Knowledge, Attitude, and Practices of Self-medication in Time of COVID-19 Pandemic Among Residents of Quezon City

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Abstract: Self-medication has been defined as taking a drug to treat oneself with self-diagnosed conditions without consulting a physician (Montastruc et al. 2016). The onset of the COVID-19 pandemic resulted in a growing number of people practicing self-care (Sanofi Philippines, 2020). The study's goal is to assess the level of knowledge, attitude, and practices of the residents of Quezon City in relation to self-medication during the COVID-19 pandemic. The researchers conducted a quantitative descriptive study. Data were collected through an online survey using Google Forms. Descriptive and inferential statistics were employed to reflect the respondents' KAP levels and socio-demographic characteristics. The socio-demographic variables were associated with KAP levels using the Chi-square test of independence in SPSS software version 21. The findings of the study show that most of the respondents from Quezon city are knowledgeable, have positive attitudes and practiced self-medication in these trying times of the COVID-19 pandemic. Their socio-demographic profiles were not significantly related to their knowledge, attitude, and self-medication practices, having a p-value greater than 0.05.

Keywords: Self-medication; COVID-19; Quezon City Residents; Drugs; Diseases

1. INTRODUCTION

1.1 Rationale

Self-medication refers to taking medicines to alleviate illnesses or symptoms that an individual has self-diagnosed, as well as the ongoing use of a prescribed medication for chronic or recurrent disorders (Limaye et al. 2017). According to the study by Beyene (2017), over-the-counter (OTC) medications, as well as those acquired by resubmitting a used prescription, being influenced by family or friends, or having medicines stored at home, were frequently used in self-medication.

In the study of Shusheela et al. (2018), it was mentioned that gender, age, income, education, medical knowledge, satisfaction, experience, and the seriousness of an individual's illnesses all have an impact on self-medication. Furthermore, widespread ads from various pharmaceutical companies, the internet, and even the media all play a role in influencing people to self-medicate (Ansari, 2018).

While the world struggles to combat coronavirus illness (COVID-19), a virus discovered in Wuhan, China, in December 2019 (Centers for Disease Control and Prevention [CDC], 2020), it is assumed that the majority of people are self-medicating minor illnesses such as coughs and colds due to limited access to hospitals and clinics. As of 18 May 2021, Quezon City has the most COVID-19-positive cases in the National Capital Region, which was selected as the study's

location (Official Website of Quezon City Local Government, 2021).

      Health policymakers can utilize the results of the study as a reference to intensifying the promotion of awareness on the proper use of medication. Educating the public about the rational use of medication is essential to increase health-related precautionary behaviors and counter false information or misbeliefs of people.

1.2 Research Objectives

      The study sought to determine the level of knowledge, attitude, and practices of the residents of Quezon City in relation to self-medication during this time of the COVID-19 pandemic and its association with their socio-demographic profiles. Specifically,

1) To describe the respondents' demographic profile in terms of:
   a. Sex
   b. Age
   c. Marital status
   d. Total number of family members living together
   e. Educational attainment
   f. Monthly income
2) To assess the level of knowledge of the residents of Quezon City about self-medication.
3) To assess the attitude of the residents of Quezon City about self-medication.
4) To assess the practices of the residents of Quezon City regarding self-medication.
5) To determine the relationship between the socio-demographic profiles of the respondents and their KAP levels.

2. METHODOLOGY
2.1 Research Design

      The researchers utilized a quantitative descriptive study.

2.1.1 Research method.

      The study employed convenience sampling in gathering respondents, and data were collected from the chosen locale through an online survey. The study's sample size was determined using Slovin's formula with a confidence level of 95% and a p-value of 0.5. A total of 400 respondents was needed based on the computation. The researchers used questionnaires that had been adapted, translated, and organized to fit the study's aims.

2.1.2 Research Setting.

      The study takes place in Quezon City, Metro Manila's largest city. Based on the Quezon City Local Government website, the total number of residents as of 2015 is 2,936,116. It is also the site of the highest COVID-19 cases in the National

Capital Region.

2.1.3 Research Respondents.

The study population consisted of Quezon City residents who volunteered to participate in the research.

2.1.3.1 Respondent Criteria.

An inclusion criterion was set before the data collection process from the respondents. The study only included respondents currently residing in Quezon City, with an email address, a social media account, and 18 years old and above.

2.1.4 Research Instrumentation.

An online survey was employed in the study utilizing Google Forms that was connected to the respondent's active email address. The questionnaire was written in English and translated into Tagalog. The survey questionnaire's link was distributed to each respondent's social media account.

2.1.4.1 Survey questionnaire components.

The survey questionnaire was adapted from several KAP research, including: "Knowledge, Attitudes and Practices on Medication Use and Safety Among Saudi People: A Public-based versus an Internet-based Survey in Taif; Kingdom of Saudi Arabia" authored by Elbur et al. (2016); (2) "Knowledge, Attitude and Practices Regarding Self-medication in Rural Community of Lahore, Pakistan" by Javeed et al. (2019), and (3) "Self-medication during COVID-19 outbreak: a cross-sectional online survey in Dhaka City" by Nasir et al. (2020).

The first section of the questionnaire addressed the demographic profile of the respondents. The second was the knowledge section, composed of eleven (11) questions, followed by the attitude section, with five (5) questions. Lastly, the practice section also had eleven (11) questions.

2.1.5 Research Validation and Reliability.
2.1.5.1 Validation.

For readability, comprehensiveness, relevance of questions to the study, intended coverage, and clarity, the prepared survey questionnaire was subjected to face, and content evaluation by three (3) qualified specialists in the subject or field of the research.

The researchers revised and improved the questionnaire based on the expert's inputs.

2.1.5.2 Pilot Testing.

The researchers disseminated the online survey questionnaire to a few residents of Quezon City for pilot testing and obtained twenty-two (22) responses.

The researchers created a Facebook group page intended only for pilot testing to segregate respondents of the pilot testing from the final respondents of the study. The Facebook group had membership questions that respondents answered before they joined the group. In detail, it was composed of questions concerning the study's inclusion criteria for screening and approval of the researchers who can and cannot join the group. The respondents who participated in the activity gave their comments, suggestions, and concerns regarding the questionnaire and were used by the researchers in improving the final survey questionnaire.

2.1.5.3 Reliability.

The researchers employed the internal consistency reliability method using Cronbach's alpha in testing the survey questionnaire.

2.1.6 Data Gathering Procedure.

Initially, the researchers identified the total population of the chosen locale and computed the study's sample size, which is a minimum of 400 respondents. Before the data gathering proper, the manuscript was reviewed by the Institutional Ethics Review Committee (ERC) of the Trinity University of Asia.

The ERC's guidelines were followed to ensure that the study did not deliberately pose any risk to participants or infringe on their rights. The researchers employed a convenience sampling technique in gathering respondents and utilized an online survey using Google forms.

The pre-tested, structured online questionnaire comprised a brief study's background, objectives, and inclusion criteria. Informed consent for voluntary participation was also indicated with a declaration of confidentiality, anonymity, and a withdrawal letter. An instruction will prompt upon agreeing to the consent, including the survey questionnaire.

3. RESULTS AND DISCUSSION

The demographic profiles of the respondents are shown in the tables below, including gender, age, marital status, educational attainment, the total number of family members, and monthly income.

3.1 Demographic Profile of the Respondents and Related Details.

Table 1. Demographic Profile of Respondents in Terms of Gender

Gender	Frequency	Percentage (%)
Male	145	35.9
Female	259	64.1
Total	404	100

Table 1 above reveals the respondents' demographic profile regarding gender. It was shown that the majority who participated were *"Female,"* which is 64.1% (259); this is because Quezon City mainly comprises females whose total population is 1,986,925, compared to males who are only 954,413 (Philippine Statistics Authority [PSA], 2016).

Table 2. Demographic Profile of Respondents in Terms of Age

Age	Frequency	Percentage (%)
18-39 years old	325	80.4
40-49 years old	66	16.3
50-59 years old	10	2.5
60-70 years old	2	0.5
71-79 years old	1	0.2
Total	404	100

Table 2 shows that most respondents were "18-39 years old," accounting for 80.4 percent of the total (325). The least age group who participated in the study was *"71-79 years old,"* which only comprised 2%. In the study of Dilie et al. (2017), it was stated that the most of age group that practiced self-medication was 20 to 25 years old, which accounted for 82 percent of the participants in the study.

Table 3. Demographic Profile of Respondents in Terms of Marital Status

Marital Status	Frequency	Percentage (%)
Single	303	75
Married	91	22.5
Separated	6	1.5
Widowed	4	1
Total	404	100

Table 3 reveals that the majority of those who took part in the survey were "Single," accounting for 75% (303), and the fewest were "Widowed," accounting fo r 1%. (4). The findings showed similarity to the KAP study of Dilie et al. (2017), showing that 89.6% of the respondents are single.

Table 4. Demographic Profile of Respondents in Terms of Educational Attainment

Educational Attainment	Frequency	Percentage (%)
Elementary Graduate	2	0.5
Junior High School Graduate	5	1.2
Senior High School Level	9	2.2
Senior High School Graduate	39	9.7
College Level	212	52.5
College Graduate	133	32.9
Post Baccalaureate	4	1
Total	404	100

Table 4 above shows that most respondents attained "College Level" at 52.5% (212). On the other hand, the least who participated in the study reached *"Elementary Graduate."* According to Shusheela et al. (2018), educational attainment is one element that influences self-medication patterns. Self-medication is a common practice in large cities, particularly for people with a good educational background, as they believe they can manage diseases independently (Javed et al. 2019).

Table 5. Demographic Profile of Respondents in Terms of Total Number of Family Members

Total Number of Family Members	Frequency	Percentage (%)
1	10	2.5
2	25	6.2
3	66	16.3
4	125	30.9
5	78	19.3
6	40	9.9
7	33	8.2
8	12	3.0
10	4	1.0
12	1	0.2
13	2	0.5

15	2	0.5
Total	404	100

Table 5 above reveals that most respondents have a total family member "4" of 30.9% (125). According to Kassie et al. (2017), when a family member is ill, other family members may engage in self-medication out of sympathy; this is in line with the research finding that most respondents come from four-membered families, which is considered a large family.

Table 6. Demographic Profile of Respondents in Terms of Monthly Income

Monthly Income	Frequency	Percentage (%)
< Php 10,957	101	25.0
Php 10,957 to Php 21,914	88	21.8
Php 21,914 to Php 43,828	180	44.6
Php 43,828 to Php 76,669	26	6.4
Php 76,669 to Php 131,483	7	1.7
>Php 219,140	2	0.5
Total	404	100

Table 6 above shows that the income status of the respondents is varied. Most respondents earn between Php 21,914 and Php 43,828 monthly, followed by < Php 10,957. According to the 2018 PSA survey on average annual family income, the majority of the residents from the National Capital Region (NCR) receives around 250,000 - 499,999 amount of salary annually, consistent with the result of the study (Philippine Statistics Authority, 2018)

3.2. Knowledge, Attitude, and Practices of Self-Medication of the Respondents during the pandemic.

The following tables present the results of evaluating respondents' level of knowledge, attitudes, and practices on self-medication.

Table 7. Level of Knowledge of the Residents of Quezon City about Self-Medication

Statements	Weighted Mean	Std. Deviation	Verbal Interpretation
1. I understand the instructions for prescribing information about drugs during this Pandemic	3.73	0.45	Highly Knowledgeable

2. I know that self-medication is safe during this Pandemic	3.39	0.59	Highly Knowledgeable
3. I know that medicines can be taken during this pandemic if I feel similar symptoms to my previous disease condition	3.47	0.55	Highly Knowledgeable
4. I know that antibiotics should be taken only with a prescription from the doctor.	3.77	0.45	Highly Knowledgeable
5. I know that self-medication during this pandemic may cause a delay in diagnosis.	3.43	0.58	Highly Knowledgeable
6. I know that adverse drug reaction, such as side effects while practicing self-medication may occur during this pandemic.	3.47	0.59	Highly Knowledgeable
7. I know that taking medicine with food or drinks can affect the action of a drug	3.41	0.58	Highly Knowledgeable
8. I know that traditional medicines are not free of side effects.	3.41	0.62	Highly Knowledgeable
9. I know that medicinal side effects can include nausea, vomiting, and diarrhea.	3.48	0.61	Highly Knowledgeable
10. I know that wrong drug usage or administration may happen during this pandemic.	3.59	0.53	Highly Knowledgeable
11. I know that usage of incorrect drugs in a certain disease may happen during this pandemic.	3.54	0.54	Highly Knowledgeable
Overall	3.52	0.37	Highly Knowledgeable

Legend: "Unknowledgeable" (1.00-1.74), "Slightly Knowledgeable" (1.75-2.49), "Moderately Knowledgeable" (2.50-3.24), "Highly Knowledgeable" (3.25-4.00)

Table 7 indicates that all the statements were interpreted as "highly knowledgeable." The result is comparable to the study of Dilie et al. (2017), showing that participants also had a good level of knowledge, with 64% of the population considered knowledgeable about self-medication. The weighted mean is 3.52 ± 0.37, interpreted as "highly knowledgeable." Therefore, the respondents had a high knowledge of self-medication during the COVID-19 pandemic.

Table 8. Attitude of the Respondents towards Self-Medication during the Pandemic

Statements	Weighted Mean	Std. Deviation	Verbal Interpretation
1. I think self-medication during this pandemic is better compared to consulting a doctor for a prescription.	3.09	0.84	Agree
2. I think self-medication during this pandemic should be advised to peers.	2.98	0.79	Agree
3. I think it is important to ask a qualified healthcare professional such as a pharmacist or doctor before taking any drug during this pandemic.	3.59	0.49	Strongly Agree
4. Safety information about medication use is important before taking any drug during this pandemic.	3.60	0.52	Strongly Agree
5. I feel comfort from self-medication during this pandemic.	3.47	0.59	Strongly Agree
Overall	3.35	0.42	Strongly Agree

Legend: "Strongly Disagree" (1.00-1.74), "Disagree" (1.75-2.49), "Agree" (2.50-3.24), "Strongly Agree" (3.25-4.00)

Table 8 reveals the attitude of the respondents towards self-medication. The overall weighted mean is 3.35 ±0.42, interpreted as "strongly agree." This indicates that all respondents strongly agreed with all statements regarding their perspective on self-medication during the pandemic. In the study of Susheela et al. (2018), 98.5 percent of the participants have a good view of responsible self-medication, which is almost similar to the results of this study. Therefore, the respondents had a positive attitude toward self-medication during the COVID-19 pandemic.

Table 9. Current Practices of the Residents of Quezon City with Regards to Self-Medication during the Pandemic

Statements	Weighted Mean	Std. Deviation	Verbal Interpretation
1. Self-medication is my first choice whenever I feel sick during this Pandemic	3.56	0.67	Always

2.	I go to medical institutions such as clinics, hospitals, etc., to see a doctor during this pandemic when I am sick.	2.21	0.96	Seldom
3.	I prefer using herbal medicine during this pandemic.	2.04	0.93	Seldom
4.	I check the expiry date of the drugs I use to self-medicate during this pandemic.	3.64	0.54	Always
5.	I ensure the dose of a drug that I use to self-medicate during this pandemic is correct.	3.53	0.58	Always
6.	I prevent using further medication if the symptoms disappear during this pandemic.	3.41	0.69	Always
7.	I ask a community pharmacist for prescription medicine without a prescription during this pandemic.	1.86	1.06	Seldom
8.	I combine traditional herbs while taking medicine during this pandemic.	1.78	0.92	Seldom
9.	I try medicines according to my friends, relatives, and family members' suggestions during this pandemic.	3.31	0.70	Always
10.	During this pandemic, I consult a pharmacist whenever I obtain a specific or unusual dose form of medicine (e.g., nasal spray or suppository).	2.97	1.05	Often
11.	I check the medicine information before using it for self-medication during this pandemic.	3.63	0.59	Always
	Overall	2.90	0.37	Often

Legend: "Never" (1.00-1.74), "Seldom" (1.75-2.49), "Often" (2.50-3.24), " Always" (3.25-4.00)

Table 9 above shows the practices of the respondents toward self-medication. The overall weighted mean is 2.90 ±0.37, interpreted as "often." This suggests that the majority of responders self-medicate often during the COVID-19 pandemic. The result is consistent with the study of Susheela et al. (2018), in which 57.8% of the research respondents are irrational regarding their self-medication practice.

3.3. Relationship of the Respondent's Socio-Demographic Profiles and their KAP Levels.

The following tables present the relationship between the respondent's socio-demographic profiles and their KAP levels in self-medication using the chi-square test.

Table 10. Relationship between the respondent's knowledge and their socio-demographic profiles.

Profiles	Knowledge		
	Pearson Chi-Square	p-value	Remarks
Gender	1.923	0.382	Not Significant
Age	9.578	0.296	Not Significant
Marital Status	6.021	0.421	Not Significant
Educational Attainment	13.758	0.316	Not Significant
Total Family Members	32.008	0.127	Not Significant
Monthly Income	21.390	0.019	Significant

Note: "If the p-value is less than or equal to 0.05 level of significance, significant; otherwise, not significant"

Using a Chi-Square test, Table 10 illustrates the relationship between respondents' knowledge and their socio-demographic profiles regarding self-medication during the pandemic. It was revealed that only *"Monthly Income"* was found to be significant when compared to the respondents' knowledge with a p-value of 0.019. Other profiles such as *"Gender" (0.382), "Age" (0.296), "Marital Status" (0.421), "Educational Attainment" (0.316),* and *"Total Family Members" (0.127)* are found to be not significant based on the p-value.

The study's findings are similar to those of Albert et al. (2020), who discovered that monthly income is strongly connected to respondents' knowledge of self-medication. Still, gender, age, married status, educational level, and total family members are not included.

Table 11. Relationship between the Respondent's Attitude and Socio-Demographic Profiles.

Profiles	Attitude		
	Pearson Chi-Square	p-value	Remarks

Gender	0.537	0.911	Not Significant
Age	10.893	0.538	Not Significant
Marital Status	9.059	0.432	Not Significant
Educational Attainment	22.016	0.231	Not Significant
Total Family Members	29.175	0.783	Not Significant
Monthly Income	25.303	0.046	Significant

Note: "If the p-value is less than or equal to 0.05 level of significance, significant; otherwise, not significant"

Using a Chi-Square test, Table 11 reveals the association between the respondents' socio-demographic profiles and their attitude to self-medication during the pandemic. The result indicates that only "Monthly Income" was significant compared to the respondents' attitude having a p-value of 0.046. Other profiles such as gender, age, marital status, educational attainment, and total family members are not significantly related to the respondent's attitude.

Table 12. Relationship between the Respondent's Practice and Socio-Demographic Profiles.

Profiles	Practice		
	Pearson Chi-Square	p-value	Remarks
Gender	3.386	0.336	Not Significant
Age	18.303	0.107	Not Significant
Marital Status	21.078	0.012	Significant
Educational Attainment	22.640	0.205	Not Significant
Total Family Members	46.328	0.116	Not Significant
Monthly Income	23.938	0.066	Not Significant

Note: "If the p-value is less than or equal to 0.05 level of significance, significant; otherwise, not significant"

Using a Chi-Square test, Table 12 reveals the association between respondents' self-medication practices and socio-demographic profiles during the pandemic. The result shows that only *"Marital Status"* was significant compared to the respondents' practice having a p-value of 0.012. Other profiles, such as gender, age, educational attainment, total family members, and monthly income, are not significantly related to the respondent's practices.

In summary, respondents' monthly income was strongly associated with their knowledge and attitude, while marital status was significantly related to their self-medication practice.

4. CONCLUSION

The researchers found that the respondents have strong knowledge, a positive attitude, and frequently perform self-medication during the COVID-19 pandemic based on the study's overall findings. Also, the socio-demographic profiles of the respondents have no significant link with their KAP levels.

Furthermore, it is recommended that future researchers conduct a similar study covering more areas in the Philippines to have more data available regarding the topic. Healthcare professionals, policymakers, and officials must work hand in hand in promoting public awareness and countering people's false information/misbeliefs regarding self-medication.

5. ACKNOWLEDGMENTS

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