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SELF-MEDICATION PRACTICES AND RELATED FACTORS AMONG RURAL COMMUNITY RESIDENTS WITH PERCEIVED ACUTE RESPIRATORY ILLNESS DURING THE COVID-19 PANDEMIC

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KEYWORDS

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ABSTRACT:

Introduction: The Covid-19 pandemic has exacerbated the increasing global prevalence of self-medication. There are limited studies on the self-medication practices of those who are perceived to have an acute respiratory illness during the Covid-19 pandemic.

Objectives: The study aimed to determine the self-medication practices of rural community residents who perceived themselves to have an acute respiratory illness during the COVID-19 pandemic.

Methods: The study employed an analytic cross-sectional study design. Probability sampling, specifically stratified random sampling, was used in the study. The study collected data from 407 adult residents of a rural municipality in the Philippines who perceived themselves to have an acute respiratory illness.

Results: The respondents preferred gathering health information from doctors but did not actually seek information about their health. They have a lot of trust in healthcare professionals. Overall, they have good access to health services. However, they have poor access to telemedicine services. Meanwhile, they generally experienced mild respiratory symptoms. Self-medication was highly prevalent among the respondents. It was significantly associated with the perceived severity of symptoms, actual source of health information, and access to health services.

Conclusions: Majority of the residents in the community self-medicated.

1. Introduction

Coronavirus disease (COVID-19) is a viral infection caused by the SARS-CoV-2 virus. On March 11, 2020, the World Health Organization declared it to be a pandemic [1]. Most infected individuals would only suffer from mild to moderate respiratory illnesses and recover without special care. On the other hand, some will become critically ill and require medical attention. Influenza and Influenza-like illnesses are the top 4 (272.9 per 100,000 population) and top 5 (95.9 per 100,000 population) causes of morbidity in the Ilocos Region, respectively, before the pandemic [2]. The influenza (flu) virus infects the nose, throat, and lungs, causing a contagious respiratory infection. It can cause mild to

severe symptoms and even death. Although Influenza and Covid-19 are both contagious respiratory illnesses, they have different causative agents [3].

Before the pandemic, there was an increasing popularity of self-medication globally, with a prevalence of 11.2% to 93.7%, depending on the country [4]. Almost all rural Filipino families (93%) practice self-medication, with coughs and colds as the 3rd most common illness prompting them to self-medicate [5]. The Covid-19 pandemic has exacerbated the prevalence of self-medication. This was evident in the study of Arshad et al. [6], where the health-seeking behavior of people changed during the pandemic, resulting in an increasing trend in self-medication and a decrease in the number of people visiting hospitals for their diseases. Previous studies cited by Arshad et al. [6] have linked increased precautionary measures to an increased perception of the virus's risk, causing fear and an overly pessimistic attitude toward risk, affecting public health care utilization, particularly during this pandemic. Due to the restrictions and fears about the virus, the pandemic has encouraged the public to practice self-medication or to treat themselves and their families without consulting any healthcare professional. Most low-income Filipino households would contact a barangay health worker when exhibiting respiratory symptoms. However, many would handle these symptoms themselves by using the stored medicines at home or just stay home and wait until they get better [7]. According to a study by Rafiq et al. [8], there was a significant relationship between self-medication practice and cough and flu symptoms, the initial symptoms of COVID-19. Hence, there is a need to determine the factors associated to self-medication practices during the pandemic.

Objectives

The study aimed to determine the self-medication practices of rural community residents who perceived themselves to have an ARI during the COVID-19 pandemic and associate it with socio-demographic factors, sources of health information, access to health services, and perceived severity of experienced symptoms.

2. Methods

The methodology adopted in this study was meticulously designed and implemented to enable a rigorous and systematic investigation of the research objectives.

Research Design. The study employed an analytic cross-sectional study design. An analytic cross-sectional study design was used to explore the association between the variables in the study. In addition, this design was selected considering the time allotted for the implementation of the study.

Study Area. The study was conducted in the municipality of Sta. Catalina, a 5th-class municipality in the Province of Ilocos Sur, Philippines, with a population of 14,493 [9]. The main livelihood of the residents includes farming, fishing, and small-scale businesses.

Data Collection. The study included residents of the chosen municipality who perceived themselves to have ARI and resided in the municipality. The respondents were selected using stratified random sampling. The respondents were stratified according to barangay. The respondents in each barangay were then selected through simple random sampling. Given the study's objectives, the minimum

sample size to achieve a statistical power of at least 0.95 with an alpha of.05 is 370. Considering a dropout rate of 10%, at least 407 were considered in the study.

The study conducted a structured interview with an interview checklist written in both English and Ilokano. The interview checklist, adapted from different studies [10-14], was evaluated for its validity by experts and reliability.

Data Analysis. Descriptive and inferential analyses were used in the study. Descriptive statistical tools were used to describe the respondents in terms of socio-demographic factors, sources of health information, access to health services, perceived severity of symptoms, and self-medication practices. Inferential statistics was employed to establish the factors associated with the respondents' self-medication practices. Multivariate logistic regression was used to explore the possible association between the self-medication practice of the respondents and the independent variables (socio-demographic factors, sources of health information, access to health facilities, and perceived severity of symptoms).

Ethical Consideration. As this study involved human respondents and gathered data about their socio-demographic factors, perceived severity of symptoms, sources of health information, access to health services, self-medication practices and health-seeking behavior, considerations regarding informed consent, voluntary aspect of participation, and data and information confidentiality will be addressed. The study was exempted from ethical review by the University of the Philippines Manila Research Ethics Board on August 10, 2022, since the study did not involve identifiable data. In addition, permission to conduct the study from the community, particularly from the municipal mayor, was sought and was granted. Before the interview was conducted, the respondents completed the informed consent forms as an agreement of their voluntary participation in the study and confidentiality of all shared data.

3. Results

Socio-demographic Characteristics

A total of 407 respondents participated in the study. Around two-thirds of the respondents are within the age bracket of middle to old adults. Most respondents are female and belong to lower income classes (Income Class E and Income Class D based on NEDA classifications). Moreover, around one-third were high school graduates, and about one-half were employed in a non-health-related field.

Sources of Health Information

When experiencing ARI symptoms, the biggest number of the respondents preferred to consult medical doctors first (49%) (Table 1). Notably, none of the respondents preferred a midwife, a traditional practitioner, social media, and mass media as their primary source of health information.

Moreover, almost half of them did not seek health information regarding their symptoms during the pandemic (44%). Although none preferred traditional practitioners and social media as their primary source of health information, some respondents actually consulted these sources during the pandemic.

Table 1

Preferred and Actual Sources and Trust in Health Information Sources.

Health Information Sources	Level of Trust				
	A lot f (%)	**Some** f (%)	**A little** f (%)	**Not at all** f (%)	**Mean ± SD (Interpretation)**
Doctor	252 (61.916)	144 (35.381)	10 (2.457)	1 (0.246)	2.59 ± 0.55 (A lot)
Nurse	230 (56.511)	157 (38.575)	20 (4.914)	0 (0)	2.52 ± 0.59 (A lot)
Midwife	215 (52.826)	162 (39.803)	26 (6.388)	4 (0.983)	2.44 ± 0.66 (A lot)
Pharmacist	215 (52.826)	166 (40.786)	26 (6.388)	0 (0)	2.46 ± 0.61 (A lot)
Barangay Health Worker	78 (19.165)	239 (58.722)	84 (20.639)	6 (1.474)	1.96 ± 0.68 (Some)
Traditional Practitioner	29 (7.125)	73 (17.936)	236 (57.985)	69 (16.953)	1.15 ± 0.78 (A little)
Family and Friends	93 (22.85)	229 (56.265)	77 (18.919)	8 (1.966)	2.00 ± 0.71 (Some)
Social Media	7 (1.72)	59 (14.496)	164 (40.295)	177 (43.489)	0.74 ± 0.77 (Not at all)
Mass media	23 (5.651)	143 (35.135)	172 (42.26)	69 (16.953)	1.29 ± 0.81 (A little)
Internet Search	12 (2.948)	96 (23.587)	127 (31.204)	172 (42.26)	0.87 ± 0.87 (A little)

Note: *Norm*

Mean	Description
2.26-3.00	A lot
1.51-2.25	Some
0.76-1.50	A little
0.00-0.75	Not at all

The respondents have a lot of trust in healthcare professionals (doctors, nurses, midwives, and pharmacists), some trust in barangay health workers and their family and friends, little trust in traditional practitioners and mass media, and no trust in social media.

Access to Health Services

Overall, the respondents have good access to health services (Table 2). Health services and facilities that are available in the community. In terms of accessibility, the respondents perceived that the distance and travel time from their house to a health facility is appropriate. Also, getting to and from the health facility is easy, according to the respondents. However, they appeared to have poor availability and accessibility of telemedicine platforms.

Table 2

Access to Health Services

Access to Health Services	Mean ± SD	Interpretation
Availability		
Health services provide for healthcare needs	4.189 ± 0.789	Good
Facilities provide for healthcare needs	4.108 ± 0.755	Good
Telemedicine platforms are available	2.531 ± 1.275	Poor
Accessibility		
Distance is appropriate	4.261 ± 0.8	Excellent
Travel time is appropriate	4.312 ± 0.715	Excellent
Getting to and from the center is easy	4.337 ± 0.715	Excellent
Telemedicine platforms are easily accessible	2.484 ± 1.181	Poor
Overall	3.746 ± 0.89	Good

Note: *Norm*

Mean	Description
4.20-5.00	Excellent
3.40-4.19	Good
2.60-3.39	Fair
1.80-2.59	Poor
1.00-1.79	Very Poor

Perceived Severity of Symptoms

The mean (±SD) symptom severity score was 5.042 (±2.605) out of a maximum severity score of 24. The most common symptoms were cough, headache, nasal congestion, fever, and sore throat. The median severity rating for each symptom when present was ‘mild.’

Self-Medication Practices

The prevalence of self-medication among those who had perceived themselves to have an upper respiratory tract infection was 85.01%. Cough, fever, and headache were the most common symptoms where self-medication was used. Cough medicines and analgesics were the respondents’ most frequently reported medications used. However, it is notable that there are respondents who self-medicated antibiotics, mostly amoxicillin, for their respiratory symptoms.

Factors Affecting Self-Medication Practices

Perceived severity of symptoms, preferred source of health information, actual source of health information, and access to health services were found to be significantly associated with self-medication from the results of bivariate logistic regression. Meanwhile, results of multivariate logistic regression revealed the perceived severity of symptoms, actual source of health information, and access to health services as important predictive factors for self-medication.

The magnitude of association between the independent variables and covariates and the dependent variables using the bivariate and multiple logistic regression analyses reveal that estimates for the odds ratios slightly attenuated for most of the variables when all predictors were included in the logistic regression model. This implies that the combination of covariates has a preventive effect on the

possibility of practicing self-medication. Table 3 shows the bivariate and multivariate logistic regression estimates.

Table 3

Bivariate and Multivariate Logistic Regression Model Estimates.

Variables	Bivariate logistic regression		Multivariate logistic regression	
	Odds Ratio (95% CI)	p-value	Odds Ratio (95% CI)	p-value
Age	0.985 (0.969 - 1.003)	0.0954	0.995 (0.974 - 1.016)	0.63
Sex				
Male	*reference*		*reference*	
Female	1.145 (0.634 - 2.066)	0.653	1.319 (0.686 - 2.535)	0.407
Household Monthly Income				
Below 8k	*reference*		*reference*	
8k to 15k	0.849 (0.432 - 1.667)	0.634	0.667 (0.312 - 1.427)	0.296
15k and Above	1.207 (0.346 - 4.214)	0.768	1.070 (0.259 - 4.420)	0.925
Highest Educational Attainment				
No education/Primary	*reference*		*reference*	
Secondary/Technical-Vocational	0.850 (0.422 - 1.714)	0.65	0.804 (0.354 - 1.823)	0.601
Tertiary/Higher	1.235 (0.562 - 2.715)	0.599	0.989 (0.373 - 2.626)	0.983
Occupation				
Not Working	*reference*		*reference*	
Working	1.088 (0.629 - 1.883)	0.764	1.319 (0.719 - 2.421)	0.371
Perceived Severity of Symptoms	1.204* (1.062 - 1.366)	0.0037	1.211* (1.062 - 1.382)	0.00431
Preferred Source of Health Information				
Health Practitioners	*reference*		*reference*	
Family/Friends/Online/Print Media	2.451* (1.065 - 5.640)	0.035	1.896 (0.739 - 4.867)	0.183
None	4.387* (1.320 - 14.58)	0.0158	2.875 (0.771 - 10.73)	0.116
Actual Source of Health Information				
Health Practitioners	*reference*		*reference*	
Family/Friends/Online/Print Media	3.742* (1.272 - 11.01)	0.0165	2.725 (0.849 - 8.742)	0.092
None	2.455* (1.351 - 4.458)	0.0032	2.095* (1.050 - 4.181)	0.0359
Trust in Sources of Health Info: Health Practitioners				
A lot	*reference*		*reference*	
A little/Some	1.266 (0.706 - 2.271)	0.429	1.148 (0.586 - 2.250)	0.687
Trust in Sources of Health Info: Family/Friends/Online/Print Media				
A lot	*reference*		*reference*	
A little/Some	0.616 (0.308 - 1.236)	0.173	0.600 (0.277 - 1.298)	0.195
Access to Health Services	2.568* (1.413 - 4.665)	0.002	2.317* (1.206 - 4.450)	0.0116
Constant			0.0890 (0.00402 - 1.969)	0.126

Note: * - p<.05

4. Discussion

Sources of Health Information. Results show that medical professionals, rather than the media or social media, were the most favored source of health information. This runs counter to a research by Superio et al. [15], which found that college students primarily and preferentially sought information on COVID-19 from television or mass media because they thought it was more dependable and could provide timely information. The negative effects of social media, such as information overload and obsolete, contradictory, and unreliable sources of information, may be the reason why people do not favor social and mass media [16].

Most respondents did not seek health information when they experienced respiratory symptoms followed by medical doctors. People's health, financial situation, and way of life have all been significantly impacted by the Covid-19 pandemic worldwide. This may have affected their behavior of seeking health information. Demographics, including age, gender, education, race, ethnicity, and social position, are important components of information-seeking behavior according to the Comprehensive Model of Information Seeking (CMIS) and the Risk Information Seeking and Processing (RISP) models [17].

A lot of trust in doctors, nurses, midwives, and pharmacists is expected, given that medical professionals are supposed to be experts in their respective professions. This confirms the findings of Hesse et al. [12] that healthcare providers are the most trusted source of health information.

Access to Health Services. The respondents claimed they have good access to health services in the municipality. The RHU is located at the center of the municipality. This distance is still very accessible and within a reasonable distance from the homes of the respondents. Furthermore, the RHU has been implementing Project Salun-at by the Department of Health to provide healthcare services in the barangays.

On availability, the respondents divulged a good availability of health services and facilities in the community but poor availability of telemedicine services. A rural health unit (RHU), an infirmary hospital, doctor's clinics, and pharmacies are available in the municipality, providing the basic healthcare needs in the community. There are two hospitals located in the neighboring municipalities providing a broader range of specialty services to handle more complex cases. Furthermore, the municipality is an adopted municipality of a university in the province that provides healthcare extension services.

The perceived poor availability of telemedicine could be due to low awareness of the community about this service. Although telemedicine services were available in the Philippines even before the pandemic, their full potential was realized until the pandemic.18 In response to the Covid-19 pandemic, many healthcare facilities established telemedicine platforms as an alternative to providing health services, which are more convenient and accessible for patients and have more benefits for rural health [19].

Jercich [20] showed that rural areas, particularly in high-poverty areas, used telemedicine at a lower rate than urban areas showing the digital divide that must be addressed to ensure widespread access to virtual care. Lack of access to gadgets, technological illiteracy, low cellular reception, poor internet connectivity, and a doctor shortage are barriers to rural telemedicine [18].

Perceived Severity of Symptoms. Generally, the respondents felt only mild respiratory symptoms suggesting that most might have only experienced common colds, and few suffered from influenza. Colds are typically mild and resolve on their own within a week, while influenza is considered more severe [21]

Self-Medication Practices. Compared to the predicted worldwide prevalence rate of self-medication (44.78%), the study's high prevalence of self-medication is greater [22]. However, anywhere in the globe, any substantial amount of self-medication (>50%) is probably dangerous for one's health [23].

The respondents opted to self-medicate because their symptoms were too mild to require a medical consult, similar to the findings of Patrick & Badyal [24]. It is also because they experienced similar symptoms in the past, medicines were available in their homes, and they lacked time to consult a health practitioner. Those who practiced self-medication mostly were those with fever, headache, and cough symptoms [23]. Most adolescents self-medicated antipyretics, antitussives, and analgesics [25]. Self-medication of antibiotics in the study may be due to their non-compliance to the duration of their treatment and the storage of any remaining antibiotics at home for future use. Participants who kept antibiotics in their homes were more likely to use them for self-medication [26].

Factors Affecting Self-Medication Practices. Perceived symptom intensity is one important predictor of self-medication. This result is in line with the health belief model, which holds that self-medication behavior is influenced by how severe symptoms are perceived. Self-medication is more common among those whose perceived severity increases. This is in contrast to earlier research showing a lower likelihood of self-medication among individuals with higher perceived severity [27]. Nonetheless, most respondents thought their respiratory symptoms were minor and did not necessitate a trip to the doctor.

Another significant predictive factor for self-medication is the actual source of health information. Respondents who obtained health information from family/friends/online/print media and had no actual health information source are more likely to self-medicate than those who consulted health practitioners. This may be due to being influenced by family and/or friends and lacking time to visit health professionals. According to the Lay Consultation Theory by Freidson (1970) cited by Onuegbu [28], informal social networks frequently serve as “lay consultants” to people dealing with illness or health issues affecting health-seeking behaviors. However, poor communication of advice results in poor health-seeking behaviors. Furthermore, most of those who self-medicated did not seek health information and just relied on their previous experience with their current symptoms.

Lastly, access to health services is a significant predictive factor for self-medication. Those with increased access to health services are more likely to self-medicate. Chautrakarn et al. [4] claimed that one important reason for self-medication is the ease of access to pharmacies. To save time and money and avoid the stigma, they avoid doctor’s clinics and hospitals and directly go to pharmacies to buy medicines opting to self-medicate.

Although health services were highly accessible, financial access and fear of potential stigma were found to be major barriers to accessing these health services, leading them to practice self-medication. Access to these health facilities still depends on people’s ability to pay. Although household out-of-pocket payments (OOP) have been decreasing, they still account for 41.5% of the total health expenditure in the Philippines [29]. The respondents may still be suffering from the economic burden

brought on by the pandemic. Previous studies cited by Bakhtiar et al. [27] reported that the high costs of visiting doctors were among the most important barriers to the proper use of medications.

Another reason why the respondents self-medicated was a lack of time. Self-medication is more common among individuals who work than among those who do not. Amuzie et al. [30] emphasized that during the Covid-19 outbreak, the majority of respondents stated that one of the reasons they self-medicated was fear of stigmatization. Stigmatization is a significant obstacle to pandemic control in the context of COVID-19 and is known to have an adverse effect on an individual's general well-being by decreasing health-seeking behavior.

5. Conclusions and Recommendations

The respondents preferred to get health information from medical doctors but did not actually seek information regarding their health. They expressed a lot of trust in healthcare professionals. Overall, health services are highly accessible to the community. However, they have poor access to telemedicine services. Meanwhile, the respondents generally experienced mild respiratory symptoms. Self-medication is highly prevalent among the respondents. Among those who self-medicated, some used antibiotics. Perceived severity of symptoms, actual source of health information, and access to health services are important predictive factors for self-medication.

The study findings may serve as a bases for the local government unit in crafting different health promotion and education initiatives on self-medication, antibiotic awareness, and telemedicine. Further studies may be conducted in a wider area to make the findings more generalizable.

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