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CONSUMER SELF-MEDICATION BEHAVIOR: A STUDY OF THE DIFFERENT FACTORS THAT INFLUENCE INTERNATIONAL SCHOOL OF ASIA AND THE PACIFIC AND MEDICAL COLLEGES NORTHERN PHILIPPINES STUDENTS' PURCHASE DECISIONS IN THE SELECTION OF OVER-THE-COUNTER (OTC) MEDICINES

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ABSTRACT

Medicines became an important part of our daily lives. Despite all their benefits, the improper use of medicines bring health hazards and evidences of adverse reactions occurs. Self-medication on over-the-counter medicines is increasing worldwide.

The aim of the study is to determine the factors that influence International School of Asia and the Pacific and Medical Colleges of Northern Philippines students' purchase decisions in the selection of OTC medicine.

The study made use of the descriptive correlational research through a questionnaire (google form) as the main instrument in gathering data. The respondents of the study were the students of International School of Asia and the Pacific and Medical Colleges of Northern Philippines. The questionnaire was divided into two parts in which the first part is concerned with participants' demographic profiles, such as age, sex, year level, course, and socio-economic status while the second part is structured on a 5-Likert Scale. Most of the students who responded to the study are BS Criminology students. The respondents have a neutral response on the factors in terms of family, experience, prices, and the origin of medicines, while they agree on the pharmacists' influence in purchasing the medicine.

Key words: *OTC medicines, Self-Medication*

INTRODUCTION

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Over-the-counter (OTC) drugs are the most prevalent medical treatment method globally and have seen a more significant rise in sales than prescription medicines over the past years.

The over-the-counter market is expected to expand more as self- medication has arisen ever since the COVID-19 pandemic. Consumers believe that over-the-counter drugs are safe effective, and it does not require a prescription to take and treat mild symptoms and illnesses. Due to the general popularity of the internet as a source of self- medication knowledge, health literacy is also improving.The market for OTC pharmaceuticals has two distinct characteristics: first, customers purchase items in response to their own health needs; second, the market is not as tightly controlled as the market for prescription drugs, allowing producers to choose their pricing and communication tactics. On the other hand, customers are not pressured by doctors to purchase a particular drug to pick the one they want on their own.

During this pandemic, the use of OTC medication is recognized as an effective way to treat flu-like symptoms associated with the COVID-19 virus. Third-world countries such as the Philippines incorporate over-the counter-drugs as adjunct therapy into many healthcare systems worldwide. According to statistics, approximately 66-80% of Filipino consumers do self-medication as a lower-cost option than having an actual consultation with professionals.

World Health Organization (WHO) states that the pharmaceutical industry has been an internationally competitive field for advertisers and marketers. Understanding the consumer's behavior on purchase decisions allows future pharmacist-owners or owners to build strategies to make the sales of over-the-counter medications more effectively in line with the consumer's decisions. Knowing the circumstances that the consumers would choose between brands would help future owners adjust strategies of marketing based on the factors of influence. It means that future pharmacist-owners must have a strong awareness of their future customers' buying decision-making process in terms of "setting prices, selecting distribution locations, and designing promotional messaging" that would most likely affect their purchase decision.

METHODOLOGY

RESEARCH DESIGN

This study used the Descriptive Correlational research. It focused on the factors that influenced International School of Asia and the Pacific and Medical Colleges of Northern Philippines Students' purchase decisions in the selection of Over-the-counter (OTC) Medicines. The researchers have used a simple random sampling to select the samples representing the ISAP/MCNP students.

RESPONDENTS OF THE STUDY

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The respondents of the study were the students of International School of Asia and the Pacific and Medical Colleges of Northern Philippines. 339 students answered the questionnaire.

DATA GATHERING TOOL

The researchers used a questionnaire through google form to gather data. The questionnaire was based from the questionnaire conducted by Tamechewu, et al (2018), and was constructed to assess the factors that influence ISAP/MCNP Students. The questionnaire was separated into two parts. The first section focuses on the demographic profiles of the respondents, such as age, sex, year level, course, and socio - economic status, while the second section uses a 5-point Likert scale to measure their degree of agreement or disagreement.

DATA GATHERING PROCEDURE

The researchers asked permission from the MCNP/ISAP school registrar to get the total population of MCNP/ISAP college departments through a request letter with the guidance of the dean of the department of pharmacy. After the approval and gathering the number of students, the researchers asked permission from the research office to conduct the study. Along with them is the copy of a request letter with an attached copy of questionnaire.
Also, the survey participants were advised of the study's intent. The details given by the willing respondents were used for research purposes only. After collecting all respondents' answers, the researchers interpreted the results.

STATISTICAL ANALYSIS

The data were treated using with following statistical tools:
Weighted Mean. This was used in the study to quantify the responses of the respondents along the different indicators and variables.
4.21 - 5.00 Strongly Agree
3.41 - 4.20 Agree
2.61 - 3.40 Neutral
1.81 - 2.60 Disagree
1.00 - 1.80 Strongly Disagree
Frequency. This was used to quantify the frequency distribution of the respondents of the study. (Basilio,2000)
Percentage. This was used to quantify the number of respondents of the study relative to the whole population. (Kerlinger,1986).
Pearson Product Moment Correlation. This was used to determine whether there is a significant relationship on the factors influencing the respondents in taking OTC medicines.

RESULTS

Table 1.1 Distribution of Respondents according to Age

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Age	Frequency	Percentage
15 - 20 Years Old	214	63
21 - 30 Years Old	125	37
Total	339	100

As shown in the table 1.1, Distribution of Respondents according to Age. Out of 339 respondents, 15 - 20 Years Old has the highest frequency of 214, with a percentage of 63% while the least frequency is 21 - 30 Years Old having a frequency of 125, with a percentage of 37%. This implies that most of respondents' Age were 15 - 20 Years Old.

Table 1.2 Distribution of Respondents according to Sex

Sex	Frequency	Percentage
Female	194	57
Male	145	43
Total	339	100

As shown in the table 1.2, Distribution of Respondents according to Sex, out of 339 respondents, the data was interpreted from highest to lowest frequency. Female has the highest frequency of 194, with a percentage of 57% while the least frequency is Male having a frequency of 145, with a percentage of 43%. This implies that most of respondent's sex are females.

Table 1.3 Distribution of Respondents according to Year level

Year Level	Frequency	Percentage
First year	125	36.9
Second year	59	17.4
Third year	76	22.4
Fourth year	79	23.3
Total	339	100

As shown in the table 1.3, Distribution of Respondents according to Year level, out of 339 respondents, the data were interpreted from highest to lowest frequency. First year has the highest frequency of 125, with a percentage of 36.9% followed by Fourth year having a frequency of 79, with a percentage of 23.3%. Third year has a frequency of 76, with a percentage of 22.4% while the least frequency is Second year having a frequency of 59, with a percentage of 17.4%. This implies that most of the respondents are First year students.

Table 1.4 Distribution of Respondents according to Course

Course	Frequency	Percentage
BS Accountancy	21	6.2
BS Criminology	176	51.9
BS Customs Administration	10	2.9
BS Hospitality Management	8	2.4

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BS Medical Laboratory Science	1	0.3
BS Nursing	6	1.8
BS Pharmacy	59	17.4
BS Physical Therapy	1	0.3
BS Radiologic Technology	27	8.0
BS Social Work	8	2.4
BS Tourism Management	22	6.5
Total	339	100

As shown in the table 1.4, Distribution of Respondents according to Course, out of 339 respondents, the data ranked from highest to lowest frequency. BS Criminology has the highest frequency of 176, with a percentage of 51.9% and the least frequency is BS Medical Laboratory Science and BS Physical Therapy having the same frequency of 1, with a percentage of 0.3%. This implies that most of the respondents are BS Criminology students.

Table 1.5 Distribution of Respondents according to Socio-Economic Status

Socio-Economic Status	Frequency	Percentage
Below ₱5,000	224	66
₱5,001 - ₱15,000	76	22
₱15,001 - ₱25,000	21	6
₱25,001 - ₱35,000	9	3
₱35,001 - 45,000	3	1
Above ₱45,000	6	2
Total	339	100

As shown in the table 1.5, Distribution of Respondents according to Socio-Economic Status, out of 339 respondents, the data was interpreted from highest to lowest frequency. Below ₱5,000 has the highest frequency of 224, with a percentage of 66% and the least frequency is ₱35,001 - 45,000 having a frequency of 3, with a percentage of 1%. This implies that most of respondent's Socio-Economic Status are Below ₱5,000.

Factors Influencing the Selection of OTC Medicines as to: Table 2.1 Family and Friends

Indicator	Weighted Mean	Interpretation
1. I have been buying over the counter drugs of which I have heard from my friend and/or my family	3.19	Neutral
2. I have trust in family member's experiences regarding OTC drugs	3.48	Agree
3. I have experience buying a brand of OTC drugs that my family members recommended to me without consulting the pharmacist	3.20	Neutral
4. The information I obtain from my family members and friends encourage me to buy OTC drugs	3.20	Neutral

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5. I repeat buying an OTC drug that my family members and friends described to me and gave me good results	3.32	Neutral
General Weighted Mean	3.28	Neutral

As shown in the Table 2.1 Family and Friends, the data was interpreted from highest to lowest weighted mean. The highest weighted mean of 3.48, interpreted as “Agree” fell under, indicator 2, “I have trust in family member's experiences regarding OTC drugs”. The General Weighted Average on Factors Influencing the Selection of OTC Medicines specifically Family and Friends is 3.28, interpreted as “Neutral”. This implies that respondents have a Neutral or unsure response towards on Factors Influencing the Selection of OTC Medicines specifically Family and Friends.

Table 2.2 Pharmacist’s Recommendation

Indicator	Weighted Mean	Interpretation
1. I have trust in pharmacist's recommendation of OTC drugs	4.12	Agree
2. I have been buying OTC drugs according to the pharmacist's recommendation	3.88	Agree
3. I repeat buying medicine which the pharmacist described to me and gave me good results.	3.97	Agree
4. I have experience of buying OTC drugs which the pharmacist recommended me	3.94	Agree
General Weighted Mean	3.98	Agree

As shown in the Table 2.2 Pharmacist’s Recommendation, the data were interpreted from highest to lowest weighted mean. The highest weighted mean of 4.12, interpreted as “Agree” is indicator 1. The General Weighted Average on Factors Influencing the Selection of OTC Medicines specifically Pharmacist’s Recommendation is 3.98, interpreted as “Agree”. This means that respondents “Agree” or have a positive response towards Factors Influencing the Selection of OTC Medicines specifically Pharmacist’s Recommendation.

Studies undertaken by various researchers, such as Kevrekidis et al. (2017), conducted in Greece, show a mean value of 4.31. Their study reveals that consumers have tremendous trust in the ability and skill of the pharmaceutical experts and that they readily sway them. For this customer segment, the pharmaceutical staff is influencers who develop the consumers' impressions of different things and determine their ultimate purchase choice.

Table 2.3 Past Experience

Indicator	Weighted Mean	Interpretation
1. I prefer to purchase a brand of OTC drugs that I have previously purchased.	3.60	Agree
2. I always buy the same brand of OTC drugs	3.51	Agree

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3. I am willing to pay more for an OTC drug I have had a good experience with.	3.50	Agree
4. I will buy different brands of OTC drugs because I want variation	2.99	Neutral
General Weighted Mean	3.40	Neutral

As shown in the Table 2.3 Past Experience, the data were interpreted from highest to lowest weighted mean. From among the 4 indicators, the highest weighted mean of 3.60, interpreted as “Agree” fell under, indicator 1, “I prefer to purchase a brand of OTC drugs that I have previously purchased.” The General Weighted Average on Factors Influencing the Selection of OTC Medicines specifically Past Experience is 3.40, interpreted as “Neutral”. This indicates that respondents have a Neutral or unsure response towards on Factors Influencing the Selection of OTC Medicines specifically Past Experience. Multiple studies were done by Talaba and Andreia (2010), Haramiova et al. (2017), Cirstea et al. (2017), and Bostrom (2011) indicated that almost all consumers report purchasing the same over-the-counter medication again. In addition, Tamechewu et al. (2018) research revealed a mean of 3.21, which is also considered "Neutral." The most prevalent reason for this buying pattern is that the customer knows the product works and has learned via experience that it is a solution to their problem or need. Some shoppers may lack the time or energy to explore different options and repurchase the same items. In contrast to this research, experience has a beneficial but negligible effect on consumers' decisions to purchase Over-the-counter drugs.

Table 2.4 Country of Origin

Indicator	Weighted Mean	Interpretation
1. I like considering its country of origin while I purchase an OTC drug.	3.44	Agree
2. I use country-of-origin as a reference to evaluate the quality of an OTC drug among brands.	3.45	Agree
3. I will purchase OTC drugs from a particular country to enhance my self-image.	3.12	Neutral
4. I believe purchasing OTC drugs from a particular country will enhance my social status and pride.	3.04	Neutral
General Weighted Mean	3.26	Neutral

As shown in the Table 2.4 Country of Origin, the data was interpreted from highest to lowest weighted mean. 4 indicators are presented in this table. The highest weighted mean of 3.45, interpreted as “Agree” fell under, indicator 2, “I use country-of-origin as a reference to evaluate the quality of an OTC drug among brands.The General Weighted Average on Factors Influencing the Selection of OTC Medicines specifically Country of Origin is 3.26, interpreted as “Neutral”. This means that respondents have a Neutral or unsure response towards on Factors Influencing the Selection of OTC Medicines specifically Country of Origin.

Studies done in Greece by Kevrekidis et al. (2017) indicate a mean value of 3.63. Other research done by Shohel et al. (2013), Dadhich & Dixit (2017), Bostrom (2011), and Tamechewu et al. (2018) explain the considerable effect of a nation of origin on consumers' selection of OTC medications. Once buyers

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have considered the input of others, it may be argued that the nation of origin influences their purchasing decisions. However, this study reveals a clear correlation between the place of origin and choice of over-the-counter medication purchase, even though the correlation is statistically insignificant. This study contradicted previously analyzed, interconnected works of literature.

Table 2.5 **Price**

Indicator	**Weighted Mean**	**Interpretation**
1. I am very concerned about the price of the OTC drugs.	3.74	Agree
2. I will continue buying OTC drugs which I know so far, even though it increases their price.	3.42	Agree
3. I will switch to another brand of OTC drugs if the price is increased.	3.18	Neutral
4. I will compare the prices of OTC drugs among brands while I want to purchase.	3.31	Neutral
5. I will buy the cheapest OTC drugs	2.92	Neutral

As shown in the Table 2.5 Price, the data was interpreted from highest to lowest weighted mean. 5 indicators are presented in this table. The highest weighted mean of 3.74, interpreted as “Agree” fell under, indicator 1, “I am very concerned about the price of the OTC drugs.” Indicator 2, 3, 4 respectively were interpreted as “Neutral”. The General Weighted Average on Factors Influencing the Selection of OTC Medicines specifically Price is 3.31, interpreted as “Neutral”. This denotes that respondents have a Neutral or unsure response towards on Factors Influencing the Selection of OTC Medicines specifically Price.

Other research was done by Dadhich & Dixit (2017), (Villako et al., 2012), Major and Vincze (2010), Haramiova et al. (2017), and Shohel et al. (2013), and in several industrialized nations, mainly in Europe and Asia, indicated a significant result. This study was bolstered by the findings of Tamechewu et al. (2018), which yielded comparable positive and statistically significant results with an overall mean of 3.30. Even though most respondents were quite well-compensated, many were concerned about the cost of over-the-counter medications. In other words, the price positively and dramatically impacts customers' decisions to purchase OTC medications. This study indicates that users of over-the-counter medicines typically consider the price before making a purchase. Despite having a low income, the participants in our survey are not concerned about the price.

Table 3 **Significant Relationship Between Factors Influencing The Respondents In Taking OTC Medicine When Grouped According To Demographic Profile**

Factors		Age	Sex	Year level	Course	Economic status
Family and Friends	**x2**	19.96	19.67	27.50	119.40	55.86
	p-value	0.00**	0.00**	0.01**	0.00**	0.00**

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Pharmacist's Recommendation	**x2**	11.66	40.39	32.80	171.86	50.94
	p-value	0.02**	0.00**	0.00**	0.00**	0.00**
Past Experience	**x2**	13.10	20.31	38.22	127.65	39.00
	p-value	0.01**	0.00**	0.00**	0.00**	0.01**
Price	**x2**	10.87	30.97	26.37	116.82	69.95
	p-value	0.03**	0.00**	0.01**	0.00**	0.00**
Country Origin	**x2**	23.79	27.65	53.25	116.82	39.62
	p-value	0.00**	0.00**	0.00**	0.00**	0.01**

If P - value > 0.05: Accept Ho: Not Significant

As shown in Table 3, there is a strong positive and statistically significant relationship between the independent variables Family and Friends' Recommendation, Pharmacists' Recommendation, Past Experience, Price, and Country of Origin and the respondent's demographic profile, including age, sex, year level, course, and socioeconomic status. Using Chi-Square for the independence test to examine the significance of the relationship between factors influencing respondents' use of over-the- counter medications when grouped by demographic profile. Since the result was less than 0.05, the null hypothesis was rejected, and the alternative hypothesis was accepted. According to the findings of Tamechewu et al. (2018), independent variables are positively and significantly correlated with their dependent variable. According to their research, the independent and dependent variables (demographic profile) have a positive and statistically significant correlation, with the Pharmacists' recommendation scoring higher than the other factors. This indicated that most respondents agreed that pharmacists' recommendations have a more significant impact on their decision to purchase Over-the-counter medications.

DISCUSSION

This study aimed to determine the factors that influence ISAP/MCNP students' purchase decisions in the selection of OTC medicine.
Specifically, it sought to answer the following questions: 1. What is the profile of the respondents in terms of Age, Sex, Year level, Course, Socio-economic status. 2. To what extent the following factors influence factors influence the selection of OTC medicines in terms of Family and Friends, Pharmacist's recommendation, Past experience, Country of origin, Price.
The study made use of the descriptive correlational research through a questionnaire (google form) as the main instrument in gathering data. The data gathered were analyzed for the purpose of interpretation.
The study came out with following findings: As to the profile of the respondents in terms of Age, findings revealed and concluded that majority of the respondents are age 15 - 20 years old. An implication of minor age respondents. In terms of sex, findings revealed and concluded that majority of the

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respondents are female. An implication of Feminism dominance. In terms of Year level, findings revealed and concluded at majority of the respondents are first year. An implication of Freshmen respondents. In terms of Course, findings revealed and concluded that majority of the respondents are BS Criminology. An implication of future uniformed personnel. In terms of Socio-economic status, findings revealed and concluded that majority of the respondents have Below ₱5,000. An implication of below average wage or income.

As to factors influencing the selection of OTC medicines in terms of Family and Friends, findings revealed and concluded that the respondents have a Neutral or unsure response towards on Factors Influencing the Selection of OTC Medicines specifically Family and Friends. In terms of Pharmacist's Recommendation, findings revealed and concluded that the respondents have an Agree or a positive response towards on Factors Influencing the Selection of OTC Medicines specifically Pharmacist's Recommendation. In terms of Past Experience, findings revealed and concluded that the respondents have a Neutral or unsure response towards on Factors Influencing the Selection of OTC Medicines specifically Past Experience. In terms of Country of Origin, findings revealed and concluded that the respondents a Neutral or unsure response towards on Factors Influencing the Selection of OTC Medicines specifically Country of Origin. In terms of Price, findings revealed and concluded that the respondents have a Neutral or unsure response towards on Factors Influencing the Selection of OTC Medicines specifically Price.

As to significant difference in the factors influencing the respondents in taking OTC medicines, findings reveal and concluded that there is significant difference in the factors influencing the respondents in taking OTC medicines.

CONCLUSION

Based on the summary that was discussed, pharmacist recommendations were the most influencing factor in ISAP/MCNP students' purchase decisions in the selection of over-the-counter drugs, followed by experience, price, family and friends, and finally, country of origin.

RECOMMENDATIONS

Based on the abovementioned findings and conclusions, the researchers recommend the following to assess the factors that influence ISAP/MCNP students' purchase decisions in the selection of OTC medicine.

1. The researchers recommend marketers to focus solely on improving pharmacists' way of marketing Over-the-Counter drugs.
    1. Research on Over-the-Counter products that are seasonal and trending.
    2. Train pharmacists to cross-sell
    3. and upsell. Educate pharmacists on how to build relationships with patients and how to make relevant suggestions based from what the patients is buying.
    4. Pharmacists can further expand their advertisements on Over-the- counter drugs by creating OTC awareness campaigns on social media platforms. They can also promote new Over-the-counter drugs so that patients could be aware of other possible alternative drugs aside from the drugs that they are already purchasing.

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2. The researchers recommend further research on Family and Friend's recommendation, Past Experience, Country of origin, and Price to examine their effect on purchase decision of OTC medicine.

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