

Pharmacovigilance and Its Extent Contribution to Eliminating Marketing Deception: An Exploratory Study on the Opinions of a Sample of Visitors of Some Pharmacies Operating in the Mosul City

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Abstract: - Two dimensions form the theoretical and field framework for this study, pharmacovigilance and marketing deception. The study revealed that pharmacovigilance represents activities related to detecting, evaluating, understanding, and preventing harmful effects or any other related problem. While, marketing deception (henceforth MD) is marketing practices carried out by organizations or sellers in terms of distorting and misleading facts that cause the customer to be in a precarious state, and result in wrong purchasing decisions. The operating pharmacies within Mosul city were a field for conducting the field study, and the researcher sought to include several questionnaires expressing the study problem that was the basis for building the field studies, including (i) Do the pharmacovigilance contribute to eliminating MD? (ii) Is there an effective correlation between the pharmacovigilance dimension and the after-MD dimension? To answer these questions, a hypothetical scheme of the study was formulated to reflect the relationships and effects between the two dimensions of the study, which resulted in a set of main and secondary hypotheses, that were tested using several statistical means for the data collected by the questionnaire which numbered (527) and all were retrieved. The study listed a set of conclusions that were distributed in terms of theory and field sides, which the researcher presents the most important: (i) According to the answers of contributed individuals, pharmacovigilance does not contribute to eliminating MD. (ii) There is an effective relationship between pharmacovigilance and MD, but to some extent, it is weak due to the absence of adopting pharmacovigilance among the researched individuals, which negatively affected the elimination of MD practiced by some pharmacies operating in Mosul city. (iii) The relative importance of the variables of MD differs from a variable on the pharmacovigilance dimension. Depending on both theoretical and field study findings, proposals were listed consistent with these conclusions, as well as future studies related to the dimensions of the current study were suggested.

Key-Words: - Pharmacovigilance, Marketing Deception, Deception in product, Price in deception, Deception in distribution, Deception in promotion

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1 Introduction

Pharmacovigilance has a great impact on guiding and educating people on the proper use of medicines and informing them about the side effects of medicines that harm the general health of the individual, and in some cases lead to death and limit harm to patients and achieve a safe life as much as possible by reducing side effects and danger from using medicines, especially after the plurality of pharmaceutical companies in the world, as well as the attempt to reduce MD, especially after the rapid technological and information development and its impact on economic development, and in light of the large variety of products and a large number of

origins, especially about medicines, and an invitation to adhere to honesty, and mutual trust with customers to sustain life correctly. And, to achieve a great market position and gain whence customers and profit. MD is regarded as one of the immoral practices in the business world that carry many meanings and implications, most of which fall under the practices of human behavior, and the rules and standards that govern this behavior, and show business organizations and their managers what should and should not in accomplishing different types of work, and whether the business behavior is right or wrong.

As the current research aims to provide a theoretical framework for the dimensions of pharmacovigilance and marketing deception and to identify the theoretical contributions of researchers to these two variables, as well as the need to provide the ingredients for building pharmacovigilance for citizens to avoid marketing deception practiced by pharmaceutical companies against them.

Therefore, the current research deals with two variables that can be considered of equal importance to the organization and presents them in a theoretical framework that shows their potential by emphasizing them by measuring them on the field side, which can indicate their importance, especially in the Iraqi environment which shrouded with many changes by measuring the relationships between the two variables and their explanatory capabilities for each other. On the other hand, in light of the hypothetical scheme defined by the research on which its main and sub-hypotheses were built, through the use of certain statistical methods. The research axes were sequenced according to their approach, starting with the first axis which shows the methodological framework, while the two axes, the second and third, which concerned with the intellectual and philosophical clarification of the research variables, which is (pharmaceutical vigilance and MD), The fourth axis focused on the statistical effort required to answer the questions raised in the methodological framework and to test its hypotheses to determine their acceptance or rejection. The fifth axis is concerned with clarifying the conclusions reached and a set of proposals.

2 Methodology

2.1 Research Problem

Medicines are discriminated against by other products for their importance and the extent of their necessity, and the pharmaceutical industry in developed countries is regarded as an unavoidable strategic choice. Whereas, health security means not giving the patient medicines as an excuse, expired drugs, not giving medicines in high or low doses, not giving two drugs with direct and indirect drug interactions, and not giving the drug incorrectly, such as giving it intravenously instead of intramuscularly or orally instead of intravenously. So, the concept of pharmacovigilance is raised to avoid the negative aspects of drug marketing operations, which means detection, evaluation, understanding, and prevention of negative reactions toward pharmaceutical products. Moreover, the customer's suffering extends to MD methods for a

long time and at a different time through the products offered to him, which appear to be good in serving him and satisfying his needs and desires. But in contrast, it was aimed at exploiting him and achieving the greatest possible amount of profits. This has escalated to the point where it has stimulated many individuals, groups, officials, and unofficial organisms to the point where the customer suffers huge marketing exploitation and deception and the consequent physical and moral damages. This also encouraged those interested in marketing to play an important role in this regard, with the directions and recommendations that provided insurance to protect the customer in his dealings with producers and distributors of products.

With this description, the fact of this research is attracted by two scientifically intertwined variables (pharmaceutical vigilance and MD), in order to look through them the research problem, which can be limited to a set of questions as follows:

1. The first main question: Are there differences in the answers of the respondents about the two variables of the study?
2. The second main question: Does pharmacological vigilance contribute to eliminating MD?
3. The third main question: Is there a correlation and effect of pharmacovigilance in MD?
4. The fourth main question: Does the relative importance of the MD variables vary on the pharmacovigilance variable?

2.2 The Importance of the Research

The importance of the current research is highlighted by the following:

1. Motivate respondents towards the importance of pharmacovigilance by collecting data and information related to various pharmaceutical products, which leads them to succeed in making various purchasing decisions.
2. The field of pharmacovigilance is regarded as a modern field in the field of scientific research and information systems science, so the research will shed light on this variable and its importance through the theoretical survey and on the field side of the research.
3. The research is expected to contribute to pointing out the necessary means, whether through information obtained by customers through pharmacological vigilance, and the impact of that on the MD which is adopted by some organizations specialized in pharmaceutical products.

2.3 Objectives of the Study

The objectives of this research study are as follows,

1. Elaboration of clearly defined theoretical frameworks for the research variables, with regard to pharmacological vigilance and MD, in an approach that enables researchers to put forward their procedural definition.
2. Achieving a new intellectual contribution that leads to indicate the importance of pharmacovigilance in the life of customers.
3. Identifying the answers of respondents to the clauses of the research variables.
4. Indicating the level of pharmacovigilance's contribution in eliminating MD.
5. Indicating the nature of the relationship and the effect between pharmacological vigilance and MD.
6. Presenting some proposals based on what will be put forward in the theoretical framework for the research variables or what will be produced by statistical analyses of the relationships between the two dimensions mentioned above.

2.4 Research Scheme

The research scheme clarifies a set of logical relationships which may be in a quantitative or qualitative form and combined to form the main features of the case you are interested in. The systematic treatment of the research problem requires a hypothetical scheme design in which it shows the logical relations between the research variables and expresses the results of the research questions raised in a problem. Whereas, scheme design was based on the possibility of measuring each dimension of the study, as well as its comprehensiveness since, pharmacological vigilance is represented as an independent variable, and the dependent variable is represented by MD, Figure 1.

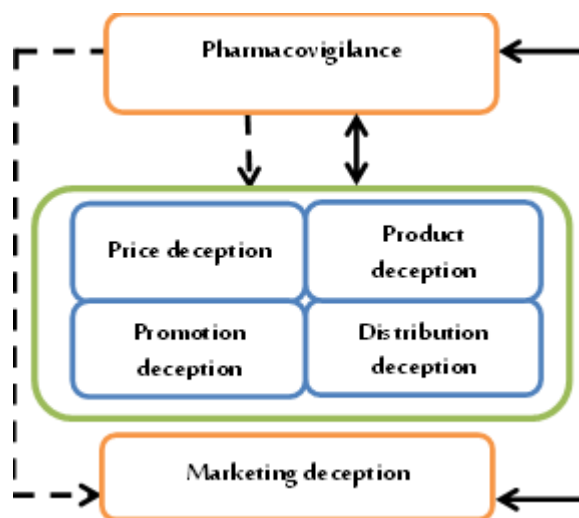


Fig. 1: The research scheme

2.5 Research Hypotheses

According to the objectives of the research and to test its scheme, the research relied on a set of main and subsidiary hypotheses, as follows:

1. There is no correlation between the pharmacovigilance variable and the MD variable and its dimensions.
2. There is no effective relationship between the dimension of pharmacovigilance in MD.
3. The relative importance of MD variables does not vary on the pharmacovigilance dimension

2.6 Research Methodology and Techniques

The research was based on the descriptive-analytical approach as the main approach, due to its suitability in describing the research variables. Through the International Information Network (the Internet), the questionnaire prepared by the researchers was also relied upon in the light of the sources that were available and which will be examined in the theoretical aspect of the research, which specialized in obtaining the appropriate data to carry out the research, and included (36) indicators, covering the research variables. The questionnaire was tested for validity and reliability. After completing the collection of questionnaire forms, and unloading the data, the Cronbach Alpha coefficient was used to determine the degree of reliability of the measurement tool. It was found that the percentage of congruence in the answers of the research sample members reached the total level (83.8%), which proves a good degree of resolution stability compared to the (Standard Alpha) of (60%) for human studies, [1]. On the other hand, the aforementioned form was distributed to a random sample of 527 attendees of some pharmacies operating in the city of Mosul, and the researchers

will stand on the descriptions of this sample at the beginning of the field framework for their research later.

The ready-made system program, [26], was adopted through which the frequencies, statistical means, and standard deviations of the answers were extracted as related to each of the phrases received in the questionnaire, as well as some tests are chosen by the researchers as appropriate tests in studying the relationships between the different dimensions of the research.

2.7 Research Limits

The spatial boundaries of the research and the research sample and those who are within the geographical boundaries of the city of Mosul.

3 Pharmacovigilance

The concept of pharmacovigilance: Looking at the negative aspects of drug marketing and the warnings of the World Health Organization has impulses many countries to pay attention to the concept of pharmacovigilance (smuggled drugs, counterfeit medicines, policies of some pharmaceutical organizations in the third world, the absence of a national drug policy, the lack of Regulated pharmaceutical legislation, weak of national pharmaceutical industries, registration of medicines without scientific standards, importing unnecessary medicines, distributing medicines without controls or restrictions, marketing of medicines withdrawn from international markets, lack of quality control after marketing, immoral promotion of medicines) all are reasons that encourage researchers to looking at the term of pharmacovigilance in the context of the marketing and post-marketing dimensions, and pharmacological vigilance is an uncommon term among patients, and it may not be known by many even those who are interested in scientific affairs, but its importance far exceeds its cognitive presence among people, as it is about keeping track of pharmacological effects therapeutic interventions and their impact on the health and safety of patients during and after treatment, as well as, if the global age of this term has exceeded five decades, it emerged in the mid-sixties, [2]. It is also related to the safety of medicines after their marketing, and soon the concept will be related to a broader scope to include pharmacological safety data for medicines before marketing. Accordingly, it requires all pharmaceutical and regulatory authorities concerned with drug safety to have a department that has all the powers and privileges to

carry out the task of pharmacovigilance and follow-up drug safety, [3]. Pharmacovigilance is designed to control the safety of licensed medical products and evaluate the benefits against the risks that may result from their use”, [4]. Or, it is “a system used by organizations to fulfill their legal duties and responsibilities in relation to pharmacovigilance and is designed control the safety of licensed medical products and evaluation of the benefits compared to the risks that may result from their use”, [5], and explained by [6], it is “the provision of information to health care professionals as well as to patients in order to improve the safe and effective use of medicinal products.” While the authors in [7] defined it as “science and activities related to detecting, evaluating, understanding and preventing of the side effects caused from drug use”, which is “checking adverse drug reactions and detecting their negative effects and problems arising from their use”, [8]. Therefore, pharmacovigilance can be considered as a set of activities that aim to improve the efficiency of medicines and control products to ensure patient safety, and reduce side effects that patients are exposed to as a result of using medicines.

The importance of pharmacovigilance: pharmacovigilance tries to identify adverse reactions to drugs, their classification, and analysis, methods of monitoring and control, as well as medication errors and how to assess their risks, find solutions to avoid them, protect community members and patients from their negative effects, in addition to identifying adverse interactions between them and chemical drugs. Or herbal and complementary medicines or food. The program also tries to motivate continuous education about drug safety, monitor adverse or adverse reactions to it, educate pharmacists and physicians, and educate the community about drug safety reports. Since our life is affected in any way by medical interventions. Pharmacovigilance has been promoted in recent years as of scientific importance to effective clinical practice and public health sciences. National Pharmacovigilance Centers have become a major influence on drug organizational authorities at a time drug safety concerns are becoming increasingly important. In public health and clinical practice. This paper reveals the basics of drug safety and other important aspects of pharmacovigilance, [8]. The study in [9] has clarified the importance of pharmacovigilance in the light of the following:

1. The drug information obtained from the pre-marketing phase of the drug is insufficient, especially regarding the safety of the drug, and it may have side effects of drugs.
2. Experiments conducted on animals do not fully indicate their effect and safety on humans.
3. Clinical experiments are conducted on a small number of volunteers, as well as a small number of patients and conditions associated with their use. The duration of these experiments is relatively limited and does not use the drugs on a large scale or for a large number of people.
4. Some side effects may not appear in pre-marketing studies, especially uncommon ones; this is due to the small number of patients participating in these studies.

3.1 The Importance of Patients' Reports about Side Effects of Medicines

The study in [9] explains that the importance of the reports submitted by patients as a result of their use of pharmaceutical products is as follows:

1. Patients are considered essential and effective players and the main stakeholder in drug safety, as well as, they can contribute effectively to its programs to improve their participation in managing their health affairs
2. Direct reports are an essential means of engaging patients and improving their communication regarding their health affairs.
3. Patients' reports can reveal side effects early, and the number of reports can be increased, especially for medicines that are taken without a prescription.
4. Direct patient reports can overcome the problem of under-reporting by doctors and pharmacists, as it was found that only 5% of them report side effects, and under-reporting is a major problem that most countries suffer from.
5. Patients' reports will enhance their rights and participation in matters of concern with their health problems.
6. Patients' reports will help to improve the quality of life and ensure the safe use of medication.
7. Patients' reports will help detect counterfeit medicines that are not suitable for the required level and that meet the standards of quality, efficacy, and safety.

3.2 The Stages of Pharmacological Vigilance

The study in [10], indicated that pharmacological vigilance goes through four basic stages:

A. The clinical stage: This stage can be expressed as follows:

a. Pre-clinical:

Includes ensuring safety and quality in the drug research and development process, through the implementation of chemistry, manufacturing, and control, regulatory requirements, such as process validation, quality standards according to designs, and good laboratory practices.

b. Post-clinical stage:

It is represented by the following:

- Ensure adherence to good practice guidelines to ensure moral quality and practical credibility when conducting clinical trials.
- Enforce close controlling, analyzing, and evaluating of reports within clinical trials/bioequivalence.

B. Marketing approval stage and manufacturing stage:

It is represented by adopting a risk-based strategy for all new drug applications, by requesting information on current drugs, certificates of manufacturing practices, risk management plans, and vigilance of drug use.

C. Post-marketing stage: This stage is adopted in creating a strong regulatory framework to:

- a. Create safety profiles for drugs that are marketed in cooperation with manufacturing organizations.
- b. Conduct clinical trials for the fourth stage when it is necessary.
- c. Ensuring safety and quality in distribution and dispensing by controlling drug product distribution outlets.
- d. **Post-exclusivity:** create a strong legal and regulated framework to implement international standards in manufacturing and distribution to ensure the accurate and modern brand of all marketed products, according to recently acquired safety information.

4 Marketing Deception (MD)

4.1 The Concept of MD

MD is one of the immoral practices in the business world that carry many meanings and implications, most of which fall under human behavior practices and the rules and standards that govern this behavior. And this will show whether the behavior that accompanies these actions is good or bad, right

or wrong, [11]. Moreover, the concept of deception in Islamic law is referred to as a forbidden act, and neglecting the commands, then everything that goes against the law is forbidden, whether it is an increase or decrease. Linguistically it is referred to as presenting something other than the hidden, [12]. The study in [13] has explained MD as “providing the customer with false information about services with intention of selling them by using soft speech, since the information is correct in form and incorrect in content”. While the study in [14] has stated that it is “a group of fabricated problems that negatively affect the customer directly and a misleading effect that moves him away from the truth, as the product is displayed through undesirable advertisements based on biased information for one side than the other, or it is providing the customer with false information about the products to sell them. The article in [15] has referred that MD is “a type of prevarication and fraud that aims to persuade the customer to purchase a good or service by providing misleading and distorted information by the seller, marketer, or service provider to obtain a benefit and illegal gain.” Therefore, MD can be considered as “a type of immoral practices presented to persuade the customer to make a purchase decision without hesitation, or try to obtain information about the quality and characteristics of the presented product and thus falling into the trap of MD.”

4.2 The Reasons for the Emergence of MD

Many researchers, including [14], [15], [16], [17] agreed with the reasons for the emergence of MD emergence as the following:

1. Disregard moral foundations and rules in commercial transactions.
2. The desire to maximize illegal profits, and thus achieve quick wealth, regardless of the legal or illegal methods that lead to it, adding to that, the ignorance and lack of knowledge of buying and selling rules.
3. Marketing practitioners resort to MD on customers, who make improper purchasing decisions.
4. Weakness or ineffectiveness in the role played by customer protection associations.
5. The negativity of customers in the field of reporting about they have fallen in or noticed deception and demanding the necessary action to compensate for the harm sustained as a result of MD.
6. The deficiencies in the legal legislation regulating specialized business activities organizations, whether about prohibition or

criminalization of MD as well as the slowness of legal procedures in this field.

7. Customers' lack of awareness of MD practices and inability to detect it, and inability to learn and benefit from situations in which they were deceived in one way or another.
8. In many developing countries, we find that the customer's cultural level is declining and the customer lacks a clear idea about the products he intends to buy for the first time.

4.3 Forms of MD:

There are many methods used in practicing deception in different organizations which provide products, and these methods are [18]:

1. **Concealment:** Concealment is one of the oldest and most common methods of deception. It means: that the producer or the marketer conceals the actual characteristics of the product or conceals the materials used in manufacturing the product to convince the customer to buy it.
2. **Camouflage:** It is more dangerous than the first type because in this type the customer is deceived since the product is presented to him to satisfy his needs and desires. Moreover, the product is of high quality by presenting some specifications to the customer in the tested product sample which is not available in all products.
3. **Corruption:** Corruption here means that the marketer or producer intentionally provides misleading or incomplete information about the product to the consumer to motivate him to buy, or the producer shows only the strengths aspects and conceals weaknesses of the product.

4.4 The Dimensions of MD

The customer's suffering from MD methods extends for long periods and at different times, and this is through the products offered to him, which seem to serve him, and satisfy his needs and desires, but in fact, it was aimed at exploiting him and achieving higher profits. This matter has increased so many individuals, groups and official and unofficial bodies have stimulated the customer to massy marketing exploitation and deception that the customer suffers from and the resulting physical and moral damages. This encourages those who are interested in marketing to present directions and recommendations to ensure the protection of customers in their dealings with producers and distributors of products, [19]. MD is considered a moral practice that causes negative effects on human behavior to obtain a competitive advantage or benefit. Many researchers including [20], [21],

[14], [22], [23], [15], [17] agreed that MD is done through the elements of the products marketing mix products or the elements of the marketing mix for services, and both mixes will be discussed according to the following:

4.5 Deception in the Product

The product is the of organization's existence, as every organization existent in the market offers a product, and many organizations use deception in the product because of one of two reasons the first: is that the product offered by the organization is a necessary product for customers and they do not check in its ingredients and specifications, that is, it cannot be dispensed with. Thus, the organization uses deception to gain the largest amount of profits by producing it at a very low cost and selling it at an almost high price. The second is the organization that outperforms its competitors is being imitated by others through imitating their products and then presenting them to the customers at the same price, but with different specifications, benefiting from a different product to deceive the customer with the same specifications of the original product, [24]. The study in [22], deals with deception in the field of the product as follows:

1. Using brands (brand name) that are similar to famous and original brands with high quality, so that the customer gets confused and deceived, and then buys it believing that it is the original brand. An example of that is the (Oshiba) brand which is close to the (Toshiba) brand.
2. Deception in the weight: writing the total weight only on the package and writing the net weight.
3. Enlarging the product package size: Exaggerated its content, so that it gives the impression to the customer that it is great content when it is not.
4. Reducing the packaging content of the product: such as the weight, and keeping the same price, instead of raising the price and keeping the content the same and exploiting the customer's prior belief in the linear size of the package that he is accustomed to.
5. Development or fictitious change in products, so that only packaging shape is changed, and the product is advertised in its new or developed form, to suggest to customers that the new product is better than the first.

4.6 Price in Deception

On the other hand, price deception is done by offering low prices compared to similar goods, and

thus the market aims to make an attractive commodity through its price, as many customers are interested in the details of the product price, they buy with the lack of interest in other aspects of the product such as usage specifications and expiration date. Moreover, many producers of new brands use price manipulation policy to build reputation and market share and attract customers, [25]. There are many deceptions in the price field, [22]. The study in [14] has indicated the deceptive practices in the field of price as follows:

1. Determining the price of the product package so that the unit price of the larger package is equal to or greater than the price of the smaller package. Adding to that, the vast majority of customers assume that the unit price of the product of a larger package is less than that of a smaller package for the same product. Therefore, the customer, who usually tends to buy a larger package to save, ends up not saving, and sometimes he may pay more for such a package.
2. Determining high prices for some products as being of high quality, while in fact, they are not, and marketers who do this exploit the customers' belief that the higher the price, the higher the quality of the product, and this is a logical belief, especially in the absence of the customer's technical knowledge, and turn to this practice is often rumored with products such as electronic devices that are used in houses, ready-made clothes, cosmetics, and bags.
3. Obliging the ATM operator to bear expenses that increased what he should incur to withdraw a certain amount from the machine.

4.7 Deception in Distribution

in this case, deception is carried out by distributing products to places far from the reach of the customer, forcing him to make a physical and psychological effort to satisfy his needs and desires, as well as not supplying products promptly, or distinguishing between customers in terms of access of the quantities and items distributed, [26], and deceptive practices in the field of distribution can be identified as follows [16].

1. Some supermarkets indicate the price of the product without mentioning whether the unit is per kilogram or for a group of products (the dozen).
2. Lack of information regarding product sources offered by some supermarkets.

3. Some retail stores sell free samples that are meant to be used to stimulate sales obtained from producers or wholesalers.
4. Some supermarkets that display vegetables and fruits use lighting to affect the colors of the different varieties of goods.
5. Displaying counterfeit products bearing the original, famous brand, and this type of deception is usually used by retail stores that deal with electronic devices when it is not, even if the prices at which these products are sold are usually significantly lower than the prices of their non-counterfeiting counterparts.

4.8 Deception in Promotion

Promotion refers to a group of contacts made by the producer with prospective customers to introduce and convince them of the goods and services and encourage them to buy. Promotion is an important marketing activity that involves the process of persuasion and attraction to buy. On the other hand, promotion is several different elements of communication with Customers as (advertising, personal selling, sales promotion, and salesmen) and all of these elements play a different role in how to deliver the commodity to customers and encourage them to buy, and these deceptive practices in the field of promotion are [16]:

1. Advertisements are characterized by the impossibility of objective proof of the invalidity of the claims contained therein, but they give promises that are difficult to fulfill. This means advertisements that contain exaggerated promises that cannot be objectively proven to be invalid, and at the same time, it is difficult to measure whether the promise is fulfilled or not. Although, customers can believe it.
2. Ads that contain insufficient information, that is, they do not disclose certain things and are lacking in the information they contain.
3. Advertisements are characterized by honesty in one part and dishonesty in the other part.
4. Advertisements about bogus trade discounts and subsequent price gouging.
5. Medical advertisements and promotions about weight loss and hair loss drugs, medicinal herbs, and others without licenses.
6. Classified advertisements contain which do not secure consequences, such as maintenance of computers in homes and advertisements for the sale of electronic devices or furniture that may be stolen.
7. Concerning personal selling, the marketer hides some information related to the product from

the customer, as well as praises the product without indicating its disadvantages while exaggerating its description.

5 This Paper Differs from Previous Literature

Their offices are nearby Medicines, Drugs Medicine, Pharmacists, Nursing Staff, Medical Agents, Symptoms, Symptoms, Medical Symptoms, and Medical Products that already exist.

Feedback Actively reporting positive feedback. This center will collect data or a future reference source of positive feedback, verify feedback from feedback, and occasionally, often collect and review reports of the effects of medicines in healthcare from different countries. Reports are published and verified correctly and verified, through their publication and verification of their publication.

Advocates for drugs and cooperation are solid and effective among the major players in the field of pharmacovigilance. The requirement that this cooperation operate with the expectation and explanation of a response to the growing demands and aspirations of the people, officials, planners, politicians, and health professionals

1. Therefore, he sees that the current time is read so far until the time of study
2. Improving patients' condition and following up after using medicines.
3. Reducing the side effects of medications and complications resulting from the idea.
4. Improving health care for children.
5. Monitoring the safety of the drug to increase its efficiency and effectiveness.

Reducing the deception that the customer was exposed to and his use of the drug.

6 Research Hypothesis Testing

6.1 There is No Correlation between the Pharmacovigilance Variable and the MD Variable

To identify the nature of the correlation between drug vigilance and MD, the data in Table 1 indicates the existence of a positive significant correlation between the two dimensions, as the value of the total correlation coefficient reached (0.299) at a significant level of (0.01). Pharmacovigilance is an important practice of monitoring drug-related issues after they have been marketed in the "real world." Pharmacovigilance and all related issues are important for those whose lives are affected in any

way by medical interventions. Therefore, this vigilance that an individual enjoys will reduce marketing deception. Batali is gradually eliminating marketing deception in pharmaceutical products. So, the hypothesis should be rejected and the alternative hypothesis accepted.

Table 1. Correlation coefficient between pharmacovigilance and MD

independent dimension dependent dimension	marketing deception
Pharmacovigilance	(0.299) **

** Significant at level (0.01) N=527
Source: Prepared by the researchers in light of the results of the electronic calculator.

6.2 There is No Relationship to the Effect of Pharmacovigilance in MD

The results of Table 2 refer to the moral analysis between pharmacological vigilance and MD, as the calculated (F) value reached (51.428), which is greater than the scheduled (F) value of (3,841) at the

two degrees of freedom (1,525) and the level of morality (0.01) And the value of the coefficient of determination (R²) was (0.089), which indicates that the percentage of the explained difference in MD due to the effect of pharmacovigilance is (8.9%) and the remaining percentage (91.1%) represents the contribution percentage of the unsearched variables, and it is inferred from the value of (β) which is (0.352) and (T) test have an effect of pharmacological vigilance in MD is (0.352), and in terms of the calculated (T) value (7.171), which is a significant value as well as greater than its tabular value of (1.645), which reflects the nature of answers The respondents expressed their ability to explain the effect of pharmacovigilance in eliminating MD.

In light of the previous data, it was found that there is an effective relationship between pharmacological vigilance and MD, but it is somewhat weak due to the absence of pharmacological vigilance in the respondents, and according to what has been clarified the hypothesis is rejected and the alternative hypothesis is accepted.

Table 2. The impact relationship between pharmacovigilance and MD

independent dimension dependent dimension	marketing deception				
	R²	D.F	F		β
			calculated	tabular	
Pharmacovigilance	0.089	1 525	51.428	3.841	0.352 (7.171)

** Significant at level (0.01) () T calculated N=527
Source: Prepared by the two researchers in light of the results of the electronic calculator

6.3 The Relative Importance of the Variables “After MD on the Pharmacovigilance Dimension” Does Not Vary)

To verify the validity of the fourth main hypothesis, the data in Table (3) disclose the following:

1. The product deception variable entered the first stage as one of the most important variables for the pharmacovigilance dimension, as the relative importance of this variable was its value (0.093), in other words, the differences explained in the pharmacovigilance dimension due to the product deception variable according to the answers of the respondents were (%). 9.3) in terms of the value of the β coefficient (0.225) and in terms of the calculated T which are (7.354), and it is greater than its tabular value (1.645).
2. The price deception variable entered the second stage, and this variable explained with the first variable its amount (0.117), this means that the explained differences in pharmacovigilance were (11.7 percent) due to the effect of the two variables (product deception, price deception) together, while the value of the coefficient reached β (0.18), which explains both variables, with a calculated T value of (5.547), which is greater than its tabulated value (1.645).
3. The distribution deception variable entered the third stage, and this variable is explained with the first and second variables, which amounted to (0.125), this means that the explained differences in pharmacovigilance were (12.5 percent) due to the effect of the variables (deception by product, deception by price, deception by distribution) together in, While the value of the coefficient of β was (0.114), which explains both variables, and in terms of

- calculated T value of (3.201), which is greater than its tabulated value (1.645).
4. The variable of deception by promotion entered in the last stage, and this variable explains with each of the first, second, and third variables, in an amount of (0.127), in other words, the explained differences in pharmacovigilance were (12.7 percent) due to the effects of the variables (product deception, price deception, Deception by distribution, deception by promotion) together, and the value of the β -factor was (0.088) and the calculated T value of (2.333), which is greater than its tabulated value (1.645).

Through what was presented above, we note that the respondents are interested in deception in the product in the first place, because of the nature of the products they buy, and that affects their personal lives, but this deception they are exposed to was great compared to the results that were seen in the Table (3) as this percentage The big one came because of their lack of interest in pharmacological vigilance, which is an important and necessary requirement for the process of buying pharmaceutical products, and thus we notice the rest of the types of deception in the marketing mix among the respondents, as deception in price came in second place, due to the large supply of pharmaceutical products and different companies, which contributes to the inability of the individual To determine the optimum price for these products, as deception by distribution came in third place, and finally, deception by promotion.

Accordingly, the relative importance of MD variables differs from a variable on the pharmacovigilance dimension, so the third main hypothesis is rejected, and the alternative hypothesis is accepted.

Table 3. The relative importance of the effect of pharmacovigilance on MD

Variables	Statistical indicator	Relative importance	β	T. Value		D.F	stage
				calculated	tabular		
Product deception		0.093	0.225	7.354	1.645	1 525	1
Product deception + price deception		0.117	0.18	5.547		2 524	2
Product deception + price deception + distribution deception		0.125	0.114	3.201		3 523	3
Product deception + price deception + distribution deception + deception by promotion		0.127	0.088	2.333		4 522	4

** Significant at level (0.01) N=527

Source: Prepared by the researchers in light of the results of the electronic calculator.

In light of what was observed from the results of Table (3), it was found that vigilance played a major role in eliminating marketing deception in pharmaceutical products, but what was observed in light of the results of the answers of the research sample individuals that they are deceived when purchasing pharmaceutical products because of their ignorance and lack of vigilance using pharmaceutical products. This comes through researching and surveying the methods of using medicines, as well as knowing the prices of pharmaceutical products, comparing them with competing companies, their distribution locations, and the proper promotional method for these products.

4 Conclusions and Suggestions

We conclude our findings as follows,

1. The customer's suffering from MD methods extends for long periods and at different times, and this is through the products offered to him which seem on the surface to serve him and satisfy his needs and desires, but in fact, they aimed to exploit him and achieve the largest possible amount of profits.
2. The results of the descriptive analysis of the two dimensions and variables of the study and from the point of view of the respondents showed that they were in the positive direction with the emergence of a variance between the two dimensions and the variables within one dimension. This indicates the ability of the respondents to diagnose and recognize the concepts adopted by the study and try to diagnose them through the field side.
3. Pharmacovigilance does not contribute to eliminating MD according to the answers of respondents.
4. There is an impact relationship between pharmacological vigilance and MD, but it is weak to some extent, due to the absence of pharmacological vigilance adoption among the respondents, which negatively affected the elimination of MD practiced by some pharmacies operating in the city of Mosul.
5. The relative importance of MD variables varies from one variable to another in the dimension of pharmacovigilance.

Our suggestions are as follows,

1. Forming specialized committees which have a high qualification of efficiency to control methods of deception and impose severe penalties for violators.

2. Imposing rules and penalties for those who practice MD by closing workplaces for a specified time or financial fines.
3. Forming educational and awareness committees to clarify methods of MD to customers, especially in the field of medicines, whether through workplaces or by visual and audio means, or editing brochures to be distributed in pharmacies showing the methods of cheating and deception.
4. Forming teams from the Pharmacists association to be neutral in controlling the pharmacy's work.
5. Controlling of pharmaceutical companies by specialized committees in this field, and checking the raw materials for the pharmaceutical industry and their conformity with internationally approved standards.
6. Educate customers about reporting any side effects that occur as a result of taking medical drugs to take the necessary measures to reduce them.

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