Chapter 11

Formal Methods for Assessing Patient Satisfaction in a Patient–Doctor Relationship

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ABSTRACT

When patients visit a doctor, they not only expect to be cured, but also to feel that they are taken care of. The patients like to be treated like guests, sit in a nice place during waiting for a doctor and feel that they are taken care of seriously at the reception desk. All these factors are important for the patients but the relationship with doctors seems to be the most valid. When the patients can choose a clinic where they want to make an appointment with a doctor, the owners and managers of the clinics try to persuade people to choose their clinic. Hence more and more often managers of the clinics try to find out the opinion of the patients, so scientists carried out the research on this phenomenon and called it Patient Satisfaction. This chapter presents the application of fuzzy sets and fuzzy relations to gather and analyze the information from patients and compute their contentment. Using classical logic is less appropriate because the patients can only choose two values: they are satisfied or dissatisfied. Fuzzy logic let the patients choose more phrases for their opinions.

INTRODUCTION

When people visit a doctor, they expect that doctors will cure them immediately and if they understand that it is impossible they want a doctor to spend some time trying to get to know not only patient’s pain but also, they expect that the doctor should take into account the circumstances of the disease. It is not so important when the sickness is not so serious but it is really significant if the treatment takes weeks, months and years.

On the other hand, doctors have quite a few patients every day and sometimes they do not have enough time to talk about something else than only symptoms of the illness. In Poland magazines and newspapers debate about it and for example according to rynekzdrowia.pl the National Health Fund does not specify the length of time that the family physician should spend with a patient (but requires that the visit with specialists should take about 15-20 minutes) (Rynekzdrowia.pl, 2009) and on the portal Gazeta prawna.pl B. Lisowska writes that family physicians would like to have it specified (Lisowska, 2015).

Nowadays people can use the Internet to write about their dissatisfaction with a too short visit as Joan Eisenstodt did after very short meeting with a specialist: “He looked up my nose, said it was inflamed, told me to see the nurse for a prescription and was gone” (Rabin 2014). One person wrote in an email to the portal tvp.info (Tvp.info, 2015) “I am sending a record of visits to a doctor’s office in Gdańsk. … The family doctor takes 90 people in 7 hours. The average visit time is about 4.5 minutes, assuming that the doctor is working completely without the break for the toilet, etc.”

Of course, the length of time spent on the visit with a doctor is not only one decisive factor of Patient Satisfaction but it is really important. Thus, we can ask ourselves what is Patient Satisfaction? According to Bhanu Prakash (Praksh, 2010) “Patient satisfaction is an important and commonly used indicator for measuring the quality in health care.” By Radosław Plentara, Anna Knyżynska and others (Plentara, 2015) the concept of Patient Satisfaction has started to be used in the context of health services only at the end of the 1990s but according to E. Kabengele Mpinga and P. Chastonay this concept “has a long history of controversy and debate” and started “in the fifties” (Kabangele, 2011).

Why carrying out the research on Patient Satisfaction is important? According to B. White “The truth about patient satisfaction surveys is that they can help you identify ways of improving your practice” (White, 1999). Thus, we should do it if we run a clinic or a medical office. Moreover, by R. Kravitz, “Measuring and reporting on patient satisfaction with health care has become a major industry” (Kravitz, 1998).

As the concept of Patient Satisfaction (PS) is not explicitly defined yet, it will be discussed within three main area of concern:

1. $A_1$: Registration with a doctor in a clinic;
2. $A_2$: Meeting a doctor;

EXPERT SYSTEM

We will discuss the situation when we examine not many people: only 10 patients and 10 doctors. However, the statistical analysis is more reliable when the questionnaire is administered to more people, for example more than 100 hundred patients. According to doctors, the situation is different, we can ask only employed doctors.

Performing calculations, even if there are not many respondents takes some time, but in the case of many respondents or when we perform this study continuously it takes a lot of time, so it is better to design an information system. The system we propose is based on fuzzy relations and their composition.