35.69	145	48.33	0.54	0.43-0.69	0.000***
	75+	225	4.26	22	7.33	1.27	0.79-2.03	0.316
2	gender							
	male	2,760	52.26	62	20.67	ref		
	female	2,521	47.74	238	79.33	3.92	2.98-5.16	0.000***
3	level education							
	high	476	9.01	18	6.00	ref		
	medium	700	13.26	51	17.00	1.92	0.91-2.42	0.111
	low	4,105	77.73	231	77.00	1.48	1.11-3.33	0.019*
4	working status							
	working	3,708	70.21	159	53.00	ref		
	not working	1,573	29.79	141	47.00	2.00	1.60-2.49	0.000***
5	health insurance ownership							
	no	2,729	51.68	195	65.00	ref		
	yes	2,552	48.32	105	35.00	1.91	1.52-2.41	0.000***
6	smoking							
	current	1,839	34.82	39	13.00	ref		
	former	539	10.21	20	6.67	1.74	1.01-3.02	0.045*

No	variable	IHC utilization				OR	95% CI	p value
		no (n=5,281)		yes (n=300)				
		n	%	n	%			
7	never	2,903	54.97	241	80.33	3.91	2.77-5.51	0.000***
	location							
	rural	2,222	42.08	73	24.33	ref		
	urban	3,059	57.92	227	75.67	2.17	1.67-2.81	0.000***
8	hypertension							
	no	3,943	74.66	186	62.00	ref		
	yes	1,338	25.34	114	38.00	1.74	1.39-2.18	0.000***
9	diabetes							
	no	4,926	93.28	269	89.67	ref		
	yes	355	6.72	31	10.33	1.55	1.08-2.21	0.016*
10	stroke							
	no	5,175	97.99	295	98.33	ref		
	yes	106	2.01	5	1.67	0.83	0.35-1.98	0.681
11	blood pressure							
	no	2,630	49.80	136	45.33	ref		
	yes	2,651	50.20	164	54.67	1.18	0.94-1.47	0.123
12	central obesity							
	no	2,787	52.77	99	33.00	ref		
	yes	2,494	47.23	201	67.00	2.17	1.71-2.74	0.000***
13	body mass index							
	underweight	607	11.49	18	6.00	ref		
	normal	1,965	37.21	101	33.67	1.73	1.04-2.88	0.034*
	overweight	866	16.40	57	19.00	2.21	1.29-3.80	0.004**
	obese	1,843	34.90	124	41.33	2.26	1.37-3.75	0.001***

Note: Chi square test; Significant level * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

The findings of multivariate logistic regression model are represented in table 4. In model 1, the demography characteristic, 60-74 years (adj OR=2.01; 95%CI=1.55-2.61), 75+years (adj OR=3.35; 95%CI=1.99-5.64), female (adj OR=3.45; 95%CI=2.26-5.27), medium (adj OR=1.76; 95%CI=1.05-2.94) low education (adj OR=2.09; 95%CI=1.19-3.69), had own health insurance (adj OR=1.87; 95%CI=1.44-2.42), urban areas (adj OR=1.76; 95%CI=1.32-2.35), hypertension (adj OR=1.32; 95%CI=1.01-1.74), normal BMI (adj OR=1.84; 95%CI=1.08-3.15), overweight BMI (adj OR=1.86; 95%CI=1.01-3.43) were each independently and significantly associated with IHC utilization. In model 2, with the excluded demography characteristic, we found that hypertension (adj OR=1.59; 95%CI=1.23-2.07) and central obesity (adj OR=2.56; 95%CI=1.85-3.54) significantly increased with IHC utilization.

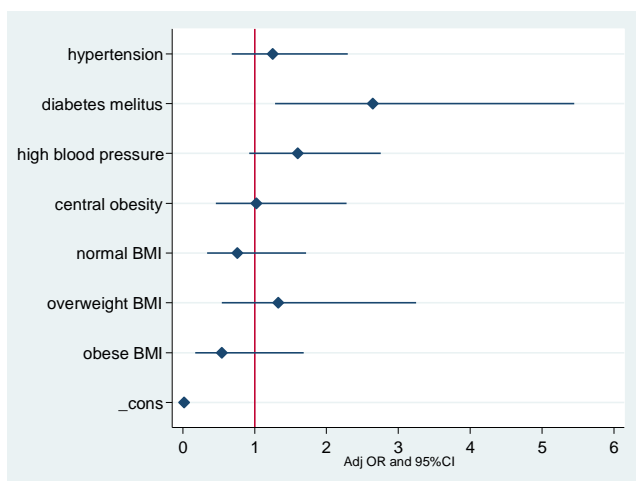
Table 4. Multivariate analysis

Variables	Model 1	Model 2
Demography characteristic		
age group (years old)		
45-59	ref	
60-74	2.01(1.55-2.61)***	
75+	3.35(1.99-5.64)***	
Gender		
male	1	
female	3.45(2.26-5.27)***	
level education		
high	1	
medium	1.76(1.05-2.94)*	
Low	2.09(1.19-3.69)*	
working status		
working	1	
not working	1.08(0.83-1.40)	
health insurance ownership		
No	1	
Yes	1.87(1.44-2.42)***	
smoking		
current	1	
former	1.22(0.69-2.15)	
never	1.36(0.87-2.15)	
location		
rural	1	
urban	1.76(1.32-2.35)***	
clinical status		
hypertension		
No	1	1
Yes	1.32(1.01-1.74)*	1.59(1.23-2.07)***
diabetes		
No	1	1
Yes	1.18(0.78-1.78)	1.24(0.83-1.85)
blood pressure		
No	1	1
Yes	0.82(0.63-1.07)	0.92(0.71-1.18)
central obesity		
No	1	1
Yes	1.12(0.79-1.60)	2.56(1.85-3.54)***
body mass index		
underweight	1	1
normal	1.84(1.08-3.15)*	1.37(0.81-2.31)
overweight	1.86(1.01-3.43)*	1.17(0.65-2.11)
obese	1.62(0.88-3.00)	0.90(0.50-1.61)

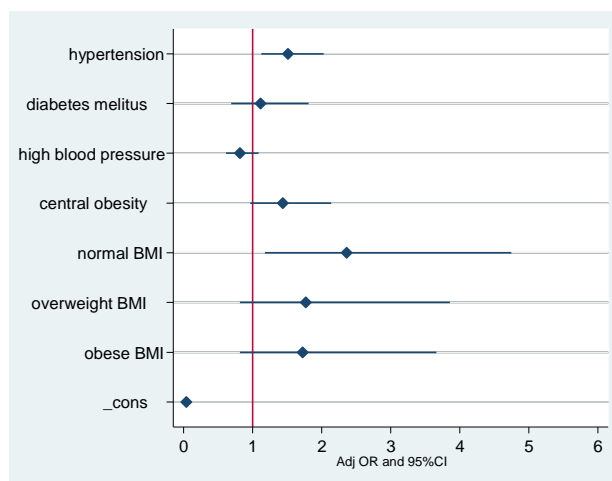
Variables	Model 1	Model 2
aic (akaike's information criterion)	2128.48	2286.58
bic (bayesian information criterion)	2247.77	2339.6
ll (log likelihood)	-1046.24	-2135.29
r2_p	0.104	0.028

Note: Logistic regression test significant level * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Findings from the multivariate regression models for male and female are displayed in Figure 2 and Figure 3. We found that the clinical status that influenced of IHC utilization among male was diabetes mellitus (adj OR=2.64; 95%CI=1.28-5.45), therefore among female were hypertension (adj OR=1.51; 95%CI=1.21-2.02) and normal BMI (adj OR=2.63; 95%CI=1.17-4.75).



Picture 2. The odds of the association between clinical status and IHC utilization stratified by male



Picture 3. The odds of the association between clinical status and IHC utilization stratified by female

DISCUSSION

Population aging is a global concern, as highlighted by research studies (Chen et al., 2007; Kato et al., 2009). To enhance healthcare coverage, it is crucial to evaluate the extent to which older adults utilize healthcare services and seek medical assistance (Ministry of Health of the Republic of Indonesia, 2016; Rahmawati & Bajorek, 2015). The current investigation revealed that 5.38% of elderly individuals in Indonesia availed themselves of IHC. This outcome aligns with previous studies, which reported utilization rates of only 3.79% and 5.38% (Putri, 2018; Trisfayeti & Idris, 2022).

Elderly individuals often require greater healthcare due to a higher prevalence of comorbidities and increased susceptibility to treatment side effects (Adams et al., 2014; Deeks et al., 2009; Vegda et al., 2009). Furthermore, this study discovered a positive association between age and the utilization of IHC, corroborating previous research findings (Trisfayeti & Idris, 2022).

This study revealed that female elderly residents exhibited higher utilization of IHC services and had more frequent visits compared to males. These findings confirm previous reports that highlight women's greater inclination to prioritize annual health check-ups, seek advice from healthcare providers and attend educational sessions. (Deeks et al., 2009; Dunnell et al., 1999; Vegda et al., 2009). This outcome could potentially be attributed to the physical and psychological characteristics of women, as they are more likely to belong to vulnerable groups (Dunnell et al., 1999; Schellhorn et al., 2000). It suggests that females may exhibit greater concern regarding their health status.(Deeks et al., 2009; Vegda et al., 2009). In general, women reported lower functional health status, which may have contributed to a larger perceived demand for healthcare. People who did not or seldom used medical services also showed lesser awareness of their high blood pressure (Sikka et al., 2021).

Based on the analysis findings, it was observed that older individuals with higher levels of education tend to have a higher frequency of visits to IHC. This can be attributed to the fact that those with middle education or above possess a sufficient level of knowledge that promotes the acceptance of certain behaviors. Having a higher education level influences one's mindset when making decisions related to healthcare utilization, including active participation in IHC. Research studies support the notion that higher education levels positively impact healthcare utilization, as individuals are more likely to engage in such services when needed (Amente & Kebede, 2016; Hidayati et al., 2018; Tennant et al., 2015; Trisfayeti & Idris, 2022; Vargas Bustamante et al., 2012). Furthermore, higher education is associated with improved professional opportunities, higher financial status, and enhanced social standing (Anand, 2016). Therefore, educational attainment plays a significant role in driving healthcare utilization.

Consistent with prior research conducted in Indonesia, the presence of health insurance was identified as a significant factor influencing the utilization of IHC among the elderly population (Idris & Nurafni, 2021; Madyaningrum et al., 2018). Individuals who are insured are more likely to recognize the benefits of regular check-ups and value the avoidance of substantial out-of-pocket expenses while receiving medical treatment. By enrolling in insurance programs, they can maintain their financial stability (Ghosh, 2014; Sriram & Khan, 2020). Elderly individuals who possess health

insurance demonstrate a higher likelihood of utilizing outpatient care. On the contrary, those without health insurance and burdened by significant financial constraints are more likely to experience delays in accessing outpatient care when needed (Madyaningrum et al., 2018).

Furthermore, the utilization of healthcare services varies significantly based on the place of residence, primarily due to differences in accessibility and availability. Previous studies conducted in Surabaya have highlighted a notable disparity between the presence of public and private healthcare providers, particularly in terms of their geographical distribution. Urban dwellers have the advantage of having both public and private healthcare options, whereas rural residents rely solely on public services (Pratono & Maharani, 2018). Additionally, elderly individuals residing in urban areas are more likely to be enrolled in national health insurance compared to those in rural areas. This increased insurance coverage contributes to higher utilization of outpatient services among urban elderly populations. (Madyaningrum et al., 2018).

This study also examined the impact of clinical conditions on the utilization of IHC. The findings indicated that elderly individuals with hypertension or central obesity tended to utilize IHC services to a greater extent. These results differ slightly from previous studies. For instance, Jiang et al. reported that elderly individuals with hypertension utilize fewer healthcare services due to the perceived stability of their condition, which can be managed through medication and self-treatment (Jiang et al., 2018). On the other hand, elderly individuals with obesity often face weight bias, which negatively affects their engagement in primary healthcare. This bias manifests through perceived barriers to healthcare utilization, expectations of differential treatment, low levels of trust and communication, and avoidance or delay of seeking healthcare services (Alberga et al., 2019).

Through gender-based stratified analysis, we observed that the influence of IHC utilization was distinct to individuals with long-term health conditions, regardless of their gender. Similar to the previous finding, usage of health services and other need variables, such as chronic illness diagnosis and subjective health status, were significant (Hlaing et al., 2020). People who were in worse or worsening health were more likely to utilize medical care frequently and to enter and remain in care over time. Women and men face distinct obstacles to preserving their health, and they use services in different ways. Diabetes is more common in men than in women. However, women are more likely to experience hypertension and report depressive symptoms than men (Institute of Medicine (U.S.), 2008; Tareque et al., 2015). Studies including patients with a range of chronic diseases have shown a 19% reduction in hospitalization risk when receiving integrated treatment (Stephenson et al., 2019).

This research showed that bmi-category associated with IHC utilization. It is similar with the previous study in UK and USA, the utilization of healthcare resources is significantly higher in individuals with obesity (Shi et al., 2021). But, for stratified gender analysis, females with normal body mass index utilized IHC substantially more than underweight females. As people "downshift" from obese to overweight and from overweight to normal weight, weight loss in old age is linked to worse health. Rapid and unintended weight loss may be a sign of depression, dementia, or other mental health conditions.(Estrella-Castillo & Gómez-De-Regil, 2019; Harris, 2017).

CONCLUSION

The utilization of IHC among the elderly population in Indonesia is currently insufficient, despite the expected growth of the elderly population in the future. This study revealed that only 5.38% of the elderly population utilized IHCs, and various factors such as age, gender, education level, location, health insurance ownership, hypertension, and obesity influenced the utilization of IHC. Furthermore, the study identified hypertension as a significant factor among female and diabetes as a significant factor among males. The paper underscores the importance of raising awareness among the elderly about the preventive benefits of using IHC and urges policymakers to take into account the variables that impact healthcare accessibility for older individuals in Indonesia.

Conflict of Interest

The authors declare that they have no conflict of interest

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