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# QUALITATIVE STUDY ON PHYSICIANS' MOTIVATIONS AND DRUG PRESCRIBING BEHAVIOUR

Luminița Mihaela Ion\*

**Abstract:** *The proper prescription of medicines by specialists from healthcare, especially physicians, it's a major challenge of the healthcare services concerning the financial implications respectively the effects upon the patient's health status. The assurance of a proper and adequate prescription for the patients is influenced by a series of factors which act upon the prescription decision of the medicines, as: the medicine features (quality-price, availability), the patient's situation, the prescriber, respectively the professional environment. The estimate of a physician behaviour concerning the action of prescribing to the patients leads to the discovery of the major role that the intention has on the behaviour. The present study aims at carrying out a thorough research on drug prescribing behaviour to patients, trying to identify the motivations which underlie the action of prescribing.*

**Key words:** patients; factors; drug prescribing behaviour to patients.

**JEL Classification:** M14; M19; M39; I11; I13; I19.

## INTRODUCTION

The final goal of any prescribed medical treatment is to obtain certain desired results from the patients in question. However, despite best intentions and efforts from healthcare professionals, these results would not be achieved if patients did not follow the treatments. As regards to developing countries, drug abuse becomes a problem of the healthcare system. Studies (Jacoby, Smith and Eccles, 2003) showed that, on average, 2.4 to 10 medicines are recommended in a medical prescription. Another challenge of the prescription habit refers to the fact that between 40-50% of prescriptions contain antibiotics as an antidote for patients' affections (Dinarvand and Nikzad, 2000). Ensuring a suitable and adequate prescription represents a major challenge for healthcare services. The unsuitable prescription of a drug presents both clinical and financial implications. Different research studies (Cockburn and Pitt, 1997; Soumerai and Avorn, 1987) identified some of the factors which influence the prescription decision, among these the following there can be enumerated: drug characteristics, the patient's situation, prescriber, and professional background, respectively.

The current situation of excessive drug prescription to patients, and their conformity to the physicians' prescribed treatments represent aspects which form the basis for understanding behaviours behind the action of prescribing, which needs to be carefully considered.

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## 1. THE ANALYSIS OF DRUG PRESCRIBING BEHAVIOUR TO PATIENTS

The aim of prescribing medicines refers to the fact that they are beneficial to the patient, implicitly to their health.

Cognitive mechanisms which lie at the basis of individual behaviours, for example adopting health behaviour, are important to be analysed and studied taking into consideration the importance of the individual decision in adopting that behaviour. Healthcare professionals are permanently exposed to new research discoveries, which can contribute, through efficiency and efficacy, in the overall process of taking care of the patient. Healthcare professionals' medical activity can be influenced by a series of factors, for example individual motivational predispositions which lead to the change of medical behaviour (for example, the action of prescribing medicines, carrying out a medical examination, the recommendation of specialists to patients, counselling, etc.).

The change which takes place in a healthcare professional's behaviour can be explained after carrying out thorough theoretical research (Grimshaw et al., 2002). The study of the mechanisms which underlies the adoption of a new behaviour was treated from the perspective of the socio-psychological theory, starting from the idea that most decisions in clinical practice are of an individual kind (Godin et al., 2008). Social-cognitive theories describe an individual's opinions/knowledge as processes which take place among external noticeable stimulus and the reactions which appear in real situations. In order to forecast the specific healthcare behaviours, a series of social-cognitive theories were approached on the basis of which the behavioural intention and the behaviour itself were explained, with the help of the *variance* indicator (Conner and Sparks, 2005). An important discovery regarding the assessment of a healthcare professional's behaviour (for example, a doctor, a nurse, a chemist, etc.) highlighted the major role which intention has on behaviour (Eccles et al., 2006). The study carried out by Eccles and his team did not measure the power of the connection between intention and behaviour for healthcare professionals, but the contribution they brought emphasized that the previously mentioned association is similar in magnitude to that encountered among non-professionals and that the different constructs through which the cognitive theories are highlighted (Theory of Planned Behaviour/Motivated Action Theory) can predict the intention and behaviour among different medical groups. For example, in a meta-study, Sheeran (2002) came to the conclusion that on average intention influences the variation of behaviour in a proportion of 28%, by estimating the determining ratio ( $R^2$ ). According to the indications of Fishbein and Ajzen (1975), intention and behaviour must correspond in terms

of action, aim/goal, context/circumstances related to the patient, and time (period when he adopted the behaviour).

The way in which behavioural changes take place as far as drug prescription is concerned was approached and studied from the perspective of the Theory of Planned Behaviour (TBP). TBP belongs to the category of social-cognitive theory which perceives individuals as rational actors which process information before forming certain behavioural intentions, which would subsequently transform themselves into the behaviour itself (Ajzen, 1991). The behavioural intention is formed on the basis of the simultaneous influence of attitude about that behaviour, perceived social pressure (subjective norm) and the perception of control on adopting that behaviour respectively. The intention which refers to certain behaviour represents the main factor which influences the formation of behaviour, compared to the perception about the behavioural control. The intention is considered the basis of TBP, both as a dependent variable and a predictor of behaviour, but the intensity of intention represents the variable predictor important to behaviour. Through the influence of intention, by means of attitude, the action of variables, the subjective norm and the perceived control can contribute to the formation of intention. The theory suggests that the variables, attitude, the subjective norm and the perceived control are based on beliefs and strong opinions. Attitude is formed on the basis of a set of opinions about the consequences triggered by the adoption of behaviour and the assessment of considered consequences. The subjective norm is based on the others' perception about the adoption of that behaviour and the extent to which a certain individual wishes to adhere to that perspective. Similarly, perceived control is determined by the opinions which refer to exercising control and the perception of power of these opinions respectively. For example, for a general practitioner to adopt a positive attitude to the prescription of a certain drug to a patient he should evaluate positively the expected change in the patient's health; he would also have to believe that prescribed drug is capable of producing that positive health modification.

Physicians' drug prescribing behaviour cannot be fully understood if we analyse only their actions. Prescribing behaviour takes place in a social context, physicians-patients, influenced by a series of aspects: patients' expectations, following or ignoring the treatment respectively. The model of interaction between the doctor and the patient starts where the existence of a problem requires a doctor's advice who, in turn, offers all his gained knowledge and abilities to solve the problem. The patient accepts the solution offered by the doctor and follows the instructions he gives. This simple model may be visualized in the following way:

*Patient with a problem > Doctor > Solution (for example, prescribing a drug) > Patient follows treatment previously prescribed*

In reality the previously described model is much more complex and is supported by the results of several research studies which identified the influence of various factors on the relationship between the physician and the patient. For example the patients differ in what concerns the availability to be seen by a certain physician for a certain problem, the patients and the physicians are not on the same page in what concerns the volume of information which they provide to each other and respectively the patients does not obey the instructions given by the physicians (Stimson and Webb, 1975). People shape their expectations before any consultation about what the physician is going to do. Physicians on the other hand can perceive these expectations in the form of a request coming from the patients about how they should proceed. The expectations of the patients are rarely expressed in explicit requests. The relationship patient – physician was tackled in recent studies which analysed the expectations of the patients regarding the solutions offered by the physicians but also the perceptions of the physicians regarding the expectations of their patients. Virji and Britten (1991) expressed the premise that physicians can be aware of the pressure of the patients on them for obtaining a prescription. Various studies showed that no matter whether a physician prescribes or not a prescription, the action itself is associated significantly with the expectations of patients to get a prescription from the physician (Britten and Ukoumunne, 1997; Cockburn and Pit, 1997). A report drawn up by the Audit Commission regarding the prescription of medicines in England and Wales in the year 1994 (Audit Commission for Local Authorities and the National Health Service in England and Wales, 1994) suggested that the excessive prescription of the medicines is influenced largely by the expectations of the patients regarding the treatment which they are to get from the prescribing physician. The results of the Audit Commission are equivocal because the researchers did not define and measure directly the demand for prescribed medicines. The study was based on the research of the perceptions of the physicians about the requests from the patients and respectively on the claims of the physicians that the expectations of the patients influenced the real or presumptive decisions regarding prescription of medicines. Nevertheless the existing studies which analysed the premise regarding the influence of the medicines demand of the patients on the prescription behaviours came to contradictory results. Thus two studies drew the conclusion that the medicines demands has no influence on the prescription (Hepler et al., 1982; Segal et al., 1982), a study showed that the perception regarding the medicines demand influences the prescription little (Stephenson et al., 1988) and other five studies showed that the medicines

demand is associated with higher rates of the prescription (Hadsall et. al., 1982; Scwartz et al. 1989). Four of the five studies which got positive results considered the complexity of the prescription behaviour so that they came to the conclusion that the degree of severity of the illness to be treated, the type of prescribed medicine or the previously made programming for a consultation at a physician contributed to influencing the prescription of medicines. The general conclusion is that the medicines demand from the patients represents one of the factors which lead to the prescription of medicines. The interaction physicians – information and education campaigns in the health field represents an important element that can influence directly the behavioural patterns of the professionals – through the activity of prescription of a formula, as well as indirectly the expectations of the patients regarding what is to be prescribed by the physician. The premises mentioned above suggest that the physicians can be motivated in their activity to prescribe as a consequence of the performed information campaigns, especially if their active participation in those campaigns (Bero et al., 1998). The medicines are an appropriate topic to be explored within the public health campaigns because suggesting a wise consumption of pills can lead through the associated advantages and risks to influencing to a greater degree the behaviour of a patient than by suggesting a healthy life style, which is difficult to practice despite the advantages for the health. The involvement of the patient in taking decisions (for example that to prescribe a certain prescription) is a strong example of the changing attitude within society in favour of obtaining more autonomy and more possibilities to choose from (Department of Health, 2001, 2002; Wanless, 2002). The role of the specialists in the health field these days becomes one in which help is offered in the taken decisions by the patients and also one in which they are supported as soon as they have made a certain decision.

## **2. ELEMENTS WHICH LEAD TO PRESCRIPTION ERRORS**

An inappropriate prescription decision of the medicines to the patient is caused by a lot of elements which are in permanent interaction. The elements which lead to the emergence of the prescription errors can be: insufficient information of the physicians regarding the last innovations in the field of pharmacology, intense promotion of the medicines by the medical representatives of the pharmaceutical companies (Avorn, Chen and Hartley 1982), errors which are based on omissions from the prescribing physicians, ignoring the cost elements of the medicines, pressure from the patient or his family to be recommended a certain medicine contrary to the indications, increased trust for the previous medicine experiences regarding certain medicines in the treatment

of certain illnesses to the detriment of the scientific studies, the necessity to be given by physicians a medicine for health problems which have no clear medical solution (for example dementia) and respectively the big volume of the medical practices focused on the prescription of medicines as a strategy to decrease the time of medical examination. Between a third and a half of the consultations carried out by physicians result in filling in a prescription. The appropriate customs for the prescription of medicines to the patients involves the use by the physician of a limited number of pills which this one knows beforehand. The risk of an inappropriate prescription is higher in case of physicians who recommend a large number of medicines. The changes emerging within the medicines prescription customs are influenced by a series of elements, from which we can specify the scientifically works, recommendations of the specialists, of the colleagues, of the patients or of the pharmaceutical companies (Bjerrum, Larsen and Søndergaard, 2002).

### 3. MOTIVATIONS REGARDING THE PRESCRIPTION BEHAVIOR OF THE MEDICINES

In a study (Schwartz, Soumerai and Avorn, 1989) which investigated the motivations of physicians which are at the basis of the prescription of medicines of non-scientific type analysed the opinions of a sample consisting of 141 specialists. The request of the patient was on the first position in the list of motivations of the physicians with 46%. The next reason, which is to be found in the model of prescription of medicines to the patients, was the use of that medicine as a consequence of the placebo effect, with 24%. Another motivation of the prescription of medicines to the patients resulted from the study referred to the clinical experience of the physician which confirmed that those recommended treatments represented appropriate therapies to be pursued. The elements which influence the prescription behaviour of the medicines by physicians were investigated in a study (Girdharwal and Singh, 2007) which tackled the topic of the behaviour of the physicians towards the marketing practices of the pharmaceutical products. The factors of influence on the prescription behaviour which were identified in the study were assessed by the physicians according to the importance given to each one on a scale from 1 to 10. On the first positions there were the factors *quality of the prescribed products*, *the price of the products* and *respectively their availability* (see Table 1). The most important of the identified factors in the study were the quality of the product prescribed by the doctor, for reasons related to the fact that it helps in the cure of an illness but also related to the contribution to the **reputation**. Thus physicians assess the quality of a product on the basis of the image of the producing pharmaceutical company and respectively

considering the results which a certain product has in the remission of the illness for which it is used. The image of the producing pharmaceutical company is another important factor in terms of priority in what regards the intention of the physicians to prescribe a certain product.

**Table 1 - Factors of influence on the behaviour of prescription of the medicines by the physicians according to the associated importance**

Position	Factor	Average
1.	Quality of the product	9,89
2.	Price of the product	8,50
3.	Availability of the product	8,46
4.	Image of the company	8,37
5.	Regular visits of the representatives of the producing companies	8,20
6.	Research in the molecular domain	7,90
7.	The specialty literature/journals	7,54
8.	The personality of the medical representatives	7,40
9.	Sponsorships for participating in conferences	7,00
10.	New combinations	6,90
11.	Medical educational programs	6,35
12.	Presentation way (package)	6,20
13.	Obtained incentives	5,34
14.	Personally received gifts	4,94
15.	Samples of the products	4,78
16.	Free campaigns for the identification of illnesses	4,70
17.	Existence of the websites of the medicine producers	4,66

Source: Nitin Girdharwal, Ajaypal Singh, A Study of Physicians Behaviour toward Marketing of Pharmaceutical Products (A Case Study of Indian Market, Vol.5, Issue, 6, 2007, available on <http://www.pharmainfo.net/>).

The low purchasing power of the patients contributes to the introduction of the price among the factors which influence the behaviour of the physicians to recommend a certain medicine. The regular visits of the medical representatives from the medicine producing companies represent the most appropriate mean of promotion for the pharmaceutical companies. The presentation of articles in the specialty literature, of the journals and respectively granting sponsorships in order to participate in different conferences or congresses are amongst the motivations of the physicians to recommend a certain pharmaceutical product or to choose a certain producing company. Among the promotion instruments which were less preferred by the pharmaceutical companies in order to be used in the strategy of promotion of medicines there were the organization of free campaigns, granting personal gifts or other types of incentives, as a consequence of the reduced importance degree which these factors have in the decision making process for recommending a medicine by the physician or pharmacist.

The diversity of the medicine brands and respectively of the companies which produce and sell them hinders the decision of the people who make the decision to recommend or prescribe a certain pharmaceutical product. In the decision making process for the recommendation of a



medicine by doctors or pharmacists there intervene a series of factors which contribute to *brand remembrance*. In the same study (Girdharwal and Singh, 2007) five factors were identified which help to remember the names of the brands in the prescription process. These factors were classified according to the importance which they have in remembering the name of the brands (see Table - 2).

**Table 2 - The importance of factors in remembering the names of the brands in the process of prescription by physicians/pharmacists of the medicines**

Position	Factor
1.	Names associated with molecules/the producing company/illness
2.	Short names of the products
3.	Constant remembering (actions of direct marketing)
4.	Names easy to pronounce
5.	Placing little gifts on the table or in the doctor's/pharmacist's office

Source: Nitin Girdharwal, Ajaypal Singh, *A Study of Physicians Behaviour toward Marketing of Pharmaceutical Products (A Case Study of Indian Market, Vol.5, Issue, 6, 2007, available on <http://www.pharmainfo.net/>*

From the table above one can notice that the physicians/pharmacists prefer to mention to the patient brands whose names are correlated with the names of molecules or with the name of the producing company or are related to the illness that they treat. Regular remembrance by means of telephone constant calls and messages sent to physicians/pharmacists at regular intervals is a more efficient option than that of giving small gifts (on which the name of the brand is printed) in order to be found in the office of the physician or on his table.

Among the motivations which determine the physicians/pharmacists to change the recommended or prescribed brand in the situation of the same therapeutic category there are the price, the introduction of new molecules, persistence of the medical representatives, *the effort made by the producing company to promote its products, and respectively campaigns testing of new brands.*

The high quality of a medicine is a key factor which contributes to the success of any pharmaceutical company on the market as a consequence of the fact that this represents a priority for the majority of physicians/pharmacists when they recommend or prescribe a certain product. Pharmaceutical companies must communicate with the physicians constantly in order to promote the products in its portfolio. The producers must also invest in the research and development activity in order to launch new pharmaceutical products (Harrison and Hart, 1987). Another key factor in the process of decision making in the recommendation of a medicine is the task of the professional sale force which becomes an integral part in this process through which the clinical behaviours and the prescription customs of the pharmaceutical products can be changed. The

scientific information presented by the medical representatives must be described in terms of learning opportunities and opportunities of improvement of the process of solving the problems so that all participants in the medical process can be advantaged – physician, patients and sales force.

## CONCLUSIONS

The development of a qualitative study regarding motivations and physicians' behaviour towards the prescription of medication was based on articles from specialized medical literature approached from a marketing perspective. Medication prescription for patients represents a challenge as well as a current issue in the health system, taking into account the fact that the physician - patient interaction is subject to the simultaneous action of several factors that influence the individual decisions of the two actors in the prescriptive act.

On one hand, the physicians' suitable prescription is influenced by several factors that act on the decision to prescribe medication, such as: drug characteristics (quality, price, and availability), patient's state, the prescriber, professional background. On the other hand, the expected results following a medical treatment can be obtained if patients comply with treatments. Excessive prescription of medication, the compliance of the patient to the doctor's recommendations constitutes individual behaviours that define and influence the act of prescribing, therefore requiring additional studies.

Human behaviours are based on cognitive mechanisms that increase the role and importance of individual decision in adopting certain behaviour.

In order to anticipate the behaviours that are typical for the health system, behaviour intention and behaviour as such have been approached from the social cognitive theory where variables were estimated by using variation. Therefore, assessing the behaviour of a health professional regarding medication prescription leads to the discovery of the major role of intention towards behaviour itself.

Understanding physicians' prescriptive behaviour should not be limited to analysing their final actions, it requires understanding the social context of the physician – patient interaction, patients' expectations regarding drug prescriptions, patients' level of acceptance towards the prescribed treatment. The relation physician- patient was intensely studied within theoretical studies on one hand, through patients' expectations regarding drug prescription, rarely expressed in open requests for physicians and on the other hand the relation was explained from the physicians' perceptions regarding patients' expectations. Various studies showed that irrespective of a physician prescribing

a treatment or not, the action in itself is significantly associated with patients' expectation to receive a prescription from the physician (Britten and Ukoumunne, 1997; Cockburn and Pit, 1997). Furthermore, patients' expectations are responsible for excessive drug prescriptions by physicians.

Inadequate drug prescription is caused by several factors that are in permanent interaction and have as a result the respective errors. Prescription errors can be caused by physicians' insufficient knowledge regarding pharmacology innovations, by intense drug promotion by representatives of pharmaceutical companies, prescriber's omissions, ignorance of drug costs, the pressure put by patient or patient's family towards recommending a certain drug despite indications, increased trust in past medical experiences regarding using certain drugs to treat illnesses in spite of scientific studies, physicians' need to prescribe a drug treatment for illnesses that do not have clear medical solutions (dementia, for example), the big volume of medical practices based on drug prescription as a strategy to reduce the time spent in the physician's cabinet.

The increased quality of a drug constitutes a key factor that leads to the success of any pharmaceutical company on the market, as this is a priority for most doctors/ pharmacists when they recommend/ prescribe a drug.

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