Author's response to reviews

Title: Cost-consciousness among Swiss doctors: a cross-sectional survey

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Author's response to reviews: see over
The Editor  
*BMC Health Services Research*

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Dear Editor:

We thank you for reviewing our paper entitled “**Cost-consciousness among Swiss doctors**” for publication in *BMC Health Services Research* as a clinical study.  

We have replied to all the comments of the reviewer on the following pages of this letter. All authors have read and approved the content of the revised manuscript.

We hope now that you will find our revised paper to be acceptable for publication but remain open to any further suggestions.

Sincerely,

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We addressed the reviewers’ comments in the following ways:

Reviewer 1 (PF)

**Major Compulsory Revisions**

The main problem throughout is the lack of objective evidence that responses on this questionnaire reflect anything other than the response to the questions. There is no theoretical framework provided—that might allow one to consider what this construct means or how it fits into other constructs (such as tolerance of uncertainty, and satisfaction—two other constructs/scales used in the survey) or other behaviors of physicians. Is it a trait or a state? What does it mean, in other words?

Cost-consciousness is clearly an attitude, that can be influenced by the environment in which physicians are working. The items we chose to measure cost-consciousness were drawn from 56 different attitudes hypothesized to influence resource use, based on a conceptual model of medical care process and a review of physician decision making. An explanatory factor analysis of these attitudes revealed four prominent domains (cost-consciousness, discomfort with uncertainty, fear of malpractice, annoyance with utilization review), among which cost-consciousness had the highest eigenvalue. This information is now mentionned in the 2nd paragraph of the Background section.

**Background**

Last sentence, first paragraph states “…medical decisions are influenced by subjective …concerns about cost…” But this statement is not supported by any reference—or literature. In fact, the scale used has not been validated against actual behavior—just perceptions of resource use—which may be circular (see following paragraph). Thus the conclusion that rising cost-consciousness may have economic consequences (see next paragraph) is un-supported.

We added some references and suppressed the sentence stating that raising cost-consciousness may have important economic consequence in the 1st paragraph of the Background section.

The next paragraph posits a possibly false dichotomy between cost-consciousness and supposed deontological obligations of doctors. Without exploring these relationships it is uncertain these may be conflicting ethics. In fact given the findings of the study, one might argue the opposite.

We have also added some additional references to better support our argument.

**Methods/Results**

Data on the reliability of the satisfaction scale should be provided (as is done with the other scales).

We provided the internal scale consistency coefficient for the work-related satisfaction scale and added a sentence at the end of the corresponding paragraph, under Methods, Predictors of cost-consciousness:

“The internal scale consistency coefficient of a work related satisfaction scale including all 16 items was 0.87.”
It is uncertain how the multivariate analysis was done—Table 3 does not show all the potential confounders. For example, specialty was a significant univariate predictor—but it is not mentioned whether this or other predictors not in table 3 were included.

Table 3 presents the results of a regression model that included only the four factors presented here. Other factor that were significant in the univariate analyses, such as specialty and self-reported time with a new patient, were not anymore significant after adjustment for type of practice, self-reported number of patient seen per week, stress from uncertainty and work related satisfaction. In addition, no sociodemographic characteristics were associated with cost-consciousness in the multivariate analysis.

We added these informations in the correponding paragraph of the Results, Multivariate analysis.

Discussion

First paragraph states “we found doctors had a favorable…” but favorable is an interpretation of the findings.

We also agree with this point, suppressed this sentence and made the following changes:

“…we found that a majority of doctors agreed that trying to contain costs was their responsibility, that they should worry about the costs of tests and procedures they order, that they should take a more prominent role in…”

The last sentence of the Stress from Uncertainty paragraph is unclear to me—i.e. “the association [between stress from uncertainty and cost-consciousness] may result from a conflict…..” It is quite likely these constructs are measuring the same or similar psychological factors—so their correlation is not surprising - I don’t see a conflict.

We agree with this remark and apologize for this confusion. We removed this sentence and modified this paragraph in the following way, trying to better explain how expenditures, stress from uncertainty and cost-consciousness might be related:

“The association between cost-consciousness and higher tolerance for uncertainty is compatible with a previous report which linked higher anxiety due to uncertainty with higher health care expenditures in a Medicare health maintenance organisation [9]. Thus there is evidence that higher stress from uncertainty is associated with higher expenditures and, as we have found, lower cost-consciousness. From this, it follows that lower cost-consciousness and higher expenditures could be associated. To our knowledge, no study has yet studied this relationship."

The limitations identify some of the main limitations of the study, but yet the authors go on to make conclusions beyond the data. The sentence “in a setting where health care expenditures are among the highest…..doctors appeared to be generally concerned about contain[ing] costs..” One might infer from this that the 2 ideas are connected—i.e. were expenditures were lower, doctors might be less concerned—but this has not been examined.

We also agree with this remark and changed our conclusion in the following way:

“In this study conducted in a setting where health care expenditures are among the highest in the world, doctors appeared to be generally concerned about the need to contain costs. Therefore failure to control costs does not seem to stem from a general lack of concern about costs among doctors. Nevertheless, levels of cost-consciousness were variable. Doctors in private practice, who saw the most patients, who were the least tolerant with uncertainty, and the least satisfied with their work were also the least cost-conscious.”
The last sentence again poses what I consider to be a false dilemma about the dual commitment of doctors—and it anyway does not gain traction from the data presented.

We removed this sentence (Cf preceding change).

Reviewer 2 (KV)

Major Compulsory Revisions

Background

It would be helpful if the authors could compare and contrast the doctors as a gatekeeper in the Swiss system versus the doctor as a gatekeeper in the U.S. system.

We added the following informations regarding this aspect of the Swiss health care system in a paragraph called “Setting” in the Methods section:

“Switzerland has the second highest health care expenditures per capita in the world, behind the United States, and devotes about 11% of the GNP to health care (Frei, 2001 #76; European Observatory on Health Care Systems, 2000 #75). Doctors in private practice who are paid on a fee-for-service schedule provide most ambulatory care, and most hospitals are public, subsidised by local governments, where doctors are salaried (in addition, some senior hospital doctors have private practice privileges). To achieve social solidarity, the Health Insurance Law makes compulsory the purchase by households of a fairly comprehensive package of health benefits, which includes ambulatory treatment, inpatient care, home nursing care, and some health promotion activities. The basic health insurance coverage can be contracted from approximately 90 private insurance carriers, which are not allowed to earn profits from the mandated benefit package. Insurers can offer different schemes for health care provision such as patients’ free choice of physician (“any-willing-provider” or compulsory contracting) or preferred providers’ contracts (general practitioner-gatekeeper model or restricted network of providers). Restriction on the choice of the provider results in lower premiums for the patient. According to official statistics, in 2001, about 45% of the insured chose the lowest permissible deductible and only 9% the highest; about 8% chose a managed care policy, mainly the general practitioner-gatekeeper model. Regarding the organisation of care, the Swiss health care system has therefore been qualified as a “regulated competition system without managed care” (Reinhardt, 2004 #404). The canton Geneva has the highest health care costs and medical density in the country. In 1998, there were 58 doctors per 10000 residents in canton Geneva - 31 in private practice, and 27 in public hospitals. ”

Results

Given the low response rate, it would be helpful if the authors would provide a Table comparing the demographic and available practice characteristics of those who responded versus those who did not. The two organizations should be able to provide some information about their members.

We agree that the response rate was suboptimal, although it is comparable with other studies, as we mentioned in the strength and limitations paragraph of the Discussion section. Unfortunately, the two medical organisations gave us only the addresses of their members, with no other socio-demographic information. The only characteristic that we could track was sex, and the proportion was similar among those who responded and those who did not.
Doctors attitude toward health care costs

If "the distribution of the answers to most questions was skewed," was any action taken to correct for the skewness?

No, we did not take any specific action to correct the skewness of the answers of the questions. This is why we presented the full range of answer distribution in Table 1. The resulting cost-consciousness score had a distribution that was very close to normal. This is the reason why we used parametric tests (ANOVA) to explore the relationships with socio-demographic and job characteristics of the respondents.

Relationship to socio-demographic and work-related characteristics

The statement, "Doctors who saw fewer patients per week and spend more time with each new patient were also more cost-conscious," seems counter-intuitive. Explain this result.

This is now explained in the discussion, under the sub-heading “Practice patterns”:

"Regardless of the setting, doctors who saw fewer patients per week were also more cost-conscious. In a fee-for-service system, a doctor’s income is directly related to the number of patients seen. Doctors who see more patients per week may be more concerned about their income and less by costs incurred by society. However, the relationship was similar among salaried hospital doctors, who have no such financial incentive. It is possible that hospital doctors who see fewer patients may have academic or administrative roles that cause them to be more concerned about health care costs."

Strengths and limitations

Cross-sectional studies (such as surveys that gather data at a single point in time) are generally designed to infer cause-and-effect relationships or to determine the need for services or change. Yet the authors state that "the main limitation of the study was its cross-sectional design, which precludes any formal conclusion about causality." Please explain.

In cross-sectional studies, it is difficult to conclude about causality, because all measures are taken at the same time. For example, we have found that the type of practice was associated with cost-consciousness. However, based on our data, it is impossible to conclude whether doctors who are more cost-conscious prefer the public sector, or whether working in the private sector changes doctors attitudes towards costs. A similar thinking can also be made for the relationship between cost-consciousness and self-reported number of patients per, stress from uncertainty and work-related satisfaction. A prospective follow-up study would help to shed some light on this problem, which is expected to take place in the coming years.

Minor Essential Revisions

1. Table 1: Replace the vague footnote with the more explicit wording from the measurement of cost consciousness section of the methods section (Negatively worded ...)

We made the suggested change.

2. Methods section, predictors of cost-consciousness: This section is worded like a results section. Are these perhaps predictors identified from the literature which may or may not be predictors in the current study?

Yes, these are predictors that we identified from the literature and mentioned in the Background section.
Define "stress from uncertainty."

We give now a definition of stress from uncertainty, as well as references. This has been added to the section Methods, Predictors fo cost-consciousness:

“Stress from uncertainty refers to physicians’ reaction to their limitations of professional knowledge, problems of diagnosis, ambiguities of treatment and outcome, unpredictability of patients response, and variations in physicians’ attitudes, values and perceptions of risk.”

3. Data analysis: Explain to the reader why continous predictors, which usually have more statistical power if left in a continuous format, have been converted into quartiles.

We chose to convert continuous predictors into quartiles for two reasons:
1. Units of all scales are arbitrary. Therefore regression coefficients expressed in such units are difficult to interpret. In contrast, the meaning of lowest quartile is more intuitive.
2. This analysis allows the reader to check whether the association is linear or not.

This has been now added in the section Methods, Statistical analysis.

4. Results: When quoting means in the text for age, years since graduation, etc., quote only the standard deviation in parentheses, not the quartiles.

We removed the quartiles for these characteristics. However, we would prefer to leave the quartiles distribution for the cost-consciousness score, our main outcome variable, to show that its distribution is close to normal.

Discretionary Revisions

1. Abstract: Change "Knowing what influence physician attitude toward..." to "Knowing what influences physician attitudes toward..."

OK.

2. Abstract: Change "...number of patient per..." to "...number of patients per..."

OK.

3. Background, 2nd paragraph: Change "...11 most doctors were not interested" to "...most doctors were not interested"

OK.

4. Sub-heading for this section: Appears a heading was left out?

OK.