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# The effects of reasoned shared decision-making on consultation outcomes: Results of a randomized controlled experiment among a student population

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ABSTRACT

Shared decision-making (SDM) has been promoted as an ideal model for doctor–patient communication. Additionally, several studies have advocated doctors' use of argumentation to support their treatment recommendations. Therefore, this experiment explores the effects of doctors' use of SDM indicators and argumentation on patients' advice recall, intended adherence, and satisfaction ($2 \times 2$ factorial design). The findings suggest that doctors' combined use of argumentation and SDM results in significantly higher satisfaction with the consultation than SDM and argumentation alone. These results shed a new light on the relevance of argumentative discourse in the specific context of contemporary medical communication.



## 1. Introduction

Over the past decades, shared decision-making has been increasingly promoted as the ideal model for doctor–patient consultation. Offering an alternative to the traditional, paternalistic approach to doctor–patient interaction in which the doctor is assumed to know best and takes up the role of the primary decision-maker, the shared decision-making model advocates a treatment decision-making process that is based on mutuality (Charles, Gafni, & Whelan, 1997; Charles, Gafni, & Whelan, 1999). During the medical consultation, doctor and patient are considered coequal partners who collaboratively strive to reach a treatment decision that is shared. Each of the parties is assumed to bring in a unique perspective to the treatment decision-making process. While the model views the doctor as an expert holding specialist medical knowledge, it considers the patient to bring a unique personal perspective to the consultation that captures personal feelings, expectations, and treatment preferences. As a result, doctors' and patients' viewpoints and roles are considered to be highly distinct yet of equal importance for the treatment decision-making process.

In order to arrive at a treatment decision that is based on mutual agreement, following the shared decision-making model, doctor and patient should engage in an exchange that goes beyond the patient being merely presented with facts about the procedure. According to Frosch and Kaplan (1999), shared decision-making is a process by which doctor and patient consider the available information about the medical issue at hand, including treatment options and consequences, and then consider how these fit with the patient's preferences. This process is often conceptualized as a *negotiation* procedure in which the participants have a commitment to work through any disagreements that arise during the discussion in a mutually respectful manner (Roter & Hall, 2006).

Wirtz, Cribb, and Barber (2006) have argued that current accounts of shared decision-making lack a detailed description of how exactly doctor and patient should embark on such a deliberation that involves a discussion about values, preferences and beliefs, and the making of a joint decision: References to 'mutual discussion' and 'negotiation', following the authors, "obscure more than they clarify". Sandman and Munthe (2010) suggest that a comprehensive model of shared decision-making should, therefore, include an additional step in which the doctor and the patient "reason with each other on the basis of shared information and preferences". They state that in order for the patient to autonomously take part in the treatment decision process, the doctor should rationally argue for the best treatment option available based on medical

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evidence, taking into account the "considerations valued highly by the patient". That is, in order to fully include their patients in the treatment decision-making process, doctors should 'argue their case'.

The conception that a full-blown model of shared decision-making should incorporate a component in which the doctor provides argumentation in support of a treatment advice forms the starting point of this experimental study. It explores the potential effects of doctors' verbalized intention to share a treatment decision (*shared decision-making*) as an independent variable on the proximal consultation outcomes *recall of the medical advice*, *intended adherence*, and *patient satisfaction.* Moreover, the present study seeks to examine the effects of doctors' argumentation in support of their medical advice (*argumentation*) on these short-term outcomes. This is done in the context of general practice. The research question that lies at the core of this study can be formulated as follows:

RQ: Does doctors' use of verbal indicators of their intention to share the treatment decision and their use of explicit argumentation in support of their treatment advice affect consultation outcomes such as patients' recall of the advice, their intended adherence to the advice, and their satisfaction with the consultation at large?

It is hypothesized that a doctor's verbalized intention to share the final treatment decision as well as the doctor's use of argumentation in support of a treatment advice positively affects the dependent variables of this study. This results in two separate hypotheses, each consisting of three sub-assumptions pertaining to the dependent variables:

H1 Doctors' use of verbal indicators of their intention to share the treatment decision positively affects patients' recall of the advice, their intention to adhere to the treatment advice, and their satisfaction with the consultation at large.

H2 Doctors' use of explicit argumentation in support of their treatment advice–with no use of verbal indicators of their intention to share the treatment decision–positively affects patients' recall of the advice, their intention to adhere to the treatment advice, and their satisfaction with the consultation at large.

Moreover, and perhaps even more importantly, following the idea that a comprehensive model of shared decision-making incorporates (i.e., is combined with) the doctor's advancement of argumentation to support treatment claims, a third hypothesis can be formulated:

H3 When doctors in addition to using verbal indicators of their intention to share the treatment decision also advance explicit argumentation in support of their treatment advice, patients' recall of the advice, their intention to adhere to the treatment advice, and their satisfaction with the consultation at large are affected positively compared to a situation in which doctors use only verbal indicators of their intention to share the treatment decision.

## 2. Methods

### 2.1. Participants

The hypotheses were tested in a randomized controlled experiment. Participants were recruited in August and September 2011. Master's students and Ph.D. students at the Università della Svizzera italiana (Switzerland) were invited via e-mail to participate in a survey study concerning doctor–patient interaction.

The[1] e-mail announced that three vouchers of CHF 30, each, redeemable in a nation-wide department store chain, would be raffled among the participants. In total 183 students completed the survey.[2] The majority of students were female (64.5%). On average, the respondents were 26.4 years of age ($SD = 3.9$; range = 21–55). In line with the university's international student body, the participant pool was highly diverse with regard to nationality. Most participants (75.4%) came from a European background, with 8.2% of the participants being German, 29.5% Italian, and 22.4% Swiss.[3]

### 2.2. Procedure

Participants were randomly assigned to one of four experimental groups on the basis of their last name.[4] In each of the groups they were presented with a different consultation scenario that consisted of a written dialog between a general practitioner and a patient. Participants were instructed to carefully read the transcript of the scenario and to identify themselves with the patient. After having read the scenarios, the 'analog patients' were asked to complete an online questionnaire. Upon completion of the questionnaire, participants were offered to participate in a raffle. Participation in the raffle was kept optional and it was emphasized that the participants' e-mail addresses would not, and could not, be matched to their survey data.

### 2.3. Scenario design

The scenario was loosely based on existing consultation transcripts and was developed in collaboration with a medical doctor. In the scenario, a patient presented to a doctor with symptoms of a sore throat. During the consultation, the patient's *tonsillitis* was diagnosed by the doctor to be most likely caused by a viral infection of the upper respiratory tract (URT) and thus not susceptible for treatment with antibiotics. Instead, conforming to standard medical practice, the doctor advised treatment with acetaminophen (a fictitious medicine referred to as *Trylinol*) and complementary fluid intake. As a tonsillitis is a relatively common medical condition (sometimes even generically referred to as the common cold), it was assumed that participants would easily relate to the dialog displayed in the scenario.

The two independent variables of interest (1) doctors' verbal display of an intention to share the treatment decision (*shared decision-making*) and (2) their argumentative support for the treatment advice (*argumentation*) were systematically varied, resulting in four different scenarios ($2 \times 2$ factorial design). In designing the four scenarios the simulated patient's responses were kept neutral and stable. Operationalization of *argumentation* was based on both actual consultation transcripts in which a patient presents with a viral URT infection and medical guidelines for the treatment of these infections. Using these sources, two prototypical lines of argument were identified in the case of viral URT infections, each supporting a standpoint: one in favor of proposed treatment with Trylinol and fluids (*1. A combination of Trylinol and fluids is the preferred method of treatment*), the other against the use of antibiotics (*2. Antibiotics is not the preferred method of treatment*) to anticipate

[1] All MA and Ph.D. students were assumed to be fluent in English, as they were all enrolled in graduate programs that are fully conducted in English.

[2] With an overall sample consisting of approximately 1600 MA and Ph.D. students, a response rate of 183 students (10.9%) is relatively low. However, as the survey was distributed via the university's e-mail system that also contains dormant e-mail accounts of alumni and students abroad, the response rate was considered adequate for the present, exploratory purposes.

[3] 11.5% of all participants were Asian, 6.6% South-American, 3.3% North-American, 1.6% African, .5% Australian. 1% of all participants preferred to not provide any information about their nationality.

[4] In a multiple choice item, participants were asked to indicate the first letter of their last name (Group 1: A, E, I, M, Q, U, Y. Group 2: B, F, J, N, R, V, Z. Group 3: C, G, K, O, S, W. Group 4: D, H, L, P, T, X). Accordingly, they were automatically redirected to one of the four scenarios.