

Traditional Health Services Utilization in Disadvantage Areas in Indonesia

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Abstract—The low availability of health services in disadvantaged areas raises conventional medicine as an alternative. The study aims to analyze the factors related to traditional health services (THS) utilization in disadvantaged areas in Indonesia, based on Presidential Regulation Number 63 of 2020 concerning the Determination of Underdeveloped Regions for 2020–2024. The research employed data from the 2018 Indonesian Basic Health Survey. This cross-sectional survey analyzed 16,346 respondents. The study looked at THS use as a dependent variable and six independent variables (age group, gender, marital status, education level, occupation type, and wealth status). We employed binary logistic regression to analyze the data. The results showed that Indonesia's average THS utilization in a disadvantaged area in 2018 was 17.6%. Meanwhile, the study found that age group, marital status, occupation type, and wealth status were related to THS utilization in a disadvantaged area in Indonesia. The older a person is, the more likely he is to utilize THS. Those who are married were more likely to use THS than unmarried. The study also found that work type and wealth status were related to THS utilization. The study concluded four factors associated with THS utilization in a disadvantaged area in Indonesia: age, marital, occupation, and wealth. We need further qualitative studies about the reasons why people choose THS. This follow-up study is vital for policymakers to develop THS according to the needs of their consumers.

Keywords—Traditional health services; traditional healing; conventional therapy; public health.

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I. INTRODUCTION

Traditional health services (THS) refer to medical care or medication that uses empirically inherited knowledge and abilities that can be accounted for and utilized following prevailing social standards. THS in Indonesia, however, also refers to the World Health Organization's global strategy for traditional medicine from 2014 to 2024. By incorporating traditional and conventional services—complementary medicine into maternal and personal health care—the process seeks to increase knowledge, reinforce quality assurance, safety, and appropriate use, and advance universal health coverage [1]. The development trend of countries that have national *complementary Medicine* policies continues to increase by 25 countries (1999), 45 countries (2005), 79 countries (2012), and in 2018, a total of 98 countries [1], [2].

The Indonesian Basic Health Survey report shows that public interest in using THS tends to increase in 2018 (31.4%) compared to 2013 (30.1%). Moreover, the utilization of THS

types in the household for primarily manual skills was 65.3%, prepared ingredients 48%, and homemade ingredients 31.8% [1], [2]. Previous findings show that the elderly population uses THS in Indonesia at 37.0% and their efforts with traditional medicine (17.3%). Older adults in the 60–69-year age group mostly used THS (37.9%), while their efforts with conventional medicine were dominated by older women (18.3%) in rural areas (19.5%). The type of THS with prepared ingredients was mainly used by male elderly (55.5%) and those living in urban areas (56.5%), while female elderly (43.6%) and in rural areas (46.5%) preferred herbs, homemade. Traditional healers (98.2%) are the energy older people use [3]. The results of another study reported that the most significant proportion of the use of THS and prepared ingredients was related to socioeconomic status and living in the city. Meanwhile, their efforts and making their potions are related to socioeconomic conditions and housing in the village [4]. Furthermore, previous research shows that traditional medicine

is the choice of individuals in households who are elderly, live in villages, and live in areas with drug posts [1], [5].

The study reports that the factors influencing herbal medicine as an alternative to traditional medicine are personal, marketing, social, cultural, psychological, price, and health facilities (hospital and primary health care). Public consumption of herbal medicine is highest in low economies. In contrast, the upper economy uses pharmaceutical treatment [6], [7]. Research on indigenous people in West Guji, Ethiopia, reports that they have indigenous knowledge of traditional medicine; 98 medicinal plants have been used to treat various gastrointestinal, respiratory, skin, and fever diseases [8]. Previous research results in different countries show that many people in rural areas still use traditional healers to treat snake bites because beliefs and cultural factors influence them [6], [7], [9], [10]. This condition indicates that traditional groups in rural and undeveloped areas, which lack health services and are influenced by socioeconomic and cultural status, nevertheless prefer conventional medicine.

In underdeveloped areas, inequality often occurs in the distribution of development, including in the health sector. However, using the environment, predominantly plants, to meet health needs, such as traditional medicines, is very high [6,9]. Traditional medicine practices are widely applied in remote areas with minimal availability of facilities [11], [12]. On the other hand, in Jakarta, the nation's capital city, with adequate THS facilities, traditional treatment efforts are reported to be very low [3]. A study informs that the most influential factors in traditional medicine self-medication are knowledge, trust, and distance from health facilities [13]. Moreover, other studies have found that conventional medicine efforts are more outstanding in older adults, those with married status, those with low education, and those working as farmers or fishermen or not working and residing in the village [14].

According to Presidential Regulation Number 63 of 2020 concerning the Determination of Underdeveloped Regions for 2020–2024, Indonesia's 62 regencies in 11 provinces are among the impoverished areas in all aspects of development, including health development. According to this regulation, what is meant by Disadvantaged Regions are districts whose territories and people are less developed compared to other regions on a national scale. This regulation regulates the designation of an area as disadvantaged based on six criteria: the community's economy, human resources, facilities and infrastructure, regional financial capacity, accessibility, and regional characteristics [15]. Based on the background narration, the study aims to analyze the factors related to THS utilization in a disadvantaged area in Indonesia.

II. MATERIALS AND METHODS

A. Data Source

The research employed data from the 2018 Indonesian Basic Health Survey. The study was a cross-sectional survey conducted nationally by the Ministry of Health of the Republic of Indonesia. Through interviews with Household Instruments and Individual Instruments, the study collected data between May and July 2018. All Indonesian households comprise the 2018 Indonesian Basic Health Survey population. The 2018 National Socioeconomic Survey,

conducted in March 2018, was the foundation for the survey's sample framework. The 2018 Socioeconomic Survey visited a target sample of 300,000 residences from 30,000 census blocks (run by the Central Statistics Agency).

The PPS (probability proportional to size) method, which uses two-step systematic linear sampling, was utilized for the survey. Stage 1: Implicit stratification developed from the 2010 Population Census's welfare strata for all census blocks. From a master frame of 720,000 census blocks from the 2010 Population Census, PPS picked the sample survey as the sampling frame, of which 180,000 were chosen (25%). The survey employed the PPS approach to identify multiple census blocks in each urban/rural strata per regency/city to construct a Census Block Sample List. In total, 30,000 Census Blocks have been selected. Stage 2: To maintain the representation of the diversity value of household characteristics, choose ten homes in each Census Block with the highest implicit stratification of education completed by the Head of Household using systematic sampling. The 2018 Indonesian Basic Health Survey will include questions for every member of the chosen family [1]. The population in this study were residents of the disadvantaged region in Indonesia, aged 15 and up. Based on the sampling technique, the study defined 16,346 respondents in the disadvantaged part of Indonesia out of 1,091,528 respondents as a weighted sample.

B. Setting

The study examines THS utilization in Indonesia's disadvantaged regions. The basis for determining disadvantaged regions is Presidential Regulation Number 63 of 2020 concerning the Determination of Underdeveloped Regions for 2020–2024. Disadvantaged Regions are regencies whose territory and society are less developed than other regions nationally. According to the law, Indonesia's 62 regencies in 11 provinces are among the impoverished areas: North Sumatera Province (Nias, South Nias, North Nias, West Nias), West Sumatera Province (Mentawai Islands), South Sumatera Province (North Musi Rawas), Lampung Province (West Pesisir), West Nusa Tenggara Province (North Lombok), East Nusa Tenggara Province (West Sumba, East Sumba, Kupang, East Timor Tengah, Belu, Alor, Lembata, Rote Ndao, Central Sumba, Southwest Sumba, East Manggarai, Sabu Raijua, Malaka), Central Sulawesi Province (Donggala, Tojo Una-una, Sigi), Maluku Province (West Maluku Tenggara, Aru Islands, West Seram, East Seram, Southwest Maluku, South Buru), North Maluku Province (Sula Islands, Taliabu Island), West Papua Province (Wondama Gulf, Bintuni Gulf, South Sorong, Sorong, Tambrauw, Maybrat, South Manokwari, Arfak Mountains), and Papua Province (Jayawijaya, Nabire, Paniai, Puncak Jaya, Boven Digoel, Mappi, Asmat, Yahukimo, Bintang Mountains, Tolikara, Keerom, Waropen, Supiori, Great Mamberamo, Nduga, Lanny Jaya, Central Mamberamo, Yalimo, Puncak, Dogiyai, Intan Jaya, Deiyai) [15].

C. Dependent Variable

The study's dependent variable was adults who used THS the previous year, whether they visited a traditional care facility or health care facility or hired traditional healers or health workers.

D. Independent Variables

The study analyzed six respondent characteristics as independent variables. The six criteria were age, gender, married status, education level, type of profession, and wealth position. Furthermore, the age was determined using the respondent's last birthday. Age groups are ≤ 25 , 26-45, 46-65, and > 65 . The study split gender into two kinds: male and female. The study split marital status into three groups: never married, married/living with a partner, and divorced/widowed. Their most recent diploma demonstrates the respondent's education. The three levels of education covered by the study are primary, secondary, and higher. Besides, there are six occupations: no work, civil servant/army/police, private sector, entrepreneur, farmer/fisherman/labor/others.

The wealth status was determined using the wealth index formula, and a weighted average of a family's total spending was used to generate the wealth index. Meanwhile, the wealth index was determined using major household expenses, including housing, food, and health insurance. Additionally, the survey divided the income index into five groups: the poorest, poorer, middle, richer, and richest [16].

E. Data Analysis

The study made a bivariate comparison for the dichotomous variable using the Chi-Square test. The study also conducted a collinearity test to ensure that the independent variables in the final regression model did not have a close link. The authors used a binary logistic regression to analyze the study's last finding. The study used the IBM SPSS 26 program throughout the investigation's statistical analysis phase.

III. RESULTS AND DISCUSSION

The analysis found that Indonesia's average THS utilization in a disadvantaged area in 2018 was 17.6%. Meanwhile, Table 1 shows descriptive statistics of the respondents. Table 1 shows that based on age group, that 26-45 are dominant in both categories of THS in the disadvantaged areas in Indonesia. Meanwhile, based on gender, males ruled in both types of THS in an underprivileged area in Indonesia. Moreover, regarding marital status, married or living with a partner dominated both THS categories in Indonesia's disadvantaged neighborhoods.

Those with primary education dominated all categories of THS in the disadvantaged areas in Indonesia according to education level. On the other side, farmers/fishermen/laborers/others dominated in both categories of THS in the disadvantaged areas in Indonesia based on occupation type. Finally, regarding wealth status, the poorest ruled in both kinds of THS in underprivileged areas in Indonesia.

Based on the study results in Table 1, four variables continued in the subsequent analysis. The four variables are age group, marital status, occupation type, and wealth status. In the second stage, the study runs a collinearity test. The result shows that there is no meaningful correlation between the independent variables. Additionally, each factor's variance inflation factor (VIF) value is less than 10, and the tolerance value for each variable is more significant than 0.10.

According to the study, the regression model displayed no signs of multicollinearity, pointing to the foundation of the test's decision-making.

TABLE I
DESCRIPTIVE STATISTIC OF RESPONDENTS (N=16,346)

Respondent Characteristics	THS Utilization		P-value
	Unutilized (n=13,471)	Utilized (n=2,875)	
Age group			* 0.001
≤ 25	26.1%	20.4%	
26-45	46.6%	44.7%	
46-65	22.6%	29.0%	
> 65	4.6%	5.9%	
Gender			0.672
Male	50.4%	50.2%	
Female	49.6%	49.8%	
Marital status			* 0.001
Never in union	23.6%	17.6%	
Married/Living with a partner	69.4%	75.1%	
Divorced/Widowed	7.1%	7.3%	
Educational level			0.228
Primary	74.0%	74.0%	
Secondary	19.5%	19.0%	
Higher	6.5%	7.0%	
Occupation type			* 0.001
No work	30.2%	28.3%	
Civil servant/army/police	3.9%	4.3%	
Private sector	3.1%	3.3%	
Entrepreneur	5.7%	7.5%	
Farmer/fisherman/labor/others	57.2%	56.4%	
Wealth status			* 0.001
Poorest	34.9%	32.1%	
Poorer	20.1%	23.7%	
Middle	17.2%	18.4%	
Richer	14.1%	14.7%	
Richest	13.8%	11.1%	

Note: *p-value < 0.001 .

Table 2 depicts the binary logistic regression of THS use in Indonesia's disadvantaged areas in 2018. Based on age group, Table 2 shows that 46-65 are 1.467 more likely to utilize THS than the ≤ 25 (AOR 1.467; 95% CI 1.335-1.612). Meanwhile, 46-65 are 1.475 more likely to use THS than the ≤ 25 (AOR 1.475; 95% CI 1.288-1.690). The result also indicates that marital status is related to THS in disadvantaged areas in Indonesia. Table 2 displays that those who married or lived with a partner were 1.305 more likely to utilize THS than those who were never in a union (AOR 1.305; 95% CI 1.196-1.425).

Regarding occupation type, Table 2 displays that entrepreneurs were 1.320 more likely to use THS than those without work (AOR 1.320; 95% CI 1.184-1.472). Moreover, farmers/fishermen/laborers/others were 0.896 less likely to use the THS than those without work (AOR 0.896; 95% CI 0.842-0.955). According to the wealth status, the poorer were 1.251 more likely to use THS than the poorest (AOR 1.251; 95% CI 1.168-1.339). Those with middle-wealth status were 1.124 more likely to use THS than the most impoverished (AOR 1.124; 95% CI 1.044-1.210). Furthermore, the richest were 0.794 less likely to use THS than the poorest (AOR 0.794; 95% CI 0.726-0.868).

TABLE II
THE RESULT OF BINARY LOGISTIC REGRESSION OF THS UTILIZATION IN A DISADVANTAGED AREA IN INDONESIA IN 2018 (N=16,346)

Predictor	p-value	Utilized THS		
		AOR	95% CI	
			Lower Bound	Upper Bound
Age: ≤ 25	-	-	-	-
Age: 26-45	0.068	1.083	0.994	1.180
Age: 46-65	**<0.001	1.467	1.335	1.612
Age: > 65	**<0.001	1.475	1.288	1.690
Marital: Never in union	-	-	-	-
Marital: Married/Living with partner	**<0.001	1.305	1.196	1.425
Marital: Divorced/Widowed	0.205	1.088	0.955	1.240
Occupation: no work	-	-	-	-
Occupation: civil servant/army/police	0.331	1.070	0.933	1.227
Occupation: private sector	0.051	1.159	1.000	1.344
Occupation: entrepreneur	**<0.001	1.320	1.184	1.472
Occupation: farmer/fisherman/labor/others	*0.001	0.896	0.842	0.955
Wealth: Poorest	-	-	-	-
Wealth: Poorer	**<0.001	1.251	1.168	1.339
Wealth: Middle	*0.002	1.124	1.044	1.210
Wealth: Richer	0.103	1.069	0.987	1.158
Wealth: Richest	**<0.001	0.794	0.726	0.868

Note: *p < 0.010; **p < 0.001; AOR: Adjusted Odds Ratio; CI: confidence interval.

This study reports that four variables correlate with THS use in disadvantaged areas in Indonesia. The factors included age, marital status, occupation type, and wealth status. The results indicate that the THS utilization tendency increases with age. This finding aligns with a systematic review conducted in Sub-Saharan Africa, which states that, especially in rural areas, THS use is carried out by those over 55 years [17]. The Norway study also shows that traditional medicine is associated with older age [18]. The situation is understandable because, with increasing age, the likelihood of suffering from various chronic diseases increases, coupled with a greater risk of death. Previous studies showed that using traditional and alternative health services was higher among patients with chronic conditions. Some chronic diseases often treated with traditional medicine include diabetes, hypertension, chronic respiratory disease, cancer, and other diseases such as joint pain, back pain, inflammation, and digestive disorders [18]–[20]. The more illnesses people have, the more likely they are to use traditional medical services [2], [19]. Thus, it is unsurprising that the search for conventional medicine services in the older age group is also more significant than in the younger age group.

On the other hand, marital status also has a relationship with THS in disadvantaged areas in Indonesia. Married people are more likely to use THS than those who are not. This finding is consistent with previous results showing that in the general population, traditional medicine is more often used by married people than those who are not [19]. Likewise, a study in South Korea showed that the utilization of THS for both therapeutic and preventive was higher in married people [17]. Specific studies on diabetes mellitus also showed similar results, that using traditional, complementary, and alternative medicine was higher in married patients than unmarried patients [21]. It can be explained that married people get moral and financial support from their partners, thus enabling them to seek health services, including THS, when sick. Meanwhile, for those who are not married, it is not necessarily obtained [22].

Meanwhile, the result displays that occupation types are related to THS in disadvantaged areas in Indonesia. Apart from *farmers*, fishermen, laborers, and others, all kinds of work, especially groups of entrepreneurs, are likelier to use THS than those who do not work. This result is different from the findings of a systematic review, which states that unemployed and unskilled individuals more commonly use traditional, complementary, and alternative medicine [17]. Similarly, a systematic review in Ethiopia also shows that pregnant women who do not work are likelier to use THS than pregnant women who work [23]. This difference can explain why people who do not work are identical to poor people who lack financial ability. Although traditional medicine services are relatively cheap, they often still require payment, mainly traditional medicine involving trained practitioners [24], [25]. This condition is undoubtedly an obstacle for those who do not have money.

On the other hand, people experiencing poverty in Indonesia have been registered as participants in national health insurance, whose contributions are borne by the government. They can take advantage of the available health services without paying for services/treatment [26,27]. This condition is different for people with jobs. With their jobs, they will earn money that can be used to meet their daily needs, including paying for THS if that is what they want.

Finally, the study also found that wealth status is related to THS in disadvantaged areas in Indonesia. It appears that the *higher* the level of wealth, the less likely it is to use traditional medical services and vice versa. This result aligns with previous research conducted in low- and middle-income countries, which stated that people experiencing poverty were more likely to be users of THS [1], [17]. A systematic review of research results in Sub-Saharan African countries concluded similar things. The users of traditional, complementary, and alternative medicine services tend to have low economic status [18].

Research on middle-aged and older adults in India also shows that the possibility of using traditional medicine is

more prevalent among those in a low financial situation [27]. The *extensive* use of THS by low-income people is due to the small income that causes the inability to pay for conventional treatment [19], [28]. In addition, there are other obstacles, such as the difficulty of access, limited transportation, and family costs while waiting for patients. Moreover, belief in the minor side effects of traditional medicine and the payment system for conventional medicine, which is quite flexible, is why people prefer traditional medicine services when sick [29]–[31]. On the other hand, the middle class and above, with their financial resources, tend to prefer to visit hospitals or clinics when they need health care [32].

The study investigated a large amount of data to provide information on *Indonesia's* underdeveloped areas. However, only appropriate variables can be studied because the study only looks at secondary data. It is impossible to analyze additional factors, such as trip duration, travel expenses to the facilities, and the nature of the ailment, that have been linked to health services in earlier studies [19], [33]–[36].

IV. CONCLUSION

The study concluded four factors related to THS utilization in a disadvantaged area in Indonesia. The four were age group, marital status, work type, and wealth status. The older a person is, the more likely he is to utilize THS. Those who are married were more likely to use THS than unmarried. The study also found that work type and wealth status were related to THS utilization. Based on the results and conclusion, we need further qualitative studies about why people choose THS. This follow-up study is essential for policymakers to develop THS according to the needs of their consumers.

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