

THE IMAGE OF A DOCTOR IN A DOCTOR-PATIENT RELATIONSHIP IN THE INTERNET ERA

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Abstract. The following paper deals with the issues of doctor's image in the doctor-patient relationship in the Internet era and the influence of Internet on patient's compliance. Both positive and negative standpoints have been discussed briefly, followed by a description of a research model proposed by Laugesen, Hassanein and Yufei (2015) applicable for this type of study. The study examines the impact of patients' use of Internet health information on various elements of patient-doctor relation (including compliance) through a theoretical model based on principal-agent theory as well as the information asymmetry perspective. A pilot survey and interview study performed on one Polish doctor and a group of his patients, a specialist in Family Medicine has been described. The study carried out by three co-workers: Laugesen, Hassanein and Yufei (2015) revealed that patient-doctor concordance and perceived information asymmetry have relevant effects on patient's compliance while patient-doctor concordance reveals a stronger relationship. The final conclusions were such that only doctor's quality had a significant influence on the information asymmetry; the Internet health information gathered by a patient had no impact on perceived information asymmetry; the pilot study performed on the Polish physician confirms the theses presented in this paper but further investigations concerning the formerly discussed issues should be done.,

Key words: internet-based health information, information asymmetry, patient-doctor concordance, patient compliance, pilot study results

1. Introduction

Over the past three decades, the biopsychosocial model of health has become increasingly important in the effective practice of medicine. Central to this model is an emphasis on treating the patient as a whole person (the so called holistic approach),

including the biological, psychological, behavioural, and social aspects of their health. Essential elements of the physician-patient relationship include verbal and nonverbal communication, effective questioning and transmission of information (task-oriented behaviour), expressions of empathy and concern (psychosocial behaviour), partnership and participatory decision-making. In recent decades, teaching and evaluation of biopsychosocial care and communication skills have been incorporated into the medical training process (see: Engel, 1980; Weiser, 2001). Anyway, these days the role of the Internet plays the essential role in doctor-patient relationship and it is of utmost importance in creating doctor-patient relationship and patient's compliance and as such it will be discussed as the major issue in this paper.

Doctor-patient relationship is considered to be the second only to family relationships as far as importance is concerned. It has been viewed as extremely important by 67 % of patients (see: Erdem and Harrison-Walker, 2006). The positive effects of such a relationship and patient's compliance to doctor's advice can be achieved only if patients follow the treatment regimen prescribed by their doctors (see: Zolnieriek and Dimatteo, 2009; Kim and Park, 2011). Nowadays the role of the Internet and increasing use of it by patients seeking for health information before paying a visit to their physicians needs to be evaluated in order to find out whether it has an influence on doctor's image in patient's eyes and also if it effects the patients' compliance. According to Fox (2006) patient use of the Internet has become a commonplace in the USA and the reports of his Project show that about 80% of American Internet users search for some type of health information on a typical day. Unfortunately, no such project has been taken in Poland so far. That's why this paper is structured mainly on the American model applied for research concerning the formerly mentioned issue.

2. Principal-agent theory and perceived information asymmetry perspective

The Principal-Agent theory and Perceived Information Asymmetry perspective has been applied by Laugesen, Hassanein and Yufei (2015) for the study of the influence of the Internet information on the image of a doctor in a patient's eyes and patient's compliance.

First, the term *compliance* needs to be explained briefly. According to Meriam-Webster online dictionary it is the act or process of *complying* to a desire, demand, proposal, or regimen or to coercion, (e.g. *Patient compliance in completing the treatment regimens was excellent.* – Georgia A. Chrousos.) *Non-compliance* is linked to worsening of disease or even death (see: Osterberg and Blaschke, 2005). DiMatteo (2004) describes the formerly mentioned notion as the one which wastes resources, may cause preventable mortality and may result in the loss of health care

funds and productivity. Alwan A., T., Armstrong, M., Cowan, and L. Riley (2011) in their article stress that the incidence of chronic diseases keeps increasing which demands the more accurate study of compliance as treatment is more reliant on patient self-management. So, improving patients' compliance will lead to better patient health outcomes and lower health care costs (see: DiMatteo, 2004).

Next, let's concentrate on Principal-Agent and Perceived Information Asymmetry. This theory has often been applied in economics, finance, accounting, marketing, political science, sociology and buyer-seller relationship (see: Eisenhardt, 1989; Pavlou, Liang and Xue, 2007). As Pavlou, Liang and Xue (2007) describe it – this theory seeks to understand and explain the association between self-interested parties who have potentially differing goals in situations where there is an imbalance of information between these parties. In the formerly mentioned theory, the principal hires the agent who performs some task on behalf of the principal because the principal typically has less information than the agent does (so-called information asymmetry). The research done previously by Vick and Scott (1998) and also by Xie, Dilts and Shor (2006) has applied the Principal-Agent theory to the relationship between doctors (agents) and patients (principals). It is also the contention of Laugesen, Hassanein and Yufei (2015) that Principal-Agent theory applies to the patient-physician relationship (especially in the context of Internet health information). Vick and Scott (1998) distinguish a recognized asymmetry of information in the patient-doctor relationship. This imbalance of knowledge and power has placed patients in a vulnerable position (see: Johnson and Ramaprasa, 2000) and the flow of information between a patient and a doctor appeared to be tenuous and the information-power gap was tremendous. As Kaba and Sooriakumaran (2007: 58) state, „The past decade, i.e. The Internet health information period has fostered a challenge to this asymmetrical model of interaction where a physician held the majority of the information and power.” Historically, doctors provided information to the patients in order to ensure their acceptance of doctors' diagnoses and treatments. This approach is changing these days thanks to quantity and quality of health information on the Internet that is available to patients.

3. Dr Google and other Internet health information sites

Obviously, patients receive the information concerning their health from doctors but also and more often the main source of their health associated knowledge also comes from various Internet sites and the Google Search Machine, colloquially called Dr Google. They also consult their friends, family and read medical health information books. According to Broom (2005) patients' level of knowledge about health associated issues vis a vis his/her physician is a function of their own information (these days gathered mostly from the Internet) and the quality of their doctor.

Therefore Broom's (2005: 327) study incorporates both Internet health information quality and physician quality as key elements in both the patient's assessment of their relative knowledge level and the one that is in the concordance between the patient and the doctor. From the patient's perspective, the effects of the Internet health information can have both positive and negative sides. After Broom (2005) it can be stated that the most commonly cited positive effect is patients' empowerment which means that Internet health information can provide a sense of empowerment, purpose and control which, in turn lead to better treatment and higher level of patient satisfaction. Iverson, Howard and Penney (2008) present the opinion that another patient's benefit from Internet health information is that it allows patient control over their rate of learning and reduces overload of information often received in a doctor's office. According to other authors (Anderson, Rainey and Eysenbach, 2003; Murray, Lo, Pollack, Donelan, Catania, White, Zapert and Turner; 2003) other positive results of patient Internet health knowledge are: enhanced patients' confidence in relation with doctors, better health choices and, better understanding of health conditions and improved communication with doctors. Looking at negative sides of Internet health information possessed by patients, one of the most commonly mentioned is patient concern about patient disapproval. Patients worry that disapproval may lead to doctors' irritation and lower quality of care (see: Erde and Harrison-Walker, 2006).

As Nwosu and Cox (2000) report in their article doctors generally accept the fact that the Internet may equip patients in better health knowledge but 40% of physicians are of the opinion that this may damage the patient-doctor relationship. Doctors are worried that the use of the Internet may lead to patient confusion and unrealistic expectations. Doctors are concerned about potential Internet health misinformation and resulting from it – patient misinterpretation of the acquired information. However, the formerly mentioned researchers present the opinion that 90% of surveyed doctors feel that providing a greater quantity of better medical information is beneficial, both for patients and doctors (see: Erdem and Harrison-Walker, 2006).

A few remarks on physician quality after Laugesen, Hassanein and Yufei (2015) will follow. The authors present the opinion that

(...) although the information a patient holds constitutes one side of the equation, ... the other important element a patient considers when determining their relative level of knowledge would be their perception of their physician's competence/knowledgeability and their physicians' communication capabilities: both physician's competence and communication capabilities along with empathy are essential elements of a physician's quality. Therefore it is logical to believe that physician quality plays a major role in a patient's thought process when determining information asymmetry relative to their physician and concordance with their physician's recommendation.

(Laugesen, Hassanein and Yufei (2015). “The impact of Internet health information on patient compliance: a research model and an empirical study.” *Journal of Medical Internet Research* 6. e143. Published online 2015 Jun 11. 10.2196/jmir.4333PMCID: PMC452693, D.O.A. 15th May, 2017).

Similar opinion of the patient-doctor relationship to the formerly cited presents Veatch (1991).

4. Research model and hypotheses

Laugesen, Hassanein and Yufei (2015) propose the theoretical model shown in the figure below (figure 1). They suggest to examine both: the influence of patients’ use of the internet health information and doctor’s quality-related factors on patients’ compliance with doctors’ advice in the presence of Internet health information (see: Laugesen, J., Hassanein, K. and Yufei Y. 2015 “The impact of Internet health information on patient compliance: a research model and an empirical study.” *Journal of. Medical Internet Research*. 6. e143. Published online 2015 Jun 11. D.O.A.: 10.2196/jmir.4333PMCID: PMC452693).

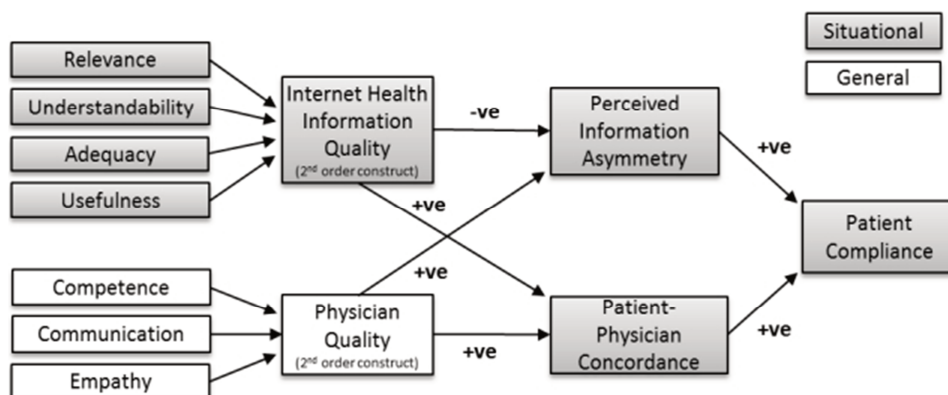


Figure 1. Research model by Laugesen, J., Hassanein, K. and Y. Yufei. 2015. “The impact of Internet health information on patient compliance: a research model and an empirical study”. *Journal of Medical Internet Research* 6. e143. Published online 2015, Jun 11. D.O.A.:10.2196/jmir.4333PMCID: PMC452693, D.O.A. 15th May, 2017)

The presented above model of research study will be useful in the follow up study performed by the author of this paper. It is presented now as it will be partly used for structuring the pilot study.

The first researchers to use the Principal-Agent theory and Perceived Information Asymmetry Perspective for their studies on patient–doctor relationship were

the following three co-workers: Laugesen, Hassanein and Yufei (2015) who hypothesized it will have a positive impact on patient compliance. In my study I follow the hypothesis presented by the formerly mentioned researchers. Patient-physician concordance involves agreement between a patient and their physician regarding the medical problem and treatment regimen. In essence, concordance encompasses the agreement regarding the treatment whereas compliance involves whether or not the patient complied with the treatment, regardless of whether or not there was concordance. As Wroth and Pathman (2006) found that physician concordance is associated with medication compliance, therefore Laugesen, Hassanein and Yufei (2015) presented the hypothesis that patient-physician concordance will have a positive impact on patient's compliance.

5. A pilot study

The research which I performed on 5 patients of one of the out-patient clinics in Bydgoszcz concerned only one doctor. It was a survey-interview study. I placed myself among patients queuing to dr. Nowak's office and asked the patients' the following questions:

The 1st question asked by me sounded like that:

Why do you queue for a visit at dr. Nowak's office ? There are other doctors available here at the moment who do not have their patients and there is no queue to their office?

The answers were as follows:

1. Because I like him very much and I have high esteem for him.
2. Because he is nice and his treatment is very successful in my case.
3. Because he explains to me a lot about my illness in the way I can understand him.
4. Because I like coming to him – he is such a nice person and a good doctor. I have heard very good opinions about him and they are true.
5. He is the best doctor in this out-patient clinic. I want to be treated by him.

He has very good medical knowledge.

The 2nd question. I asked each patient was:

Do you study health information sites before you come to visit dr. Nowak at his office?

All the five patients answered:

Every time before I come to dr. Nowak's office I study a lot on the Internet health information sites. Two of the questioned patients additionally said that they use the web-search-machine which they call *Dr Google*.

The 3rd question was as follows:

Aren't you afraid that dr. Nowak might get angry if you let him know where your health information/knowledge came from?

All the patients answered that dr. Nowak has a lot of understanding for their web-search for health information and he wouldn't say a word against it. He sometimes discusses the medical issues with them and shows his approval for their interest in health knowledge.

The 4th question sounded like that:

Did you ever tell dr. Nowak that you search *Dr Google*?

All the patients answered that they told dr. Nowak about *Dr Google* and he reacted to this news with a smile.

The 5th question was structured as follows:

Do you think that after studying health information sites you are wiser than dr. Nowak is?

No patient answered: "Yes". All the patients possessed this sort of certainty that dr. Nowak has got huge medical knowledge and wisdom. Dr. Nowak knows much more than they do and they trust him fully as far as their treatments are concerned, but they admitted they felt better when they could talk to dr. Nowak about the symptoms of their diseases, treatment and chances of curability after having gathered some health information from the Internet. They did not have the feeling of inferiority which they had experienced earlier before studying the Internet health sites. Then there was a great gap between them and doctors. These days they feel less anxious before the visit to a doctor's office than they did in the past days when they did not have the access to the Internet health sites. Summing up: according to the patients' coverages – dr. Nowak is a warm and empathetic person, preserves their dignity and treats his patients as partners (they say so!). They all shared this sort of feeling. Also, the access to the Internet health sites made them more conscious about their disease and symptoms and chances of cure and made them more compliant to the treatment suggested by dr. Nowak and this way the concordance between them and dr. Nowak was built up.

6. Conclusions

The most important conclusion is the fact that the pilot study performed by the author of this paper agrees with the premises introduced by the formerly mentioned authors: Laugesen, Hassanein and Yufei (2015) concerning the application of the Principal-Agent Theory and Perceived Information Asymmetry perspective in the

field of doctor–patient relationship and the influence of the Internet health information both on patients’ compliance and the image of a doctor in patients’ eyes in the Internet era. The performed pilot study gives the evidence of the positive impact of the Internet–based information on the patient’s compliance with doctor’s advices and treatment, as patients feel well informed about their illnesses and curability chances and also the image of a doctor in patients eyes is not associated with the Internet received information. Patients know that their physicians have broader and deeper medical knowledge than they have but the doctor’s image seems warmer and more friendly to patients as the huge knowledge gap that occurred between patients and physicians several decades ago has diminished. The image of a doctor in patient’s eyes is not created by Internet health information; only doctor’s quality has a significant influence on the information asymmetry; the Internet health information gathered by a patient has no impact on perceived information asymmetry. What counts most in patients’ eyes are the following features: the quality of a doctor, his knowledge, communication skills, empathy and chances of patient’s curability. The Internet era has only helped both the patient and the physician to find out a common ground and better mutual understanding. This paper only signals the breadth of the subject that needs further investigations and study.

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