



LITERATURE REVIEW: PATIENT'S MEDICAL TREATMENT AND DOCTOR DIAGNOSIS ON INVESTIGATION

Hsieh, Tsung-Yu

Associate Professor, Economics and Management College, Zhaoqing University

Duanzhou District, Zhaoqing 526061 Guangdong, P. R. of China

E-mail: tyhsieh@mail2000.com.tw

Tsung-Che Wu

Assistant Professor Department of Banking and Finance, National Chiayi University

Phone : 011-886-5-2732866 Fax : 011-886-5-2732889

Email : tcwujeff@mail.ncyu.edu.tw

Abstract

The report applied effectiveness function to investigate when a patient is seeking for medical treatment, how the treatment is decided and prescribed through diagnosis. On the other hand, the relationship between doctor and patient is similar to financial scholar and their familiarity towards company financial statements; the doctor's diagnosis result is the same as the financial advice from financial expert.

Key words: Behavioral Finance, Effectiveness Function, Loss aversion

Introduction

Consumers face with many choices in their daily life, when making decisions, consumers would have to choose under various limits (for example, income) and their personal preference. The medical treatment consumption is based on the personal income and the price of medical treatment. When a person is ill, it also refers to a person may experience a certain level of income loss. Under current policy, labour receives a certain level of compensation during sick leave, which when the illness occurs, patients would tend to choose between taking a sick leave or continue to work. Furthermore, to evaluate the opportunity cost of whether to receive medical treatment, it was discovered that the higher the income replacement is, the often people would seek for medical treatment. Owing to the information asymmetry between doctor and patients, the authorization becomes effective, it had become a motivation for patients to decide whether to look for medical treatment no matter theoretically or

empirically. In terms of individual medical practice, the individual health condition and whether would receive the social security and sick leave compensation had resulted the “ethical risk”. The empirical research on this issue was raised from: the change of copayment, individual’s comparison on different insurance plan and the randomization of insurance plan, however, the empirical results had not yet been identified due to the engagement between doctor and patients were not addressed.

The utility function was applied to evaluate patient’s medical treatment and the progress of making treatment decision on medical prescription in this report, on the other hand, the correlation between doctor and patient is similar to the connection between financial expert and their familiarity on the company financial statement, the medical treatment prescribed from doctor to patient is similar to the financial expert giving financial advice. Moreover, the correlation between

doctor and patient could be investigated through behavioral economics which the provocation of ethical risk and motivation of seeking medical treatment could be discussed from a different perspective.

Discussion & Literature Review

Becker & Murphy (1988) once illustrated drug addiction through behavioral economics, Glaeser (2001) considered people is easier to experience cognitive errors when one decision has to be made within a very short time (the cognitive errors could result from the lack of one professional knowledge, the lack of medical care information). Newhouse (1970) discovered that the numbers of doctors and their income are in direct proportion, which is against to the market model. Newhouse (1970) illustrated that doctor salary required to have a set price to guarantee them sufficient income, therefore, doctor may provoke the “Physician induced demand” through representing a patient who is lack of full understanding of their own

condition and making decision for their medical treatment (Thaler, 1980).

Doctor Behavior

Doctor Subjective Behavior

Owing to doctors are fully trained professionals, their main duty would be prescribing medical treatment to patients for curing illness. Doctors have put most of their effort in improving patient’s health condition maximally and lower patient’s fear towards their own sickness. Since the implementation of separation of dispensing practice from medical practice in United States, local doctors are more willing to cure patient with better quality drugs that makes them a perfect medical treatment execution agent. However, doctors prefer prescribe drugs they are used to instead of adopting the innovative new drugs which leads to the price of old drugs stay high (Hellerstein, 1998).

Doctors have full responsibility to their diagnosis result in view of their

short diagnosis duration and the trust and cooperation from a patient to a doctor, however, the short diagnosis duration is very possible to provoke the medical treatment dispute afterwards. The potential of the occurrence of dispute has become the inducement for doctors to lower the misjudgment cost and furthermore, to avoid curing patient with higher medical risk. Therefore, doctors tend to care more about their reputation than patient's health condition (Jha & Epstein, 2004). Balsa & McGuire (2003) suggested that the doctor's behavior should be adopted as part of the doctor- patient interaction and to evaluate how the complicated treatment decision is made by doctors within a very short duration.

Doctor Diagnosis Progress

Koszegi (2003) discovered the treatment result would be affected by patient's psychological condition which are their faith and income. The emotion after a patient is aware of their own condition would affect the doc-

tor's reservation level on telling a patient their own diagnosis result especially for experienced doctors. This phenomenon has shown the existence of information asymmetry within doctor- patient relationship, for instance, a doctor may want to give a beam of light to a patient who has cancer, so a patient's real health condition is covered deliberately by telling them the health check result has not yet been revealed or describe their health condition as mild. However, if the diagnosis was done by two different doctors in the same hospital, despite of there is no extra information received by the second doctor from the previous doctor (the health condition was simply adopted through the diagnosis of the second doctor), the second doctor would choose to tell the patient their true health condition which is preferable by most of the doctors (Caplin & Leahy, 2003), it is because, if the real health condition is hidden, patient would easily to perceive their health condition as very poor.

Patient Behavior

Patient Seeking Doctor Diagnosis

The patient's risk reluctant level would be lower with the increase in income. Medical care market required to consider both the market uncertainty and the doctor-patient relationship information asymmetry. If the patient's decision is made according to the doctor's performance, then doctor would have inducement to improve the treatment quality and individual performance. If the doctor's practice condition and the medical information resource are both taken into consideration, the progress of how patient collect information would become very important. Owing to the well developed internet system and media, both factors had become decisive for medical quality improvement and medical market efficiency as the information is quickly spread nowadays (Shaller et al., 2003). The patient information collection and choosing diagnostic doctor are effective to policy formulation. In United States, public media always

transparent a doctor's individual behavior.

Patient Seeking Medical Treatment Decision Progress

The cost-benefit ratio is used to evaluate the medical treatment cost and the profitability. When a doctor and a patient are both facing a serious injury, the doctor and the patient's family would all care for the physical and mental pain the patient has to been through. The anxiety raised by the worry to the future health condition would also affect a patient's health condition and their behavior during sickness. A person would normally refuse to see a doctor and not even willing to receive any medical information from a free information platform when their illness is mild.

Doctor-Patient Relationship

Doctor-Patient Relationship Related Theory History

The doctor-patient relationship was magnificently changed in the past forty years. It was from the doctor paternalism relationship to a situation that patient's autonomy and the doctor's authority are both facing the significant threats from outward resources. The history background and the social forces would each be reviewed below to investigate the influence from the two mentioned forces on the traditional doctor-patient relationship. The illness behavior establishment as one of the social mechanisms. The society expects the social responsibility of a patient could be temporarily relieved, for example, the job duty. The patient do not need to be responsible for their own illness, but would require care from others. On the contrary to the Parson's model, the Freidson (1960) negotiation model considered during the doctor-patient interaction, the two individuals with different culture, rules and systems would reach an agreement through the negotiation between each other. This model could clearly describe the doctor-patient engagement channel and the variable situation of

the physician-doctor interaction. However, the disadvantage of this model is that, it lacks of the doctor-patient interaction's progress and result's description.

Doctor-Patient Interaction- Authorization from Patient to Doctor

The role of the doctor would be fully an agent. In tradition, a patient, who has the decision-making right, is assumed to have complete and not biased medical information. The doctor's authority and the assignment level would normally be affected by three factors: the disadvantage of lacking information, responsibility trader and insurance coverage that are illustrated below:

(1) The disadvantage of patient lack of medical treatment information

Owing to the individual lack of medical information and searching for information gap fulfillment, the patient may refuse to fulfill the information gap because of the expected marginal

return had not yet covered the marginal cost which the information asymmetry between the doctor-patient relationship remains.

(2) Transfer of Authority

The patient would prefer to authorize the decision making right externally even there is with sufficient information. A normal patient would want to be fully aware of their health condition and assign the final decision-making right to the doctor which generate the negative externality.

(3) Insurance Coverage

The more comprehensive the insurance coverage is, the less economic concern of a patient and the level of doctor authorization would increase. If there is no insurance, the patient would have to consider their personal economy that lower the authorization willingness. A consumer's intention on medical care reflects on selection issues, many occurred on insurance and taxation financing system. In a certain extent, the insurance would affect the intention and such intention becomes

sources of the different types of ethical risks.

Ethical Risk

From a standard perspective, ethical risk create a negative externality- the insurance company needs to increase every client's insurance fee. Some exploratory evidences indicated the health care ethical risk exist in the medical market in United States.

(1) Prior Ethical Risk

The prior ethical risk is mainly discussing situation occurs before the illness. The hypothesis of contingent effect would be evaluated. And an individual could affect the ratio of the loss occurrence, under many circumstances, the effectiveness may be reflected from the ratio of the salary (Enrlich & Becker, 1972). The range of the insurance coverage may destroy an individual's motivation on the loss prevention (Grossman, 2000). Under the health insurance system, the probability of getting sick may increase due

to the inducement of sickness prevention would be lower that result the rise the whole society's medical expenses which also known as the prior ethical risk.

(2) Afterwards Ethical Risk

The afterwards ethical risk generally occurs after the illness. At this stage, medical insurance would lower the medical care net currency price. The salary payment during sick leave would decrease the opportunity cost of the time. Such decrease may inhibit the increase in ratio of the medical treatment or sick leave application (Enrlich & Becker, 1972). Under the health insurance system, the decrease in currency price in consumer seeking medical advice that increase the medical demand.

(3) Dynamic Afterwards Ethical Risk

Dynamic ethical risk is related to the medical technology motivation; however, from a medical care point of view, there is always a certain choice between the existing and new medical technology. In a certain extent, the

benefit package of the new medical technology is the same as the existing medical technology which motive the policy holder to chase after the latest technology, furthermore, increase the dynamic ethical risk (Baumgardner, 1991). Under the health insurance system, consumers do not require to carry all medical cost and the strong demand on good quality medical service had driven the medical service provider to offer better quality medical services that allows the high technology medical treatment to spread rapidly which the medical expenses were rose continuously (for example: the medical arm race creates in every medical clinic in Taiwan).

References

- Balsa, A.J., and T.G. McGuire (2003), "Prejudice, Clinical Uncertainty and Stereotyping as Sources of Health Disparities", *Journal of Health Economics* 22(1): 89-116.
- Baumgardner, J. R. (1991), "The interaction between forms of in-

- insurance contract and types of technical change in medical care.”, *RAND Journal of Economics*, 22, 36-53.
- Becker G., and K. Murphy (1988),”A Theory of Rational Addiction” *Journal of Political Economy* 96(4): 675-700.
- Enrich, I., and G. S. Becker (1972), “Market Insurance, self-insurance, and self-protection.”, *Journal of Political Economy*, 80, 623-648.
- Caplin,A.,andJ.Leahy(2003): “The Supply of Information by a Concerned Expert,” *Economic Journal*.
- Glaeser, E.L.(2003), “Psychology and the Market”, NBER Working Paper #10203, Cambridge, MA. December.
- Grossman, M. (2000), “The Human Capital Model”, in: J.A. Culyer and J.P. Newhouse, eds., *Handbook of Health Economics*, Elsevier, Amsterdam, Ch. 7.
- Hellerstein, J.K. (1998), “The Importance of the Physician in the Generic Versus Trade-Name Prescription Decision” *Rand Journal of Economics* 29(1): 108-136.
- Jha, A.K., and A.M. Epstein (2004), “The Predictive Accuracy of the New York State Bypass Surgery Reporting System and its Impact on Volume and Surgical Practice”, *Unpublished Manuscript, Department of Health Policy and Management, Harvard School of Public Health*.
- Newhouse, J.P. (1970), “A Model of Physician Pricing” *Southern Economics Journal*, 37 (October): 174-183.
- Shaller D., S. Sofaer, S.D. Findlay et al. (2003), “Consumers and Quality-Driven Health Care: A Call to Action”, *Health Affairs* 22(2):95-101.
- Thaler, R. (1980), “Toward a Positive Theory of Consumer Choice” *J. Economic Behavior and Organization* 1(1):39-60.