International Journal of Management Research and Emerging Sciences

Homepage: http://ijmres.pk/
Vol 12, No 1, March 2022, PP. 32-47
E-ISSN: 2313-7738, ISSN: 2223-5604

Doctors' Attitude Toward Patient Demand and Direct-To-Consumer Pharmaceutical Advertisements in Pakistan

[1*]Abid Shahzad, [2]Syed Gohar Abbas, [3]Gohar Saleem, [4]Muhammad Wahab

[1]Department of Business Administration, Sarhad University of Sciences & Information Technology, Peshawar Pakistan.
[*]Corresponding Email: abid.scholar@suit.edu.pk
[2]Associate professor, Sarhad University of Sciences & Information Technology, Peshawar Pakistan. Email: abbas.ba@suit.edu.pk
[3]Assistant Professor, Institute of Management Sciences, Peshawar Pakistan.
[4]COMSATS University Islamabad, Pakistan

ARTICLE INFO

Article History:
Received: Dec 12, 2021
Revised: Feb 08, 2022
Accepted: Mar 17, 2022
Available Apr 12, 2022

Keywords:
Direct to consumer pharmaceutical advertisements, physician-patient relationship, physician persistence habit.

JEL Classification:
M3, M310, I000, I1,

ABSTRACT

Since the COVID-19 phenomenon has emerged, e-patient attitudes have created a new normal for abnormal situations. This study sees how the patient demands will affect physician persistence habits from the perspective of physician-patient relationship, which is reinforced by increased digital health advertisements such as direct to consumer pharmaceutical advertisements. In this respect, primary data was collected from 300 doctors of Peshawar, using cluster random sampling through an adapted questionnaire and applied Creswell (2014) mixed method. SPSS-AMOs was utilized to evaluate the data from the first phase. In the second phase, Atlas.ti was applied to validate the first phase results. Patient demands backed by direct to consumer advertisements are more likely to be considered by physicians. Escalated physician patient relationship can also serve as a partial mediator between patient demand and physician persistence habits. Moreover, DTCPA has a direct effect on physician persistence habits and moderates the mediation of physician-patient relationship between patient demand and physician persistence habits. Consequently, majority of physicians advocate the use of DTCPA to raise patient awareness and allow them to express unspoken concerns to physicians. However, self-medication and unnecessary patient interventions may increase healthcare risks. The study contributes to the substantial body of knowledge about DTCPA's impact on Pakistani physicians and physician–patient relationship by modifying the behavioral theories.

1. INTRODUCTION

Pharmaceutical marketers are in search of an alternate to conventional pharmaceutical marketing practices. In which the centre of attention is physician behaviour (Shah et al., 2017). Since 1958, it has been regarded as a useful marketing strategy that primarily consists of detailed men, sampling, educational sponsorships and some personalised services provided to physicians, due to their distinctive knowledge and the authoritative role in physician-patient relationship (PPR)(Ahmed et al., 2020; Jones, 2020). However, inadequacies of medical literacy at the patient level seem to be changing, patients are now more educated and given access to a wide range of health related medical information, In particular, since the COVID-19 phenomenon has emerged, virtual medical consultations and e-pharmacies usage have been accelerated, which fosters an e-patient psyche. It appears to be a major impact factor on the PPR (Shahzad, Abbas, & Wahab, 2021). For pharmaceutical marketers, it is also an extremely challenging situation, due to market rivalry, technological innovation, and social distancing circumstances. Accessing physicians to influence their prescription behaviour has become more complex(Chiplunkar, Gowda, & Shivakumar, 2020). To counter this situation, marketers have evolved a multichannel marketing strategy that leads to the activation of brand messages to some extent(Banerjee & Bhardwaj, 2019). However, as an alternative to the conventional approach Direct-To-Consumer Pharmaceutical Advertisements (DTCPA) is considered as an optimal way to achieve health expert patient society (Bélisle-Pipon, 2021; Boulet, 2016). It involves actively marketing of medicines to consumers (patients) rather than physicians (2015). DTCPA was first introduced to the US market in 1981, a few decades ago. It is currently legal in the United States and New Zealand. Some other countries, such as Canada, Europe, and India, partially allow DTCPA to be used in drug ads (Dey, Rautray, & Soni, 2019). However, in Pakistan, it is only allowed for over-the-counter

medicines, prescription medications are not permitted through DTCPA(Siddiqi & Shah, 2017). Prescription items can only be sold through physician prescriptions (Siddiqi & Shah, 2017). Therefore, Physician Habit of Persistence (PHP) is at the forefront of all conventional pharmaceutical marketing strategies(Murshid, Mohaidin, & Zayed, 2019).

PHP represents the physician's belief, which the physician builds over time in practice through clinical experience, pair and senior influence, brand promotional efforts, and academic updates. Moreover, some other factors, such as drug characteristics, drug cost benefits and pharmacy are also associated factors (Murshid, Mohaidin, & Nee, 2016). PHP has a strong positive impact on physician prescribing decisions. Therefore, conventional pharmaceutical marketers primarily focus on it through different marketing mix strategies in order to influence it for their own interests of products (Kumar & Subhasini, 2020). The conventional marketing practices are seen to be a catalyst that fosters commercialism in healthcare services(Shahzad & Wahab, 2016), in which patients are viewed as static entities and are frequently exploited by Nobel professionals, Patient Demand Factors (PDF) are often overlooked when physician making decisions about their healthcare matters (Grunloh et al., 2018). Patients faith in healthcare professional is eroding as the healthcare business becomes more commercialised (McKinlay & Marceau, 2002), especially in developing countries such as Pakistan. According to W.H.O survey cited by Raza et al (2014) that 78% of physician prescriptions in Pakistan violate the drug prescribing protocols (i.e. diagnosis, indication, and completeness). In addition, 58.5% of prescriptions are illegible. Patients' rights are being ignored over the commercial interests of the healthcare providers. Many factors contribute to this dilemma in local perspective including a rudimentary public health sector, developing economy, low literacy rate, social and cultural barriers and patient lack of awareness about basic health literacy is the crucial factor (Shahzad et al., 2021).

In this respect, the current study empirically assesses the effects of DTCPA as a contemporary advertising strategy, whether it can empower patients as neoliberal e-patients(Borras, 2021), in the view of self efficiency theory assuming that patients can gain the skills and expertise necessary to read and comprehend basic health-related information through e-portals or DTCPA. Will they be encouraged to ask more questions in order to be involved in their healthcare decisions? Undermining the physician's authority as the only credible source of medical knowledge in question (Zaman, Asim, Shah, & Ahmed, 2018). Where the physician's motives and believes motivate them to recommend a medicine based on theory of planned behaviour and a patient presents with a DTCPA-stimulated approach in the light of stimulus response theory. In such situations, the issue of how the physician can deal with the patient in the framework of agency theory arises. This doctrine states that the principal (patient) hires the agent (physician) and the agent acts in the principal's best interests (Uddin, 2018). While DTCPA promotes a physician-patient relationship based on shared involvement. It focuses on teamwork and communication to improve healthcare outcomes from physician-patient interactions. Will this help to inspire patients and improve their well-being (Siraj & Curley, 2018). As a result, it is asserted that if DTCPA supports PDF and PPR, how will physicians entertain their patients? What effect would these factors have on physician's habit of persistence?

1.1 Research Objectives

- To assess the impact of Patient Demand Factor (PDF) on the Physician Habit of Persistence in the light of Direct-to-Consumer Pharmaceutical Advertisements (DTCPA).
- To analyse the mediating role of the physician-patient relationship (PPR) between PDF and PHP?
- To analyse the impact of DTCPA on PHP.
- To evaluate the moderating impact of DTCPA on the mediation of PPR between PDF and PHP.

1.2 Significance of the study

The current research has added to the existing body of knowledge by examining the academic and empirical implications of the study with the aim of facilitating the transition from conventional health culture to a health-expert patient society. This will create a symmetrical relationship between patient autonomy and physician authority, especially in the local context of Pakistan. The current study's findings have paved the way for more

research into the patient perspective and, it's something to think about for pharmaceutical marketers as they place their brands and allocate advertising budgets on DTCPA for help seeking patients and social media campaigns.

2 LITRATURE REVIEW AND HYPOTHESES DEVELOPMENT

Patient demand factor and patient preferences are two characteristics that define a patient (Ahmed et al., 2020). PDF refers to a patient's wishes to adjust their medication according to their expectations and regarding social assistance (Valori et al., 1996). In order to do this research, PDF reflects consumer demand for brands or generic related drugs that prompts patients to request a specific prescription version of the drug they expect to be administered (Murshid et al., 2016) . PDF in the context of self-efficiency theory seems that a person is in control of own misery and socioeconomic situation (Bandura, 1982). Self-efficiency and health-care satisfaction are inextricably linked (Masaud & Khan, 2015). It promotes self-regulation and encourages people to think more about how to treat chronic illnesses. According to Schwarzer and Luszczynska (2008) and Hassan et al., (2013) self effectiveness will help to achieve the health expert patient principle by promoting and educating a person about basic health literacy. The significance of the physician's position, on the other hand, is undeniable (Boulet, 2016; Murray et al., 2004). The behavioural component of healthcare has risen in importance and it has been widely explored in health literature, especially in the context of health care outcomes and pharmaceutical marketing (Cernadas Ramos et al., 2020).

From a marketing perspective, stimulus response theory describes how people respond to a stimulus. It is one of the most well-known experiments in psychology. The principle states that behavioural manifestations are the result of interactions between stimuli and responses; without stimulation or learning, there would be no responses (Clark, 2018). This principle can be referred to as a buyer black box in health sciences, particularly for physician prescribing behaviour. Since it focuses more on precursors than mechanisms of buying in behaviourism, it focuses more on them (Kotler, 2005). Physicians respond to various stimuli in different ways depending on their learning and believe as buyers. It may assist in comprehending physician prescription activity in response to DTCPA. Moreover, it can help to understand the physician habit of persistence in response to stimuli such as patient demands backed by DTCPA (Ahmed et al., 2020). The following hypothesis is being set to explore the study's first objective:
H_1: Patient demand factor has significant direct effects on physician habit of persistence.

Numerous health economic theories, such as the theory of planned behaviour, stimulus response theory, and agency theory, have been used to evaluate physician decision making models (Ahmed et al., 2020). However, owing to its ease of understanding, agency theory is regarded as a pioneer and is widely used in health economics (Stavropoulou, 2012). According to Arrow (1984) and mahmood et al., (2015) and Khaliq et al., 2016 agency theory views the physician-patient relationship in terms of knowledge asymmetry between the principal (patient) and the agent (physician). As a result, the principal obtains agent resources in order to accomplish the wellbeing utility (Savedoff, 2004). However, critics have pointed out a number of flaws in the agency theory's incorporation with health care providers and patient relationships. According to Kaba and Sooriakumaran (2007) physicians are not likely to understand the patient's needs in their actual sense, patients are more mindful of their socio economic conditions than physicians. Thus, perfect agency theory may not be combined with health economics. Moreover, imperfect agency arises where a doctor has a miss-judgment or insufficient knowledge about a patient (Warutere & Kibaara, 2016). The given utility seems to be skewed in this situation. The scenario could foster a lack of confidence in physicians, affecting the physician patient relationship and its outcomes (Razzaghi & Afshar, 2016).

Because, physician habit of persistence is the product of dynamic cognitive functions involving a variety of causes. Physician-patient relationships and PHP are associated factors, simple to complex strategies have been used to investigate the factors that influence PHP, such as Knapp and Oeltjen (1972) and Khan et al., (2017) cost benefit ratio model. This focuses on the risk and benefit of patient healthcare decisions in terms of economic impact. The Raisch (1990) psychosocial complex model, which was focused on multiple structures such as medical representatives, pharmacy formularies, and empirical evidence including patient factors, was followed by Gallan (2004), Kyle, Nissen, and Tett (2008), and Ramendra (2008) conceptual method. Furthermore, the theoretical analysis by Stros and Lee (2015) suggested a more detailed model in the form of the four P's of marketing. Murshid

and Mohaidin (2017) introduced a model of physician prescribing activity that included marketing techniques, patient characteristics, physician contextual factors, and pharmacist partnership factors. Their model was based on behavioural theories, previous prescribing models, and physician decision-making factors. The suggested model is limited to the above components. However, they did suggest that the model be validated by additional research with contextual or conceptual modifications. As a result, the current research has modified their model with the aid of behavioural theories to assess the effect of DTCPA. In particular, in the sense of persuasion theory, which is a mass communication theory aimed at delivering subtly messages in order to influence receivers' actions (Smith, 1982).The inclusion of perceived behavioural regulation was encapsulated with attitude and norms in the theory of planned actions. Its scope has been generally embraced by the marketing community (Conner & Armitage, 1998; Sniehotta, 2009) For the current study, it focuses on the PHP, which is the precursor of physician prescribing decisions from a physician's contextual point of view. Current study focuses on whether in the presence of patient demand, which is backed by DTCPA, and the mediation of the physician-patient relationship, whether it influences the physician to deviate from his habitual prescribing habits or not:

H_2: Physician-patient relationship has significant mediation between PDF and PHP.

Pharmaceutical companies' direct-to-consumer advertising campaigns are run globally under the Food and Drug Adminstration (2015) drug advertisement criteria, which divides drug advertisements into three categories: assistance-seeking, reminder, and product assertion ads. Direct-to-consumer advertising of medicines through brand storey messages helps to raise the noise level for brands, resulting in increased revenue for the organisation (Pharma, 2017). These initiatives are designed to reach mainly the patient and the physician as a particular segment, as well as other stakeholders (i.e. family, social community, business partners, social blogs, and so on) (Conte et al., 2012). DTCPA encourages patients to talk to their doctors about unspoken concerns, treatment plans, and treatment choices that are available at various prices (Epstein et al., 2010). According to Murray et al (2004), DTCPA can play a critical role in healthcare conduct, service use, and physician-patient relationships by encouraging low-income patients to actively engage in their health care decisions. It may also improve advertising efficiency by generating roughly USD 4.2 in additional income for every single dollar spent. Since then, the top 25 corporations in the world have raised their social media advertising budgets, especially after the COVID-19 phenomenon further accelerated (Julie, 2016). The number of patients attending medical centres or hospitals has decreased by 70 to 80 percent in recent years as a result of social distancing (Ayati, Saiyarsarai, & Nikfar, 2020).

Hence, it is assumed how the physician will respond to the patient in this case, where the patient is stimulated by DTCPA and the physician has a predetermined mindset. The contents of DTCPA purposefully follow a course of action that gives the appearance of a direct effect on the patient and an indirect effect on the physician (Jiang, 2018; Santana et al., 2019). In the light of the theory of persuasion, this research attempted to evaluate the indirect effects of advertising on physician contextual influences and, as a result, on physician prescribing conduct. Furthermore, in respect to the above discussion and research gaps, the following hypotheses have been set:

H_3: DTCPA has significant impact on PHP.

H_4: DTCPA has a moderating impact on the mediation of PPR between PDF and PHP.

3 RESEARCH METHODOLOGY

The current study's research design was based on Creswell (2014) mixed method of sequential explanatory approach. The study's first phase was quantitative with primary data collected through a questionnaire adapted from Murray et al (2004), Murshid, Mohaidin and Zayed (2019). The instrument underwent some contextual changes and a thorough validation process was carried out using psychometric statistics, such as reliability and validity on a pilot data set. Finally, 300 questionnaires from Peshawar's leading teaching hospitals and polyclinics were chosen from 389 questionnaires distributed among medical doctors. Cluster random sampling with a mapping technique was used to divide the densely populated sample population into clusters (Hoshaw-Woodard, 2001). For the initial phase of data analysis, confirmatory factor analysis was performed with model fit assumptions for the measurement and structural model, using SPSS-AMOs with Hayes (2017) moderated mediation model. The qualitative research was the next phase, and Atlas.ti version 9 was used to validate the first phase results using a proportionate sample size

from the 300 study population in accordance with social sciences benchmark (Research, 2006). The theoretical framework was based on behavioural theories; the theory of planned behaviour, agency theory, self-efficacy theory, stimulus response theory, and persuasion theory were employed.

4 DATA ANALYSIS

Table 1 illustrates the demographics of the study population, which consisted of 300 medical doctors whose responses were evaluated following the distribution of 389 questionnaires. The 89 questionnaires were discarded since many of them were incomplete and lacked consent for a follow-up interview, which was needed to implement the mixed method study.

Table 1. Demographics

Particular's	Numbers	Percent (%)
Gender	-	-
Male	158	53
Female	142	47
Category	-	-
Physician	214	71
Surgeon	86	29
Designation	-	-
Consultant doctors	108	59
Training doctors	176	36
General Practitioners	16	05
Experience in years	-	-
0-4	55	18
5-10	173	58
11-15	53	18
15 and above	19	06
Patient per week	-	-
00 - 100	29	10
101-200	135	45
201-300	102	34
301+ above	34	11

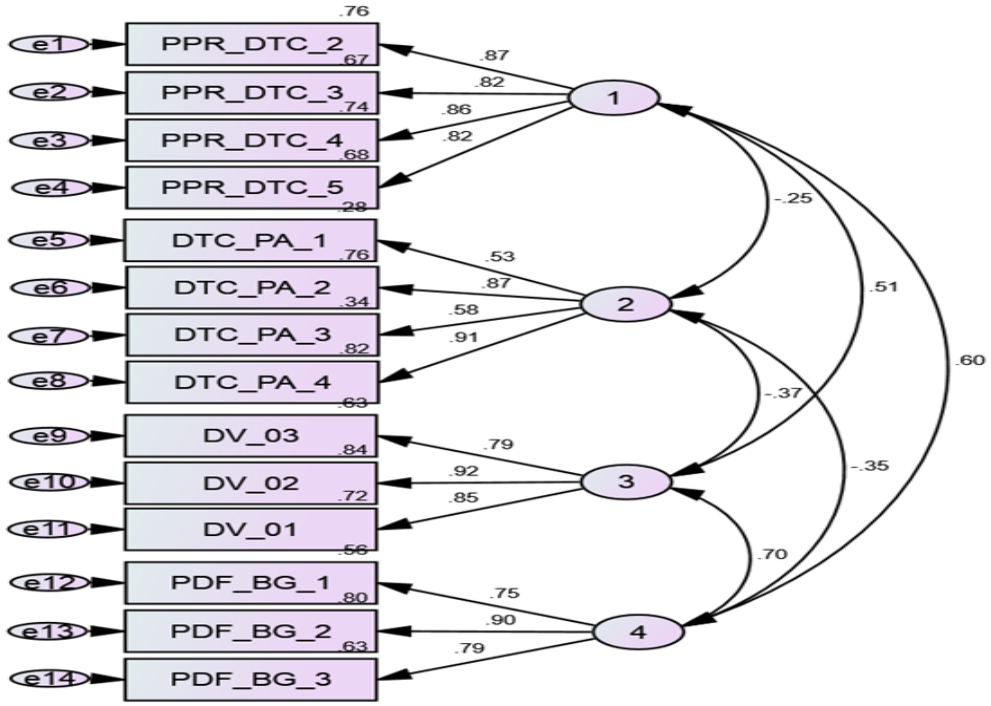
The results in table 2 show that composite reliabilities are in the range of 0.822 to 0.908, meeting the minimal threshold criterion (>0.6). It further shows that factor loadings vary from 0.741 to 0.916 for most items, except for item one (0.526) and item three (0.584) of DTCPA. These items were not deleted in accordance with the Hu and Bentler (1999) criteria, study has adapted their estimant for model fit measurement, which fulfilled the discriminent validity criteria and fell under the acceptable range.

Similarly, the average variance extracted (AVE) values in all items are greater than 0.50, indicating that the convergent validity criteria, which are also required for SEM modeling, have been met. Figure 1 depicts the suggested measurement model.

Table 2. Validities statistics

No	Construct's	FL	CR	AVE	MSV	Max R (H)	PPR	DTCPA	PHP	PDF
1	PPR	.873 .819 .863 .826	0.908	0.712	0.366	0.911	**0.844**			
2	DTCPA	.526 .872 .584	0.822	0.549	0.134	0.895	-0.246***	**0.741**		
3	PHP	.907 .788 .916 .851	0.891	0.733	0.495	0.907	0.514***	-0.366***	**0.856**	
4	PDF	.741 .898 .795	0.855	0.664	0.495	0.875	0.605***	-0.351***	0.704***	**0.815**

N=300, FL= Factor Loading, CR= Composite reliability, AVE= Average Variance Explained, MSV=Maximum share variance, Max R (H) Maximum Reliability.



PDF_BG: Patient Demand Factors_Brand or Generic.
DTC_PA Direct to Consumer Pharmaceuticals Advertisements.
PPR_DTC: Physician Patient Relationship_Direct to Consumer.
DV: Dependent Variable i.e. Physician Habit of Persistence (PHP).

Fig 1. Confirmatory Factor Analysis

The values of fit-indices are shown in table 3 (i.e. CFI 0.961, SRMR 0.053, RMSEA 0.069) for measurement and structural model (i.e. CFI 1, SRMR 0.000, RMSEA 0.000) are within the necessary threshold requirement. As a result, the current study has come to the conclusion that the proposed measurement model is acceptable (Hu & Bentler, 1999).

Table 3. Model fit statistics

Measure of fit	CMIN	DF	CMIN/DF	CFI	SRMR	RMSEA	P-Close
Criterion Threshold	-	1	1 to 3	>0.95	<0.08	<0.08	>0.05
Measurement Model	170.918	71	2.407	0.961	0.053	0.069	0.011
Structural Model	0.000	1	0.000	1.000	0.000	0.000	0.988

Threshold criteria adopted from Hu and Bentler (1999)

4.1 Regression weights

The direct relationship between Patient Demand Factor (PDF) and Physician Habit of Persistence (PHP) was assessed using standardised regression weights to discover the mediating function for Physician Patient Relationships (PPR) between PDF and PHP. Besides, a conditional effects technique was applied using an estimate by Hayes (2017) and Naisr et al., (2017). The multiple paths were labelled in the theoretical framework (Figure 2) to examine the moderating impact of Direct To Consumer Pharmaceutical Advertisements (DTCPA) on the mediation of PPR, and the direct effects of DTCPA on PHP were also examined.

Table 4. Regression weight statistics

Label	Path			Estimate	S.E.	C.R.	P
A1	PDF	→	PPR_Mediator	0.305	0.115	2.651	0.008
B1	PPR_Mediator	→	PHP	0.232	0.072	3.237	0.001
G1	PDF	→	PHP	0.634	0.074	8.592	0.000
C1	DTCPA	→	PPR_Mediator	-0.459	0.175	2.624	0.009
D1	Interaction term	→	PPR_Mediator	0.140	0.062	2.271	0.023
F1	DTCPA	→	PHP	-0.263	0.075	3.514	0.000

N=300, p<0.05

Table 4 shows that all these relationships have statistical significance as p-values are less than 0.05. As a result, it was determined that PDF stimulated by direct consumer advertising has a direct impact (=0.634**) on the PHP (Table 5). Similarly, the indirect effects of PDF through PPR have also been witnessed (β=0.07**) as significant effects on PHP. Furthermore, the combined effects of PDF and PPR (=0.705**) on PHP are significant. However, it is important to mention that positive beta weights will further stabilise the PHP with his routine prescription. Therefore, physicians will not entertain the patient's request. However, the negative beta weights of DTCPA as direct effects (=-0.263**), indirect effects (=-0.107**) and total effects (=-0.370), will force the physician to deviate from its routine practices and consider patient requests related to brand or generic products.

Table 5. Multiple paths statistics

Parameter	Estimate	P
PDF effects		
PDF Indirect effects	0.071	0.001
PDF Direct effects	0.634	0.003
PDF Total effects	0.705	0.001
DTCPA effects		
DTCPA Direct effects	-0.263	0.001
DTCPA Indirect effects	-0.107	0.003
DTCPA Total effects	-0.370	0.001

N=300, p<0.05, Boots trap 2000, using Gaskin Hayes estimant.

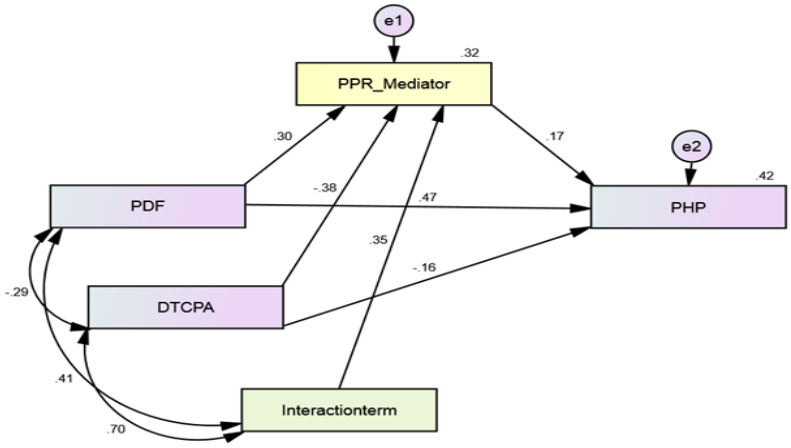
4.2 Conditional effects

Similarly, table 6 demonstrates that the corresponding probability for moderated mediation on PHP is substantial (-0.210**). It indicates that the DTCPA's multiplicative effect has negative weights on the PHP, which is due to the conditional effects of a high PDF with the presence of DTCPA and a high physician patient relationship, might strongly affect a physician's decision to depart from the prescription's persistence and consider the patient request for particular product or brand.

Table 6. Conditional effects

Parameter	Estimate	P
Moderation effects		
Low interaction of PDF with DTCPA	-0.727	0.124
Med interaction of PDF with DTCPA	-1.831	0.034
High interaction of PDF with DTCPA	-2.935	0.017
Mediation effects		
Low Conditional effects of PPR	-0.495	0.312
Med Conditional effects of PPR	-1.599	0.065
High Conditional effects of PPR	-2.703	0.031
Moderated Mediation effects		
PDF_PPR_DTCPA → PHP	-0.210	0.001

N=300, p<0.05, boots trap 2000, conditional effects Gaskin Hayes estimant



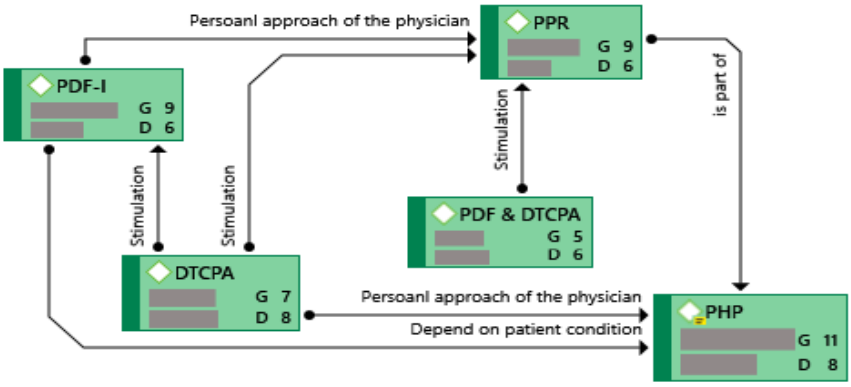
PDF: Patient Demand Factors.
DTCPA Direct to Consumer Pharmaceuticals Advertisements.
PPR: Physician Patient Relationship.
PHP: Physician Habit of Persistence.

Fig 2. Theoretical Framework.

4.3 Qualitative analysis

According to Tiley (2017), qualitative research focuses on words rather than figures, and requires more in-depth engagement of the researcher to objectively comprehend the audience's verbal and nonverbal responses. However, the current study was not a purely in-depth qualitative approach; it was a mixed-method study, in which the theme of constructs was already established in the literature. Therefore, the interview script for the study was based on the first phase (quantitative results). This was utilised as a series of questions to elicit responses to the issue of whether the undertaken study correctly evaluated the connection between variables in quantitative analysis or not. In order to accomplish this goal, a qualitative analysis project was first established within Atlas.ti. Following the Atals.ti user guide, six interview recordings were imported into the Atlas.ti software. Interviews were done in groups with the respondents' agreement to record them; each contact lasted an average of 20 minutes.

The standard interview transcript methodology varies from the first order or semantic network method. The audio recordings were directly coded, with a total of 13 open (in-vivo) unique codes beneath a canopy of 24 quotations, 4 of which were directly linked to the study's primary objectives, and the remaining 9 codes were beyond the scope and not examined for the current study. The linked codes denoted by arrow lines and based on theoretical knowledge, these are codes denoted by arrow lines and based on theoretical knowledge (Christina & Lewins, 2014). Polylines routing was also utilized to convert the network into an intelligible layout. Readers will find semantic networks to be self-explanatory and simple to comprehend. However, the alphabet that occurs within the code, such as "G and D," where "G" stands for groundness, which indicates how many quotations are related to a specific code and "D" indicates the code's relationship with other codes. PHP had the greatest G=11 and D=9 in this study, followed by PPR, PDF, and DTCPA. The relationship's complexity with other elements of phenomenon is represented by the highest number of these numerical values. In addition, a Code Co Occurrence table was created to assess the strength of the relationships between these codes (John, 2016).



Note: Interaction = DTCPA & PDF

PDF: Patient Demand Factors.
DTCPA Direct to Consumer Pharmaceuticals Advertisements.
PPR: Physician Patient Relationship.
PHP: Physician Habit of Persistence.

Fig 3. Qualitative Theoretical Framework

4.4 Code Co-Occurrence table

It estimates the horizontal and vertical frequencies of associated codes. It measures the strength of the link between codes in a similar way to correlation coefficient values without the significant threshold. The coefficient values in the CCO table range from 0 to 1. Although, according to Friese (2019), the point of value from which it may be determined a link is strong or weak is not written in the Atlas.ti user guide. However, in the range of zero to one, it appears that the closer a value is near one, the stronger the connection, and the further away from one, the weaker the correlation.

Table 7. Code co occurrence statistics

Particular's		DTCPA Gr=7	Interaction Gr=5	PDF-I Gr=9	PHP Gr=11
DTCPA	Gr=7	0.00	0.33	**0.60**	0.38
Interaction*	G=5	0.33	0.00	**0.56**	0.45
PDF-I	Gr=9	**0.60**	0.56	0.00	0.54
PHP	Gr=11	0.38	0.45	**0.54**	0.00
PPR	Gr=9	0.45	0.40	0.64	**0.67**

**Interaction = DTCPA & PDF*

The coefficient value of the code PDF, which refers to patient demand, and the code PPR are intended to express the level of strong or adverse relationship between physician and patient, indicating that in the presence of a high PPR, a PDF can have a significant impact on PHP, which is a dependent variable, and can stimulate a physician to consider or not consider a patient request e.g. for brand or generic related products. It implies that PPR serves as a link between PDF and PHP. The use of the code DTCPA as a moderator enhances PPR's mediation capacity even further. It implies that when a patient is exposed to DTCPA as well as PPR, the combined impacts of PDF, PPR, and DTCPA will have a significant influence on PHP. As a result, the first phase results were verified and matched the research population's answers, indicating that the responses were correctly assessed and measured what they were designed to measure. As a consequence of the quantitative and confirmatory interview data, the following choices were made:

- Accepted hypothesis: PDF has a direct and significant influence on PHP.
- Accepted hypothesis: PPR mediates significantly between PDF and PHP.
- Accepted hypothesis: DTCPA has a substantial influence on PHP.
- Accepted hypothesis: DTCPA acts as a moderator in the PPR mediation between PDF and PHP.

5 DISCUSSION

Results have shown that patient demand for brand and generic related products are more likely to be considered by the majority of physicians. Physicians entertain such types of patient requests to meet the patient's expectations, which are stimulated by the drug's information, e.g., DTCPA, or other media-related sources. It was also revealed, through the qualitative analysis phase, that physicians appreciate the reliable information that helps to educate patients about better healthcare outcomes. These findings are similar to those of Preechavuthinant, Willis, and Coustasse (2018) that show how honouring patient requests can help to achieve higher patient satisfaction. Such types of demands affect the physician's habit of persistence, as concluded by McKinlay. et al. (2014). Complementing pharmaceutical marketing efforts with basic health literacy training for people will be a critical step toward better healthcare interactions (Chiplunkar et al., 2020). However, physicians, on the other hand, may not appreciate patient requests based on knowledge of medication features that appear to be needlessly interventionist on the patient's part. Patient demand in general, is not important (McKinlay & Marceau, 2002). According to Cutler et al. (2019), what matters are the physician's believes and organisational variables. Furthermore, physician induced demand, which has many aspects, is a major driver in shifting the patient demand curve in accordance with physician believes and contextual factors (Mohammadshahi et al., 2019). Physicians typically adapt different behavioural change techniques depending on the patient's profile to handle them (Stuermlinger et al., 2019). Moreover, in the view of Netemeyer et al. (2020) health literacy or the patient's functional and communicative qualities has a linear association with physician trust, but numeracy has no direct influence. In reality, physician-patient discussions on treatment outcomes offer patients a psychological lift and help them improve (Dossett et al., 2020). The preceding analysis aids in exploring the study aim of patient demand impacts on physician habits of persistence.

The current study revealed that PPR appears to mediate the relationship between PDF and PHP. It suggests that a higher PPR will encourage individuals to talk to their doctors more and make demands about their health care. Physicians will also accommodate patients with whom they have a stronger relationship. The statistical significance has revealed partial mediation of PPR between PDF and PHP. This outcome has helped to explore the study objective for the mediating role of PPR. Moreover, drug information such as DTCPA being moderator has increasing effects on the mediator (i.e. PPR) impact among PDF and PHP. However, the lower to middle moderation may not significantly impact the conditional effects of PPR between the PDF and PHP. While on the higher side, the moderated mediation has a significant impact on the relationship between PDF and PHP. It supports Ahmed et al. (2020) hypothesis that increased drug information could encourage people to talk more to their doctors. According to Siddiqi and Shah (2017), physicians in Pakistan support direct-to-consumer marketing as a supplement to the health-care system. Moreover, it has found that the DTCPA can inspire patients to register on time in order to enhance their quality of life, especially in low-income nations (Defibaugh, 2019; Epstein et al., 2010). It is suggested that communication, consistent information, and increased use of social marketing are required across the whole health management sector, particularly in the aftermath of the Covid-19 crisis (Scott et al., 2020). Traditional techniques make it difficult to maintain, but modern technology offers a slew of innovative ways to reach out to customers and offer medicines. Shifts in pharma marketing tactics, such as advanced marketing, digital marketing, e-customer relationship management are creative work behaviour, and the telemedicine revolution, might lead to a new normal scenario and encourage better healthcare outcomes (Khan & Basak, 2021).

However, according to Ortiz and Rosenthal (2019) growing DTCPA might lead to physician mistrust. Jiang (2018) Belief's that patients are more likely to trust advertisements for medications than physicians. Moreover, Pandey, Jha, and Saha (2019) mentioned that DTCPA would encourage un-due therapies from the patient's perspective, it may cause dissatisfaction as a self-medication propensity. As a consequence, the lenient aspect of the

physician-patient relationship may be lost. These findings corroborated Silver et al. (2019), who suggested that personnel in-equalities might affect patient care and expectations. This approach will require a more thorough evaluation of strategies to enhance access to medicines as part of broader national health and industrial policy efforts, as well as a more clear articulation of common health policy goals across national level (Lexchin, 2021).

As a consequence, it is apparent that DTCPA necessitates a physician to diverge from their usual prescription patterns. These findings support Weib et al. (2019) findings that non-medical variables can have a significant impact on physician judgments. Physicians frequently act logically in order to comply with administrative requirements and ensure patient satisfaction. Furthermore, DTCPA has an increasing influence on physician-patient relationships and PHP. PHP has been influenced by medico marketing and other variables such as pair influence, pharmacy factor, and patient demand as it has evolved by physicians over many years of experience (Murshid et al., 2019).Consequently, the study has concluded that:

5.1 Conclusion

Physicians are more likely to pursue patients' demand backed by DTCPA. The DTC advertisements encourage patients to express any unspoken concerns with their doctors. They will have more involvement in their health-care decisions. Furthermore, the collaborative engagement of the patient and physician will be reinforced by the existence of a physician-patient relationship, which may be further moderated via DTCPA. This vicious cycle of PDF, PPR, and DTCPA collective impact on PHP will help to balance between patient autonomy and physician authority, which will potentially lead to a better health care outcome. On the other hand, self-medication and unwanted interventions from the patient side may increase the risks associated with healthcare expenses. This can be regulated by effective communications and a transitional plan in light of FDA drug advertising criteria. Consequently, following research objectives have been gratified:

- The impact of PDF on the PHP in light of DTCPA has been found.
- A partial mediating role of PPR between PDF and PHP has been witnessed.
- DTCPA has a direct impact on PHP.
- The moderating role of DTCPA on the mediation of PPR between PDF and PHP has been established.

5.2 Recommendations

Conventional healthcare and pharmaceutical-marketing practices are being challenged, notably in Pakistan. As a result, the physician-patient relationship has become shaky. As part of a collaborative effort to enhance health care outcomes through physician-patient interactions. The fundamental health care knowledge gap needs to be mitigated between physicians and patients, through public-pharma sector partnership programmes that help to educate patients about basic health literacy and their autonomy that promote e-patient psyche, and will help to achieve health expert patient society.

5.3 Limitations

Social desirability bias and sampling as a universal constraint may be present in this study due to the complexity of the phenomena. As a result, further study is needed, especially in Pakistan's local context, with an emphasis on patient opinions on DTCPA. In addition, pure qualitative research might be useful in elucidating new elements in this area. The current study's qualitative phase interviews were limited to the study's focus only, particularly the first phase's findings.

REFERENCES

Ahmad, R. U., Tayyeba, K., Muhammad, I., Maryam, A., Uma, I., & Maheswari. (2014). Prescription patterns of general practitioners in Peshawar, Pakistan. *Pakistan Journal of Medical Sciences*, *30*(3), 462-465.

Ahmed, R., Raheem, Streimikiene, Dalia, Abrhám, Josef, Vveinhardt, J. (2020). Social and behavioral theories and physician’s prescription behavior. *Sustainability*, *12*(8), 33-79.

Arrow, K. J. (1984). The economics of agency. from https://apps.dtic.mil/sti/citations/ADA151436.

Ayati, N., Saiyarsarai, P., & Nikfar, S. (2020). Short and long term impacts of COVID-19 on the pharmaceutical sector. *DARU Journal of Pharmaceutical Sciences, 28*(2), 799-805.

Bandura, A. (1982). The self and mechanisms of agency. *Journal of Psychological Perspectives on The Self, 1*, 3-39.

Banerjee, S., & Bhardwaj, P. (2019). Aligning marketing and sales in multi-channel marketing: Compensation design for online lead generation and offline sales conversion. *Journal of Business Research, 105*, 293-305.

Bélisle-Pipon, J.-C. (2021). Pharmaceutical Marketing Ethics: Ethical Standards for More Acceptable Practices. *Journal of Global Marketing*, 1-23. doi: 10.1080/08911762.2021.1939469

Borras, A. M. (2021). Toward an Intersectional Approach to Health Justice. *International Journal of Health Services, 51*(2), 206-225. doi: 10.1177/0020731420981857

Boulet, L.-P. (2016). The expert patient and chronic respiratory diseases. *Journal of Canadian Respiratory, 20*(16), 1-6.

Cernadas Ramos, Andrés, Barral Buceta, Bran, Fernández da Silva, Ángela, . . . Ana. (2020). The Present and Future of eHealth in Spain From a Health Management Perspective. *International Journal of Health Services, 50*(2), 0020731420914836. doi: https://doi.org/10.1177/0020731420914836

Chiplunkar, S., Gowda, D., & Shivakumar, H. (2020). Adaptation of pharmaceutical marketing and drug promotion practices in times of pandemic COVID-19. *International Journal of Health & Allied Sciences, 9*(5), 11-11.

Christina, S., & Lewins, A. (2014). *Using Software in Qualitative Research: A Step-by-Step Guide*: Sage Publication.

Clark, K. R. (2018). Learning theories: Behaviorism. *Journal of Radiologic Technology, 90*(2), 172-175.

Conner, M., & Armitage, C. J. (1998). Extending the theory of planned behavior: A review and avenues for further research. *Applied Social Psychology, 28*(15), 1429-1464.

Conte, R., Gilbert, N., Bonelli, G., Cioffi-Revilla, C., Deffuant, G., Kertesz, J., . . . Sanchez, A. (2012). Manifesto of computational social science. *The European Physical Journal Special Topics, 214*(1), 325-346.

Creswell, J. W. (2014). *A Concise Introduction to Mixed Methods Research*: Sage Publications.

Cutler, David, Skinner, S, J., Stern, Dora, A., . . . David. (2019). Physician beliefs and patient preferences: a new look at regional variation in health care spending. *American Economic Journal: Economic Policy, 11*(1), 192-221.

Defibaugh, S. (2019). "I talked to my doctor:" Constructing the neoliberal patient-consumer in direct-to-consumer pharmaceutical advertising. *Discourse, Context & Media, 28*, 1-7.

Dey, N., Rautray, P., & Soni, M. (2019). Patient-centered design in a connected healthcare world: A case study *Research Into Design For A Connected World* (Vol. 134, pp. 967-976): Springer.

Dossett, L., M., Hall, A., J., Kaptchuk, T. J., & Yeh, G. Y. (2020). Improved health outcomes in integrative medicine visits may reflect differences in physician and patient behaviors compared to standard medical visits. *Patient Education and Counseling*. doi: https://doi.org/10.1016/j.pec.2020.07.014

Epstein, M, R., Fiscella, Kevin, Lesser, S, C., . . . C, K. (2010). Why the nation needs a policy push on patient-centered health care. *Health Affairs, 29*(8), 1489-1495.

Food and Drug Adminstration. (2015). FDA rules for drug advertisements. Retrieved January, 15, 2019, from http://www.fda.gov/Drugs/ResourcesForYou/Consumers/PrescriptionDrugAdvertising/ucm072077.htm

Friese, S. (2019). *Qualitative Data Analysis with ATLAS. ti*: SAGE Publications Limited.

Gallan, A. S. (2004). Factors that influence physicians' prescribing of pharmaceuticals: a literature review. *Journal of Pharmaceutical Marketing & Management, 16*(4), 3-46.

Grunloh, Christiane, Myreteg, Gunilla, Cajander, Åsa, & Rexhepi, H. (2018). "Why do they need to check me?" patient participation through eHealth and the doctor-patient relationship: qualitative study. *Journal of Medical Internet Research, 20*(1), e11.

Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*: Guilford publications.

Hoshaw-Woodard, S. (2001). Description and comparison of the methods of cluster sampling and lot quality assurance sampling to assess immunization coverage. Retrieved 20 March 2020, from https://apps.who.int/iris/handle/10665/66867

Hu, L. t., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural equation modeling: a multidisciplinary journal, 6*(1), 1-55.

Jiang, P. (2018). Asking a doctor versus referring to the internet: A comparison study on consumers' reactions to dtc (direct-to-consumer) prescription drug advertising. *Health Marketing Quarterly, 35*(3), 209-226.

John, L. (2016). Using ATLAS. ti to facilitate data analysis for a systematic review of leadership competencies in the completion of a doctoral dissertation. doi: http://dx.doi.org/10.2139/ssrn.2850726

Jones, C. (2020). *Pharmaceutical Marketing in the United States: How Prescription Drugs Have Become The Health Care Solution. doi:org/10.26153/tsw/11364.*

Julie, L. (2016). Health care marketing report. Adverting age by Kantar media,. from http://gaia.adage.com/images/bin/pdf/KantarHCwhitepaper_complete.pdf

Kaba, R., & Sooriakumaran, P. (2007). The evolution of the doctor-patient relationship. *International Journal of Surgery, 5*(1), 57-65.

Khan, M. M. R., & Basak, K. (2021). Shifts in pharma-marketing trends in post COVID-19 era. *International Journal of Multidisciplinary: Applied Business and Education Research, 2*(2), 108-114.

Knapp, D. E., & Oeltjen, P. D. (1972). Benefits-to-risks ratio in physician drug selection. *American journal of public health, 62*(10), 1346-1347.

Kotler, P. (2005). *According to Kotler: The world's foremost authority on marketing answers your questions*: AMACOM.

Kumar, P., & Subhasini, J. (2020). Effectiveness of marketing strategy formulation in biomedical healthcare industry. *International Journal of Research in Pharmaceutical Sciences, 11*(1), 466-470.

Kyle, G. J., Nissen, L., & Tett, S. (2008). Pharmaceutical company influences on medication prescribing and their potential impact on quality use of medicines. *Journal Of Clinical Pharmacy And Therapeutics, 33*(5), 553-559.

Lexchin, J. (2021). Drug Promotion in India Since 2000: Problems Remain. *International Journal of Health Services, 51*(3), 392-403. doi: 10.1177/0020731420932109

Masaud, A., Dr, & Khan, K. S. A. (2015). Self-efficacy as a predictor of life satisfaction among undergraduate students. *The International Journal of Indian Psychology, 2*(2), 8-11. doi: B00301V2I22015

McKinlay, J. B., & Marceau, L. D. (2002). The End of the Golden Age of Doctoring. *International Journal of Health Services, 32*(2), 379-416. doi: 10.2190/jl1d-21bg-pk2n-j0kd

McKinlay., John, Trachtenberg, Felicia, Marceau, D, L., . . . A, M. (2014). Effects of patient medication requests on physician prescribing behavior: Results of a factorial experiment. *Medical Care, 52*(4), 294-299.

Mohammadshahi, M., Yazdani, S., Olyaeemanesh, A., Sari, A. A., Yaseri, M., & Sefiddashti, S. E. (2019). A scoping review of components of physician-induced demand for designing a conceptual framework. *Journal of Preventive Medicine and Public Health, 52*(2), 72-81.

Murray, Elizabeth, Lo, Bernard, Pollack, L., Donelan, . . . Ken. (2004). Direct-to-consumer advertising: public perceptions of its effects on health behaviors, health care, and the doctor-patient relationship. *The Journal of the American Board of Family Practice, 17*(1), 6-18.

Murshid, M. A., & Mohaidin, Z. (2017). Models and theories of prescribing decisions: A review and suggested a new model. *Pharmacy Practice (Granada), 15*(2), 990-1012.

Murshid, M. A., Mohaidin, Z., & Nee, G. Y. (2016). The influence patient's characteristics "requests and expectations" on physician prescribing behavior. *International Journal of Pharmaceutical and Healthcare Marketing, 10*(4), 390-411.

Murshid, M. A., Mohaidin, Z., & Zayed, M. (2019). Development and validation of an instrument designed to measure factors influencing physician prescribing decisions. *Pharmacy Practice, 17*(4), 1616-1626.

Netemeyer, G., R., Dobolyi, G., D., Abbasi, A., Clifford, G., & Taylor, H. (2020). Health Literacy, Health Numeracy, and Trust in Doctor: Effects on Key Patient Health Outcomes. *Journal of Consumer Affairs, 54*(1), 3-42. doi: 10.1111/joca.12267

Ortiz, S. E., & Rosenthal, M. B. (2019). Medical marketing, trust, and the patient-physician relationship. *JAMA, 321*(1), 40-41.

Pandey, J. R., Jha, A., & Saha, S. K. (2019). Impact of manipulative character of direct-to-consumer promotionDynamic Perspectives on Globalization and Sustainable Business in Asia (pp. 198-211): IGI Global.

Pharma, E. F. (2017). Introduction to multichannel marketing. Retrieved January 25, 2019, from https://social.eyeforpharma.com/commercial/digital-power-harnessing-multichannel-marketing-opportunities

Preechavuthinant, S., Willis, W., & Coustasse, A. (2018). Trends and effects of pharmaceutical DTCA. *International Journal of Pharmaceutical and Healthcare Marketing, 12*(1), 61-70.

Raisch, D. W. (1990). A model of methods for influencing prescribing: Part II. A review of educational methods, theories of human inference, and delineation of the model. *DICP, 24*(5), 537-542.

Ramendra, S. (2008). Network connectedness of pharmaceutical sales rep (FLE)-physician dyad and physician prescription behaviour: a conceptual model. *Journal of Medical Marketing, 8*(3), 257-268.

Razzaghi, M. R., & Afshar, L. (2016). A conceptual model of physician-patient relationships: A qualitative study. *Journal of Medical Ethics and History of Medicine, 9*(14), 2-7.

Research, A. (2006). Sample size calculation. Retrieved 26, January, 2019, from https://www.research-advisors.com/tools/SampleSize.htm

Santana, M.-J., Ahmed, S., Lorenzetti, D., Jolley, R. J., Manalili, K., Zelinsky, S., . . . Lu, M. (2019). Measuring patient-centred system performance: a scoping review of patient-centred care quality indicators. *BMJ open, 9*(1), e023596.

Savedoff, W. D. (2004). Kenneth Arrow and the birth of health economics. *Bulletin of the World Health Organization, 82*, 139-140.

Schwarzer, R., & Luszczynska, A. (2008). How to overcome health-compromising behaviors: The health action process approach. *European Psychologist, 13*(2), 141-151.

Scott, L, M., Martin, D, K., Wiener, J. L., Ellen, P. S., & Burton, S. (2020). The COVID-19 pandemic at the intersection of marketing and public policy: SAGE Publications Sage CA: Los Angeles, CA.

Shah, Asim, S., Khan, N., Ayub, Muhammad, Anwar, & Asim. (2017). Influence of pharmaceutical promotional mix instruments upon healthcare consultants prescription decision making. *Journal of Managerial Sciences, XI*(4), 143-156.

Shahzad, A., Abbas, S. G., & Wahab, M. (2021). Physician's Perception towards Contemporary Pharmaceutical Advertisements in Pakistan. *Sarhad Journal of Management Sciences, 7*(1), 83-101.

Shahzad, A., & Wahab, M. (2016). Why are national pharmaceutical brands more considered than multinationals? A case of pakistan's pharmaceutical industry. *Sarhad Journal Of Management Sciences, 2*(2), 176-194.

Siddiqi, A. A., & Shah, S. Z. A. (2017). Physicians' attitude towards direct to consumer advertising of pharmaceutical drugs. *International Journal of Pharmaceutical and Healthcare Marketing, 11*(1), 37-48.

Silver, K, J., Bean, A. C., Slocum, C., Poorman, J. A., Tenforde, A., . . . Zafonte, R. (2019). Physician workforce disparities and patient care: a narrative review. *Health equity, 3*(1), 360-377.

Siraj, A. M., & Curley, L. (2018). A review of DTCA techniques: Appraising their success and potential impact on medication users. *Research in Social and Administrative Pharmacy, 14*(3), 218-227.

Smith, M. J. (1982). *Persuasion and Human Action: A Review and Critique of Social Influence Theories*: Wadsworth Publishing Company.

Sniehotta, F. (2009). An experimental test of the theory of planned behavior. *Applied Psychology: Health and Well-Being, 1*(2), 257-270.

Stavropoulou, C. (2012). The doctor-patient relationship: A review of the theory and policy implications. *The LSE Companion to Health Policy*, 314-326.

Stros, M., & Lee, N. (2015). Marketing dimensions in the prescription pharmaceutical industry: a systematic literature review. *Journal of Strategic Marketing, 23*(4), 318-336.

Stuermlinger, Anna, Poss, Doering, R., Glassen, Katharina, . . . Kamradt, M. (2019). Dealing with patient expectations regarding the prescription of antibiotics in ambulatory care in Germany: A qualitative analysis. *Research Square*. doi: https://orcid.org/0000-0003-0618-4034

Tiley, C. (2017). Qualitative research: What is it and why should you use it?, adresse: https://www. onepoll. com/qualitative-research-what-is-itand-why-should-you-use-it. *Hentet, 25*, 2020.

Uddin, K. N. (2018). Doctor-patient relationship. *BIRDEM Medical Journal, 8*(3), 194-197.

Valori, R., Woloshynowych, M., Bellenger, N., . . . Salmon, P. (1996). The patient requests form: A way of measuring what patients want from their general practitioner. *Journal of Psychosom Res, 40*(1), 87-94.

Warutere, P. N., & Kibaara, K. R. (2016). The physician-patient relationship: A review of two theoretical approaches and health regulation implications. *Journal of Social Sciences*, *5*(02), 265-276.

Weib, Vivien, Nau, Roland, Glaeske, G., Hummers, E., & Himmel, W. (2019). The interplay of context factors in hypnotic and sedative prescription in primary and secondary care; a qualitative study. *European Journal Of Clinical Pharmacology*, *75*(1), 87-97.

Zaman, K., Asim, K., Shah, N., & Ahmed, S. J. (2018). Physicians' perspective regarding direct to consumer marketing of nutraceuticals products. *Pak J Med Sci*, *34*(3), 710-713.