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Toward a Better Understanding of Physicians' New Drug Prescribing: Behavior, Attitudinal Response or Decision-making?

Hacia una Mejor Comprensión de la Prescripción de Nuevos Fármacos por Parte de los Médicos: ¿Comportamiento, Respuesta Actitudinal o Toma de Decisiones?

Imen Ben Ali[1]
Tunis University, Tunisia
Chokri El Fidha[2]
Tunis University, Tunisia
Manel Kazdar[3]
Tunis University, Tunisia

ABSTRACT

The significance of prescribing new drugs is widely recognized in marketing literature. However, the varied definitions and conceptual approaches to this concept make it ambiguous and hinder its comprehension. The different ways in which new drug prescription is conceptualized, stemming from its overlapping nature (behavior, attitude, and decision-making), obscure the complexities of new drug prescriptions, making it difficult to understand the concept fully.

This paper aims to build upon the theoretical basis of the concept of new drug prescription by defining it and exploring its different conceptualizations. To achieve this, a comprehensive review of existing literature on new drug prescriptions is carried out. Three primary conceptualizations are identified in literature, and a more comprehensive conceptualization of the concept is proposed.

1 Ph.D. Student, Imen BEN ALI, Higher Institute of Management of Tunis, Tunis University, Tunisia, imen.benalibarnat@isg.u-tunis.tn (corresponding author).

2 Professor, Chokri EL FIDHA, Higher School of Economic and Commercial Sciences of Tunis, Tunis University, Tunisia, chokrielfidha@gmail.com.

3 Doctor, Manel KAZDAR, Higher School of Economic and Commercial Sciences of Tunis, Tunis University, Tunisia, m.kazdar@gmail.com.

Additionally, the key characteristics and the most relevant measurement of this concept are clearly outlined.

Keywords: Prescription of new drugs, Prescribing behavior, Physician prescribing attitudes, Prescription decision-making, Shared decision-making model.

RESUMEN

La importancia de la prescripción de nuevos fármacos es bien reconocida en la literatura de marketing. Sin embargo, las variadas definiciones y enfoques conceptuales de este concepto lo hacen ambiguo y dificultan su comprensión. Las diferentes formas en que se conceptualiza la prescripción de nuevos fármacos, derivadas de su naturaleza superpuesta (comportamiento, actitud y toma de decisiones), oscurecen las complejidades de las prescripciones de nuevos fármacos, dificultando la comprensión completa del concepto.

Este trabajo tiene como objetivo construir sobre la base teórica del concepto de prescripción de nuevos fármacos definiéndolo y explorando sus diferentes conceptualizaciones. Para lograr esto, se lleva a cabo una revisión exhaustiva de la literatura existente sobre prescripciones de nuevos fármacos. Se identifican tres conceptualizaciones principales en la literatura y se propone una conceptualización más completa del concepto. Además, se describen claramente las características clave y la medición más relevante de este concepto.

Palabras clave: Prescripción de nuevos fármacos, Comportamiento de prescripción, Actitudes de prescripción de los médicos, Toma de decisiones en la prescripción, Modelo de toma de decisiones compartida.

JEL Codes: I10, M31, L65

1. Introduction

The relentless pursuit of innovative therapies has revolutionized modern healthcare, with new drugs emerging as a cornerstone of medical advancement. As the demand for accessible and effective treatments surges, the pharmaceutical industry faces increasing pressure to expedite drug development and delivery. This acceleration has led to a growing need for a deeper understanding of the adoption of new drugs by healthcare providers.

While significant research has explored the factors influencing physician prescribing behavior, the intricacies of the prescribing process remain relatively understudied. This knowledge gap is especially significant due to the crucial role of physician prescribing in determining a drug's success or failure. Once a new drug is introduced to the market, its future is primarily determined by physician prescriptions, as they are the main route through which drugs are consumed. The prescribing process of physicians for new drugs is of great significance, however, in-depth research on this topic has been limited. A comprehensive understanding of the prescribing process is essential to optimizing drug development strategies, improving patient outcomes, and maximizing the impact of pharmaceutical innovation.

To address this research gap, this study aims to delve into the theoretical conceptualization of new drug prescribing, delimit the nature of this concept and explore its measurement. By gaining a clearer understanding of the mechanisms involved in the prescribing process, we can contribute to the development of evidence-based strategies to enhance the adoption of effective therapies and ultimately improve patient care.

2. Methodology

To conduct this study a narrative review of the literature on new drug prescriptions was carried out. Relevant academic databases were searched using a combination of keywords and subject terms. The search terms included, "prescription of new drugs," "prescribing behavior," "drug adoption," "prescribing attitudes," and "Prescription decision-making". To ensure the inclusion of high-quality studies, the following inclusion criteria were applied: (1) academic publications, (2) written in English or in French. Articles were excluded if they were case reports or did not directly address the topic of new drug prescriptions. Based on journal articles, conference proceedings, dissertations, and marketing books, the core trends in this area were analyzed and discussed. The time frame for the literature review was limited to the past 50 years (1973-2023). Expanding the time frame allows for a more thorough analysis of the prescribing concept's evolution and ensures the inclusion of the latest findings.

3. Previous Literature & Conceptual Framework

The exploration of drug prescribing by physicians is believed to have commenced in 1949 with Dunlop et al. who surveyed general practitioner prescribing practices in England (Dunlop et al., 1952). This research emerged following the establishment of the public health service, which shifted the financial responsibility for medications from patients to the state (Bradley, 1991). Thus, physicians' prescribing habits, for the first time, became a matter of interest to people other than physicians and patients. Similar studies of physician prescribing appeared much later in the United States (Nithman et al., 1971). In the following section, we will begin by introducing the practice of prescribing drugs by physicians.

3.1 Definition of New Drug Prescription

Etymologically, to prescribe originates from the Latin verb "praescribere", meaning "to put forward, to mention in advance, to indicate"[4]. In general, a prescription is defined as a "formal, detailed order listing what is to be done or should be done". It can also be seen as a "commandment, precept, a rule to be followed" [5]. Prescription therefore conveys the idea of advice, or recommendation, with a more formal dimension, or even a notion of requirement. According to Dagognet (1964), a prescription reflects an expressly formulated order marked by a relationship of authority. Thus, this definition emphasizes the aspect of an order, a rule which is not open to challenge.

In medical terms prescribing is the act of "giving advice, providing firm recommendations or orders for a specific treatment to a patient" [6]. Essentially, by prescribing, the physician fulfills a directive role, emphasizing the medical authority based on scientific knowledge (Welsh, 2009). Grant et al. (2013) defined prescribing as the effort to apply scientific evidence to individual patients while taking into account their preferences, values, and circumstances. Drug prescribing is categorized as micro-prescribing and is performed by all clinicians during patient consultations.

4 National Textual and Lexical Resource Center. http://www.cnrtl.fr/.

5 French Larousse Dictionary. http://www.larousse.fr/dictionnaires/francais-monolingue.

6 National Textual and Lexical Resource Center. http://www.cnrtl.fr/.

Indeed, "prescribing is a form of communication, specifying what needs to be done, naming the remedy" (Martin and Kipman, 1994). Prescribing is therefore an act carried out by the physician following diagnosis, in which he describes and orders the treatment to be taken by the patient. Moreover, prescribing is an integral part of the medical act. It represents "the close and permanent relationship maintained by the physician with the drug in his professional practice" (Faroudja et al., 2012).

Sermet and Pichetti (2012) argued that prescribing is "the most trivial and the most crucial of the medical acts essentially carried out by physicians". Prescription is a way to carry out physicians' treatment plans.

Lévy and Garnier (2007) stated that "drug prescribing is an important moment in the medication process". It is a significant action through which it will be possible, on the one hand, to understand the dynamics of the relationship between physician and patient. On the other hand, it will be possible to identify perceptions of drugs and their functions.

According to the Medical Encyclopedia Larousse, a medical prescription is a therapeutic recommendation, often written on a prescription, provided by a physician. It enables pharmacists to dispense drugs, particularly those available only on prescription, and to receive reimbursement for prescribed drugs from the health insurance system. A medical prescription is therefore the act whereby a physician orders therapeutic recommendations for his patient, who is expected to adhere to it to receive proper care. Admittedly, prescriptions often include a list of drugs. However, it may also mention medical devices, biological or radiological tests to be carried out or other health professionals to be contacted.

A prescription consists of a written or oral indication, advice, or order issued via a prescription[7]. In addition, prescriptions, often handwritten or typed, "must include the information set out in the Public Health Code: "the physician's identification (stamp), the patient's identification (surname, first name, age), the date of the prescription, the name of the drug in plain language, the dosage, the duration of treatment and the prescriber's signature" (Wainsten, 2012). Prescribing medication is the most common outcome of medical consultations (Gallois et al., 2007). It reflects the medical act par excellence. Moreover, a consultation generally ends with a prescription for medication, given that this prescription aims to treat illness.

Choosing a drug for a patient is a key task for physicians. They may choose a drug according to a usual choice by prescribing a drug from the inventory of drugs retained or according to an unusual choice by prescribing a new drug (Lilja, 1976). According to Florentinus (2006), most physicians typically work with a collection of drugs known as a formulary. This formulary is unique to each physician and comprises a personalized list of drugs that are constantly subject to change, with new drugs being added and existing ones being removed.

When a new drug is prescribed, both the physician and patient anticipate a certain therapeutic benefit to enhance the standard of care. However, prescribing a new drug could also pose an increased risk to the patient's health (Baratas, 2006). In this sense, a physician needs to weigh the potential benefits against

7 National Textual and Lexical Resource Center. http://www.cnrtl.fr/portail/ v° prescription, § acte médical.

the possible harm. Understanding the process of prescribing new drugs is fundamental. There is a significant distinction between "prescribing a new drug for the first time and prescribing a drug out of habit" (Dybdahl et al., 2004).

3.2 Main Conceptualizations of Prescribing New Drugs

Based on previous work on the prescribing of new drugs by physicians, we identify three dominant conceptions of this concept in the literature. These conceptions will be detailed below.

3.2.1 Prescribing New Drugs as a Behavior

In this behavioural approach, the prescription of new drugs by physicians is considered a behaviour. This approach is based on two primary theories. The Theory of Planned Behaviour explores the prediction of human behaviour in specific contexts (Cheung et al., 1999), while the theory of diffusion-adoption explains the evolution of new products from the invention stage to that of widespread use (Rogers, 2003).

As per Murshid et al. (2019) and Ahmed et al. (2020), the prescription of new drugs by physicians appears to be a behaviour explained by three components. Firstly, the social norm, which relates to the perceived pressure from patients or pharmacists. Secondly, the perceived behavioral control, which involves the physician's experience and knowledge of the drug, as well as anticipation of potential future issues.Thirdly, the attitude toward the behavior, encompassing the physician's attitude toward information concerning the drug, the drug's brand, the sales promotion, and the medical representatives.

According to Godin et al (2008), physicians' prescription of new drugs is a behaviour explained by their intention, their habit (past behaviour) and their beliefs about the capabilities of the new drug. Therefore, this prescribing behaviour is preceded by their intention to do so, which is the key predictor of this behaviour. Some researchers argue that the concept of new drug prescribing behavior can be equated with intention, which is the best representation of such behavior (Assande, 2011).

For Miller (1973), the prescription of a new drug is a physician's adoption behavior that involves a process encompassing various stages of adoption as well as the variables affecting this adoption behavior. The author adapted Rogers and Shoemaker's (1971) model of the diffusion of innovation to the context of the diffusion of a new drug and outlined "five stages in the adoption process: awareness, interest, evaluation, trial, and adoption".

3.2.2 Prescribing New Drugs as an Attitudinal Response

In this approach, physicians' attitudes play a significant role in prescribing new drugs. The attitudinal approach states that physicians prescribe a new drug when they develop a positive attitude towards it. According to Zanna and Rempel (1988), attitude is based on three types of information:

- Cognitive information: Encompasses physician's knowledge about the drug's characteristics, efficacy, safety, and side effects, derived from scientific literature, clinical trials, and guidelines.
- Affective information: Captures physician's emotional responses and subjective evaluation of the drug's desirability, appeal, and perceived benefits.
- Conative information: Refers to physician's past prescribing behaviors, experiences with similar drugs, propensity to

adopt new therapies, and overall inclination to act.

Powpaka (1996) suggests that attitude appears to be a mental evaluation structure intermediary between attitudinal objects (new drugs) and individual responses (the physician's prescription). This approach was adopted to expose the structure of physicians' attitudes to new drugs. Additionally, Powpaka (1996) emphasizes that a physician's intention to adopt or prescribe a new drug is a function of three attitudes:

- Attitude towards the new drug: This encompasses the physician's overall evaluation of the new drug itself, based on the available information.
- Attitude towards the medical representative promoting the new drug: Pharmaceutical representatives often play a crucial role in disseminating information about new drugs. A physician's perception of the representative's credibility, trustworthiness, and helpfulness can significantly influence their attitude toward the drug.
- Attitude towards pharmaceutical product innovations: This reflects the physician's general disposition toward new pharmaceutical products. A physician who is open to innovation and embraces evidence-based advancements may be more likely to adopt new drugs.

By considering these multifaceted attitudinal influences, this approach recognizes that physicians' prescribing of new drugs is significantly influenced by their attitudes.

3.2.3 Prescribing New Drugs as A Decision

This approach suggests that physicians' prescription of new drugs results from a decision-making process. Grenier et al (1999) stated that "the practice of medicine is primarily a science of decision-making. As knowledge continues to expand, the process of decision-making becomes more complex". The practitioner is viewed as "an expert who strives to make the best decisions for their patients", considering the extent of their knowledge (Abecassis, 1999).

It is crucial to select a drug based on a solid understanding of both the disease and pharmacology. The selection is made considering its mode of action, potential effectiveness, safety, and tolerability, leading to the prescribing decision (Jackson et al., 2004).

According to Kast (2002), decision theory provides "a framework for analyzing rational behaviour uncertain situations". This theory is based on: "a set of descriptions of decision problems from which coherent analyses can be conducted; it proposes principles on which selection criteria are constructed, and solutions will be proposed". Therefore, this theory gives decision-makers the tools to analyze their problems and justify the solutions they adopt.

Delassus (2011) confirms that in the field of medicine, learning to make decisions is an ongoing learning process. Physicians continuously enrich their database, which enables them to refine their decision-making skills when prescribing constantly. According to Chapman (2004) prescribing generally involves healthcare professionals making decisions on behalf of patients.

Mallet and Lemoine (2011) emphasize that physician drug prescribing highlights "a structured and methodical decision-making process. This process includes chronological successions of stages and requires logical and deductive reasoning". They add that the decision taken by physicians is "a

highly rational activity, employing analysis, utilization of knowledge and evaluation of alternatives while weighing up the benefits and risks".

4. Discussion of the Main Conceptualizations of Prescribing New Drugs

Prescribing new drugs is a complex and multifaceted phenomenon conceptualized through various theoretical frameworks: the behavioral, attitudinal, and decision-making approaches. Each offers unique insights but also presents limitations.

The behavioral approach to prescribing new drugs offers several strengths. It provides a comprehensive framework by integrating theories like the Theory of Planned Behavior and diffusion-adoption theory, offering a multifaceted analysis of new drugs prescribing. This approach has predictive power, as intention is a key predictor of behavior, allowing for targeted interventions. It also provides a process-oriented perspective through Miller's adaptation of Rogers and Shoemaker's model, outlining stages of adoption. However, the approach has several weaknesses. There is potential for bias due to self-reported intentions. The model may underestimate contextual factors such as healthcare policies. Furthermore, it has a limited focus on patient-centric factors like socioeconomic status or health literacy. Finally, its focus on adoption stages introduces temporal limitations, as it does not fully capture the dynamic nature of prescribing behavior over time.

The attitudinal approach to prescribing new drugs offers several strengths. It provides a comprehensive framework by integrating cognitive, affective, and behavioral components, offering a holistic view of how attitudes shape new drugs prescribing by physicians. This approach demonstrates predictive power in identifying early adopters of new drugs, which is crucial for effective drug diffusion strategies. However, the approach has several weaknesses. The inclusion of affective components introduces subjectivity, as emotional responses vary among physicians. The model may underestimate contextual factors such as healthcare policies or resource availability. Furthermore, it has a limited focus on patient-centric factors, which are crucial in real-world prescribing decisions.

The decision-making approach to prescribing new drugs emphasizes a structured and rational process, highlighting the use of knowledge and analysis to inform choices. Its strengths include providing a rational framework for decision-making, recognizing continuous learning as physicians refine their skills, and being patient-centered by focusing on patient well-being. It also encourages comprehensive consideration of disease and pharmacology and is adaptable to complex medical scenarios. However, this approach has several weaknesses. It may underestimate cognitive biases that influence decisions and neglects patient involvement in shared decision-making. It risks oversimplification by not fully accounting for external factors like pharmaceutical marketing or healthcare policies.

It is essential to highlight that the behavioral, attitudinal, and decision-making approaches in physicians' prescription of new drugs closely align with consumer behavior theories. The behavioral approach reflects stimulus-response theory and social influence, similar to how marketing and social norms shape consumer decisions. The attitudinal approach parallels consumer

trust and prior experiences, influencing how physicians and consumers evaluate products. The decision-making approach mirrors consumer information processing and risk perception, involving careful evaluation of available options. These approaches connect with theories such as Theory of Planned Behavior, and Elaboration Likelihood Model. Both physician prescribing and consumer decisions are shaped by personal, social, and environmental factors, highlighting their shared interdisciplinary foundations.

5. Proposed Conceptualization of Prescribing New Drugs

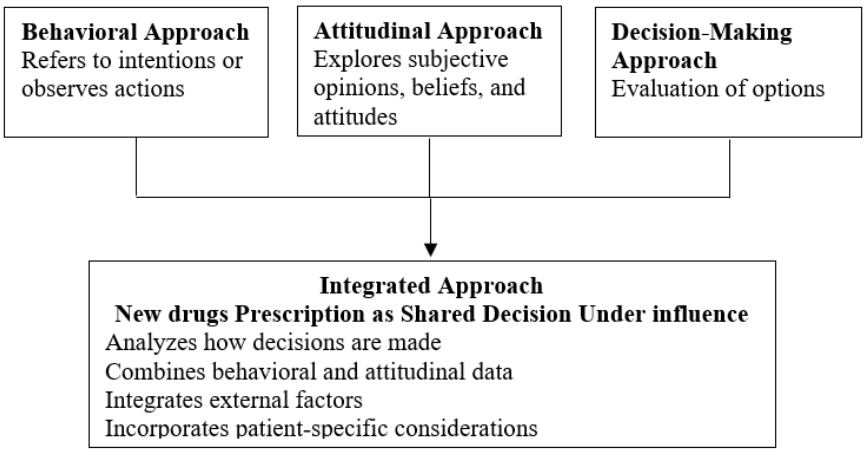
After reviewing the prevailing conceptions of new drug prescribing by physicians in the literature and discussing their strengths and weaknesses, we will now elucidate the selected nature of this concept and provide specific justifications for our choice.

Given the strengths and limitations of the behavioral, attitudinal, and decision-making approaches to understanding prescribing behavior, this study adopts the decision-making approach as its primary framework. This choice is justified by the approach's emphasis on structured, rational processes, which aligns well with the complex nature of prescribing new drugs. However, to address the limitations identified in the decision-making approach and to create a more comprehensive model, this study will integrate two complementary perspectives:

- Shared Decision-Making: This perspective will incorporate patient-specific considerations and address the need for patient involvement in the prescribing process.
- Decision Under Influence: This addition will account for the external factors and systemic influences that shape prescribing behavior, such as healthcare policies, and pharmaceutical marketing.

By combining these elements, we aim to develop a more robust and holistic framework. This integrated approach will provide a more comprehensive understanding of prescribing behavior, ultimately leading to more effective strategies for optimizing drug adoption and improving healthcare outcomes. The resulting conceptualization will address the gaps identified in previous approaches while leveraging their strengths, offering a more nuanced and applicable framework for studying and improving prescribing practices. The proposed conceptualization, which integrates these complementary perspectives, is detailed below and illustrated in the following figure.

Figure 1: The proposed conceptualization of new drugs prescription



In the following section, we will justify and elaborate on the proposed conceptualization of new drug prescription by physicians.

5.1 Prescribing New Drugs: A Decision-Making Process

Our research will prioritize the cognitive approach to understand how physicians prescribe new drugs. As a health product based on acquired medical knowledge, the prescription of new drugs is argued to constitute a carefully considered decision by the physician.

Decision-making refers to a complex process, involving problem identification and resolution. According to Easton (1973), the term "decision" can refer to a complex process or be synonymous with "choice". Dumoulin et al. (2001) state that prescribing is a medical decision governed by a process which is not well understood due to its complexity and lack of study. Prescribing is often considered the unknown element of the medication circuit and is often depicted as a decision-making process.

In the field of medicine, Abecassis (1999) considers physicians' prescribing as a medical decision-making process. This process can be broken down into two main phases: the diagnostic phase, which precedes the decision, and the decision phase itself. Dowie and Elstein (1988) further break down the prescribing decision process into three phases: "a scientific analysis phase where data related to the problem is examined, a deliberation phase where the issues and options are considered, and finally the decision phase, which involves weighing up the options".

Dumoulin et al. (2001) describe prescribing as an empirical decision-making process that relies on experience and learned knowledge. They outline four stages: "diagnosis as precise as possible, identification of possible solutions, selection of the best solution, and execution of the decision".

Sybord (2000) and Banning (2006) propose that prescribing is a medical decision-making process involving various cognitive stages: diagnosis, prognosis, treatment, and therapeutic follow-up. These stages differ based on the type of disease and represent the cognitive process leading to decision-making.

Prescribing, as described by Denig and Haaijer-Ruskamp (1992), involves two stages. The first stage is "the consideration of a set of potential treatment options" known as the "evoked set". The second stage is "the selection of a specific therapy from these options". This transition from the evoked set to the final selection can occur through a problem-solving process or by habit.

A prevailing consensus in extant research posits that prescribing embodies a decision-making process underpinned by deliberative judgment. Its basic stages include identifying the problem, identifying possible actions, and choosing the best action to maximize effectiveness and minimize potential risk (Mousquès et al., 2003).

Understanding the retained nature of new drug prescribing will help in comprehending drug prescribing as a whole and identifying the specificities that distinguish this decision-making process.

5.2 Prescribing New Drugs: A Shared Decision

Hardy and Smith (2008) argue that the process of prescribing a new drug involves more than simply selecting a treatment—it requires making an informed decision based on a thorough evaluation of the patient's condition

and needs. Prescribing new medications adds layers of complexity, as these drugs may come with unknown risks, evolving evidence, and novel side effect profiles. In such situations, patient involvement becomes particularly crucial, as the uncertainties associated with new drugs must be carefully discussed. Whitney et al. (2008) affirm that this process is inherently complex and comprises multiple critical stages where patient involvement plays a crucial role.

Traditionally, physicians were the primary decision-makers when introducing new treatments, but the modern emphasis on shared decision-making (SDM) reflects a transition toward a collaborative approach. Patients are now encouraged to actively participate in decisions, especially regarding the adoption of new and potentially unfamiliar drugs. In this collaborative model, patients contribute their values and preferences, while physicians provide the latest evidence regarding the effectiveness and safety of new drugs.

The focus on SDM has gained significant traction among large healthcare organizations, which recognize its potential to enhance the quality of care, especially when prescribing new medications (Sculpher et al., 2002). This model highlights not only the cognitive aspects of decision-making but also the broader context that influences prescribing decisions. The introduction of new drugs often requires a nuanced discussion that considers the patient's understanding, preferences, and concerns. As patients become increasingly informed and eager to participate in their healthcare, SDM offers a more integrated perspective of decision-making, where the context and impact of new treatments are fully explored.

Coulter (2006) notes that more patients are actively participating in discussions about new drug therapies during consultations. This trend reflects a broader cultural transition towards patient engagement, where individuals have transitioned from being passive recipients of care to becoming active partners in selecting new treatment options. Given this shift, it is critical for prescribing decisions, especially those involving new drugs, to align with patient preferences. Research indicates that medical decisions based on patient values lead to greater satisfaction and improved adherence to treatment plans (Elwyn et al., 2012).

Looking to the future, SDM is expected to play an even more integral role in healthcare, particularly as the development and availability of new medications continue to accelerate. Gerber and Kraft (2014) predict that "in the future, shared decision-making will be viewed as the ideal model of decision-making in the medical field," especially for new drug prescriptions. This reflects a growing consensus that SDM is not just a desirable option but a necessity for ensuring that treatments, particularly novel therapies, are both evidence-based and tailored to the unique preferences and needs of each patient.

SDM has emerged as one of the most prominent models in medical decision-making, frequently discussed in both academic and clinical literature (Deber, 1994). The evolving healthcare landscape—marked by the rapid introduction of new therapeutic options—has led to an increase in research focused on SDM (Légaré et al., 2003).

Légaré (2009) emphasizes that as "therapeutic and diagnostic possibilities expand, along with the rapid growth of healthcare information, decision-making processes must evolve to require more active patient involvement in their own health decisions." This is especially true when

considering new medications, where patients must navigate unfamiliar information and weigh the potential benefits and risks.

In essence, SDM shifts the traditional, paternalistic model of healthcare—where physicians make decisions on behalf of patients—to one where the patient becomes an informed and empowered participant. This transition is particularly relevant when prescribing new drugs, as it ensures that decisions are made collaboratively, integrating the patient's values and preferences alongside the physician's expertise and knowledge of the most current scientific evidence.

Towle et al. (1999) define SDM as "a collaborative process jointly undertaken by the physician and patient, utilizing the best available scientific evidence regarding the risks and benefits of all treatment options." Regarding new drug prescriptions, this definition underscores the significance of evidence-based practice, ensuring that both physician and patient rely on the most up-to-date information on the drug's efficacy, safety, and long-term impact.

Loh and Simon (2007) further describe SDM as "an interactive process involving legally equivalent participation of the physician and patient, with shared information leading to an empowering agreement." This approach is especially crucial for new drug therapies, where the balance of risks and benefits may be less well understood, making open dialogue and shared responsibility critical to the decision-making process.

Harter (2004) emphasizes that SDM is "an interactive process between patient and physician, where both share information to reach a jointly responsible agreement." In the context of new drugs, this mutual responsibility for outcomes ensures that patients feel more confident in their treatment choices, understanding both the potential benefits and the uncertainties of newly prescribed medications.

Stevenson et al. (2000) point out that SDM requires patients to take responsibility for their health by "disclosing preferences, asking questions, and evaluating treatment alternatives". This is especially important when prescribing new medications, where patients may need to engage more deeply with their healthcare providers to fully understand the available options and make informed decisions about treatments that may be unfamiliar.

Recent literature, such as Zoghlami et al. (2020), offers a modern perspective on SDM, defining it as "a collaborative process where patients and physicians make decisions together, incorporating the best available scientific evidence, as well as the patient's values, experiences, and preferences."

For new drug prescriptions, this approach not only takes into account clinical data but also respects the individual experiences and concerns of patients, thus personalizing care in ways that align with the patient's health goals. In this context, SDM provides patients with the necessary support to make informed decisions about new drug treatments, while giving physicians confidence that the prescribed medications are appropriate (Elwyn et al., 2012). By ensuring that new drugs are prescribed in a way that aligns with patients' values, SDM enhances patient satisfaction, fosters compliance with treatment plans, and improves clinical outcomes. Moreover, it addresses one of the major challenges in healthcare—balancing patient autonomy with clinical expertise. By fostering discussions around new and complex medical information, SDM improves the overall quality of care.

The French National Authority for Health (HAS, 2013) supports SDM as the only model that ensures a truly bidirectional exchange of information joining the physician and the patient. When introducing new drugs, this two-way communication becomes even more vital, as it ensures that patients are fully informed about the possible alternatives and that the prescribing decision is reached via a thorough deliberation, leading to consensus. This process reinforces the ethical dimension of SDM, where the autonomy and dignity of the patient remain at the forefront.

By integrating the latest scientific evidence with patient input, SDM allows healthcare providers to make well-informed prescribing decisions that are not only clinically effective but also aligned with the patient's values and preferences. In doing so, it builds trust in the physician-patient relationship, increases patient engagement, and improves health outcomes by fostering adherence to new drug therapies.

5.3 Prescribing new drugs: A decision under influence

In modern medicine, prescribing remains one of the most important medical acts. It represents the culmination of the physician's therapeutic decision-making process and is rooted in the principle of freedom of prescription—which underscores the physician's professional independence and responsibility (Sermet & Pichetti, 2012). However, prescribing freedom is not absolute, and its scope has evolved due to various influences.

According to Houdart (1995), the freedom to prescribe has always been tempered by restrictions that originated with concerns for patient safety. As time progressed, these restrictions expanded, driven by not only safety concerns but also by economic considerations, the efficient use of resources, and the rationalization of pharmaceutical expenditure. Lévy and Garnier (2007) explain that these restrictions are influenced by other healthcare professionals, governmental efforts to control costs, and the increasingly informed and critical nature of patients. This reflects a complex landscape where the physician's independence is shaped by external forces.

Sermet and Pichetti (2012) point out that, while freedom of prescription is cherished by physicians, it is often influenced by external factors, including government regulations. Research also shows that prescribing decisions can be affected by designed interventions or systemic pressures (Armstrong et al., 1996). This further highlights the interplay of various external influences in what might appear to be an independent decision-making process.

Prescribing is not simply the act of choosing a drug—it involves a complex decision-making process shaped by multiple considerations. Bradley (1991) and McKinlay et al. (1996) note that prescribing is influenced by an array of factors, including pharmacological considerations, patient expectations, organizational pressures, and healthcare policies.

According to Foisset (2012), the act of prescribing is influenced by unconscious mechanisms. Bradley (1995) and Miller et al. (1970) affirm that non-pharmacological factors exert significant influence over prescription decisions. They refer to these as the "non-pharmacological foundations of therapies," highlighting how factors such as patient pressures, pharmaceutical marketing, and healthcare policies shape prescription behaviors. For instance, Miller notes that prescription decisions are often driven by

factors independent of the biochemical attributes of the drug, including external pressures or biases that arise during the patient-physician consultation.

When prescribing a new drug, physicians must carefully weigh various elements including the patient's condition, the drug's risk-benefit ratio, potential side effects, cost, and efficacy compared to other alternatives (Nollet Tassin, 2017). As physicians rely on a range of information sources—such as medical education, scientific journals, peer discussions, and pharmaceutical representatives—each of these inputs has the potential to shape their decisions. The pharmaceutical industry serves a crucial role in shaping prescribing behaviors. Nollet Tassin (2017) notes that drug manufacturers use various communication strategies to disseminate information about new medications, making pharmaceutical marketing a main factor in the prescriber's decision-making process. Indeed, Mintzes (2009) points out that the billions of dollars spent annually on pharmaceutical marketing reflect its impact on prescribing patterns. The continued existence of these marketing practices indicates that they are effective in influencing prescription decisions (Robinson, 2001).

Recent studies have examined the impact of marketing activities such as medical visits, advertisements, and participation in conferences on prescribing habits. Authors like Murshid et Mohaidin (2018), Murshid et al. (2019), Ahmed et al. (2020), and Hailu et al. (2021) have found that these activities significantly influence drug prescriptions. Such findings reinforce the need to consider how commercial interests intersect with medical practice, particularly when new drugs are introduced into the market.

When prescribing new drugs, physicians must navigate a complex decision-making landscape that incorporates clinical, ethical, and regulatory considerations. The introduction of a new drug involves weighing scientific data against the backdrop of external influences, including patient expectations, economic pressures, and the commercial interests of pharmaceutical companies.

Several studies highlight the influence of unconscious factors in prescribing new drugs. Kozlowska (2013) argues that the decision to prescribe is shaped by unconscious biases, suggesting that physicians are influenced by factors that extend beyond the scientific evidence. These biases may include cultural influences, the physician's personal history, and the social context of the consultation.

According to Foisset (2012), "prescription cannot be the result of a totally objective and pure scientific reflection". Objectivity in prescribing is no more automatic than the physician's neutrality is real: he has opinions, he makes choices that are related to his own history (Audisio, 1988), his perceptions of risk, and his cultural origin (Vega, 2012). Vega (2012) adds that physicians' prescriptions are not irreducible to social analysis. Indeed, the determinants of medical decision are neither totally subjective nor completely scientific: they fit into the context of the decision.

As new drugs enter the market, physicians face the challenge of objectively assessing their benefits while remaining cognizant of the non-pharmaceutical influences and regulatory frameworks that may shape their prescribing decisions. This requires a delicate balance between clinical judgment and the external pressures that inevitably influence the medical field.

6. Challenges in operationalization of new drug prescription as a shared decision-making process

The prescription as a shared decision-making process takes place within the context of a complex interaction between the physician and the patient. As noted in early studies by Charles et al. (1997), it is essential to consider this patient-physician interaction dynamics. There are several challenges associated with measuring prescription as a shared decision-making construct.

The complexity of prescribing new drugs can be fully captured only by incorporating multiple perspectives, as highlighted by Légaré et al. (2007). Physicians and patients often face uncertainties related to the novel nature of the drug, including unknown long-term side effects and varying responses in the broader patient population.

Several tools have been developed to assess SDM in medical consultations. Guimond et al. (2003) created instruments to analyze audio and video recordings of consultations. These tools focus on observable aspects of the interaction, such as verbal exchanges, but they may fail to capture the full extent of the decision-making process, especially when internal preferences or unvoiced concerns of both the patient and physician remain undetected.

Other instruments, such as the 9-item Shared Decision-Making Questionnaire (SDM-Q-9) developed by Kriston et al. (2010), focus on the patient's perspective. These tools are useful for understanding how the patient views his role and his involvement in the decision-making process, but they are inherently limited because they cannot fully represent the physician's perspective or the clinical reasoning behind the drug choice. In the context of new drugs, where therapeutic options are unfamiliar, patient perspectives may be especially shaped by fears or expectations, which may not fully reflect clinical realities.

To address these limitations, Dolan (1999) proposed an approach that combines the patient's perspective with that of the physician. This holistic method provides a fuller understanding of SDM, particularly when prescribing new drugs.

The Decisional Conflict Scale, developed by O'Connor (1995) and adapted by Légaré et al. (2003), is one of the most prominent tools in this context. This scale measures the uncertainty and conflict experienced during the decision-making process, and it is particularly appropriate when prescribing new drugs, where risks and uncertainties are amplified.

The concept of decisional conflict—the uncertainty experienced when choosing between different options—is central to understanding SDM, particularly with new drugs. In these cases, both patients and physicians must navigate uncertain outcomes, unknown long-term effects, and cost considerations. As Légaré (2009) pointed out, medical decisions are often characterized by asymmetric information, with physicians possessing more knowledge about the drug than the patient. When prescribing new drugs, physicians must balance the novelty of the drug with the patient's comprehension of its possible risks and benefits.

Instruments like the Decisional Conflict Scale help physicians assess the uncertainty patients may feel when presented with a new drug option. This scale has proven valuable in medical decision-making studies by capturing key factors like the perception of risk by

patients, their comfort with the decision, and their satisfaction with the final choice.

This scale is widely recognized as a benchmark tool in the field of physician decision-making (O'Connor, 2003). Entwistle and Watt (2006) emphasize that it effectively addresses the needs of physicians, providing clarity and structure in the decision-making process. It offers a comprehensive framework for evaluating key factors such as uncertainty, risks, and satisfaction with the decision, making it a valuable asset in both new and complex medical consultations. Furthermore, all the data reported to date indicate that the psychometric qualities of this scale appear to be adequate (Légaré et al., 2003).

When prescribing new drugs, the Decisional Conflict Scale offers a structured way to evaluate simultaneously the physician's and patient's thought processes, helping to ensure that the final decision reflects shared understanding and agreement. This is particularly important when considering innovative therapies with limited long-term data.

The prescription of new drugs as a shared decision-making process requires a nuanced approach that incorporates the perspectives of both the patient and the physician. Tools like the Decisional Conflict Scale are valuable for measuring the uncertainty and satisfaction surrounding these decisions, especially in cases where the drug's long-term safety and efficacy remain uncertain. However, as the healthcare landscape continues to evolve, there is a growing need for more refined tools that can fully capture the complexities of SDM in new drug prescriptions, including the influence of pharmaceutical marketing and the need for transparent, evidence-based decision-making.

7. Theoretical & Managerial Implications

The relevance of new drug prescriptions by physicians is recognized by academics and practitioners. The interest in researching this concept is demonstrated by the fact that much research has discussed recently the factors affecting the uptake of new drugs published.

However, as this research shows, the prescription of new drugs' multiple conceptualizations, as well as the exploratory approach adopted in anterior works, make it difficult to conceptualize and operationalize the construct.

There is no consensus on the exact nature of the concept since researchers consider the new drug prescription in many alternative ways. Some studies consider it as physician behavior, others as an attitudinal response and others as decision-making. This absence of agreement generates confusion among researchers, as they approach the construct through their own differing definitions and conceptual frameworks. This study gives an overview of previously known and current developments in new drug prescriptions. This review emphasizes the significance of the cognitive component of new drug prescriptions by physicians.

The recently published articles that describe the construct highlight the relevance of the Theory of Decision to clarify the nature of the construct (Kast, 2002). Some researchers (Sybord, 2000; Jackson et al., 2004; Banning, 2006; Delassus, 2011) argue that the cognitive dimension is paramount for explaining new drug prescriptions, aligning with Grenier et al. (1999), who assert that drug prescribing is fundamentally a science of decision-making. The retained conceptualization can be used as a framework to accurately predict the new drugs prescription. This would enhance

the theoretical understanding of this concept and would provide a theoretical framework for developing and assessing the factors influencing the prescribing decision of new drugs.

A significant aspect of this narrative literature review is the acknowledgment of the Shared Decision Model and its role in understanding physician prescribing. Beyond its theoretical contribution, this reveals that pharmaceutical industry managers need to recognize patients' pivotal role in shaping the decision-making process. They need to shift to a patient-focused approach in their marketing strategies.

Also, the narrative literature review outlines the fact that new drug prescription is an influenced decision. This could provide valuable insights into how these decisions are shaped. From a managerial perspective, focusing efforts on specific factors could impacts positively new drugs prescription by physicians. So, it is crucial to investigate the main factors that affect this decision of physicians. Thus, there is a need for further research to empirically pinpoint the influential factors. In summary, while there is a rich discourse surrounding new drug prescriptions, establishing a unified conceptual framework is essential for advancing research and improving clinical practices in this area.

8. Limitations & Future Research

Upon reviewing the current literature on new drug prescriptions, it is critical to acknowledge certain limitations associated with the narrative approach utilized in this study. While this approach provides an in-depth examination of the topic, it may restrict the generalizability and inclusivity of the analysis, potentially resulting in the omission of valuable literature on drug prescriptions. Consequently, a systematic literature review would be more effective in this context.

In delving into the existing studies on new drug prescriptions, it becomes apparent that the majority of these studies employ an exploratory approach rather than a theoretical one. This approach has led to ambiguity in the conceptualization of the prescribing of new drugs by physicians. The literature reveals varying perspectives on new drug prescriptions, with some studies framing it as a behavior, while others consider it an attitudinal response or a form of decision-making. This absence of agreement complicates the understanding of the prescribing process among researchers.

Consequently, this review proposes a more defined framework that elucidates the construct of new drug prescriptions. The review suggests that future research should prioritize a comprehensive investigation into the applicability of shared decision-making (SDM) principles within healthcare systems, particularly public healthcare systems. Furthermore, future research should concentrate on identifying the primary factors influencing the decision to prescribe new drugs and should rigorously evaluate the implementation of patient-centered medicine by assessing the authentic effectiveness of patient participation in new drug prescription decisions, specifically the integration of patient values and preferences within the clinical prescribing paradigm. Additionally, exploring the consequences of new drug prescriptions from a marketing perspective could be an intriguing avenue for future research.

9. Conclusions

Research on new drug prescriptions by physicians has not been well-grounded in theory, highlighting the complexity of

this phenomenon influenced by numerous factors. Current studies provide varying conceptualizations of drug prescribing, complicating the understanding of this intricate subject. The interplay between behavior, attitudinal response, and decision-making further obscures the nuances involved in new drug prescriptions.

This paper adopts a narrative review approach to delineate the adapted conceptual framework of new drug prescriptions by physicians, proposing that the shared decision-making process is the most relevant construct for understanding this phenomenon.

The process of prescribing new drugs is more than a clinical decision; it is a shared, multifaceted process influenced by various factors, including patient involvement, regulatory frameworks, economic pressures, and pharmaceutical marketing. Physicians must evaluate the scientific merits of new treatments while also recognizing unconscious influences that may shape their prescribing decisions. The increasing focus on shared decision-making underscores the necessity for physicians to balance their clinical expertise with patient preferences and external pressures. This balance is crucial for responsible and effective prescribing in an evolving healthcare landscape. This delineation and operationalization of the new drug prescription could be used in further research, but there is a need for additional research to empirically validate its effectiveness.

In summary, while current literature offers insights into the complexities of new drug prescriptions, establishing a robust theoretical framework is essential for advancing understanding and improving clinical practices in this area.

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