

# Health seeking behavior for influenza management in North Sumatra Province, Indonesia

Zachowania zdrowotne związane z leczeniem grypy w prowincji Sumatra Północna w Indonezji

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## STRESZCZENIE

### ZACHOWANIA ZDROWOTNE ZWIĄZANE Z LECZENIEM GRYPY W PROWINCJI SUMATRA PÓŁNOCNA W INDONEZJI

**Cel pracy.** Niniejsze badanie miało na celu określenie zachowań zdrowotnych w zakresie leczenia grypy w północnej Sumatrze w Indonezji.

**Materiał i metody.** W badaniu wykorzystano projekt ilościowy z podejściem przekrojowym. Liczba uczestników tego badania wynosiła 385, a próba została pobrana przy użyciu wygodnego doboru próby. Dane zostały zebrane za pomocą kwestionariusza w czerwcu 2024 r. i przeanalizowane przy użyciu statystyk opisowych i inferencyjnych.

**Wyniki.** Wyniki tego badania wykazały, że pierwszym działaniem w przypadku grypy jest poszukiwanie leczenia u pracownika służby zdrowia (49,6%), samoleczenie (44,7%), odpoczynek (3,6%) i wizyta u tradycyjnego uzdrowiciela (2,1%). W drugim działaniu, jeśli pierwsze działanie zostanie uznane za nieskuteczne, respondent szuka leczenia u innego pracownika służby zdrowia (82,3%) i samoleczenia (17,7%). Cechy demograficzne, które znacząco wiązały się z samoleczeniem, to wiek, poziom wykształcenia i ubezpieczenie zdrowotne.

**Wnioski.** Wiele osób nadal stosuje samoleczenie w przypadku zachorowania na gripę. Aby uniknąć negatywnego wpływu samoleczenia, społeczeństwo musi być uspołecznione, aby miało odpowiednią wiedzę na temat zagrożeń związanych z samoleczeniem. W ten sposób będą mogli zdecydować się na leczenie grypy.

## Słowa kluczowe:

zachowanie, grypa, Indonezja, samoleczenie, poszukiwanie zdrowia

## ABSTRACT

### HEALTH SEEKING BEHAVIOR FOR INFLUENZA MANAGEMENT IN NORTH SUMATRA PROVINCE, INDONESIA

**Aim.** This study aimed to identify health-seeking behavior for influenza management in North Sumatra, Indonesia.

**Material and methods.** This study used a quantitative design with a cross-sectional approach. The number of participants in this study was 385, and the sample was taken using convenience sampling. Data was collected using a questionnaire in June 2024 and analyzed using descriptive and inferential statistics.

**Results.** The results of this study found that the first action when experiencing influenza is to seek treatment from a health professional (49.6%), self-medication (44.7%), rest (3.6%), and visit a traditional healer (2.1%). In the second action, if the first action is considered unsuccessful, the respondent seeks treatment from another health professional (82.3%) and self-medication (17.7%). Demographic characteristics that were significantly related to self-medication included age, education levels, and health insurance.

**Conclusions.** Many people still self-medicate when they experience influenza. To avoid the negative impact of self-medication, the public needs to be socialized so that they have adequate knowledge about the risks of self-medication. Thus, they can decide to seek medical care for influenza treatment.

## Key words:

behavior, influenza, Indonesia, self-medication, health seeking

## INTRODUCTION

Influenza, also called flu, is a highly contagious respiratory disease caused by several RNA influenza viruses [1]. Influenza viruses are classified into four types: A, B, C, and D [2]. Influenza has two epidemiological forms, namely seasonal and pandemic. Seasonal influenza is caused by influenza A and B viruses, while pandemic influenza is caused by influenza A viruses. The interval emergence of pandemic influenza is unpredictable and causes higher morbidity and mortality than seasonal influenza [3]. Influenza viruses, especially types A and B, are common in global circulation, with one to two peaks yearly [4].

In most cases, seasonal influenza resolves on its own without causing serious complications, but it can sometimes lead to severe illness [5]. Influenza can have a detrimental impact on the human body, even resulting in hospitalization and death, especially in people with chronic diseases, older adults, infants, and pregnant women [6]. Worldwide, the mortality rate of influenza complications is 500,000 cases each year [1]. The disease also poses an economic burden because the sufferer needs to be hospitalized and cannot work productively [5].

Globally, influenza viruses are estimated to cause 39.1 million acute lower respiratory tract infections and 58,200 deaths annually [7]. Common respiratory viruses, such as respiratory syncytial viruses (RSV) and influenza viruses, often emerge during Indonesia's wet or rainy seasons [8]. Most influenza cases are caused by H1N1 and H3N2 subtypes [4]. However, Indonesia has been hit by the endemic avian influenza H5N1 in birds and was reported as the country with the second most population in the world infected with H5N1. In addition, the H5N1 virus has also infected pigs in Indonesia [9].

Health-seeking behavior is based on the decision-making process. It is defined as any action taken by individuals who feel that they are in a state of illness or are experiencing health problems to seek appropriate medical help or medication. Therefore, health-seeking behavior is not the same from one person to another; it is influenced by cognitive and non-cognitive factors, such as awareness, sociocultural, and economic ones [10]. Other terms for health seeking behaviors are treatment-seeking behavior, care-seeking behavior, and help-seeking behavior [11].

Health-seeking behavior is influenced by predisposing factors (age, gender, culture, ethnicity, and social), supporting factors (finances, organization, and access to services), and needs factors (views and experiences). Each of these factors affects a person's decision to seek health, both at the beginning of seeking it and in its continuation [12]. In Indonesia, health-seeking behavior is complex due to the country's multicultural society, diverse ethnic groups, and varying levels of healthcare services. Non-formal healthcare providers still play an important role, even though formal healthcare providers are widely available. In the Indonesian context, non-formal healthcare providers are called traditional health providers [11].

## AIM

This study aimed to identify health-seeking behavior for influenza management in North Sumatra, Indonesia.

## MATERIALS AND METHODS

### Study design and sample

The design of this study was a descriptive-cross sectional. According to Aggarwal and Ranganathan [13], descriptive design describes the distribution of one or more variables without the desire to test hypotheses or explain causal relationships. The sample size in this study was determined using the formula of Cochran 1963 in Israel [14]:

$$N = \frac{Z^2 \cdot p \cdot q}{e^2}$$

Where Z = Z score for the confidence level of 95%,  $\alpha/2 = 1.96$ ; e = level of precision; p = estimated proportion; and q = 1 - p.

Similar studies have not been found in the region, therefore, in this study the value of the estimated proportions used was 0.5, which assuming that the variability of the population was maximum [14]. Thus, the number of samples in this study was:

$$N = \frac{(1.96)^2 (.5)(.5)}{(.05)^2} = 385.$$

The inclusion criteria were being 18 years of age or older, having engaged in or currently engaging in a health-seeking behavior for influenza treatment, and being willing to participate as a research respondent. There were two instruments in the study, namely the demographic characteristics instrument and the questionnaire on health seeking behavior developed by the researchers based on literature studies that has been used in Indonesia, Iran, and Malawi, and validated in Indonesian language [11,15,16]. The research instrument was approved as valid based on a face validity test by two validity examiners from the Faculty of Nursing, Universitas Sumatera Utara.

### Data collection

Data was collected in June 2024 after obtaining official approval from the research ethics committee of the Universitas Sumatera Utara Number 496/KEPK/USU/2024. Before data collection began, information sheets were given to all respondents, and all respondents signed informed consent forms. This research was conducted in Medan Amplas District, Medan City, North Sumatra Province, Indonesia. The sampling technique used was convenience sampling, and interview for data collection was employed by two researchers (MT and RPA) in the community setting of the research site.

## Data Analysis

The collected data was analyzed using SPSS version 23. The demographic characteristics of respondents and health seeking behavior were analyzed using descriptive statistics (frequency and percentage) and inferential statistics (Chi-square test) with a statistically significant  $p$ -value  $< 0.05$ . The data analysis process follows the guidance of Morgan, Barrett, Leech, and Gloeckne [17].

## RESULTS

### Demographic characteristics of respondents

The study results on 385 respondents found that the majority were aged 18-34 (51.4%) with mean (SD) = 37.45 (12.81), women (55.6%), basic/intermediate education level (89.6%), married/widow/widower (68.6%), income, which based on minimum wages the region, was less than IDR 3,600,000 (94%), no smoking (66.2%), and having health insurance (88.3%), as shown in Tab. 1. The results of the research on health seeking behavior are shown in Tab. 2.

■ Tab. 1. Frequency and percentage of respondents' demographic characteristics (N=385)

Characteristics	Categories	Frequencies	Percentages
Age (Year)	18-34	198	51.4
	35-72	187	48.6
Gender	Women	214	55.6
	Men	171	44.4
Education*	Basic/Intermediate	345	89.6
	Higher	40	10.4
Marital status	Married/Widow/Widower	264	68.6
	Unmarried	121	31.4
Income (IDR)*	< 3,600,000	362	94
	≥ 3,600,000	23	6.0
Smoking status	Yes	130	33.8
	No	255	66.2
Health Insurance	Yes	340	88.3
	No	45	11.7

\*Basic education (elementary school and junior high school), Intermediate education (senior high school), Higher education (academy and university); 1 IDR (Indonesian Rupiah) ≈ 0.00006 EUR.

### Health-seeking behavior of respondents

The results of the research on health seeking behavior are shown in Tab. 2. The study found that health-seeking behavior for influenza management was visiting professional healthcare (49.6%) and self-medication (44.7%) in the first action. If the first action did not improve, most respondents (82.3%) decided to visit professional healthcare in the second action. Three demographic characteristics significantly related to self-medication were age, level of education and health insurance, as presented in Tab. 3.

■ Tab. 2. Frequency and percentage of health-seeking behavior for influenza management (N=385)

Statement	Options	Frequencies	Percentages
First action against influenza.	Professional healthcare (physician and pharmacist)	191	49.6
	Self-medication	172	44.7
	Rest	14	3.6
	Traditional healer	8	2.1
Second action, if the first action improvement does not appear.	Visiting another professional healthcare (physician and pharmacist)	317	82.3
	Self-medication	68	17.7

■ Tab. 3. Factor associated with self-medication on influenza (N=385)

Characteristics	Categories	First action	Second action
		<i>p-values</i>	
Age	18-34	N/A	.003*
	35-72		
Gender	Women	N/A	.830
	Men		
Education	Basic/ Intermediate	N/A	.008*
	Higher		
Marital status	Married /Widow/Widower	N/A	.067
	Unmarried		
Income (Rupiah)	< 3,600,000	N/A	.084
	≥ 3,600,000		
Smoking status	Yes	N/A	.154
	No		
Health Insurance	Yes	N/A	.003*
	No		

\*Significant at  $p < 0.05$ ; N/A = Not Available

## DISCUSSION

The purpose of the study was to identify health-seeking behavior for influenza management in Indonesia. The study found that respondents who self-medicated when experiencing influenza were 44.7%. Self-medication, usually over the counter, is performed by patients independently without a prescription [18]. According to the world health organization (WHO), self-medication is self-treating known diseases or disorders [19]. Self-medicating has advantages and disadvantages. At the individual level, the advantage is that it saves time or reaches the health service place more conveniently, cost-effectively, and independently if the disease experienced is mild. At the community level, the benefits include reducing the economic burden on healthcare facilities and saving resources, and in remote areas, getting treatment is faster and cheaper. On the other hand, the disadvantages at the individual level are the possibility of diagnosis errors and self-medication errors, inaccuracies in choosing appropriate health facilities, improper dosages, wrong drug administration routes, prolonged treatment, drug interactions, drug toxicity, side effects, drug dependence, germ resistance, and loss of state power [20].

Self-medication is becoming a problem in many countries and occurs in various parts of the world with different prevalence. In developing countries, the prevalence of self-medication is between 12.7% and 95%, while in Western countries, the prevalence is much lower at 3% [21]. The results of a study on farmers in Vietnam found that the prevalence of self-medication was 67%, while in other Asian countries it was reported as 45.4% in China, 7.7% in India, 59% in Nepal, and 51% in Pakistan. European countries with a high prevalence were Germany (27.7%) and Greece (23.4%) [22]. In Poland, self-medication was 72.1% among adults and 39.8% among children [23]. In addition, self-medication was also often found during the COVID-19 pandemic [24].

The results of the current study found that the demographic characteristics that were significantly related to self-medication included age, education level, and health insurance. There are both similarities and differences compared to other studies. The variation in prevalence can be caused by various factors such as education level, social and economic status, accessibility, and the quality and ability of health services [21]. Medications often used include antibiotics, antipyretics, and analgesics [25]. In Indonesia, by the law, antibiotics can only be purchased using a doctor's prescription and drug stores are prohibited selling antibiotics. However, a survey found that inappropriate antibiotic administration is widespread in community pharmacies and drug stores [26].

Self-medication is generally performed when individuals experience mild illnesses such as coughs, runny noses, headaches, stomach ache, and fever [21]. In Syria, self-medication treats diseases such as headaches, coughs, flu, and body aches [25]. In Iraq, antibiotics are most widely used to treat influenza and sore throat [27]. In Saudi Arabia, most respondents gave medication to their family members without consulting a doctor. The choice of self-treatment was mainly influenced by the recommendation of friends and searching for online information [19]. The results of a survey in the city of Yogyakarta, Indonesia found that as many as 58.82% of mothers who have children under five years old carry out self-medication for their children [28]. Self-medication is chosen primarily because the symptoms of the disease are mild, the high cost of consultation with health professionals, and the experience from previous diseases [25].

Demographic characteristics, health insurance, disease knowledge, health literacy, and confidence can affect health-seeking behavior. For example, individuals with health insurance are more likely to seek medical attention from a doctor rather than self-medicating when sick [15]. In Indonesia, health insurance is organized by a universal social security administration agency called *Badan Penyelenggara Jaminan Sosial* (BPJS). By law, all Indonesian citizens are mandated to participate in the BPJS, which aims to achieve universal health coverage when a citizen suffering from a disease [29,30]. However, until recent year, a small percentage of citizens have still not registered as BPJS participants due to several challenges, such as regulatory issues and personal hesitation [29,31]. In addition, a lack of knowledge about the disease results in

errors in taking medication and irrational actions in managing disease symptoms. Lack of health confidence leads to lower ability to manage personal health needs [15].

Health-seeking behavior is a process or action decided by a person to maintain physical well-being and fitness to manage the physical, social, and social environment according to their wishes. Improving and maintaining health cannot be achieved by simply improving and implementing health sciences but also through intelligent efforts and behavioral choices that are often influenced by the norms that apply to the society in which we live. In other words, health is not solely shaped by medical dynamics [32]. In this day and age, individuals can easily access all the medications they need. Thus, self-medication becomes familiar in many populations worldwide when dealing with a disease [15]. This study has limitations because the sampling technique used a convenient sampling that can cause under-representation. Therefore, the results of this study cannot be applied as a generalization to the entire population in Indonesia. In addition, the study applied a descriptive cross-sectional design, therefore the results could not provide a causal relationship.

## CONCLUSIONS

The results of this study provide information that almost half of the respondents choose to self-medicate when experiencing influenza, which can cause a new detrimental impact on their health. Therefore, the public needs to be properly educated about the use of drugs for influenza treatment so that they can make the right decision in seeking influenza treatment. Nurses working in community settings can help to increase public literacy about influenza and its treatment.

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