



The Effect of Patients' Appearance on Doctors' Diagnostic Decision Making: Do Poor People Get Poorer Medical Care?

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Abstract

Purpose: Health inequalities are of great concern to health providers. Studies on the influence of social class on diagnostic performance are rare and inconclusive. We investigated whether patients' appearance (poor versus rich) affects physicians thinking and their ability to reach a correct diagnosis.

Method: Forty-six internal medicine residents participated in this purposely designed computerized study. Every participant solved four case scenarios with one of two versions of a patient's picture for each scenario. In this study simulated patients' pictures were used to play the role of poor and dirty patients in one condition and rich and clean in another condition. The basic analysis was aimed at diagnostic accuracy. Time needed to reach a decision and participants' ratings of how extensively they had processed the case, the latter composed by ratings of confidence in the diagnosis, case complexity and mental effort required to diagnose the cases, were measured for each participant and used as indications of the extent to which participants diagnosed the case analytically.

Results: There were no significant differences between the two conditions in terms of diagnostic accuracy and time spent in diagnosing the cases. However, even if the cases were exactly the same, participants reported to have processed the cases more extensively when the patient appeared poor than in rich-looking patients ($p = .04$).

Discussion: Social class seems to influence how extensively doctors think about the patient's problem during the diagnostic process but does not influence diagnostic accuracy. Given our findings, it may be worthwhile to replicate the study with a larger number of cases and larger differences in experience between groups of physicians.

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1. Introduction

Physicians generally believe that the diagnostic method is a more or less "objective" approach to solving patient problems, in which physicians use only the complaints, signs, and symptoms presented by the patient to arrive at a diagnosis. This belief is grounded in the assumption that medicine is a natural science and hence the application of knowledge from that science

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does not leave room for non-medical factors to interfere with the process.

However, there are reasons to believe that clinical reasoning is a less rational endeavor than many seem to think. For instance, patients' social characteristics seem to play a role in the treatment of coronary heart disease. Although coronary heart disease is the main cause of death for both men and women, twice as many women as men aged 45–64 have undetected myocardial infarctions, suggesting later coronary heart disease diagnosis among women,¹ possibly mirroring lay opinions shared by doctors about coronary heart disease as a primarily male disease.² Race, social class, and gender were also shown to be influencing the diagnosis of other diseases, including psychiatric disorders.^{3,4} In a recent study by our own group we presented physicians with one of two versions of the same patient: a difficult patient version, exhibiting aggressive or non-compliant behaviors, or a neutral version in which these behaviors were absent. The physicians made significantly more diagnostic errors when they were presented with a "difficult" version than when presented with a neutral version of the same patient. Unlike most studies discussed here, that were correlational in nature, this effect of a patient characteristic on the accuracy of medical diagnosis was demonstrated in a tightly controlled experiment.

So it seems that background characteristics and particular behaviors of patients can have a negative influence on the quality of medical practice. But what about how the patient looks like? Will physicians be led astray by the sheer appearance of a patient all other things being equal? On first thought this is unlikely to happen unless appearance is directly related to the complaints, signs, and symptoms of that patient. For instance, when a patient looks pale or yellowish or sad, one can suspect a relationship with disease. But why would sheer appearance unrelated to disease interfere with clinical reasoning? We know from psychology that a person's appearance can influence judgment of that person. An early example is a study of Dion, Berscheid, and Walster.⁵ They studied the relationship between attractiveness and judgment of personality. Students from University of Minnesota took part in the experiment. Each subject was given three different pictures to examine; one of an attractive individual, one of an individual of average attractiveness, and one of an unattractive individual. The participant judged the pictures' subjects along 27 different personality traits (including altruism, conventionality, self-assertiveness, stability, emotionality, trustworthiness, extraversion, kindness, and sexual promiscuity). Results showed that participants overwhelmingly believed the more attractive subjects to have more socially desirable personality traits than either

the averagely attractive or unattractive subjects.⁵ Of course, these students had no special knowledge of the persons judged and of how somebody looked like, and their personality. In such cases a first impression may be an important determinant of judgment.⁶ Doctors however have deep knowledge about disease and its relationship with appearance and may therefore be less susceptible to the influence of first impressions. In addition, doctors are thought to be analytical in their thinking, weighing signs and symptoms of a case in the light of possible diagnostic hypotheses. Or are they? There is at least one theory of clinical reasoning that suggests that physicians' modal response to a case is governed by its likeliness to diseases seen previously.⁷ This process of pattern recognition is considered to be fast, effortless, and not under control of conscious processing. Only if the signs displayed do not spontaneously activate a particular diagnostic hypothesis, physicians tend to engage in analytical reasoning.⁸ This theory suggests that not directly relevant features of a patient, such as his appearance, may influence diagnosis, if the physician has seen a similar-looking patient (with a similar but different disease) previously.⁹

In the present study we were in particular interested in one aspect of a patient's appearance, namely whether he or she appears to be rich or poor. Although some studies suggest that lower-class patients are treated differently from higher-class patients, for instance in referral for psychotherapy, or in the diagnosis of breast cancer,^{3,4} we could find only one study in which social class was experimentally manipulated.¹⁰ In this study, primary care doctors viewed a video-vignette of a scripted consultation where the patient presented with standardized symptoms of coronary heart disease. Videotapes were identical apart from varying patients' gender, age, class and race. Gender of patient significantly influenced doctors' diagnostic and management activities. However, there was no influence of social class, neither on the doctor's diagnosis, nor on the management activities undertaken. It is however possible that the two social class roles (teacher versus janitor) enacted in these videotapes were not sufficiently different to allow for an effect.

To test the hypothesis that the appearance of a patient indicating his social class has an effect on diagnostic accuracy, we presented beginning and advanced internal medicine residents with either a picture of a poor, dirty, patient or a well-dressed, clean, patient, before presenting them with the same clinical scenario. To avoid confounding by different persons impersonating the poor and the rich version, pictures were always of the same person (but in different guises). Time needed to arrive at a diagnosis was measured as an indication of the extent to which the physician used analytical reasoning to arrive at a diagnosis.

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