

# A cross-sectional study of the prevalence and factors associated with self-medication among patients at the out-patient clinic of the department of dermatology in Rizal Medical Center

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## ABSTRACT

**INTRODUCTION** The trend of self-medication practices is increasing worldwide especially in developing countries like the Philippines. If inappropriately practiced, this can lead to deleterious effects. Despite this, literature available in this area are limited.

**OBJECTIVES** The primary objective of this study was to determine the prevalence and factors that contribute to self-medication practices among dermatology patients in the out-patient clinic of a tertiary government hospital.

**METHODS** An analytical cross-sectional study was conducted from December 2020 to April 2021 in an out-patient dermatology clinic of Rizal Medical Center using a self-administered questionnaire. Descriptive statistics were used to summarize participant characteristics while univariate binary logistic regression analysis was used to determine possible factors associated with self-medication.

**RESULTS** The practice of self-medication was prevalent in 88.70% of the participants. The most common facilitators for self-medication were recommendation by family or friends (49%) and having a previous prescription (39%). The most common medicines utilized were topical steroids (18%), combination topical medication (16%), and anti-acne preparations (10%). On univariate analysis, the likelihood of self-medication was almost four-fold among those with a monthly income of less than PHP 9,000 compared to those who had a higher monthly income.

**CONCLUSION** There is a high prevalence of self-medication among patients with dermatologic conditions. Patients with low monthly income were almost four times more likely to self-medicate.

**KEYWORDS** self-medication, self-care, dermatology

## INTRODUCTION

The World Health Organization (WHO) defines self-care as a broad concept that refers to actions people practice to maintain health, prevent diseases, and deal with illnesses. These activities are done individually or with the help of professionals to maintain good hygiene, nutrition, and lifestyle. WHO noted an increasing trend in self-care practices among individuals influenced by lifestyle, easy access to medicines, public health, and socioeconomic and environmental factors. Self-medication, an element of self-care, is defined as the use of medicine by individuals to treat self-recognized illness or symptoms. Socioeconomic factors which include improved educational levels and greater access to information increases an individual's interest in personal health thus making them likely to self-medicate. Easy access to medications without the need for a prescription also increases the likelihood of

self-medication. When appropriately practiced, responsible self-medication becomes economical especially in countries with limited resources as it results to reduction in the load of medical services.<sup>1</sup> However, when inappropriately practiced, this leads to several possible deleterious effects.<sup>2,3</sup> These include wastage of resources, increased chances of microbial resistance to antibiotics, adverse drug reactions, and prolonged morbidity.<sup>4</sup>

Self-medication is reported to be practiced worldwide especially in developing countries because most drugs are available over-the-counter without prescription. The prevalence of self-medication practices in the Southeast Asia was reported at 43% compared to 3% in Northern Europe.<sup>3,5</sup> Similarly, a review focusing on the prevalence of this practice on skin diseases showed that a larger number of individuals self-medicate in developing countries such as

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Brazil and those in the African continent.<sup>6</sup>

Although it is common to encounter patients in dermatology clinics who reported to have self-medicated, studies that investigate the prevalence and factors that contribute to self-medication practices among dermatology patients are limited. This study aimed to determine the prevalence and factors associated with self-medication practices among dermatology patients.

## **METHODOLOGY**

### **QUESTIONNAIRE CONSTRUCTION AND PREPARATION**

The Andersen model of health service utilization is a framework that identifies factors that may facilitate or impede access to medical care. This model theoretically associates three (3) domains of individual characteristics to self-care practices including medicine use: predisposing, enabling, and needs factors. No variables are specified to measure these factors resulting to a great diversity of variables utilized in studies to explain health-care practices and utilization. Our questionnaire was constructed based on this model and were arranged according to these domains. Predisposing factors are the patient's sociodemographic profile including age, gender, educational attainment, and employment status. Enabling factors include both community and personal resources such as their monthly income and address. Need factors, which were previously considered as the most powerful predictor of health service, refers to the perceived severity of an illness. We used duration of the illness prior to consultation to evaluate this factor.<sup>7,8,9,10</sup>

The questionnaire consisted of three (3) main parts: predisposing factors, enabling factors, and need factors. Patients were also asked of their source of knowledge. The questionnaire was available in both English and Filipino language. The questionnaire was pre-tested by 10 participants through purposive sampling followed by cognitive debriefing.

### **STUDY DESIGN AND POPULATION**

An analytical cross-sectional study was conducted among patients of the Department of Dermatology of Rizal Medical Center to determine the factors associated with self-medication. All patients aged 18 years old and above seen at the out-patient clinic or via teledermatology who consented to participate in the study were included. This study excluded individuals who were not able to speak or understand English or Filipino.

The minimum number of patients was determined based on the anticipated proportion of 50%. At confidence level of 95%, power of 80%, and margin of error of 10%, the required minimum number of patients was 97.

### **DATA COLLECTION**

An approval of the Institutional Review Board of the hospital was obtained prior to data collection. Participants seeking consult at the dermatology out-patient clinic or via teledermatology

from December 2020 to April 2021 were invited to participate in the study. Informed consent was obtained for all participants who agreed to participate. A self-administered structured questionnaire, in English and Filipino, with 10 items was used to collect data. For participants seen via teledermatology, both consent forms and self-administered questionnaires were given via an online form.

The primary outcome assessed were the prevalence of self-medication practice and the factors associated with self-medication. These factors were theoretically grouped into three domains based on the Anderson framework of health utilization. Predisposing factors refers to the age, gender, educational attainment, and employment status. Enabling factors include monthly income and address. Need factors refers to the duration of the illness prior to consultation.

### **STATISTICAL ANALYSIS**

Descriptive statistics were used to summarize the general and clinical characteristics of the participants. Frequency and proportion were used for nominal variables, median and range for ordinal variables, and mean and standard deviation for interval/ratio variables.

Independent T-test, Mann-Whitney U test and Fisher's Exact/Chi-square test was used to determine the difference of mean, median and frequency between groups, respectively. Odds ratios and the corresponding 95% confidence intervals from binary logistic regression was computed to determine the association between patient profile and self-medication.

All valid data were included in the analysis. Missing data were neither replaced nor estimated. Null hypothesis was rejected at 0.05 $\alpha$ -level of significance. STATA 15.0 was used for data analysis.

## **RESULTS**

### **SOCIO-DEMOGRAPHIC PROFILE OF THE RESPONDENTS**

Data from 141 dermatology patients were analyzed (Table 1). Most patients were between 18-35 years of age (67%), female (75%), attained tertiary education or higher (62%), and were employed/self-employed (57%). More than half of patients had a monthly income of less than PHP 9,000 (52%) and had their skin condition for more than one month prior to consultation (53%). The reported prevalence of self-medication was by 88.70% (95% CI = 82.20% to 93.40%).

The most common facilitators for self-medication were the recommendation by family members or friends (49%) and having a previous prescription (39%) (Table 2). Less common prompts cited were online information or social media (4%), sales recommendation (3%), and advertisement (0.80%). Majority of the products used without prescription were topical medications (86%), and the top products utilized were topical steroids (18%), combination topical medications (anti-fungal, antibiotic,

**Table 1.** Socio-demographic profile of Dermatology patients (n=141)

	Total (n=141)	Self-medication (n=125)	No self-medication (n=16)
	Mean ± SD; Frequency (%)		
<b>Age</b>	<b>33.95±13.67</b>	<b>34.81±14.15</b>	<b>27.25±5.80</b>
More than 70 years	2 (1.42)	2 (1.60)	0
35-69 years	44 (31.21)	42 (33.60)	2 (12.50)
18-35 years	95 (67.38)	81 (64.80)	14 (87.50)
<b>Sex</b>			
Female	106 (75.18)	95 (76.00)	11 (68.75)
Male	35 (24.82)	30 (24.00)	5 (31.25)
<b>Education level</b>			
Primary school	4 (2.84)	4 (3.20)	0
Secondary school	49 (34.75)	42 (33.60)	7 (43.75)
Tertiary school	77 (54.61)	69 (55.20)	8 (50.00)
Post graduate	11 (7.80)	10 (8.00)	1 (6.25)
<b>Employment</b>			
Employed/Self-employed	81 (57.45)	68 (54.40)	13 (81.25)
Unemployed	60 (42.55)	57 (45.60)	3 (18.75)
<b>Monthly income, Php</b>			
<9,000	74 (52.48)	70 (56.00)	4 (25.00)
9,000-18,000	33 (23.40)	26 (20.80)	7 (43.75)
18,000-38,000	28 (19.86)	23 (18.40)	5 (31.25)
>38,000	6 (4.26)	6 (4.80)	0
<b>Duration of dermatologic disease before consultation</b>			
<1 week	21 (14.89)	20 (16.00)	1 (6.25)
1-2 weeks	20 (14.18)	17 (13.60)	3 (18.75)
3-4 weeks	25 (17.73)	24 (19.20)	1 (6.25)
1-3 months	17 (12.06)	12 (9.60)	5 (31.25)
>3 months	58 (41.13)	52 (41.60)	6 (37.50)

steroid) (16%), anti-acne preparations (10%), and topical antibiotics (10%).

### FACTORS ASSOCIATED WITH SELF-MEDICATION AMONG DERMATOLOGY PATIENTS

On univariate analysis, the likelihood of self-medication was almost four-fold (cOR=3.82, 95% CI=1.17 to 12.49, p=0.027) among those with a monthly income of less than PHP 9,000 compared to those who had a higher monthly income (Table 3). Other patient characteristics were not found to have significant association with odds of self-medication for dermatologic conditions.

### DISCUSSION

In our study, the prevalence of self-medication among dermatology patients was estimated to be 88.70% which is higher than previous studies that reported self-medication among patients with dermatological conditions. Kombaté et al reported a 67.65% prevalence of self-medication for skin diseases among 711 dermatology patients in West Africa. According to the authors, however, the legitimacy and honesty of the respondents

**Table 2.** Facilitators of self-medication and medicines used (n=125)

	Frequency
<b>Event that evoked the use of medication</b>	
Recommended by family and friends	61 (49.19%)
Previous prescription	42 (33.87%)
Internet/online search/social media	6 (4.39%)
Sales personnel recommendation	4 (3.23%)
Advertisement	1 (0.81%)
<b>Medications</b>	
Oral	18 (14.40%)
Topicals	107 (85.60%)
<b>Specific products used</b>	
Topical steroids	22 (17.74%)
Combination topical medications (anti-fungal, antibiotic, steroid)	20 (16%)
Anti-acne preparations	13 (10.04%)
Topical antibiotics	12 (9.6%)
Emollients	9 (6.38%)
Antihistamine	8 (5.67%)
Topical antifungal	8 (5.67%)
Medicated soap	7 (5.60%)
Anti-bacterial/anti-fungal ointment	6 (4.80%)
Pain and itch relieving ointment	6 (4.80%)
Oral steroids	4 (3.23%)
Methotrexate	2 (1.42%)

may have caused the lower prevalence rate of self-medication, and this may be rooted from their fear and feelings of shame to divulge their self-medication practices.<sup>11,12</sup> Other studies reported prevalence rates of self-medication ranging from 20% to 50%. In the study by Khajuria et al in India, 42% self-medicated.<sup>13</sup> Despite the varying prevalence reported, self-medication remains a widespread practice affecting developing countries.

It is also notable that the two (2) most common factors that lead to self-medication in our study were recommendations of family members and friends (49.19%) and the use of a previous prescriptions (33.87%). This is consistent with other studies that showed that the reuse of previous prescriptions, sharing medications, and recommendations of family and friends are frequent motivators of self-medication. Family members and friends who experienced favorable response to a medication could share or recommend that medication to others. It is also a common practice to store previously prescribed medications at home encouraging the practice of self-medication.<sup>6,13,14</sup> Our findings highlight the importance of addressing these motivating factors during consultation with our patients.

Interestingly, our results also showed that the likelihood of practicing self-medication for skin conditions was significantly associated with monthly income. In particular, the odds of practicing self-medication was almost four (4) times higher among those with low monthly income (less than PHP 9,000 per month) than those with higher monthly salary. This is consistent with the findings of a study by Aziz et al. showing that low monthly income prompts self-medication because the cost of self-medi-

ating for a skin condition is perceived to be more affordable.<sup>15</sup> Patients with low monthly income encounter difficulties in accessing appropriate and adequate medical care making them seek a more affordable alternative to manage their dermatological condition, thus leading to self-medication.<sup>6,16</sup> Although we did not further explore the underlying mechanism, it is also possible that our patients who had low monthly income initially self-medicated because of their perception that seeking treatment for their condition is more expensive than self-medicating. This emphasizes the need to explore potential mechanisms, policies, and programs that could assist financially challenged dermatology patients in seeking access to medical consult, therapy, and healthcare facility.<sup>16</sup> In contrast, several studies, most of which were conducted in university settings, identified a positive association of higher monthly income and the likelihood of self-medication which may be due to the higher purchasing power of patients with higher income.<sup>17,18,19</sup> This shows that the factors that lead to self-medication may vary according to societal context.

Other variables including age, educational attainment, employment status, and duration of dermatologic disease before consultation, were not significantly associated with self-medication practices among our respondents. These findings contrast with the findings of several studies done in European, Asian, and African countries suggesting that factors such as older age, female gender, lower educational attainment, unemployment status, and longer duration of dermatologic disease increases the likelihood of self-medication. Although health and cultural beliefs as well as financial perspectives may account for this difference, our study is a single-center study which may not reflect the general Filipino population and therefore larger nationwide studies should be conducted on the association of these socio-demographic characteristics with self-medication practices of Filipinos.<sup>12,17,18,20</sup>

Despite the presented results, this study has certain limitations. First, the study employed a cross-sectional study design thus, temporality may be a potential issue. Second, the questionnaire was not validated, and it did not explore on all the possible patient characteristics of the Andersen's health service utilization model. Third, the study was conducted during the coronavirus disease 2019 (COVID-19) pandemic wherein there is a decrease in out-patient dermatology consultations in the country.<sup>21</sup> This may have contributed to the high prevalence of self-medication practices either because non-urgent dermatological conditions were not prioritized in health facilities at this time or because patients were reluctant to go to the hospital for fear of contracting COVID-19. Lastly, a self-administered questionnaire was utilized posing a potential for recall bias.

**Table 3.** Univariate binary logistic regression analysis of the factors associated with self-medication among Dermatology patients (n=141)

	Crude Odds Ratio (95% CI)	P
<b>Age</b>		
18-35 years	Reference	-
35-69 years	3.63 (0.79 to 16.72)	.098
More than 70 years	-	-
<b>Sex</b>		
Male	Reference	-
Female	1.44 (0.46 to 4.47)	.529
<b>Education Level</b>		
Post graduate	Reference	-
Tertiary school	0.87 (0.10 to 7.65)	.894
Secondary school	0.60 (0.07 to 5.45)	.650
Primary school	-	-
<b>Employment</b>		
Employed/Self-employed	Reference	-
Unemployed	3.63 (0.99 to 13.38)	.052
<b>Monthly income, Php</b>		
≥9,000	Reference	-
<9,000	3.82 (1.17 to 12.49)	.027
<b>Duration of dermatologic disease before consultation</b>		
<1 week	Reference	-
1-2 weeks	0.28 (0.03 to 2.98)	.294
3-4 weeks	1.20 (0.07 to 20.43)	.900
1-3 months	0.12 (0.01 to 1.15)	.066
>3 months	0.43 (0.05 to 3.83)	.452

We limited the recall period to minimize this, but self-reported questionnaires may still result to either under-reporting or over-reporting of data.

## CONCLUSION

Our study showed a high prevalence of self-medication among dermatology patients motivated by recommendation of family members and friends and using previous prescriptions. In addition, low monthly income was significantly associated with self-medication, increasing its likelihood by almost four (4) times.

The results of this study has two (2) clinical implications. First, having the knowledge that self-medication of dermatological conditions is a highly prevalent practice among Filipino patients, clinicians and health policymakers should explore potential means and approaches to correct and address the misuse of medications to avoid preventable adverse events. Second, noting that low income may contribute to self-medication practices, stakeholders may need to explore potential mechanisms, policies, and programs to educate and extend assistance to patients with financial constraints in seeking access to appropriate healthcare facilities.

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