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An Analysis of Physician-Induced Demand in the Health Care Industry

Dr. D. Uma★

Associate Professor, PG and Research Department of Economics, Ethiraj College for Women, Chennai, TN, IND.

S Ilakkiya

Post Graduate, PG and Research Department of Economics, Ethiraj College for Women, Chennai, TN, IND.

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ABSTRACT

Purpose: Physicians are the healthcare industry's backbone. Although they are said to be the "backbone" of the health care sector, the tasks and obligations of providers of health care services are inevitable and critical to healing the ailments of the recipients. Health care professionals should act as guides for patients and train patients and their family members to make the best decisions regarding their health condition and medical treatment plan in order to improve the health of those who receive health care services. As a result, it is critical to comprehend the nature of the demand for health care and to detect the occurrence of physician-induced demand in the health care system. **Design and Methodology:** The article concentrated on physician-induced demand in the healthcare market in Chennai. The primary data was collected from 60 healthcare providers and recipients, including the general public and general physicians. Secondary data was acquired from field-related materials, books, journals, websites, research papers, and dissertations. The statistical tool, Factor analysis was used to examine the primary data collected. **Findings:** According to the study, physicians and hospitals stimulate demand by providing free health examinations, recommending medication supplements, and engaging in referral marketing. **Scope for further research:** This analysis provided a broad perspective on induced demand from physicians, healthcare professionals, hospitals, diagnostic centers, and pharmacies. Both commercial and governmental organizations might do the study in order to save people's out-of-pocket expenses as well as the government's healthcare costs.

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★ *Corresponding author's e-mail:* uma_d@ethirajcollege.edu.in (Dr. D. Uma)

1.0 INTRODUCTION

"Health is a state of complete physical, mental, and social well-being, not simply the absence of disease and infirmity" (WHO). The physician's role is crucial in the process of preserving good health in all countries. The physician's responsibilities include preserving health via the use of pharmaceutical supplements, treating diseases and disorders, healing injuries and illnesses, and recommending patients to health care providers for access to health care services in all areas.

While providing health care services, physicians act as agents for patients, known as principals. The principal is not a medical professional. Agents in the healthcare industry aid principals by prescribing appropriate prescriptions, providing proper diagnoses, teaching patients about treatment techniques, and sending patients to hospitals, specialists, surgeons, and a range of other healthcare professionals. It is advantageous for people to make proficient decisions in the medical sector with the support and advice of a physician.

The flip side of the coin is the presence of asymmetric information between the provider and the recipient of health care services. Through information asymmetry, which is supported through referral marketing, the agent can influence the patient and build demand in the health industry. It is one of the primary-agent challenges in the health industry. Due to the preponderance of asymmetric information between healthcare users and providers, the healthcare system suffers from social prejudice.

The term "induced demand" refers to a change in healthcare demand brought on by healthcare practitioners' discretionary power over their clients, particularly physicians. (Kasper and Sloan, 2008) induced demand is a major challenge for healthcare systems across the world because it creates an imbalance between demand and available resources, increasing patients' share of healthcare costs and the occurrence of catastrophic health spending. Even when patients bear all costs, induced demand makes efficient resource allocation difficult. Such a situation has the potential to destabilize the healthcare industry's supply-demand balance while putting an additional burden on patients. Incorrect diagnosis and treatment might lead to medical issues for patients.

1.1 Review of Literature

Garg *et al.,* (2020) studied the Pattern of Utilization and Out-of-Pocket Expenditure in Public and Private Hospitals in India. Out-of-pocket expenditure as a result of physician-induced demand, according to the paper, adds to poverty, catastrophic health spending, and inhibits equitable access to healthcare in India.

Dzampe and Takahashi (2021) assessed physician-induced demand and competition in a regulated healthcare market in Ghana, South Africa. The purpose of the study was to see if there is physician-induced demand for hypertension sickness in Ghana's healthcare system, where costs are regulated, and no co-payment is necessary.

Datta *et al.,* (2022) investigated the profit motivated attitudes of Tamil Nadu's private healthcare providers. As a result of stimulated demand, the average treatment cost in the private sector was significantly higher than in the public sector, and supply-side data indicated that the average annual receipt per year is six times bigger than the average operating cost per year.

1.2 Objectives

- To explore the factors that influence physician-induced demand in the healthcare business.
- To investigate the many types of referral marketing used in the healthcare industry.

- To propose solutions to the health care industry's stronghold of dismissive generated demand.

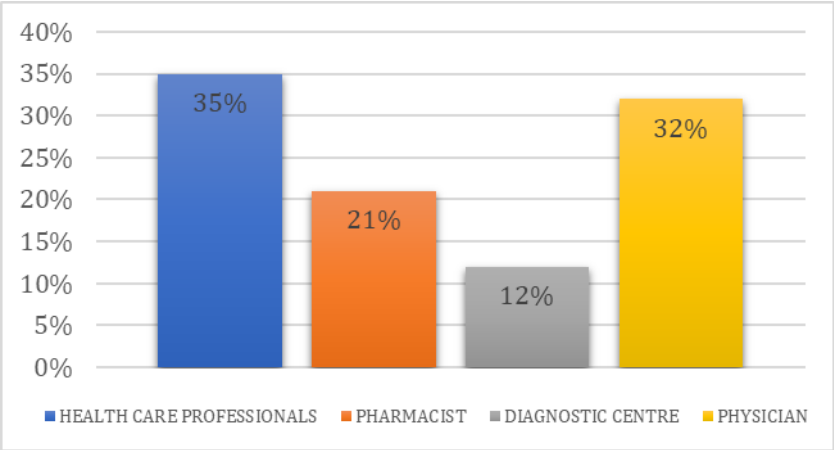
2.0 RESEARCH METHODOLOGY

The success of any research depends on the methodical strategy for data collection and analysis. The primary data was collected from 60 healthcare providers and recipients in Chennai, including the general public and general physicians. Secondary data was acquired from field-related materials, books, journals, websites, research papers, and dissertations. Factor analysis is used to assess the fundamental data obtained.

3.0 DATA ANALYSIS AND INTERPRETATION

Chart 1

Referral to the Physician



Source: Primary Data

Chart *1* depicts the general public's referrals to physicians from various professionals in the health care business. 35 per cent of health care professionals, 21 per cent of pharmacists, 12 per cent of diagnostic centers, and 32 per cent of other physicians refer physicians to the general population. The majority of general public referrals come from health care practitioners.

Table 1

Doctor's Suggestion of Supplements

Suggestion	Frequency	Percentage
Yes	26	87.00
No	4	13.00
Total	30	100.00

Source: Primary Data

Table *1* shows the ideas and recommendations given by doctors in clinical settings about supplements such as vitamin and mineral pills, protein supplements, and iron tablets. It was agreed by 87 per cent of respondents and disputed by 13 per cent. The majority of those surveyed endorsed yes.

Table 2

Fees Charged for Health Care Services

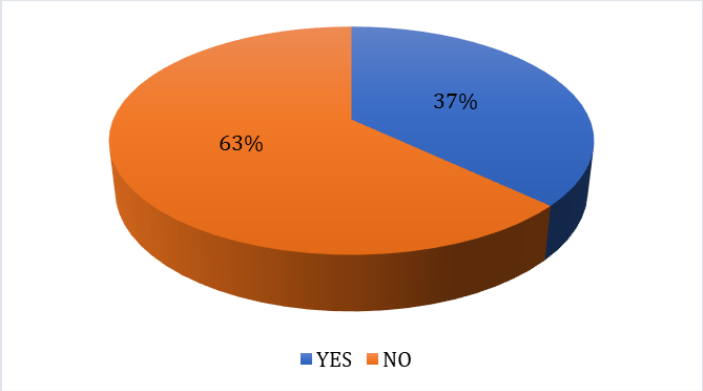
Same Fees	Frequency	Percentage
Yes	16	53.00
No	8	27.00
May Be	6	20.00
Total	30	100.00

Source: Primary Data

Table *2* shows the fees charged by physicians for health care services provided to patients. 53 per cent of the sample felt that fee was not changed, 27 per cent felt that the fees was changed, and 20 per cent were neutral. The majority accepted the same fees being charged by the physicians for all health care services.

Chart 2

Free Health Check-up and Health Camps



Source: Primary Data

Chart *2* depicted the general public's involvement in free health checkups and health camps organized by private clinics, hospitals, and diagnostic centers. 37 per cent of those sample participated in the free health camps and health examinations, while 63 per cent did not. The majority of responders were indifferent to the camps.

3.1 Statistical Tool - Factor Analysis shows the Determinants of Induced Demand in the Health Care Industry from Physicians and Hospitals

Table 3

KMO and Bartlett's Test

Kaiser-Meyer-Olkin	Measure of sampling adequacy	0.525
	Chi-Square	16.700
Bartlett's Test of Sphericity	Degrees of Freedom	21
	Significance	0.027

Source: Computed from Primary Data

In Table *3*, the KMO test result, which is more than 0.5, is 0.525. The use of data reduction methods is permissible and valid. At a 5 per cent level of significance, Bartlett's test of sphericity is significant. 0.027 is the p value. It demonstrates that there is a significant degree of correlation between variables, making factor analysis appropriate.

Table 4

Communalities

Determinants	Initial	Extraction
Free health checkup in the hospitals	1.000	0.525
Physician charges same fees for all health care service	1.000	0.474
Supplement suggestion by physicians	1.000	0.653
Referral for the physician from another domain	1.000	0.707
Physicians refer the hospitals for the patients	1.000	0.675
Cross referral between physicians in the health sector	1.000	0.725
Physician books specialist appointments for the patients	1.000	0.597

Extraction Method: Principal Component Analysis

Source: Computed from Primary Data

In Table *4*, all of the variables in the communalities start off with a variance of 100 per cent, which is displayed as 1.000 in the initial heading column. The minimum variance share of the variable after extraction is 47.40 per cent, and the maximum variance share of the variable is 72.50 per cent, according to the extraction value range of 0.474 to 0.725.

Table 5

Total Variance Explained

Component	Initial eigen values			Extraction sums of squared loadings			Rotation sums of squared loadings		
	Total	*Percentage of variance*	*Cumulative percentage*	*Total*	*Percentage of variance*	*Cumulative percentage*	*Total*	*Percentage of variance*	*Cumulative percentage*
1	1.672	23.887	23.887	1.672	23.887	23.887	1.516	21.656	21.656
2	1.422	20.311	44.198	1.422	20.311	44.198	1.458	20.832	42.488
3	1.262	18.026	62.223	1.262	18.026	62.223	1.381	19.735	62.223
4	0.895	12.788	75.011						
5	0.653	9.327	84.338						
6	0.589	8.410	92.748						
7	0.508	7.252	100.00						

Extraction Method: Principal Component Analysis

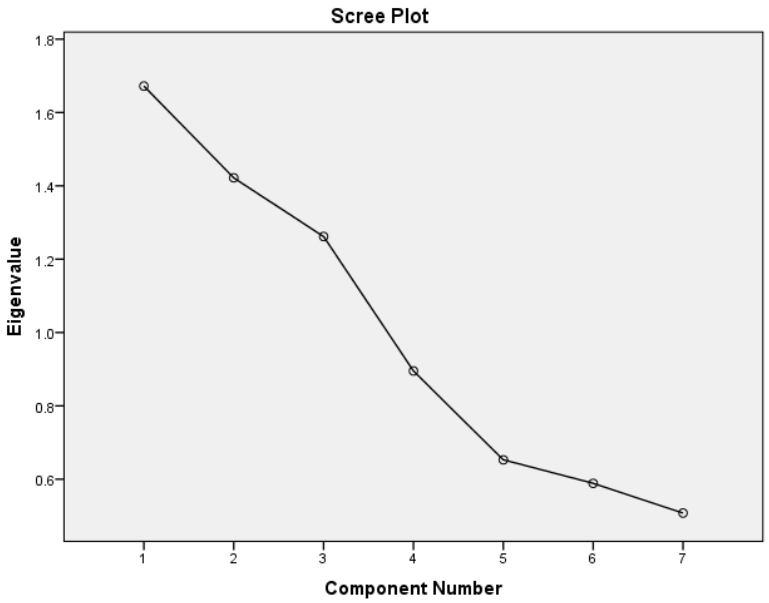
Source: Computed from Primary Data

In Table *5*, the total variance for the first component, the second component, and the third component each contributed is 23.887, 20.311, and 18.026 respectively. The variation in all the variables that are accounted for by a specific factor is measured by its Eigenvalue for that factor. It is evident from the provided collection of data that there are three separate components with Eigenvalues larger than 1. The Eigenvalues for the first factor are 1.672, the second is 1.422, and the third is 1.262.

In Chart *3*, the appropriate eigenvalues are displayed as the y axis on the Scree plot, with the components as the x axis. Considered are the first three components, and their eigenvalues are 1.672, 1.422, and 1.262. The greatest variance is shared by all the components, which all have eigenvalues larger than 1. They are therefore crucial to the current study.

Chart 3

Scree Plot



Source: Computed from Primary Data

Table 6

Rotated Component Matrix

Factors	Components	Item description	Rotated Loading	Percentage of variance	Eigen value
I	Vital Determinants	Free health checkup in the hospitals	0.482	23.887%	1.672
		Physician charges same fees for all health care service	-0.688		
		Supplement suggestion by physicians	0.748		
II	Referral for diagnosis	Physicians refer the hospitals for the patients	0.755	44.198%	1.422
		Cross referral between physicians in the health sector	0.836		
III	Referral for treatment	Referral for the physician from another domain	0.813	62.223%	1.262
		Physician books specialist appointments for the patients	-0.683		

Extraction Method: Principal Component Analysis

Rotation Method: Varimax with Kaiser Normalization

Source: Computed from Primary Data

Factor 1 – Vital Determinants

Factor 1 has an eigenvalue of 1.672 and a variance of 23.887 per cent. The factors are connected to the vital hospital characteristics that create induced demand in the healthcare sector.

Factor 1 has a moderately high significant loading on the variable Free health checkup in hospitals (0.482) and a very high significant loading on the variable Supplement suggestions by physicians (0.748).

Factor 2 – Referral for Diagnosis

The variance of component 2's eigenvalue, which is 1.422, is 44.198 per cent. The variables are connected to the factors that influence the induced demand in the healthcare sector as a result of doctor referrals for a diagnosis. Cross referral between doctors in the healthcare industry is a very high significant loading on factor 2 (0.836), whereas physicians recommend patients to hospitals is a moderately high significant loading (0.755).

Factor 3 – Referral for Treatment

The variance of factor 3's eigenvalue, which is 1.262, is 62.223 per cent. The variables are connected to the factors that influence the induced demand in the healthcare sector caused by physician referrals for treatment. The variable called Referral for the physician from another domain has a very high significant loading on factor 3 (0.707).

4.0 FINDINGS

- The majority (25 percent) of general physician respondents indicated they were referred by another physician in the healthcare business.
- The majority (67 percent) of general physician respondents cited patient convenience and referral marketing as reasons for physician referrals in the healthcare business.
- The majority (30 percent) of general physician responders either seldom or never accept the test findings identified and recommended by another physician.

5.0 SUGGESTIONS

The general population should be educated on health issues in order to avoid being victims of the healthcare industry's dismal induced demand. The general public should not believe suggestions, referrals, and recommendations made by healthcare experts in various settings such as hospitals, clinics, diagnostic centers and pharmacies.

Healthcare workers should not collect healthcare expenses in hospitals. The healthcare workers would not know the financial and insurance backgrounds of the patients, which helps to reduce the occurrence of induced demand in hospitals, particularly when hospitals use fees for service to pay physician salaries.

6.0 CONCLUSION

Induced demand in the health care business is both a blessing and a curse for those who get healthcare. It is a boon in the sense that the receiver receives the most suitable care from professionals, and then receives correct recommendations amongst health care specialists to heal the patient’s acute and chronic diseases and disorders. On the other hand, the problem is that the demand in the healthcare sector is induced by healthcare professionals who are motivated by profit. As a result, consumers pay both financial and non-financial costs as a result of induced demand, and government health spending is inefficient because it doesn't get to the right group of beneficiaries.

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