

Who should be cured first?

Abstract

This research talks about price discrimination in cosmetic surgery industry. To find out whether there is a price discrimination in cosmetic surgery or not. If it exists, how can it happened and what is the incentive to do that. Some may know that doctors are able to charge price at a different level but how can they do that? This paper will provide you a proper answer about it.

Since price discrimination is an unfair method of charging a different price to each customer. The situation gets worse when it occurred in health industry such as health care or even cosmetic surgery. Imagine if the people who injured by accident get lower priority than those who want to upgrade their body, it would generate a huge harmful to a society as a whole. This paper will provide you a survey about decision making of people about undergoing surgery and their expected return combine with the prior research about this industry.

Price discrimination does exist in cosmetic surgery industry because of different willingness to pay among the patients. According to the survey, high expected income will leads to high willingness to pay. Assume that surgeon will always do price discrimination by offer the highest price which equal to the willingness to pay of patients.

For the policy implication, Suggested that the patients collude by not allowing surgeon to charge price higher than collusion price. The surgeons would not able to charge price higher than that but on the other hand, there are still some patients that willing to pay higher than collusion price in order to get priority in treatment or their pleasures. This paper may reduce price

discrimination in health industry and hope that the right to get treatment will go to the right patient.

Introduction

“You know, let's put it this way, if all the people in Hollywood who have had plastic surgery, if they went on vacation, there wouldn't be a person left in town- Michael Jackson” This statement is not exaggerated. Plastic surgery nowadays has been widely accepted. Even a super stars or normal officers also undergo surgery because everyone wants to have good appearance in our own opinion and the others.

In Thailand, medicine is the most competitive faculties for high school students when they talk about bachelor's degree. Even though doctor is the occupation that sacrifices a lot but why students still compete among one another to be a doctor. Doctors are the occupation that always helps people. Although some may does it because of morality but not all. On the other side, what they get in return for sacrifice themselves? The return must be high enough in order to compensate for the lost of being a doctor. Therefore, i start thinking about the return of doctors and how did they earn it.

However, price discrimination by doctors allows the unfair price among individual. Patients will be charged at surgeon's offering price which is bad for patients themselves. On the other hand, allowing of price discrimination may generate more competitive among surgeons, the better skill they have, the more patients they will get. Patients will see the different in cost as a compensating for time, pay more money in order to get priority in undergoing surgery, or potential of doctors, high-skilled doctors usually charge high price, which is considered to be worth paying. Therefore, although patients know that surgeon discriminates the price, they will choose to undergo surgery with that surgeon no matter what.

Due to a long history of plastic surgery, Undergoing surgery nowadays is not a new and strange thing anymore. There is a widely used of cosmetic surgery around the world especially in Asia countries. This research focuses on the benefit of price discrimination among patients as a producer of the products, plastic surgery. How can surgeons discriminate the price and how price discrimination affects society as a whole.

Literature Review

The term 'plastic surgery' derived from the ancient Greek word "plastikos" which means to mold or form. Plastic surgery is devised into two branches, cosmetic surgery and reconstructive plastic surgery. The different between these two types are the purpose of undergo surgery. Cosmetic surgery has the aims to enhance aesthetic appearance of an individual. It can be performed in all area of the body. Cosmetic surgery is an elective surgery (Nordqvist 2014), the decision to perform is based on the satisfaction of individual people. The example of cosmetic surgery prodders are breast enhancement, facial contouring, and skin rejuvenation. On the other hand, Reconstructive plastic surgery has the purpose to improve function of body, repair and reconstruction of facial and body defects due to birth disorders, and disease such as Breast reconstruction, burn repair surgery, hand surgery, and scar revision surgery (Morrison, M.sc., Colin 2008).

In ancient Egypt, plastic surgery was found to one way of making the dead be recognized. The mummy was surgically altered in order to be recognizable in the afterlife. In ancient India, the plastic surgery was found in 600 B.C. to repair noses and ears that were damaged from the punishment or battle. In ancient Rome, since it was the era of admiration of the beauty of the body in both art and poetry, plastic surgery was very popular during that time because people appreciate the value of beauty. The most ordinary surgery at that time was circumcision removal, scar removal,

and breast reduction in men. The middle-ages is said to be a decline of plastic surgery. The cosmetic surgery was accused to be sinful because of the spilling of blood by a surgeon and the power of surgery was blamed to be magic. The Renaissance seems to be a bright rise of plastic surgery again. The common surgery such as scar removal or nose rebuilding can be found easily in most barber shops. During world war I (1910-1919), plastic surgery become prospers again. The most popular surgery in that time is surgery in order to repair or reconstruct the part of body that injured from the war. It generates a huge benefit to the society by making disable or abnormal people to continue living a normal life. For Thailand, the cosmetic surgery begins around 1950s. During that time, plastic surgery with the purpose of beauty is not quite necessary. People will undergo surgery only when they are disability or physical abnormality. The early stages of surgery in Thailand are hare-lip surgery and skin transplants.

According to the American Society for Aesthetic Plastic Surgery (ASAPS) report, the number of procedures performed has been risen dramatically in recent year. Not only in United States but also other regions such as Asia-Pacific, Middle East and Latin America are expected to be the potential markets in the near future due to the global cosmetic surgery market analysis by segment (Appendix 1). The top 5 most popular cosmetic surgery procedures worldwide are liposuction, breast augmentation, eyelid surgery, tummy tuck, and Rhinoplasty while the top 7 most popular surgery in Thailand are scar reduction, blepharoplasty, Rhinoplasty, chin augmentation, jaw reduction, lip augmentation, and breast augmentation respectively. The trend of cosmetic surgery is increasing over time and has positive relationship with social media, i.e. Selfie trend uploading on social media. As media technologies have increasingly penetrated the fabric of daily life, people have reacted by updating their appearance, transforming their image, and seeking artificially enhanced beauty (Elliott 2011). Zoe Mintz (2014) calls it hyper-vanaty, the tremendous focus on image that results from social media's reliance on pictures to make an impression, the more widespread use of social media, the increase in demand for cosmetic surgery.

There are three factors that influencing the motivation for cosmetic surgery. First are cultural factors and media which may differ through time and between cultures. Obviously, the signaling game is true for this factor. One study showed that cosmetic surgery patients who regularly watched reality television programs featuring cosmetic surgery reported a great influence from media to pursue cosmetic surgery. Secondly, social factors is depends only on the social and environments which maybe differ in each area. The signaling game also in such a way that making the individual get familiar with cosmetic surgery and reduce the taboo, thereby increasing the possibility of considering cosmetic surgery oneself. Thirdly, psychological factors are considered about appearance dissatisfaction, ideal figure and self-esteem. Role of signaling game in psychological factors is creating ideal state and making individual to undergo surgery because they all want their actual state meet ideal state.

Although many writers agree that undergoing cosmetic surgery is a good method in order to eliminate self's defect and have improve self-satisfaction, but there are some papers disagree about this. there is article talking about the Influence of positive body image indicators on attitude toward cosmetic surgery among Thai women argued that the people should change their attitudes toward themselves instead of undergo surgery. The method suggested is to improve the key components of positive body image, namely: body appreciation, satisfaction with life, perceived social support, and collective self-esteem (Intasoon 2014). While another research article also agree about increasing self-esteem instead of surgery but they claim that the influence of celebrity does affect decision making of people.

In producer side, or a surgeon in this case, price discrimination is a method of firm charging an unfair price to each individual people for the homogeneous commodity. More precisely, price discrimination occurs whenever the difference in prices between consumers is not proportional to

the difference in costs. In other words, price discrimination exists whenever the price-cost margin varies between different consumers (Waldman, Jensen 2006). First degree price discrimination or perfect price discrimination which arises when the seller can capture all of the consumer surplus by pricing each unit at consumer's marginal willingness to pay (Stole 2003). The difference in willingness to pay can imply to the elasticity of demand for the separate group. When the seller, or surgeon in cosmetic surgery industry, controls the industry, the seller will extract the surplus of the patients' willingness to pay and obtain the profit from it. On the same hand, talking about the size-up-his-income type of discrimination, it is often practice by doctors and lawyers. In rendering their bills, they ask themselves how much the particular patients or clients can afford to pay for their professional services (Machlup, 1995). As you can see, the size-up-his-income type of discrimination is one type of first degree price discrimination but specified more explicit about the scope of the type which specified for the case of doctors and lawyers.

Simisade Adedeji; Daniel K. Sokol; Thomas Palser; Martin McKneally (2009) state that, there are four principles approach to medical ethics including respect for autonomy, a patient's deliberated wishes and provide adequate information to support patients in their decision making, beneficence, commitment to benefit patients by acting in their best interest, nonmaleficence, moral obligation not to cause harm to patients (e.g. through words, drugs, or procedures), justice, the obligation to distribute source health care resources fairly. The medical ethics is pluralistic depends on individuals disagree among themselves about what is right and what is wrong, and even when they agree, it can be for different reasons (Williams 2009). The heart of medical ethics is that the health of patient will be doctor's first consideration.

Doctors and patients may have conflict of interest among each other. They define illness from entirely different perspectives and background. Moreover, the angles of their respective lenses are mismatched (Ofri 2014). Doctors focus on patient's health but in patient's point of view, health

may not be the first thing that they concerned in life.

This study will fill a gap in other relevant literatures by providing information about, even though the patients knew that surgeons discriminate the price, why the price discrimination still exists in the society. If surgeons have potential to choose customers themselves by offering the discriminating price, does it conflict with medical ethics that doctors must firstly concern about health of patient since the doctor may give priority to those who able to pay the highest price?

Methodology

This project uses survey in order to collect the data of people who interested in undergoing surgery. The target group is men and women at the age between 20 to 25 years old. These following questions have purpose to observe the demand for individuals in undergoing cosmetic surgery and also the relationship between occupation, willingness to pay, and expected return. The questions provide in survey including:

- 1.) What is the age of interviewer?
- 2.) What is the gender of interviewer?
- 3.) Does interviewer interested in cosmetic surgery or not?
- 4.) If the interviewer interested in cosmetic surgery, how much is your willingness to pay for the cost of surgery?
- 5.) What is the purpose of undergoing surgery? Is it about work or not?
- 6.) After undergoing surgery, does it affects your future income? If yes, what is the difference between before and after undergoing surgery?
- 7.) Does your occupation relates to entertainment industry or not?

According to the survey (Appendix 2), the data collected will provide willingness to pay of

each patients and expected return in the future in order to compare cost and benefit of individuals whether to invest in undergoing surgery or not.

From surgeons' point of view, they can make decision whether to provide surgery to the patients or not using game theory. Assume that they always do first degree price discrimination by observe the willingness to pay of each patients and offer the price that equals willingness to pay of each individual. According to the table (Appendix 3), from surgeon side, they would not offer the prices that make themselves worse off. 0 means willingness to pay of patients equals offering price from surgeon. + means willingness to pay of patients higher than offering price from surgeons. When the outcome for the surgeons is +, they can discriminate the price and earn more profit by charging higher price.

From patients' side, they will signal their willingness to pay to surgeons through negotiation. 0 means willingness to pay of patients equal their expected returns in the future. - means willingness to pay of patients less than their expected returns in the future. + means their willingness to pay is higher than expected return in the future.

Result Interpretation

Since the paper focus only people who interested in undergoing cosmetic surgery, the result from the survey is classified into 3 groups. According to the survey (Appendix 2), first is the group of people who wants to undergo surgery and wants to work in entertainment industry, i.e. actor, actress, and model. There are 2 interviewers in this group, focusing on the lowest willingness to pay person. They expect that undergoing surgery would generate an increase in their income in the future. The reason that I focus on entertainment industry is because working in entertainment industry can generate higher income from the aesthetic appearance than other occupations. The

increase in expected income is higher than 200,000Baht per month. The willingness to pay for the cost of surgery is more than 100,000Baht per month. Second is the group of people who want to undergo surgery and expect that surgery would make them success in their occupation beside entertainment industry. Since working in entertainment industry give highest expected income compare to others, second group would expect the increase in income lower than the first group. The second group's increase in expected income is 10,000Baht per month. The willingness to pay for surgery cost is between 50,001Baht and 100,000Baht. There is 1 interviewer classified into second group. Lastly, the last group includes people who want to undergo surgery because of self-satisfaction. There is no increase in expected income for people in this group because the purpose of surgery is not about working. The number of interviewers classified into this group is 6 persons. The willingness to pay for this group is less than 50,001Baht.

From patients' point of view, they have to make decision whether investing in surgery is a good investment or not by comparing cost and benefit of undergoing surgery. Assume that the willingness to pay is a cost of surgery and an increase in expected return is benefit from undergoing surgery. Since people from the third group have no increase in expected return, the cost and benefit cannot be compared in this case. According to (Appendix 4), for people in the first group, focusing on the lowest willingness to pay person, working only 1 month would cover all of the cost of surgery and still have some benefit left about 100,000Baht. For people in the second group, they have to work at least 8 month in order to pass the break-even point. Therefore, people in the second group should not choose a type of surgery that can live less than 8 months such as injecting temporary fillers treatment which can exist only 4 months because the cost will exceed benefit.

According to game theory, in surgeons' point of view, they can make decision whether to provide surgery to the patients or not. Assume that they always do first degree price discrimination by observe the willingness to pay of each patients and offer the price that equals willingness to pay

of each individual. According to the table (Appendix 3), from surgeon side, they would not offer the price that makes themselves worse off. When the outcome for the surgeons is +, they can discriminate the price and earn more profit by charging higher price. On the other hand, when the outcome for patients is -, the patients will choose not to undergo surgery because their costs exceed expected benefit. On the other hand, if the outcome is +, the patients would be able to pay for the surgery cost up until the surgery price equals their willingness to pay.

The table (Appendix 3) shows the possible cases between surgeons and patients. There are 3 cases that cannot happen because the cost of surgery is higher than the expected return of patients, when surgeons offer the cost that is higher than 100,000 Baht to people from the second and third groups and when surgeons offer a cost between 50,000 Baht and 100,000 Baht to people from the third group. There are 3 cases that both surgeons and patients are in a break-even point, when surgeons offer a cost of surgery more than 100,000 Baht, between 50,000 Baht and 100,000 Baht, and less than 50,000 Baht to people from the first, second, and third groups respectively. There are 3 cases that the surgeons can charge a price higher than the offering price, when surgeons offer the cost of surgery less than 50,000 Baht to people from the first and second groups and when surgeons offer the cost of surgery between 50,000 Baht and 100,000 Baht to people from the first group.

There are two types of patients. First is the group of patients who are really sick such as face damaged by accident, disabled persons, and handicapped. The treatments from surgeons are very important for this type of patients. Second is the group of patients who think they are sick. They want to undergo surgery because they do not satisfy with their bodies. Using survey and game theory, according to two types of patients and willingness to pay of each individual, the patients will be classified into 4 groups. First is a group that needs surgery because of an abnormal body and has an expected return in the future. They want to undergo surgery and expect that their late incomes would be higher from more opportunity in occupation. Second is a group of abnormal people who

need surgery but do not have expected return in the future. They undergo surgery because of self-satisfaction only. Third is a group of normal people who want to surgery because they want to use their appearance to increase the opportunity in getting better occupation, and expected income. They undergo surgery because of self-esteem without any abnormality about their body. Fourth is a group of normal people who want to undergo surgery because of self-satisfaction only.

As you can see from the survey, high expected return leads to high willingness to pay. According to the medical ethics of doctors, abnormal people should get priority in undergoing surgery rather than normal people because the symptom is more severe than others. Since surgeons can assort types of patients using price discrimination, the priority in getting treatment may not depends on medical ethics but on willingness to pay of each patients instead. If the surgeons select patients by focusing on willingness to pay of patients, the first and third groups will get priority in medical treatment. On the other hand, if surgeons select patients based on medical ethics, the first and second groups would get priority instead.

Conclusion

The reason why normal people undergo surgery is because of self-satisfaction, they want their actual selves meet the ideal selves. Moreover, if they can earn benefit from gorgeous appearance, they would get both self-satisfaction and money. Therefore, people who have high expected return will have higher willingness to pay than those who have low expected return in the future.

According to comparing cost and benefit, the willingness to pay relates to type of surgery that patients choose since some kind of surgery has expiry date such as fillers injection that will decomposes within 4 months after injection date. The higher the willingness to pay of patients, the

better the type of surgery that individual will choose.

The result from survey and game theory between surgeons and patients indicates that price discrimination may cause harmful outcome to the patients who really need medical treatment. Since the surgeons have ability to charge the flexible price depend on their own decision making based on medical ethics, but medical ethics is variable rely on individual doctors, the patient that need medical treatment may not get priority in undergoing surgery. On the other hand, people who get priorities are those who have higher willingness to pay instead.

Limitation

Since doctors have to keep secrets of patients, interviewing surgeon is not permitted. The information from surgeons' point of view collects from other researches and assumptions. According to the survey provided in this research, it includes only normal people who demand to undergo surgery because of enhancing appearance, the abnormal people, i.e. disable or handicap, are not included.

Policy Implication and Contribution

In order to prevent price discrimination by surgeons, the suggested solution is collusion among the patients. When the patients who has demand to undergo surgery begin to collude, they will gain more bargaining power. The surgeon would not able to charge price higher than the collusion price because they will lose all the customers. On the same hand, surgeons should charge the group that is necessary to undergo surgery a higher price than the group that just want to surgery for enhancing appearance in order to compensate for the priority in undergoing surgery. The patients do have incentive to cheat from collusion price since paying more than normal price would

give them priority in undergoing surgery.

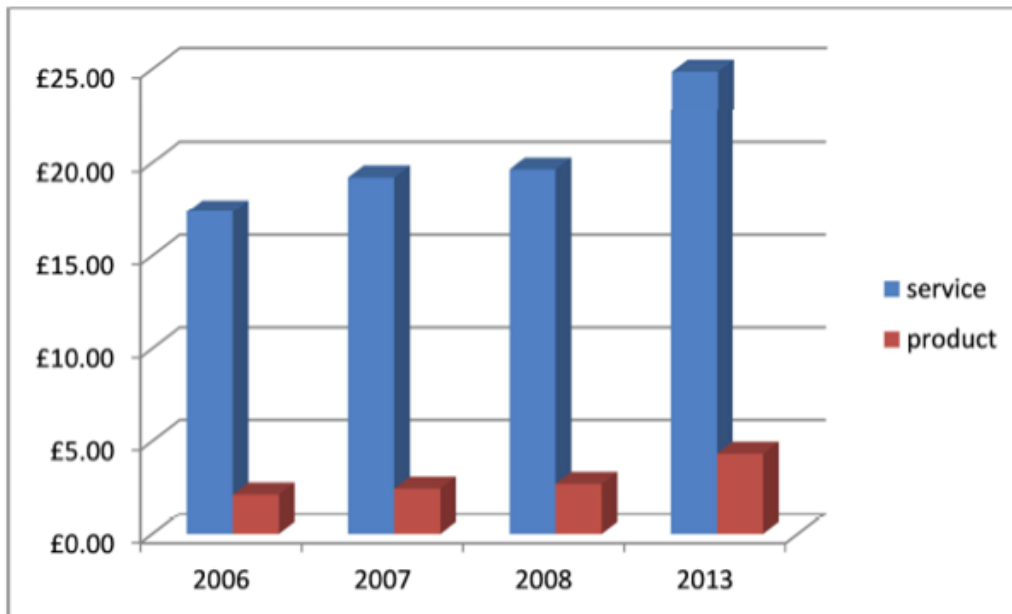
This research would reduce price discrimination by doctor through signaling patients that doctors always charge a flexible price to individuals depend on willingness to pay. This would increase bargaining power of patients and decrease willingness to pay later. On the other hand, doctors can also observe the willingness to pay through survey provided in this research and charge price related to the survey price.

Recommendations for further research

The survey should provide detail about type of patients for more accurate data which leads to more precise result of research when comparing to normal people group. The price discrimination is a big problem for this industry, reducing price discrimination would generate more benefit for this industry as a whole. Moreover, giving priority to necessary group of people will improve life's quality of people in the society.

Appendix 1

Global Cosmetic Surgery Market Analysis by Segment
2006-2013 (in £ Billion)



Source: Adapted from BCC Research (2009)

Appendix 2

Total inter- viewees = 31	Purpose	Gender	Age	Willingness to pay	Expected Income
Not interested in surgery = 22					
Interested in surgery = 9					
interviewee 1	work (entertain- ment industry)	Women		200,000	100,000
interviewee 2	work (entertain- ment industry)	Men	21	100,000	200,000
interviewee 3	work (Not in in- tertainment in- dustry)	Men	21	80,000	10,000
interviewee 4	self satisfaction	Women		30,000	0
interviewee 5	self satisfaction	Women	50	50,000	0
interviewee 6	self satisfaction	Women	47	20,000	0
interviewee 7	self satisfaction	Women		50,000	0
interviewee 8	self satisfaction	Men	22	50,000	0
interviewee 9	self satisfaction	Men	54	10,000	0

Appendix 3

		Surgeon		
		Less than 50,000B	50,000-100,000B	More than 100,000B
Patient	Group1 (wtp: >100,000)	(+,+)	(+,+)	(0,0)
	Group2 (wtp: 50,000-100,000)	(+,+)	(0,0)	(-,0)
	Group3 (wtp: <50,000)	(0,0)	(-,0)	(-,0)

Appendix 4

Methodology		
<ul style="list-style-type: none"> Compare cost and benefit of undergoing surgery 		
	Willingness to pay(cost)	Increase in Expected Return(benefit)
Group1	More than 100,000Baht	200,000Baht
Group2	50,000-100,000Baht	10,000Baht

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