QATAR UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

THE EFFECTS OF DTCA ON DRUG PRESCRIPTION IN SAUDI ARABIA

BY

MODDATHER MOHAMED MOHAMED

A Thesis Submitted to

the College of Business and Economics

in Partial Fulfillment of the Requirements for the Degree of

Master of Business Administration

January 2022

COMMITTEE PAGE

The members of the Committee approve the Thesis of

Moddather Mohamed defended on 09/12/2021.

_____

Dr. Tamer Hamed Elsharnouby

Thesis/Dissertation Supervisor

_____

Prof. Belaid Aouni

Committee Member

_____

Prof. Adam Mohamed Fadlalla

Committee Member

Approved:

_____

Dr.Adam Mohamed Fadlalla, Dean, College of Business and Economics

ABSTRACT

MOHAMED, MOHAMED, MODDATHER, Masters : January : 2022,

Master of Business Administration

Title: The Effects of DTCA on Drug prescription in Saudi Arabia

Supervisor of: Dr. Tamer Hamed Elsharnouby.

This research extends to other studies published in many countries on direct-to-consumer advertising (DTCA) prescription drugs. However, this research focused on the effects of DTCA on prescribing drugs in Saudi Arabia. The study's main objective is to evaluate the impact of DTCA on drugs prescription in Saudi Arabia. Moreover, to develop an answer to the main question, primary research was conducted to answer the reseach questions that focused on the effects of direct-to-consumer advertising (DTCA) on prescribing drugs in Saudi Arabia and the doctors' reactions towards it. Moreover, this research assessed the impact of DTCA on improving overall physician responses to patient requests and enhancing the presumed DTC advertising influence. Also, the doctors' attitudes toward DTC prescription drug advertising, the doctors' attitudes towards DTCA regulations, and the usefulness of DTCA were evaluated.

This research found that the effects of DTCA on drug prescription in Saudi Arabia are generally positive and favored by doctors. This research showed that most doctors responded to patients' desires, and the doctors tend to accept the DTCA advertising. Furthermore, the doctors considered that DTCA provides valuable information to the consumers. The physicians believed that DTCA should continue under government regulations. Finally, doctors and patients were likely to agree that DTCA is useful. Pharmaceutical companies' marketers should improve the educational content of the DTCA and show the positive side of DTCA by providing

a fair balance between risks and benefits and detailed information on dosage and side effects. In addition, pharmaceutical companies' marketers have to pay attention to doctors' attitudes towards DTCA by understanding the underlying motivations and reasons behind doctors' negative responses to DTCA. Moreover, it's also recommended to establish a dedicated regulatory body for prescription drug advertising.

Keywords: *Direct to Consumers' Advertising (DTCA), Saudi Arabia, prescription drug,*

DEDICATION

This thesis is dedicated to my parents, Dr. Mohamed Abu Elsheikh and Thuraya Abdullatif, who always were my backbone during my whole life.

This work is also dedicated to my wife, Sally Mohamed, who has always been a source of encouragement and powerful in my life.

I dedicate this thesis to my friends, Ahmed Salem, Mohamed Nafie and Ahmed Samady they were always the source of support and motivation not only during this journey but whole life journey.

Last and best dedication goes to the best gift on my life my daughter Noor, the source of happiness and beauty of my life.

.

ACKNOWLEDGMENTS

"I want to thank the Qatar University and its professional teaching staff for this beautiful experience, and I would like to express my appreciation to Prof Adam Fadlalla his continuous support and prof Belaid Aouni for his support not only in this graduation project but also in all MBA journey.

Also, I would like to thank my supervisor Dr. Tamer Hamed Elsharnouby, for his patience, motivation, and support during this project."

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1: INTRODUCTION

1.1 Introduction

There is increasing adoption of direct-to-consumer advertising (DTCA) as a promotional channel by pharmaceutical companies, especially after the COVID-19 pandemic. Also, it's believed to play an essential role in raising awareness toward achieving better patient compliance and increasing patient awareness toward medication cost vs. insurance plans. However, more research is needed to assess the impact of DTCA on physician responses to patient requests, Presumed DTC advertising influence, doctors' attitudes toward DTC prescription drug advertising, the regulation of DTCA, and the usefulness of DTCA.

Direct-to-consumer advertising (DTCA) of prescription drugs is a new promotion method for prescription drugs advertising, where prescription drugs are promoted through advertising on television, magazines, radio, newspapers, the internet, and pharmaceutical campaigns to the public. DTCA of prescription drugs is different from regular DTCA models because consumers are not the final decision maker to get the medication; however, they must get doctor prescription and the regulations governing the DTCA of prescription drugs.

The effects of DTCA on consumers, doctors, and healthcare systems are still ambiguous; therefore, DTCA of prescription drugs is legalized in some countries, permitted under strict regulations in others, and banned in most countries.

1.2 Research Problem

Based on the previous studies, the power of DTCA advertising showed its impact on consumers' attitudes and behavior (Robinson, et al., 2004), (Liu & Gupta, 2011), and this effect is continuously increasing significantly during the spread of the COVID-19 pandemic. Thus, the physicians' behavior changed toward medication

prescription.

Exploring the impact of DTCA on prescribed drugs is need further exploration for researchers, and they could not have comprehensive insights into the determinants that motivate the consumers toward the DTCA. In the literature review, little information has been uncovered about the essential effects of DTCA in the Saudi pharmaceutical market. Consequently, this research shed light on the impacts of DTCA on the health status, doctors' practice, doctor-patients interaction, and the doctors' attitudes towards content and regulation of the DTCA.

The undertaking of this study is fundamental to bridge the gaps in the current literature, and the results will benefit pharmaceutical companies in spreading the awareness among consumers and knowing the proper DTCA techniques. Also, it will assist the policymakers by bringing their attention to the danger of misusing the medicine in an inappropriate way, which can negatively impact public health.

1.3 The Significance of Research

This research is interesting because it assesses the impact of DTCA on prescription behavior by measuring the physician response to patient request Also, it measures the effect of DTCA on doctors' attitudes toward DTC prescription drug advertising prescription behavior, so pharmaceutical companies can efficiently allocate resources on such promotional channels to achieve their financial goals; however, corporate social responsibilities must be considered while using such channels. Moreover, the extensive use of the DTCA raises ethical questions about abuse/misuse, which require a special kind of governance by the regulatory authorities.

There are evolving debates between the proponents and opponents of DTCA regarding the subject of corporate social responsibilities because of increasing use of

DTCA in promoting prescription drugs in recent years, as pharmaceutical companies are directing advertising to patients rather than doctors. In addition, calls for research to examine the effects of DTCA on prescription drugs are intensified. However, this research extends the previous research conducted in Europe and the USA.

1.4 Research Objectives

The main objective of the research is to evaluate the effects of DTCA on drugs prescription in Saudi Arabia. In order to achieve the main objective, the research will query as follows:

- Physician acceptance or refusal response toward DTCA influenced patient's request.
- Presumed DTC advertising influence on physician prescriptions.
- Physicians attitudes toward DTC prescription drug advertising.
- Physician recommendation regarding regulatory.
- Pysicians perceived about DTCA usefulness.

1.5 Study Structure.

In this research, the structure of the paper is as follows: "Literature Review" section describing the current promotional mix used by the major pharmaceutical companies, followed by "DTCA Overview" section critically reviewing articles on DTCA for prescription drugs, highlighting the history of DTCA, definition, the reasons for evolution, and regulations governing the DTCA for prescription drugs, and the current regulations in Saudi Arabia. Then, the predictor DTCA that impact; the health status, doctors' practice, doctor-patient relationship, and the doctors' behaviors towards the DTCA regulations are discussed in the "Study's Variables" section. In "Research Methodology" section discusses the methodology employed in this study. The tests

applied, and the study's findings are presented in Data Analysis & Discussion" section. The "Conclusion" section summarizes the paper's results with recommendations for pharmaceutical companies highlighting main areas for future investigation.

CHAPTER 2: LITERATURE REVIEW

Several articles were reviewed on the pharmaceutical promotional mix currently used alongside DTCA: personal selling, e-detailing, advertising to doctors, events, and public relations. This will be followed by describing DTCA history, reasons for evolution, and features. Then a discussion of the regulations governing the content and distribution of DTCA worldwide and in Saudi Arabia.

Based on previous studies, this chapter will critically analyze the effects of DTCA on physician responses to patient requests. Then, proponents' and opponents' arguments on DTCA and its impact on the doctor-patient relationship will be discussed. Finally, doctors' attitudes towards the regulations and the content of pharmaceutical DTCA will be addressed.

2.1 Pharmaceutical Promotional Mix

Pharmaceutical companies' promotional marketing mix effectively achieves prescription drug marketing goals (Hailu, 2021). The role of promotion in a company is to communicate with individuals, groups, or organizations, with the aim of directly or indirectly facilitating exchanges by informing and persuading one or more audiences to accept the company products (Dibb, Simkin, Pride, & Ferrell, 2005)

Several types of promotional methods can be combined to promote a particular product; that combination constitutes the promotional mix. The four traditional ingredients of a promotional mix are advertising, personal selling, public relations, and sales promotion (Dibb et al., 2005). However, people's attitudes towards promotion differ to a great extent. Some argue that advertising distorts reality because

it provides customers only with selected information for the product's benefit. They also argued that promotion activities' costs are high, resulting in additional fees added to the product price. However, proponents of promotion argued that it often projects wholesome values, such as affection and generosity.

Moreover, they argue that promotion is a powerful economic force, can free countries from poverty by communicating information (Dibb et al., 2005). Pharmaceutical companies' promotional mixes differ slightly from other industries due to drug-customer exchange procedures. Following is an overview of the six critical elements of the pharmaceutical promotional mix.

2.1.1 Personal Selling

Personal selling is defined as the selling that involves informing customers and persuading them to purchase products through personal communication in an exchange situation (Dibb et al., 2005). For personal selling, a salesperson and customer meet face to face using several ways of communication as language, both speech, writing, and body language. Pharmaceutical companies depend mainly on personal selling for promoting their products; salespersons are equipped with detailing aids, medical studies, and drug samples. Personal selling is preferred because it involves high-impact specific communication aimed at one customer or several customers. In addition, it provides immediate feedback, allowing marketers to improve their communication. However, personal selling costs more than any other form of promotion. As a result, pharmaceutical companies are adopting different forms of advertising to reduce the overall cost.

2.1.2 Public Relations

Public relations are a deliberate and sustained effort to establish and maintain goodwill and mutual understanding between an organization and its target publics. (Dibb et al., 2005). Target publics' can be customers, employees, shareholders, media, or government officials. Publicity results from public relations activities, where publicity refers to non-personal communication about an organization or its products in news or press conferences. Advertisement depends on mass media, and it's informative and more credible than advertising because the companies do not sponsor publicity.

Furthermore, pharmaceutical companies depend to a great extent on public relations and publicity for publishing medical studies proving the efficacy and safety of drugs, maintaining a high level of ethical standards, and overcoming negative images. As a result, pharmaceutical companies invest in the public relations sector to improve their reputation in the market, but the generated publicity do not persuade doctors to prescribe drugs and do not have a direct impact on sales

2.1.3 Sales Promotion

Sales promotion consists of a collection of incentive tools, mostly short-term, designed to stimulate the quicker or more excellent purchase of particular products by consumers or trade (Kotler & Keller, 2009). Examples of sales promotion include trade shows, bonuses, gifts, and coupons. Sales promotion for pharmaceutical companies on prescription drugs has a minor role in generating prescriptions. However, pharmaceutical companies design sales promotion to introduce their drugs for the price-sensitive sectors.

2.1.4 Events

Events for pharmaceutical companies have many forms, for example, group meetings for doctors, round table discussions, departmental meetings for the hospitals, and lecture tours. The events are sponsored by the companies aiming to promote their products by increasing the awareness of the product name, reinforcing perceptions of key brand image, creating an experience, expressing commitment to the community, and enhancing the company image.

2.1.5 E-Detailing.

E-detailing for pharmaceutical companies is a recent tool for promoting prescription drugs. Detailed information, including the existing branding and positioning on drugs, is available on the company website or dedicated websites for some products. Consumers can interact with these websites via e-mail or chat with online representatives. E-detailing is informative and does not persuade customers to use the products.

2.1.6 Advertising

The final ingredient of the promotional mix is advertising, which is defined as "a paid-for form of non-personal communication that is transmitted through mass media such as television, radio, newspapers, magazines, direct mail, public transport vehicles, outdoor displays and now also the internet" (Dibb et al., 2005, p.538). Advertising can serve many purposes, such as demand stimulation, making sales personnel more effective, markets' customers' education, increasing the use of a product, and offsetting competitors' advertising. In addition, according to Kotler and Keller (2009), advertising objectives can be classified according to their aims, and whether is to inform, persuade, remind, or reinforce. For example, informative

advertising, which aims to create brand awareness and knowledge of new products or new features, is commonly used by pharmaceutical companies for launching new drugs. Persuasive advertising, which aims to generate liking, preference, and purchase of a product, is frequently used by pharmaceutical companies for medicines in highly competitive markets. In addition, reminder advertising that aims to stimulate repeat purchase of products is used by pharmaceutical companies to promote chronic diseases' drugs. Reinforcement advertising which aims to convince current purchasers that they made the right choice, is commonly used by pharmaceutical companies when presenting pharmaceutical studies about the efficacy of certain drugs. Figure 1 shows the esstinal eight steps required for developing and implementing an advertising campaign.

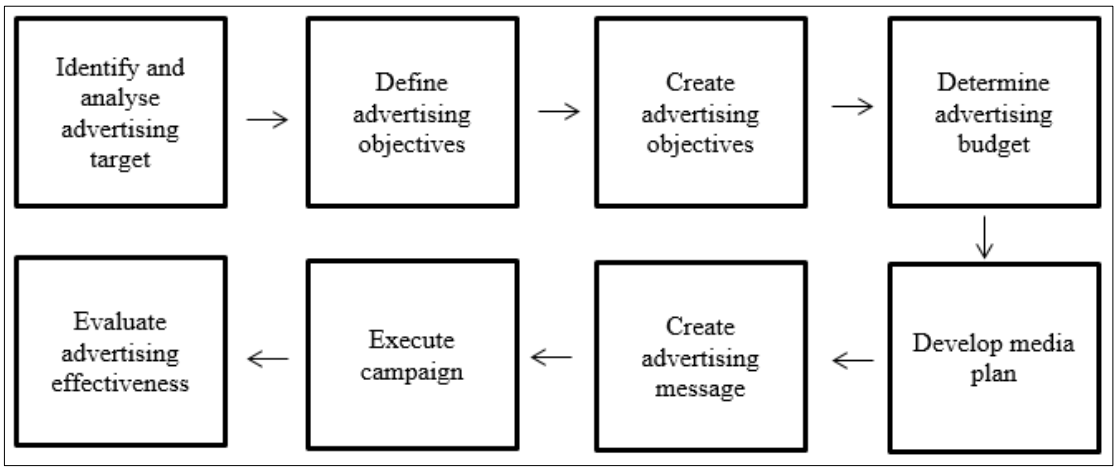

Figure 1: General steps for developing advertising campaign (Dibb et al. 2005)

Identifying and analyzing the advertising target at which the advertisement is aimed are essential processes because the result will determine the other steps in developing and implementing the advertising campaign. For example, pharmaceutical companies advertising targets usually depend on the disease and its severity. Proper analysis is required to identify the characteristics of the advertising target, brand awareness, and level of competition.

Defining the advertising objectives and creating advertising objectives steps are concerned with the company's goals with the advertising campaign. The purpose may increase brand awareness, sales, and market share. Objectives must be specific, measurable, achievable, realistic, and with a particular time frame. Determining the advertising budget is affected by many factors, such as the size of the market, the size of the advertising target, and the distribution of the customers. However, many approaches are used in determining the budget, for example, the objective and task approach, the percentage of sales approach, the competition matching approach, and the arbitrary approach (Dibb et al., 2005).

Furthermore, for developing an effective media plan, a marketer must specifically choose which kind of media to use radio, television, magazines, newspaper, public transport, internet, direct mail, or a combination of two or more, to reach the highest possible number of people in the advertising target with increased frequency. For example, advertising for childhood vaccines is taking place on the radio and television programs concerned with childhood diseases and maternity issues to ensure the highest reach and frequency to mothers listening and watching these programs. However, the advertising message sometimes affects the choice of the media.

Moreover, Dibb et al. (2005) state that several factors affect the content and form of the advertising message in creating the advertising message. For example, the product's features, uses, benefits, objectives of the campaign, choice of media, and the characteristics of the people in the advertising target. In creating an advertising message, marketers move the advertising target through a persuasive sequence: Attention, interest, desire, and action (AIDA). Advertising messages for pharmaceutical products always start with disease severity to create attention, followed by the drug's efficacy in curing the disease to create interest, then highlighting the safety and tolerability of the drug to create desire, finally promoting buyer into action.

Executing the campaign and evaluating the effectiveness of the advertising are the final steps for developing and implementing an advertising campaign. They require intensive planning and coordination between employees involved in executing the advertising campaign effectively. There are various techniques to evaluate the effectiveness of the advertising campaign; it can be before, during, or after the campaign. Practical evaluation is required to measure the effects and further developments of the campaign.

2.2 DTCA Overview

2.2.1 DTCA History

Historically, prescription drug advertising was directed toward health care professionals rather than consumers, or to a lesser extent by advertising in medical journals. However, as Calfee (2002) mentioned in the early 1980s, a few pharmaceutical companies advertised prescription drugs directly to consumers. In September 1982, the food and drug administration (FDA) declared a prohibition period for DTCA during which the FDA could study the impact of DTCA on public health (Iizuka, 2004). However, Calfee (2002) stateD that in 1985, the FDA made DTCA permissible but emphasized that DTCA must meet the same standards as those aimed at health care professionals. These standards required the pharmaceutical companies to include a detailed " summary" of the advertised drug's risks, side effects, and efficacy. According to Pines (1999), the FDA moved in this direction because it recognized that consumers wanted to know more about prescription drugs.

Pines (1999) also mentioned that DTCA increased after the FDA regulations but was limited to newspapers and magazines because of the required " summary," which is impractical to be provided on television or radio. In addition, providing a " summary" is costly since it occupies a full page or more in newspapers and magazines. As a result, during the mid-1990s, pharmaceutical companies avoided providing the " summary" by taking one of two approaches (Calfee,2002).

First, "help-seeking" advertisement in which disease symptoms are only mentioned or discussing treatment for an existing condition, but without mentioning the drug name. Second, a "reminder" advertisement in which the drug name is mentioned without mentioning what condition the drug treats.

However, under these constraints, pharmaceutical DTCA expenditure increased from $6.3 billion in 2016 to $6.5 billion in 2020. (Inte, 2020). In August 1997, the FDA issued preliminary guidance for the industry "Consumer-Directed Broadcast Advertisements" The FDA guidance has relaxed the previous regulations. Thus, according to Iizuka (2004), pharmaceutical DTCA can mention both the drugs' names and conditions without providing a summary. Pharmaceutical companies now are requested only to provide significant statements of risks and benefits of the medicines. In addition, toll-free numbers or internet website addresses are provided detailing the full prescribing information. Moreover, educating consumers and allowing them to share health care professionals in the drug prescribing is one reason for DTCA evolution.

2.2.2 DTCA Evolution

Pharmaceutical DTCA has evolved dramatically in recent years, and the advertising expenditures for prescription drugs continue to increase. As Choi and Lee (2007) mentioned, pharmaceutical companies commit significant resources for establishing and maintaining their presence on the web, television, and magazines as the primary communication channels. DTCA is evolving because pharmaceutical companies have changed from "push" to "pull" strategy. Parker and Pettijohn (2003) stated that doctors control over 80 percent of health care expenditures in the US due to the ability to write prescriptions. Therefore, pharmaceutical companies were only applying the push strategy, investing their advertising budgets in doctors to promote their products. However, in 1985 pharmaceutical companies directed their advertising budgets to use the pull strategy. This allows consumers to take a significant role in deciding which products to prescribe. Moreover, the shift from a push strategy to a

pull strategy is very effective in increasing the sales of a pharmaceutical product (Parker and Pettijohn, 2003).

However, now both pull and push strategies are being used by pharmaceutical companies. Parker and Pettijohn (2003) said that pull strategies are used to increase clinic visits by patients to request the advertised drugs, while push strategies are used to entice doctors to prescribe those advertised drugs rather than the cheap generic drugs. Moreover, Iizuka (2004) states that pharmaceutical companies protect their products against generic entry by increasing DTCA to differentiate brand-name drugs from generics. However, upon generic entry, pharmaceutical companies tend to reduce DTCA due to the externality of advertising. For example, many countries adopt mandatory brand-name drugs with generics to minimize expenses. As a result, return from advertising will be lower under this situation (Iizuka, 2004).

Pharmaceutical companies use DTCA to differentiate their brand name products from other non-advertised brand-name products. The reason behind this is that a substantial body of research found that people develop perceptions of media effects on other people and modify their behaviors based on those perceptions (Huh & Langteau, 2007). On the other hand, Hausman (2008) stated that drug requests are a critical element in selling advertised drugs, but they don't always result in sales of advertised drugs. National survey results indicated that only 50 percent of drug requests result in the prescription of the advertised medication, 32 percent result in the cure of another drug, and 18 percent result in no medicine at all. This is because of the unique features of pharmaceutical DTCA, as doctors and pharmacists act as intermediaries between the customer and drug prescription

2.2.3 DTCA Features

Like other products, Pharmaceutical DTCA uses mass media like television, radio, magazines, the internet, and street banners to promote drugs publicly. However, pharmaceutical DTCA is unique from other forms of product advertising because the promoted drugs cannot be purchased without the cooperation of healthcare professionals, for example, doctors and pharmacists (Huh & Langteau, 2007). In addition, pharmaceutical DTCA is subject to government regulation, regulating the content of the advertisement message. Furthermore, Iizuka (2004) states that a striking feature of pharmaceutical DTCA is that unlike detailing promotion, DTCA is concentrated on a small number of drugs in some specific therapeutic categories. However, "the decision to advertise a specific product to the public does not necessarily reflect superior efficacy; it is a marketing decision made based on likely returns on investment" (Lexchin & Mintzes, 2002). Moreover, Iizuka (2004) finds that some firms are more likely to advertise newer and high-quality drugs, others promote more when the number of potential patients is significant. The first finding indicates that DTCA and product quality complement each other. At the same time, the latter result suggests that DTCA complements the demand-side and is consistent with proponents' claim stating that DTCA targets under-diagnosed therapeutic classes, thus improving the overall health status.

In addition, findings of Iizuka (2004) state that firms advertise less when the therapeutic and generic competition gets intense. This indicates that DTCA does not shift market shares between alternative drugs and DTCA is more drug-class specific. For example, DTCA for GlaxoSmithKline rotavirus vaccine (Rotarix) in Saudi Arabia increased the rotavirus market in general, not only the Rotarix vaccine. However, Iizuka (2004) finds that early entrants are more likely to advertise than late entrants.

This indicates that DTCA return is higher for early entrants.

2.2.4 DTCA Regulations

The United States and New Zealand are the only developed countries that permit DTCA of prescription drugs, while Canada and European Union (EU) nations are still debating whether to allow DTCA or not (Calfee, 2002). However, in the United States, the FDA regulations of DTCA of prescription drugs are stringent. The FDA Guidance for the industry stated that DTCA of prescription drugs must be non-deceptive and present a fair balance between information about risk and information about effectiveness. It must include a signed statement stating all of the drug's most significant risks in a consumer-friendly language and communicating all information relevant to its indication in the consumer-friendly language (Calfee, 2002).

Moreover, Iizuka (2004) mentions that the FDA assumes jurisdiction over DTCA because it views DTCA as a "label," describing all the information about the drug. As a result, the FDA monitors and regulates the information contents of DTCA vigorously. Although DTCA is banned in the United Kingdom and EU, unbranded disease awareness campaigns are allowed. As a result, pharmaceutical companies conduct these campaigns via the patients' organizations by sponsoring the disease awareness campaigns (Auton & Frank, 2006). Moreover, In Saudi Arabia, the regulating body is the Saudi Food and Drug Administration (SFDA). SFDA regulations are less stringent than FDA, requiring the DTCA to be non-deceptive, mentioning the "Consult your doctor" phrase in every DTCA, validating the content of DTCA against the approved indications of the drug. However, the most prevalent form of DTCA in Saudi Arabia is disease awareness campaigns. Therefore, many pharmaceutical companies are now promoting their drugs via these campaigns. The

following section will critically analyze the different views on DTCA effects.

2.4 Critical Views on DTCA Effects.

The tremendous increase in DTCA of prescription drugs in recent years has created controversies over the effects of DTCA on the overall health status, doctors' practice, the impact on the doctor-patient relationship, and the doctors' attitudes towards DTCA regulations and content. In the next section, I will discuss the critical views on these controversies.

2.4.1 Physician Responses to Patient Requests

One of the justifications for DTCA of prescription drugs as (Calfee , Public Policy Issues in Direct-to-Consumer Advertising of Prescription Drugs, 2002)state is that patients are required to seek additional information from doctors about their medical problems and treatment options. Discussions initiated by patients around a DTCA may require doctors to reeducate their patients so that the message in the DTCA is properly understood. However, this justification raises the question whether the doctors' limited time will allow patients to seek such information.

In addition, the adequacy of risk information in DTCA varies and patient may not read it all. As a result, doctors are required to discuss the detailed risk information of the advertised drugs. However, (Calfee , Public Policy Issues in Direct-to-Consumer Advertising of Prescription Drugs, 2002) mentions that a considerable body of research shows that patients receive little risk information from doctors, and often tend to ignore it. Furthermore, (Huh & Langteau, Presumed influence of direct-to-consumer (DTC) prescription drug advertising on patients, 2007) state that the evidence varied regarding the effect of DTCA on doctors' prescribing behavior, a study by the National Medical Association reported that 89 percent of doctors did not change their prescribing behavior due to DTCA. However, in another study of

clinicians three quarters of respondents reported that they were "somewhat" to "very likely" providing a prescription when a patient asked for it based on a DTCA.

The FDA survey results also finds that about half of the doctors reported no pressure to prescribe a requested drug, and 91 percent of doctors reported that patients did not influence their treatment that would have been harmful to them. However, (Lexchin & Mintzes, 2002) argue that for doctors to prescribe the requested drug to be most appropriate to the patient's condition, doctors must assume that patients have accurately self-diagnosed and chosen the best drug available from treatment in terms of safety, efficacy, convenience, and cost. This is practically incorrect because most of prescription drugs treat conditions that are difficult to be self-diagnosed and DTCA provides little information on efficacy, safety, and cost. (Calfee , Public Policy Issues in Direct-to-Consumer Advertising of Prescription Drugs, 2002) based on the Prevention survey findings state that 69 percent of doctors prescribe the requested drug. (Parker & Pettijohn , Ethical Considerations in the Use of Direct-to-Consumer Advertising and Pharmaceutical Promotions: The Impact on Pharmaceutical Sales and Physicians, 2003) argue that doctors are often prescribing the requested drug, fearing that if the requested drug is not prescribed the patient may go elsewhere seeking medical treatment.

2.4.2 Presumed DTC Advertising Influence

Oopponents of DTCA argue that DTCA may provide misleading information with suspect quality to the patients, resulting in misuse or abuse of drugs. Others also argue that DTCA may push patients to try more expensive drugs but equally effective with cheaper drugs available. (Frosch, Krueger, Hornik, Cronholm, & Barg, 2007) argued that DTCA has limited educational value and may over promote the benefits

in a way that may conflict with population health. Moreover, opponents argue that patients are not in a position to diagnose their diseases or evaluate the safety, tolerability and efficacy of the advertised drugs (Becker, Lee, Huh, & Jisu, 2005). However, DTCA lead patients to ask intelligent questions to their physicians (Choi & Lee , Understanding the impact of direct-to-consumer (DTC) pharmaceutical advertising on patient-physician interactions, 2007).

2.4.3 Attitudes Toward DTC Prescription Drug Advertising

Doctors' attitudes towards DTCA regulations vary, Calfee (2002) argue that the FDA regulations of DTCA are stringent and because of these regulations most of advertisements follow the required standards. However, (Parker & Pettijohn , Ethical Considerations in the Use of Direct-to-Consumer Advertising and Pharmaceutical Promotions: The Impact on Pharmaceutical Sales and Physicians, 2003) argue that for pharmaceutical companies to comply with these regulations they tend to offer DTCA either very general or too vague, because DTCA which do not mention the drug's name or the condition it treats are very confusing to the average consumer. In both cases DTCA might promote misunderstandings by providing patients with incomplete and confusing information.

Moreover, Calfee (2002) argue that DTCA regulations should be relaxed, as the main problem is the huge quantity of warning information required for the DTCA. This information could be simplified and shortened. The simplification of the warning and dosage information will allow substantial number of consumers who view this information to make sense of it. (Calfee , Public Policy Issues in Direct-to-Consumer Advertising of Prescription Drugs, 2002) claims that "the FDA should reconsider the notion that all DTCA need to balance information about risks and benefits", thus DTCA

works best in a dynamic medium where the information should fill the most important gaps in consumer awareness.

Overall, Calfee (2002) argue that DTCA motivates patients to seek additional information from doctors especially for previously untreated conditions, and to discuss with their doctors the appropriate prescription drug to use.

2.4.4 Support for Regulation

Claims by IMS health (Calfee , Public Policy Issues in Direct-to-Consumer Advertising of Prescription Drugs, 2002) research findings, which state that a poll of doctors are desiring tighter regulations or a ban on DTCA, and managed care organizations have complained that DTCA cause excess prescribing and directing consumers to more expensive branded drugs.

Furthermore, regarding the information content and usefulness of the information of the DTCA, Consumer Reports (Lexchin & Mintzes, 2002) find that two to three doctors who reviewed the advertisement judged two-thirds of the DTCA as accurate and contain statements supported by scientific evidence.

CHAPTER 3: RESEARCH METHODOLOGY

This chapter will detail the data collection, sampling instrument development, and statistical analysis techniques adopted in this study. First, the methodological information in the study will be discussed, followed by examining the research methods and reasons for choosing them. Then, the research objectives will be highlighted to answer the research questions

Moreover, the research design and reasons for conducting it will be outlined by discussing the list of questions used in the self-administrated questionnaires (SAQs). After that, the sampling technique used in the research and data collection will be highlighted.

3.1 Data Collection and Sampling

A questionnaire was collected from doctors in Saudi Arabia by a medical representative during their regular work practice. In introducing the self-administrated questionnaires (SAQs), doctors were asked to complete a 10-15 minutes survey designed to provide information on a new research area, stating that the findings will enhance pharmaceutical marketing in the future. The participants were anonymous and voluntary. Upon completion, the doctors were asked to place it in an attached envelope to ensure confidentiality and leave it to the representative to pick it up during his next visit (1-2 weeks). After questionnaires were distributed and collected, the response rate was 67 %; only 140 respondents out of 210 completed the questionnaire. The response rate matched with previous research used SAQs for acquiring secondary data.

The questionnaires were distributed between the 10^{th} to 28^{th} of December 2019. Surveys were collected from doctors located in the Eastern province of Saudi Arabia as a convenient sampling technique. The doctors were from different specialties such

as (including pediatricians, general practitioners, and obstetricians\gynecologists) specialties were selected to reflect those therapy areas in which (DTCA) is most prominent. The sample also was based on the place of practice (including Hospitals, polyclinics, and private clinics). Ministry of Health hospitals was excluded because doctors only prescribe drugs available in the hospitals' formulary.

Due to the lack of a complete sample frame of doctors in Saudi Arabia from each specialty at the research time, non-probability sampling was the only appropriate method. Moreover, a convenience sampling technique was used because Saudi Arabia is naturally scattered, and it's hard to reach all the cities to conduct the survey.

3.2 Instrument

The effects of DTCA on drug prescription in Saudi Arabia were measured by a set of 16 questions based on 5 Likert-scaled items (1=strongly disagree to 5= strongly agree) divided into five sections. In addition, demographic information was generated about the participants

The survey consists of two main parts:

1. **the effects of DTCA from different perspectives. The questions were developed based on the Likert scale**

- The first section consists of five questions that were developed, where the respondents were asked to rank each statement to what extent they 1 (Strongly disagree) to 5 (strongly agree). This section will assist in measuring the physicians' responses to patients' requests.
- The second section consists of four questions used to measure the doctors' assumptions of the impact of DTCA. The respondents were asked to rank from 1 (Strongly disagree) to 5 (strongly agree) the presumed DTC advertising

influence statements

- The third section consists of three questions to measure the effects of DTCA on doctors' practices. The respondents were asked to evaluate doctors' attitudes toward DTC prescription drug advertising on the patients.
- The fourth section consists of two questions to measure doctors' support towards DTCA regulation. The respondents were asked to rank from 1 (Strongly disagree) to 5 (strongly agree) DCTA regulation statements.
- The five sections consist of two questions to measure the usefulness of the DTCA overall.

2. **Demographic Information:** questions were asked about gender, years of doctors' experiences, doctors' titles and specialties, and the place of practice.

To ensure that the research was conducted with high ethical standards, the questionnaires were collected and distributed by an MBA student (Ahmed Marzouk) at Leicester University. The consent is presented in Appendix A. the research questions are presented in Appendix B. The questions were modified from earlier research, and the measurement items of the study are shown in table 1.

Table 1. Measurement items of study

Variable	Measures	Source of Scale
physician responses to patient requests	Doctors Prescribe requested advertised drugs.	(Huh and Langteau, 2007)
	Doctors refuse to prescribe advertised drugs.	(Huh and Langteau, 2007)
	Doctors recommend the different drug.	(Huh and Langteau, 2007)
	This requested drug has been the doctor's first choice of treatment.	(Parker and Pettijohn, 2003)
	The doctor feels pressured to prescribe the advertised drug.	(Huh and Langteau, 2007)
Presumed DTC advertising influence	Prescription drug advertisements would lead to misuse or abuse a prescription drug.	((Huh and Langteau, 2007)
	DTCA be deceived about the benefits of a prescription drug.	((Huh and Langteau, 2007)
	Patients ask me to change a prescription drug they're already taking.	(Huh and Langteau, 2007)
	DCTA is leading patients to ask intelligent questions about treatments and medical conditions.	(Huh and Langteau, 2007)
Attitudes toward DTC prescription drug advertising	Prescription drug advertisements would provide helpful information to consumers.	(Choi and Lee, 2007)
	Prescription drugs should not be advertised directly to consumers.	(Choi and Lee, 2007)
	Pharmaceutical companies should not advertise directly to the public.	(Choi and Lee, 2007)
Support for regulation	DTCA should be submitted to the government for prior approval.	(Huh and Langteau, 2007)
	DTCA should be banned.	(Huh and Langteau, 2007)
Perceived usefulness	Drug advertisements improve the patients' awareness of side effects and precautions of the advertised drugs.	(Parker and Pettijohn, 2003)
	DTCA will lead to identifying new medical conditions.	(Aikin et al., 2004)

3.3 Statistical Techniques

The data collected were quantitatively analyzed through the Excel sheet to calculate the mean, percentage and prepare charts and histograms to illustrate the results. The majority method was used to evaluate the difference between the means of independent groups. In addition, Frequencies were used to analyze demographic and classification information to provide an overview of the respondents' agreement or disagreement with the measured variables.

CHAPTER 4: DATA ANALYSIS & DISCUSSION

4.1 Sample Demographics:

The questionnaire sample consisted of 140 doctors from different specialties: 68 pediatricians (49 %), 29 general practitioners (21 %), 31 obstetricians\gynecologists (22 %), and 12 from other specialties (9 %). Two hundred ten questionnaires were distributed in the Eastern province in Saudi Arabia. The response rate was 67 % (140 respondents), which is acceptable compared to previous research conducted using self-administered questionnaires (SAQs). The 140 doctors were practicing in different account types, and the sample size consisted of 76 hospitals (54 %), 55 polyclinics (39%), and nine private clinics (6 %). Regarding the gender split the respondents were 94 male (67 %) and 46 female (33 %), divided between 67 specialist (48 %) and 73 consultant (52 %). Moreover, 82 doctors (59 %) who participated in the research had more than ten years of experience, while 58 doctors (41 %) had less than ten years of experience. Table 2 illustrates the questionnaire sample characteristics.

Table 2 Sample characteristics

Demographic	Description	Frequency	%
Gender	Female	46	33
	Male	94	67
years of experience	less than ten years	58	41
	More than 10 years	82	59
Title	consultant	73	52
	specialist	67	48
specialty	GP	29	21
	OB/GYN	31	22
	Pediatric	68	49
	Other	12	9
place of practice	Hospital	76	54
	polyclinic	55	39
	private clinic	9	6

4.2 Quantitative Data Analysis

In this section, the findings showed the effects of DTCA on drug prescription in Saudi Arabia will be presented based on the measurement of the respondent's agreement or disagreement. The questions associated with the following variables; physician responses to patient requests, presumed DTCA advertising influence, attitudes toward DTCA prescription drug advertising, support for regulation, and perceived usefulness, will answer the research questions.

The research questions are as follows:

- What are the effects of DTCA on physician prescription decisions in Saudi Arabia?
- What are the impacts of DTCA on the doctor and patient information in Saudi Arabia?
- What are the methods and recommendations that could enhance DTCA in Saudi Arabia in the future?

4.2.1 Physician Responses to Patient Requests.

Generally, regarding the physician responses to patient requests, this research found that the doctors respond positively to patient requests with a mean value of 3.4. The results presented in Table 3 shows that doctors' agree that DTCA impacted their response to patients' requests; this impact was based on responses for the following points: (1) Doctors Prescribe requested advertised drugs (mean= 3.42), (2) Doctors refuse to prescribe advertised drugs (mean= 2.73), (3) Doctors recommend different drug (mean= 3.40), (4) This requested drug has been the doctor's first choice of treatment (mean= 3.39), and (5) The doctor feel pressured to prescribe the advertised drug (mean= 2.60).

Table 3 physician responses to patient requests.

Measures		**1**	**2**	**3**	**4**	**5**	**Mean**
Doctors Prescribe requested advertised drugs	Count	11	20	40	37	32	3.42
	%	8	14	29	26	23	
Doctors refuse to prescribe advertised drugs	Count	25	30	50	28	7	2.73
	%	18	21	36	20	5	
Doctors recommend different drug	Count	0	24	48	56	12	3.40
	%	0	17	34	40	9	
This requested drug has been the doctor's first choice of treatment	Count	6	25	43	40	26	3.39
	%	4	18	31	29	19	
The doctor feels pressured to prescribe the advertised drug.	Count	26	45	34	29	6	2.60
	%	19	32	24	21	4	

These findings matched with the previous studies that evaluated the impact of DTCA on doctors' practice. FDA survey found that about half of doctors reported no pressure to prescribe, and 91 percent of doctors reported that patients did not attempt to influence their treatment in a manner that would have been harmful to them. Also, (Calfee, Public Policy Issues in Direct-to-Consumer Advertising of Prescription Drugs, 2002) mentioned tha69 percent of doctors prescribe the requested drug based

on the Prevention survey findings. However, (Parker & Pettijohn, 2003) found that doctors often prescribe the requested drug, fearing that the patients may seek medical treatment elsewhere if the requested medication is not prescribed.

4.2.2 Presumed DTC Advertising Influence

Generally, regarding presumed DTCA advertising influence, this research found that the doctors have positive presume about DTCA influence (mean value (3.8)), but with caution because the DTCA may be deceived about the benefits of a prescription drug.

The results presented using mean responses (Table 4) to establish significant differences from the scale mid-point 3 show that doctors' have positive presumed about DTCA influences, the majority of doctors agreed (agree/strongly agree) with the following points: (1) Prescription drug advertisements would lead to misuse or abuse a prescription drug (mean= 3.49), (2) DTCA be deceived about the benefits of a prescription drug (mean= 3.03), (3) Patients ask me to change a prescription drug they're already taking. (mean= 3.02), and (4) DCTA leads patients to ask intelligent questions about treatments and medical conditions. (mean= 3.82).

Table 4. Presumed DTC advertising influence

Measures		**1**	**2**	**3**	**4**	**5**	**Mean**
Prescription drug advertisements would lead to misuse or abuse of a prescription drug.	Count	26	5	14	65	30	3.49
	%	19	4	10	46	21	
DTCA be deceived about the benefits of a prescription drug.	Count	36	10	31	40	23	3.03
	%	26	7	22	29	16	
Patients ask me to change a prescription drug they're already taking.	Count	2	46	43	45	4	3.02
	%	1	33	31	32	3	
DCTA is leading patients to ask intelligent questions about treatments and medical conditions.	Count	9	0	21	87	23	3.82
	%	6	0	15	62	16	

These findings match (Frosch, Krueger, Hornik, Cronholm, & Barg, 2007) that argue that DTCA has limited educational value and may over-promote the benefits in a way that may conflict with population health. Moreover, opponents argued that patients could not diagnose their diseases or evaluate the advertised drugs' safety, tolerability, and efficacy (Becker, Lee, Huh, & Jisu, 2005). Hence, FDA survey findings claimed that patients requested unnecessary drugs and prescription drugs when another drug was effective (Aikin, Swasy, & Braman, 2004).

4.2.3 Attitudes Toward DTC Prescription Drug Advertising

Regarding Attitudes toward DTC prescription drug advertising, the research found that doctors were against DTCA for prescription drugs via pharmaceutical companies to the public and consumers. Still, they agree that DTCA could provide helpful information. These results will be clarified more when showing the following variables' results.

The results presented in Table 5 showed that doctors' attitudes towards DTC prescription drug advertising were based on responses for the following points: (1) Prescription drug advertisements would provide useful information to consumers (mean= 3.75), (2) Prescription drugs should not be advertised directly to consumers. (mean= 3.34), (3) Pharmaceutical companies should not advertise directly to the public. (mean= 2.01).

Table 5 Attitudes toward DTC prescription drug advertising

Measures		1	2	3	4	5	Mean
Prescription drug advertisements would provide useful information to consumers.	Count	4	5	42	60	29	3.75
	%	3	4	30	43	21	
Prescription drugs should not be advertised directly to consumers.	Count	8	37	13	64	18	3.34
	%	6	26	9	46	13	
Pharmaceutical companies should not advertise directly to the public.	Count	11	38	49	23	19	3.01
	%	8%	2	35	16	14	

These findings match previous research (Choi & Lee, 2007) claims that DTCA could provide helpful information for the patients about the usage of the drugs. However, (Huh & Langteau, 2007) stated that doctors do not prefer pharmaceutical companies advertising to the public without further regulation.

4.2.4 Support for Regulation

Regarding support for regulation, this research found that the doctors strongly support keeping DTCA to consumers with rules by the government (Mean value:4.12). Table 6 indicates that doctors tend to keep DTCA with more governmental regulation. The reason behind this finding is to ensure that the consumer could receive the proper way, and this could be proven based on the following points: (1) DTCA should be submitted to the government for prior approval (mean= 4.12), (2) DTCA should be banned (mean= 2.34).

Table 6 Support for regulation

Measures		1	2	3	4	5	Mean
DTCA should be submitted to the government for prior approval.	Count	0	10	17	59	54	4.12
	%	0	7	12	42	39	
DTCA should be banned.	Count	36	61	18	10	15	2.34
	%	26	44	13	7	11	

The outcomes are consistent with previous studies. Calfee (2002) stated that doctors desired more regulations or banning DTCA. Also, the government should apply restrictions as the care organizations complained that DTCA caused excess prescribing and directed consumers to more expensive branded drugs. Moreover, Huh and Langteau (2007) found that presumed negative DTCA influence would be positively associated with doctors' support for regulation, while presumed positive DTCA influence would be negatively associated with doctors' support for law.

4.2.5 Perceived Usefulness

This research found that the doctors agree that DTCA provides useful information to patients regarding perceived usefulness. Also, it led them to identify new medical conditions. Table7 shows doctors' agreement about DTCA usefulness is based on the following points: (1) Drug advertisements improve the patients' awareness of side-effects and precautions of the advertised drugs. (mean= 3.7), (2) DTCA will lead to identify new medical conditions. (mean= 3.08).

Table 7 Perceived usefulness

Measures		**1**	**2**	**3**	**4**	**5**	**Mean**
Drug advertisements improve the patients' awareness of side-effects and precautions of the advertised drugs.	Count	0	19	47	34	37	3.70
	%	0	14	34	24	26	
DTCA will lead to identify new medical conditions.	Count	19	22	32	63	4	3.08
	%	14	16	23	45	3	

These findings align with (Calfee, 2002) who claimed that DTCA appears to yield significant benefits to consumers. For instance, benefits range from increasing awareness of the risky nature of prescription drugs to better compliance with therapies and even to pursuing lifestyle and behavioral changes that may reduce the need to use drugs. Moreover, Aikin, Swasy, and Braman (2004) claimed that the Food and Drug

Administration (FDA) survey matched the research findings. The survey found that 41 percent of doctors reported that DTCA exposure led to benefits, while only 18 percent said exposure led to problems. The benefits included greater awareness, better discussions, and DTCA as a source of educating and informing patients. The FDA survey also found that 44 percent of doctors believed DTCA facilitates earlier awareness of health conditions. About a third of doctors claimed that DTCA increases the likelihood of proper drug usage. Also, both FDA and prevention surveys (Calfee, 2002) contended that DTCA had caused patients to ask doctors about problems they had not discussed previously, which may lead to identifying new medical conditions.

CHAPTER 5: DISCUSSION AND CONCLUSION

5.1 Discussion.

In the DTCA phenomenon, doctors play an essential role as intermediaries in interactions with their patients. Based on the presumed influence model, it was hypothesized that although DTCA does not target doctors, they form perceptions of DTCA influence on patients, which would impact their responses regarding DTCA (Huh & Langteau, 2007). The data analysis has explained and illustrated the doctors' responses regarding the following sections: physician responses to patient requests, presumed DTCA influence, attitudes toward DTCA prescription drug advertising, support regulation, and perceived usefulness. This consequently answered the main research question and achieved the research objectives.

This research found that doctors believe that DTCA improves physician responses to patient requests based on doctor agreement on the following points: 49% of doctors agreed that they always prescribe the requested drug, 49 % recommend a different drug. Moreover, 51 % of doctors disagreed about feeling pressure to prescribe the requested medication, and 47% agreed that the advertised drug is considered a first-choice treatment. These findings indicate DTCA have impacted the doctor responses to patient request.

Presumed DTC advertising influence was based on doctors' agreement on the following points: 68% of doctors agreed that Prescription drug advertisements would lead to misuse or abuse of a prescription drug, 45% feel that DTCA deceived about the benefit of a prescription drug, and 35% agreed that Patients ask me to change a prescription drug they're already taking while 34% disagree, in addition, 79% from doctors believe that DCTA is leading patients to ask intelligent questions about treatments and medical conditions.

Attitudes toward DTC prescription drug advertising could easily understand from the following: 64 % of doctors agreed that prescription drug advertisement would provide helpful information to consumers. In comparison, only 7 % disagreed, 59% of doctors agreed that prescription drugs should not be advertised directly to consumers, and 32% disagreed. In contrast, 30% agree that pharmaceutical companies should not advertise directly to the public, and 35% disagree.

This research also found that doctors strongly support DTCA under government regulation as 81% agreed that DTCA should be submitted to the government for prior approval. Only 7% disagree. Moreover, 69% disagree about DTCA should be banned. In comparison, 18% agree, which indicates that doctors need regulation to balance the risk and benefit content of the DTCA, prevent drug misuse and abuse, and ensure that DTCA information is not misleading or biased, directing consumers to more expensive branded drugs.

Furthermore, doctors perceived the usefulness of DTCA as 51% agreed that Drug advertisements improve the patients' awareness of side effects and precautions of the advertised drugs, and 14% disagree, also 48% believed that DTCA would lead to identifying new medical conditions, and 29% believe not.

These results indicate that doctors feel comfortable with DTCA, which influences patients to be more informed, educated about medical conditions and treatment options, and more involved in their medical care. Consequently, it will lead the patients to seek more information about their medical conditions and drugs from health care professionals.

Finally, regarding the demographic and professional experience variables, doctors' responses were statistically insignificant among different specialists, places of practice, years of experience, gender, and title.

This chapter has answered the research questions and achieved the research objective for evaluating the effects of DTCA on drug prescription in Saudi Arabia.

5.2 Conclusion

In conclusion, this research found that the effects of direct-to-consumer advertising (DTCA) on drug prescription in Saudi Arabia are generally positive and favored by doctors. These findings match most of the previous research conducted in the USA prior to the Food and Drug Administration (FDA) clarification of advertising regulations. However, there is a slight deviation in this research finding from other research findings conducted in New Zealand and the USA recently.

The opinions and experiences of doctors are critical in evaluating DTCA effects on drug prescription in Saudi Arabia. These research findings showed that doctors believe that DTCA improves patients' awareness. On the other hand, they also think that DTCA impacts their practice in one way or another, but physician responses to patient requests cause the impact on practice. Moreover, the findings showed that doctors are against totally banning DTCA, but they are applying strict regulations on DTCA content.

In addition, this research achieved the primary research objective, which was to evaluate the effects of DTCA on drugs prescription in Saudi Arabia. Primary research was conducted to answer the following research questions, which were about: physician responses to patient requests, presumed DTCA influence, attitudes toward DTCA prescription drug advertising, support regulation, and perceived usefulness.

This research found that DTCA would improve the overall awareness of consumers because DTCA would provide helpful information to consumers on drugs and medical conditions. DTCA also enhances patients' understanding of the side

effects and precautions of the advertised drugs. However, these claims assumed that DTCA would not be deceived about the advantages or disadvantages of the advertised drugs.

These findings matched with the FDA survey results(Aikin, Swasy, and Braman (2004) which found that DTCA seems to increase awareness of conditions and treatments. Moreover, the American Academy of Pediatrics (AAP) (2003) found that DTCA educates patients, induces seeking care for undiagnosed conditions, encourages a more active role for patients (Huh & Langteau, 2007). However, it confuses patients due to increased demand for unnecessary drugs (Huh & Langteau, 2007).

In addition, this research found that DTCA impacted physician responses to patient requests in a way, whether because patients ask doctors to prescribe an advertised drug or ask to change a medication they are already taking. Moreover, some doctors believed that DTCA might lead to identifying new medical conditions which might be undiagnosed. The research findings showed that DTCA creates positive attitudes toward DTC prescription drug advertising because it opens a discussion between the doctor and the patient about a specific drug or medical condition. This discussion, in turn, allows patients to talk about their concerns and fears. Also, it will enable doctors to explain the various treatment options suitable to the patients' conditions. However, some doctors mentioned that DTCA leads to unnecessary discussions about advertised drugs and medical conditions, and these discussions are time-consuming and increase the clinic visit time. Moreover, they also mentioned that not prescribing the requested drug may negatively impact the doctor-patient relationship (Parker & Pettijohn, 2003).

Also, the research findings showed that the impact of DTCA and the doctor-patient relationship could be improved if DTCA is monitored and regulated by the government. Also, regulatory bodies before approval are essential to ensure that there is a balance between the risks and benefits in the content.

Finally, this research found that demographic and professional experience variables have no impact on the doctors' responses. However, Huh and Langteau (2007) found that when patients requested a prescription for an advertised drug, doctors who specialize in OB/GYN were more likely to prescribe the requested drug.

5.3 Manegerial Implications

DTCA shown to have an influence on physician prescriptions leading to more tendency to prescribe the requested medication by the patients, so pharmaceutical companies can leverage the sales of their prescribed medications by utilizing the wide range of direct to consumer marketing channels weather digital or traditional one.

Using DTCA for increasing the patient awareness weather toward medication side effect, or in identifying medical condition is highly recommended, as it’s shown that the DTCA has high perceived usefulness in this domain, also using DTCA can lead to help in increasing patient physician communication as it’s shown to help patients to ask more intelligent questions to their treating physician, which can help in adding positive treatment outcomes by enhancing patients physician shared treatment approach

However, the use of DTCA should be used strategically, as it’s perceived by some physicians that it increases the incidence of misuse, abuse of drugs, promotes deceived benefits, cause change of the current prescribed drugs for non-clinical reasons, also it’s shown that other physicians are against promoting prescription drugs direct to patients, So the use of DTCA should be wisely used and only when it’s

appropriate in order not to impact patients life or company reputation.

Finally the use of DTCA for prescription drug raises ethical and legal questions of such marketing tool, so it’s recommended not to totally ban the direct to patient advertising, but to highly regulate such tool in order to comply with the health care authorities regulations, and to make sure that it will increase the standard of health care by increasing patient medical awareness not vice versa.

5.4 Limitations and Future Research

Some limitations are considered in this research. First, the survey was created by other students (Appendix A) which cause some tightening in measures and variables. Second, the data only measures the effect of DTCA from a physician's perspective. However, if it considers the patient perspective, a clear and solid result about the impact of DTCA could generate a more solid recommendation if we have data from both views.

Little is known about the effects of DTCA on drug prescription in Saudi Arabia, so more researches are needed to explore and understand the impact of DTCA, especially in Saudi Arabia, where DTCA is a recent phenomenon. Moreover, new areas need more understanding and evaluation, like the effects of DTCA on patients' behavior and compliance and the impact of demographic variables on doctors' responses regarding the DTCA effects. Las limitation is that the reseach is data driven as th data is secondary data.

REFERENCES

Aikin, J., Swasy, L., & Braman, C. (2004). Patient and physician attitudes and behaviors associated with DTC promotion of prescription drugs–Summary of FDA survey research results. Washington, DC: Food and Drug Administration. Center for Drug Evaluation and Research. *Food and Drug Administration, 19*.

Anon. (2009). *Research Methods.* University of Leicester.

Auton, & Frank. (2006). Direct-to-Consumer Advertising (DTCA) of Pharmaceuticals: An Updated Review of the Literature and Debate since 2003. *Economic Affairs, 26*(3), 24-32.

Becker, Lee, B., Huh, & Jisu. (2005). Direct-to-consumer prescription drug advertising: understanding its consequences. *International Journal of Advertising, 24*(4), 441-466.

Calfee, E. (2002). Public Policy Issues in Direct-to-Consumer Advertising of Prescription Drugs. *Journal of Public Policy & Marketing, 21*(2), 174-193.

Calfee, E. (2002). Public Policy Issues in Direct-to-Consumer Advertising of Prescription Drugs. *Journal of Public Policy & Marketing, 21*(2), 359-366.

Choi, M., & Lee, W. (2007). Understanding the impact of direct-to-consumer (DTC) pharmaceutical advertising on patient-physician interactions. *Journal of Advertising, 36*(3), 137-149.

Dibb, S., Simkin, L., Pride, W., & Ferrell, O. (2005). *Marketing Concepts and Strategies.* Boston: Cengage Learning; 5th edition.

Frosch, D. L., Krueger, P. M., Hornik, R. C., Cronholm, P. F., & Barg, F. K. (2007). Creating Demand for Prescription Drugs: A Content Analysis of Television Direct-to-Consumer Advertising. *Annals of Family Medicine, 5*, 6-13.

Hailu, A. W. (2021). Influence of pharmaceutical marketing mix strategies on

physicians' prescribing behaviors in public and private hospitals, Dessie, Ethiopia: a mixed study design. *BMC Public Health 21*.

Hausman, A. (2008). Direct-to-Consumer Advertising and Its effect on prescription requests. *Journal of Advertising Research, 48*(1), 42-56.

Hollon, M. F. (1999). Direct-to-Consumer Marketing of Prescription Drugs. *Journal of American Medical Association, 281*(4).

Huh , J., & Langteau, R. (2007). Presumed influence of direct-to-consumer (DTC) prescription drug advertising on patients. *Journal of Advertising, 36*(3), 151-172.

Huh, J., & Langteau, R. (2007). Presumed influence of direct-to-consumer (DTC) prescription drug advertising on patients. *Journal of Advertising, 36*(3), 151-172.

Iizuka, T. (2004). What Explains the Use of Direct-to-Consumer Advertising of Prescription Drugs?'. *The Journal of Industrial Economics, 52*(3), 349-379.

Inte, N. A. (2020). *How DTC spending shifted in 2020.* Medical Marketing and Media .

Kotler, P., & Keller, K. (2009). *Marketing Management.* Upper Saddle River, New Jersey: Prentice-Hall.

Lexchin, J., & Mintzes, B. (2002). Direct-to-Consumer Advertising of Prescription Drugs: The Evidence Says No. *Journal of Public Policy & Marketing, 21*(2), 192-201.

Liu, Q., & Gupta, S. (2011). The impact of direct-to-consumer advertising of prescription drugs on physician visits and drug requests: Empirical findings and public policy implications. *nt. J. Res. Mark, 28*, nt. J. Res. Mark.

Parker, R., & Pettijohn, C. (2003). Ethical Considerations in the Use of Direct-to-

Consumer Advertising and Pharmaceutical Promotions: The Impact on Pharmaceutical Sales and Physicians. *Journal of Business Ethics, 48*(3), 279-290.

Parker, R., & Pettijohn, C. (2003). Ethical Considerations in the Use of Direct-to-Consumer Advertising and Pharmaceutical Promotions: The Impact on Pharmaceutical Sales and Physicians. *Journal of Business Ethics, 48*(3), 279-290.

Pines , W. L. (1999). A History and Perspective on Direct-to-Consumer Promotion'. *Food and Drug Law Journal, 54*, 489-518.

Robinson, A., Hohmann, K., Rifkin, J., Topp, D., Gilroy, C., Pickard, J., & Anderson, R. (2004). Direct-to-Consumer Pharmaceutical Advertising Physician and Public Opinion and Potential Effects on the hysician-Patient Relationship. *Arch. Intern*, 427–432.

Siddiqi, A. a. (2007). "Physicians' attitude towards direct to consumer advertising of pharmaceutical drugs". *International Journal of Pharmaceutical and Healthcare Marketing,*.

APPENDIX

Appendix A: Data Sharing Consent Form

Data Sharing Consent Form

I'm **Ahmed Mohamed Marzouk,**

hereby give my permission to **Modather Mohamed Mohamed** to use my collected data in his graduation project that talk about "The Effects of Direct-To-Consumer Advertising (DTCA) on Drug Prescription in Saudi Arabia".

I understand that Modather Mohamed is MBA student at Qatar university and will use my data in his graduation project and I have no objection on that.

Name: Ahmed M.Marzouk

Date of Birth: 26/3/1984

Signature: 

Date:1/9/2021

ID number (passport): A24895631

Appendix B: The Questionnaire

Please tick the box that best describes your opinion.

We would like you to identify the different factors that influence your satisfaction. For this purpose, we constructed a scale from 1 to 5 where 1 means that you: Strongly disagree with this statement, 2: Disagree 3: Neither agree nor disagree, 4: Agree, and 5: Strongly agree**.**

Part one: Effects of DTCA from different perspectives

No.	Measures	1	2	3	4	5
1	Doctors Prescribe requested advertised drugs					
2	Doctors refuse to prescribe advertised drugs					
3	Doctors recommend a different drug					
4	This requested drug has been the doctor's first choice of treatment					
5	The doctor feels pressured to prescribe the advertised drug.					
6	Prescription drug advertisements would lead to misuse or abuse a prescription drug.					
7	DTCA be deceived about the benefits of a prescription drug.					
8	Patients ask me to change a prescription drug they're already taking.					
9	DCTA is leading patients to ask intelligent questions about treatments and medical conditions.					
10	Prescription drug advertisements would provide helpful information to consumers.					
11	Prescription drugs should not be advertised directly to consumers.					
12	Pharmaceutical companies should not advertise directly to the public.					
13	DTCA should be submitted to the government for prior approval.					
14	DTCA should be banned.					
15	Drug advertisements improve the patients' awareness of side effects and precautions of the advertised drugs.					
16	DTCA will lead to identifying new medical conditions.					

Part Two: Demographic Information

Please indicate the following:

1- **Gender**

___Male ___Female

2- **Year of Experience**

___less than 10 years ____more than 10 years

3- **Title**

___consultant ____specialist

4- **Specialty**

___GP ____OB/GYN

___Pediatric ____Others

5- **Place of Practice**

___Hospital ____poly clinic

___private clinic