

## Pharmacist's Knowledge, Practice and Attitudes Toward Pharmacovigilance and Adverse Drug Reactions

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### ABSTRACT

**Background:** It is observed that the adverse drug reactions are one of the many reasons contributing in the deterioration of health and wellbeing.

**Objectives:** This study was carried out to list the numerous elements affecting the knowledge, attitude, and practice of pharmacists and pharmacy technicians towards pharmacovigilance and adverse drug reactions.

**Material and methods:** A certain prepared questionnaire is performed over numerous pharmacies from the areas around in addition to the data collected from similar researches which performed the same method.

**Results:** Based upon the findings of our study, we came to a vision of the superiority of pharmacists over pharmacy technicians when it comes to acknowledging how to deal with pharmacovigilance and adverse drug reactions.

**Conclusion:** Pharmacists are more knowledgeable when it comes to ADRs than pharmacy technicians, yet both of them needs to go under training for enhancing their knowledge.

**Keywords:** KAP, ADR, Adverse drug reactions, pharmacovigilance.

### INTRODUCTION

It has been noticed that the adverse drug reactions "ADRs" are considered to be of the many reasons contributing in the deterioration of the health and wellbeing of certain cases in hospitals and treatment centers leading to losses of mortality and abnormality type <sup>(1)</sup>.

On the other hand, the world health organization "WHO" identifies the pharmacovigilance as the part of science, which is, interrelated with inspection, evaluation, and countermeasure the effects of any drug causing problems. It is a very important and significant branch of sciences, because it can contribute in the development of hospitals and making them consume and lose less resources and energy in favor of the deceased and abnormal cases <sup>(2)</sup>.

It is pretty observable that community pharmacists are the ones most closest to the ADRs effect on patients every day, that is because of the nature of their work with patients and their multiple conditions which involve them in their beginning and passing through the entire process of pathological effects and symptoms appearing on them. Finally, ending up with final treatment suitable for every condition whether that knowledge was collected from the patients themselves and their experiments or from the scientific reference <sup>(3)</sup>.

FDA as an organization when approves a certain drug, there is very little information about its adverse

effects. That is why it comes down to the community pharmacists and pharmacy technicians to know those effects. The importance of discovering such effects is actually crucial in the work of hospitals and health centers. And that is referred back to the contribution of the ignorance of ADRs in increasing of the hospitality time spent by the patients inside the health care center, which of course, leads to greater consumption of resources <sup>(4)</sup>.

That is why an instant reporting of the effects of ADRs is something really crucial and helpful for the pharmacists themselves doing so, or for the health care organizations like hospitals and health centers. It provides a faster and statistical information delivery concerning the effect appeared as a symptom on the patient with the least cost of experimentation for discovering so possible <sup>(5)</sup>.

There are a lot of pharmacovigilance centers built across the whole world in difference of numbers, facilities, and technologies to help form a concrete image about the ADRs effects in every drug possible to get reported about <sup>(6)</sup>.

They mostly use the data collected from the community pharmacists in their area, in addition to the data collected from the other experimentation they run and conduct in many aspects to study every angle of effect of the drug being tested <sup>(7)</sup>.

The knowledge is important, and to show how important and significant it is for such field, we need

to know the knowledgeable pharmacists contribute with more data reporting about the ADRs effects in health care centers concerned with pharmacovigilance than those pharmacists with less experience and knowledge background about ADRs in general <sup>(8)</sup>.

So, we aimed in this study to evaluate and enhance the knowledge, attitude, and practice of pharmacists concerning the pharmacovigilance and the study of ADRs in every aspect possible. That's why there is so much effort being made to form a concrete vision of that concept, and a great understanding for the role of pharmacists in this process <sup>(9)</sup>.

## SUBJECTS AND METHODS

The method used in this research is that a certain prepared questionnaire is performed over numerous pharmacies from the areas around, and the data collected from similar researches which performed the same method in gathering those data over pharmacies in their own region as well.

The questionnaire we were conducting was inclusive to pharmacists and pharmacy technicians. We aim by that to reach the most of all the levels of pharmacy awareness possible for all those who are interested in pharmacology in general.

The test was a multiple-choice and correct/wrong survey, holding scientific questions to measure the knowledge of the members being tested about the pharmacovigilance and ADRs. The individual scores ranged from zero to ten depending on the degree of knowledge of the materials being tested. It was considered that the answers ranging from seven to ten are "aware", the answers ranging from four to seven are "poor", and the answers ranging from zero to four are "unaware".

Also, to measure the attitude of the pharmacists and pharmacy technicians, we ran a situation exam to define each individual action and reaction in certain situations concerning ADRs. Those who could choose to "agree" with recommendation and interrelations with ADRs and their effects were considered having positive attitude, and those who choose to "disagree" with recommendation and interrelations with ADRs and their effects were considered having negative attitude towards ADRs and pharmacovigilance.

Also, to specify the practice of pharmacists and pharmacy technicians of ADRs and pharmacovigilance, we conducted another model for measuring the intention and readiness for

recommending and dealing with ADRs inquiries. Those who choose to "interact" with the information and questions asked by customers and patients about Pharmacovigilance and ADRs were considered "on regular practice", and those who choose to "evade" the information and questions asked by customers and patients about pharmacovigilance and ADRs were considered "on unregular practice" of the matter.

This was the tool provided for getting the most results possible of a study depending on knowledge, attitude, and practice "KAP" method. And by defining so, we can define the results we intend to take out of the study's data shown so far. We think it is the best tool for doing so, because of the simplicity and details allowance.

## RESULTS

### *Knowledge*

It is found that there is a bit of difference between the pharmacists and the pharmacy technicians when we compare their knowledge degree and knowledge base about Pharmacovigilance in general and ADRs <sup>(10)</sup>.

It is noticed that the pharmacists have the advantage in attaining more knowledge about the ADRs system of work and effect over the patient more than pharmacy technicians do. Also, it was seen that the pharmacy technician were less aware about the location of the pharmacovigilance centers in town or even the importance of reporting back and forth to and from the pharmacovigilance centers. They lacked the knowledge necessary to verify them as "aware" of pharmacovigilance and ADRs, in a way less than pharmacists did <sup>(11)</sup>.

Both of them lacked the knowledge of the importance of pharmacovigilance itself and its manner of working out. While it favored the side of the pharmacists when it came down for knowing the effects of the ADRs, and the difference between ADRs and side effects in the drugs being tested and taken in question <sup>(12)</sup>.

As regards, the variety of information concerning ADRS, it was reported in this study that the pharmacists had come to a more perspective and variety of ADRs than pharmacy technicians had. It seemed that, the only observable ADRs for pharmacists were allergy and diarrhea. While pharmacy technician could not recognize any of those ADRs during their experimental practice <sup>(13)</sup>.

Thus, the pharmacists themselves got moderate degrees in awareness of pharmacovigilance and ADRs, while the pharmacy technicians got poor knowledge and unawareness degree of pharmacovigilance and ADRs. We think that the degrees collected refers back to the training and education level of both pharmacists and pharmacy technicians in difference. All along with the years of experience for each, while the demographic gender-wise factor didn't resemble much variance in knowledge between males and females about the pharmacovigilance and ADRs <sup>(14)</sup>.

#### - **Attitude**

It is observed in this study that the attitude of both the pharmacists and the pharmacy technicians differs greatly in assessing certain queries about the importance of the pharmacovigilance as a science and an application to be executed. The pharmacists had the favor in numbers concerning the consideration of the importance and significance of the pharmacovigilance as a science, while the pharmacy technicians had less interest into acknowledging the importance of the pharmacovigilance as a science and an application <sup>(15)</sup>.

Not only that, but also, we found that the pharmacists were more into the belief that pharmacovigilance is a professional duty of their own to carry and execute devotedly alongside with the already knowledge they got from other drugs effects and side effects to be told to the customers and patients. That attitude was way less with the pharmacy technicians concerning the intention to consider pharmacovigilance as an individual duty to follow while treating a patient of their own and reporting back to the specified interested center of pharmacovigilance in town <sup>(16)</sup>.

When asked about the pre-assuring step which is before reporting back to the pharmacovigilance center to make sure it is interrelated with the drug being talked about and tested on the patient, there was a convenient agreement on the same terms between pharmacists and pharmacy technicians concerning that matter. Also, it was settled that when it comes to dangerous effects, they will report right away both of them <sup>(17)</sup>.

Both of them were considered having positive attitude towards ADRs reportage when it comes to critical issues, while the pharmacists were superior in

positivity of attitude when it comes to regular effects shown on the patient <sup>(17)</sup>.

#### - **Practice**

It has been collected from this study that there is a tendency for not reporting the ADRs effects shown on the patient for both the pharmacists and the pharmacy technician, but those tendencies differ between them. As pharmacists justify not informing and reporting back to the pharmacovigilance center mostly because they don't want to be described as not understanding the ADRs effect. They don't want to be admitting that there was a damage occurred to the patient. Finally they think that all the ADRs effects are preset and thought of before the application of the drug <sup>(18)</sup>.

While it came with the same result of not informing and reporting pharmacovigilance about ADRs, but it varied with pharmacy technician in the reasons. As they justify their not reporting with that they don't know where to report to, they said at times they lack the necessary knowledge for doing so, and they thout it is a waste of their time to do so <sup>(18)</sup>.

#### **DISCUSSION**

It is seen from the results of the study that pharmacists differ from pharmacy technicians in many aspects concerning the knowledge, attitude, and practice of ADRs and Pharmacovigilance in general. The reasons behind the low degrees of both of them shared of being lacking the necessary knowledge of ADRs, and varied in the self-esteem criteria for both of them.

#### **CONCLUSION**

Pharmacists are more knowledgeable when it comes ADRs than pharmacy technicians. Yet, both of them needs to go under training for enhancing their knowledge. Pharmacists are in near terms with pharmacy technicians when it comes to attitude gained against ADRs. Pharmacists are more egoistic about admitting ADRs to be reported, while pharmacy technicians only lack the professionalism in dealing with ADRs.

#### **RECOMMENDATION**

We recommend that the educational system includes more ADRs training for the undergraduate students, and to provide more online and internet courses to increase the amount of information and professional skills needed for practicing ADRs

reportage to the pharmacovigilance centers in a precise and enhanced manner.

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