



(RESEARCH ARTICLE)



## Knowledge, Perception, and Practices towards the Use of Over-the-Counter Drugs Among CEU Manila students before and during COVID-19 pandemic

Patricia Carmen M. Berces <sup>1</sup>, Rogeliza Marie D. Campo <sup>1</sup>, Asiya A. Farouk <sup>1,\*</sup>, Ana Katrina L. Geografia <sup>1</sup>, Josephine Cayl M. Mellendrez <sup>1</sup>, Edeanne L. Meneses <sup>1</sup>, Anne Shane N. Oliver <sup>1</sup>, Joanna Marie D.R. Pelayo <sup>1</sup>, Gabrielle Raine L. Salomon <sup>1</sup>, Angelica C. Santo Domingo <sup>1</sup>, Raven Snyrrah B. Viloría <sup>1</sup>, Jan Karlo T. Ecalne <sup>1</sup>, Cecilia D. Santiago <sup>1,2</sup> and Mylene S. Andal <sup>1</sup>

<sup>1</sup> Centro Escolar University-Manila, School of Pharmacy, 9 Mendiola St., San Miguel, Manila 1008, Metro Manila, Philippines.

<sup>2</sup> The Graduate School, Centro Escolar University-Manila, 9 Mendiola St., San Miguel, Manila 1008, Metro Manila, Philippines.

GSC Biological and Pharmaceutical Sciences, 2023, 24(01), 329–333

Publication history: Received on 04 June 2023; revised on 19 July 2023; accepted on 21 July 2023

Article DOI: <https://doi.org/10.30574/gscbps.2023.24.1.0278>

### Abstract

The practice of self-management of symptoms through over-the-counter (OTC) drugs have long been present way before the COVID-19 pandemic and is a known “quick fix” for any discomfort. This research aims to assess the Knowledge, Perception, and Practices of the use of OTC drugs among CEU-Manila students before and during the COVID-19 pandemic. A quantitative descriptive cross-sectional correlational design was used as an approach to assess the respondent’s knowledge, perception, and practice. A random sampling method was used, and survey questionnaires were sent to 371 students of CEU Manila from both medical and non-medical programs. The research concluded that there is a ‘good knowledge’ of OTC drug use before and during the COVID-19 pandemic and had a ‘very positive perception’ before and during the COVID-19 pandemic. While utilization of OTC drugs by CEU-Manila students indicates ‘often engaged’ with a mean of 3.59 and 3.73. A p-value of 0.174 indicates no significant relationship between respondents’ knowledge before and during the pandemic. However, a significant relationship between perception and practices before and during the pandemic, with p-values of 0.001 and 0.000, respectively. The analysis showed an alpha value of below 0.05 for the perception and practice towards over-the-counter drug use, suggesting that the null hypothesis be rejected. Thus, based on the overall findings, this study claims that there is a satisfactory and correct knowledge, perception, and practices towards OTC drug use before and during the pandemic among the undergraduate students of CEU-Manila.

**Keywords:** OTC Drugs; Self-management; Self-medication; Health-Allied; Non-health Allied

### 1. Introduction

Over the counter (OTC) drugs can be sold directly without a prescription from a licensed physician, and availability of OTC drugs without restriction or regulation is one of the primary causes for its excessive use. The use of OTC medications was influenced by factors such as advertisements from televisions, radios, and billboards. Furthermore, no regulation was implemented in using OTC drugs in the Philippines, despite the growing use of OTC drugs for the self-management of symptoms (Melencio et al., 2016) [5].

*Self-medication* is termed as “the use of pharmaceutical goods by the consumer to address self-diagnosed problems or symptoms” in the context of chronic or recurring illnesses (Araia et al., 2019) [1]. Self-medication, formerly seen as

\* Corresponding author: Asiya A. Farouk

unnecessary, is now viewed as critical to self-care (Bekele et al., 2020) [3]. Despite its numerous benefits, improper drug usage can result in significant health problems, including death.

Due to the restrictions brought upon by the COVID-19 pandemic, people became hesitant to see doctors in hospitals or clinics (Tominaga, 2021) [8]. The internet became their online consultant by searching for medications available at home or can be bought in their nearby drug stores. Many students turn to OTC drugs to alleviate self-diagnosed symptoms, hence, interventions such as programs regarding risks of self-medication practice and increasing the control and monitoring of drug sale should be done (Aryankhesal et al., 2020) [2]. Therefore, Pharmacists have an important role in regulating and controlling pharmaceuticals through patient counseling by providing guidance and advice to customers (Ravichandran & Basavareddy, 2016) [7].

This study aims to know the knowledge, perception, and practices towards using Over-the-Counter drugs Among CEU Manila Students before and during COVID-19 Pandemic.

---

## **2. Materials and Methods**

### **2.1. Study Design**

A quantitative descriptive cross-sectional correlational design was used as numerical data and scales that were gathered from the respondents to provide results for the study. Descriptive research design was conducted to describe and interpret the knowledge, perception, and practice towards the use of over-the-counter (OTC) drugs. This research also used correlational study design to analyze the magnitude or relationship of the variables (Curtis, 2016) [4]. A cross-sectional study design, a type of correlational research, was used as participants were selected based on the inclusion and exclusion criteria set for the study (Oso & Onen, 2009) [6].

### **2.2. Respondents of the Study**

This study focused on the Undergraduate students of Centro Escolar University, Manila. This involved students partaking in different health allied and non-health allied inclined programs. The sample size was computed according to the results shown during the reliability testing of the research questionnaire and as well as the total population of undergraduate students, which is 9,613. From there, the computation of the number of participants was determined to be 371. About 330 of which were from health-allied courses and 41 were from non-health allied courses.

### **2.3. Sampling Technique**

A stratified sampling technique. This is used to obtain the sufficient number of the population from a stratum, thus, getting a good representative of the sample. Afterwards, a random sampling technique, also known as “probability sampling” was used.

### **2.4. Survey Questionnaire**

The researchers used a survey-method questionnaire which utilized the Likert scale and a dichotomous scale. A dichotomous scale using “true” or “false” was utilized for knowledge questions, for open-ended questions may deduce an “I have no idea” response (Züll, 2016) [9]. On the other hand, the 4-point scale under ‘perception’ was stretched from 1 (strongly disagree) to 4 (strongly agree), which expressed the agreement of the respondents in the given statements. For the statements under ‘practice’, a 5-point scale ranging from 1 (never) up until 5 (always), was to demonstrate the frequency of the actions done by the respondents appertaining to the given statements.

### **2.5. Data Collection**

For the purpose of completing this study, a survey was conducted by the researchers through an online questionnaire to the undergraduate students of Centro Escolar University – Manila, and is estimated 10 minutes to complete. This is due to the strict health protocols implemented for face-to-face interaction and policies made during the pandemic.

### **2.6. Data Analysis**

The socio-demographic profile of the respondents was identified using frequency and percentage distribution, and with the computation of central tendencies such as the mean. The respondents' knowledge, perception, and practices (KPP) about the use of over-the-counter medications before and during the COVID-19 pandemic was assessed using a Paired Sample T-test to determine the variables separated by time. Additionally, Pearson Product-Moment Correlation was used to analyze the direct association of knowledge and perception of CEU-Manila students to their practice towards

the use of over-the-counter drugs. The same method of analysis was utilized to associate the knowledge and perception of the respondents in using over-the-counter drugs to one's practice.

### 3. Results and Discussion

The respondents of the study were CEU - Manila Undergraduate students aged 18 - 36 years old, comprised of a majority of 20 - 24 years old (71.43%), female (76.3%), first-year students (31%), and enrolled in Health Allied Courses (88.9%).

**Table 1** Descriptive analysis of the Knowledge on the Use of Over-the-Counter drugs Before and During COVID-19 Pandemic Among CEU-Manila Students

	N	Mean	Std. Deviation
Knowledge (before the pandemic)	371	8.24	1.25
Knowledge (during the pandemic)	371	8.08	2.01

Most CEU Manila students demonstrated satisfactory and proper knowledge, perception, and practice about OTC drugs prior to the COVID-19 pandemic and during the pandemic. For instance, students were reported to be knowledgeable that OTC drugs are the most accessible and that misusing such medication may lead to serious harm such as adverse effects.

**Table 2** Descriptive analysis of Perception on the Use of Over-the-Counter Drugs Before and During COVID-19 Pandemic Among CEU-Manila Students

	N	Mean	Std. Deviation
Perception (before the pandemic)	371	3.43	0.59
Perception (during the pandemic)	371	3.49	0.63

The respondents also showed a positive perception towards their use of OTC drugs before and during pandemic. However, there is an increase of mean in the data gathered which explains the perception of the respondents towards the use of OTC drugs, the fear that the virus may progress to a more critical level which they are avoiding, thus the use of OTC drugs to relieve the symptoms.

**Table 3** Descriptive analysis of the Practices of CEU Manila Students towards Over-the-Counter Drug Use Before and During the COVID-19 Pandemic

	N	Mean	Std. Deviation
Practices (before the pandemic)	371	3.59	0.58
Practices (during the pandemic)	371	3.73	0.58

Findings have demonstrated that students of CEU-Manila do often engage in practices concerning OTC drugs, with a mean value of 3.59 and 3.73 respectively (SD = 0.58). It was also indicated that the most prevalent symptoms addressed with OTC drugs were fever, cough and colds, muscle aches and pain, headache, and diarrhea.

In line with this, the demographic profile of the respondents had shown varying significance; Prior to the pandemic, the variables sex, and program had shown no significance with the students' Knowledge in regards to use of OTC drugs, excluding the significant variables age and year of education (value = 0.01 and 0.01). Meanwhile, year of education and program had also shown no significance to Perception, excluding sex (value = 0.026) as the only variable significant in regards to the use of OTC drugs before the pandemic. Similarly, the study showed no significance with all of the variables age, sex, year of education, and program in terms of the students' Practice in OTC drug use prior the pandemic. On the other hand, during the pandemic, the student's program (value = 0.03) is the only variable that has shown a significant

relationship with knowledge. Whereas, sex is the only variable significant to both Perception and Practice (value = 0.002 and 0.14) during the timeframe.

**Table 4** The Relative Contribution of Knowledge and Perception to the CEU Manila Students' Practice on the Use of Over-the-Counter drugs before and during COVID-19 Pandemic

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig	Verbal Interpretation
	B	Std. Error	Beta			
Constant (before the pandemic)	2.72	0.12		13.77	0.00	Significant
Knowledge (before the pandemic)	0.11	0.02	0.23	4.44	0.00	Significant
Constant (during the pandemic)	3.31	0.12		27.07	0.00	Significant
Knowledge (during the pandemic)	0.05	0.02	0.18	3.55	0.00	Significant

The respondents' knowledge and perception were found to be highly correlated with one another and present with multicollinearity in relation to their practice of using OTC drugs prior and during the pandemic. There is also a substantial association between the undergraduate's knowledge and practice about using OTC drugs, indicating that respondents apply their expertise in utilizing OTC drugs. However, it showed that even though students are particularly concerned and knowledgeable about the medication's expiration date, they are unaware that the drug's safety and effectiveness are diminished after the expiration date. Patient counseling is advised to be accomplished to inform patients of the medication's expiration date and when to stop taking a drug.

**Table 5** Comparison and contrast of the significance of knowledge, perception and practice of CEU-Manila students in regards to their use of over-the-counter drugs on the given time frame

Variables	Time Frame	p-value (2-sided)	Significance (<0.05)
Knowledge	Before	0.17	Not Significant
	During		
Perception	Before	0.00	Significant
	During		
Practice	Before	0.00	Significant
	During		

The respondents' data present that there is no significant relevance found in the comparison of the knowledge (0.17) of the respondents, while a significant relationship exists in the student's perception (0.00) and practice (0.00) before and during the pandemic, respectively.

#### 4. Conclusion

The analysis showed an alpha value of below 0.05 for perception and practice towards over-the-counter drug use, suggesting that the null hypothesis be rejected. On the other hand, undergraduate students have shown to have "satisfactory" knowledge regarding the use of OTC drugs. Thus, based on the overall findings, this study claims that there is a satisfactory and correct knowledge, perception, and practices towards OTC drug use before and during the pandemic among the undergraduate students of CEU-Manila.

## Compliance with Ethical Standards

### *Acknowledgements*

We, the researchers, would like to express our utmost gratitude to Centro Escolar University – Manila for giving us the opportunity to conduct this research and by providing us with quality education and curricular offerings that honed our academic skills.

### *Disclosure of Conflict of interest*

This study has no conflict of interest as submitted and approved by Centro Escolar University Institutional Ethics Review Board (CEU-IERB).

### *Statement of ethical approval*

The researchers have obtained an approval from the CEU Institutional Ethics Review Board to conduct the study, and as well as the informed consent used. The data gathered were treated with utmost confidentiality.

### *Statement of informed consent*

Informed consent was obtained from all individual participants included in the study.

---

## References

- [1] Araia, Z. Z., Gebregziabher, N. K., & Mesfun, A. B. Self medication practice and associated factors among students of Asmara College of Health Sciences, Eritrea: a cross sectional study. *Journal of Pharmaceutical Policy and Practice*. 2019; 12(1):1-9.
- [2] Aryankhesal A., Baradaran H.R., Behzadifar M., Behzadifar M., Bragazzi, N.L., Ravaghi H., Khaksarian, M. and Sajadi H.S. Prevalence of self-medication in university students: systematic review and meta-analysis. *East Mediterr Health J*. 2020; 26(7):846–857.
- [3] Bekele, K., Abay, A., Menistu, K., Atsbeha, B., Demeke, C., Belay, W., and Yimenu, D. Knowledge, Attitude, and Practice on Over-the-Counter Drugs Among Pharmacy and Medical Students: A facility-based cross-sectional study. *Integr Pharm Res Pract*. 2020; 9:135-146.
- [4] Curtis, E. A., Comiskey, C., and Dempsey, O. Importance and Use of Correlational Research. *Nurse researcher*. 2016; 23(6):20-25.
- [5] Melencio, D.M., Monterozo, R.V., Novelo, C.J., Ona, M.A., Paez, C., Pensotes, D.V., Quinto, M.G., Ramirez, D.R., Ramoran, E.G., Reyes, M.S, Ruz, C.D., Salas, J.T., Santos, P.L., Savella, A.M., Seco, R.J., Soriano, M.C., Sy, C.M., Tan, I.K., Tanael, J., Tolentino, G.A., Tolentino, S.C., Uy, O.L., Villa, M.A.C., Villacorte, R.C., Yu, B.N. and Yusingco, P.J. The Use and Understanding of Over-the-Counter medications among University of Santo Tomas College Undergraduate Students. *International Journal of Scientific & Engineering Research*. 2016; 7(5):486-489.
- [6] Oso, W. Y and Onen, D. Knowledge, Perception, and Practices of Self-medication among Households in Children under Five Years in Borama, District, Somaliland. A general guide to writing research proposals and reports. Kenya: Joma Kenyata Foundation. 2009.
- [7] Ravichandran, A., & Basavareddy, A. Perception of pharmacists regarding over-the-counter medication: A survey. *Indian journal of pharmacology*. 2016; 48(6), 729.
- [8] Tominaga, T. Self-Medication in the Age of COVID: The Country-Specific Role and Acceptability of OTC Medicines. *DIA Global Forum*. 2021; 13(5).
- [9] Züll, C. Open-Ended Questions. *GESIS Survey Guidelines*. Mannheim, Germany: GESIS – Leibniz Institute for the Social Sciences. 2016. doi: 10.15465/gesis-sg\_en\_002