

PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

This paper was submitted to a another journal from BMJ but declined for publication following peer review. The authors addressed the reviewers' comments and submitted the revised paper to BMJ Open. The paper was subsequently accepted for publication at BMJ Open.

(This paper received three reviews from its previous journal but only two reviewers agreed to published their review.)

ARTICLE DETAILS

TITLE (PROVISIONAL)	A US-based cross-sectional survey of clinicians' knowledge and attitudes about shared decision-making across healthcare professions and specialties
AUTHORS	Forcino, Rachel C; Yen, Renata West; Aboumrad, Maya; Barr, Paul J; Schubbe, Danielle; Elwyn, Glyn; Durand, Marie-Anne

VERSION 1 – REVIEW

REVIEWER	Trudy van der Weijden Maastricht University the Netherlands none commercial interests declared Intellectual interest is perhaps somewhat present as I've co-authored Elwyn's BMJ 2017 paper on the 'new model of SDM' . But in my view I've not experienced any obstacles to critically assess this paper.
REVIEW RETURNED	09-Apr-2018

GENERAL COMMENTS	<p>This is an interesting, well-executed and well-written study with relevant findings, such as on the existence of the 'Dunning-Kruger effect'.</p> <p>Main comments</p> <ul style="list-style-type: none"> - Apparently no grant was obtained for this study? So, who paid for the up to \$30 per respondent incentive? What was the role of this SERVO company? Why would these health care professionals join this SERMO panel? Is any selection bias or socially desirable behavior possible? - Data analysis and results: Why did you not relate the average knowledge score to the item on the definition of SDM, why was it reported as two different concepts? Or why was it not related to the single item question? This single item question is also about knowledge, as it seems to me. As the respondent is primed on questions regarding SDM, this single item question tests him or her also on knowledge, I think, instead of about their performance. - Data analysis: I do not seem to have read the results of the logistic regression analyses (?). I did find results of subgroup analyses, but did not find any reported odds ratios. <p>Minor comments</p>
-------------------------	---

	<ul style="list-style-type: none"> - The abstract should give the total number of panel members that were approached; 272 out of - PA = practice assistants? - The knowledge test was built with true-false items. Not with true-false-? (don't know) items. In the latter you could have calculated true minus false rates, which some researchers regard as psychometrically superior. Why did you not give the ?-escape. - You mention a recommended number of minimum of 10 observations per parameter for the logistic regression analysis. I was taught that the minimum nr is 20 (?). but I'm not a statistician... - Discussion: on page 8 and 9 you mention 'select knowledge items'.. I do not understand what that means. - Discussion: page 9: Can you elaborate a bit more on the unexpected finding of time NOT really being perceived as an important barrier?
--	---

REVIEWER	Claudia C Dobler Mayo Clinic, Rochester, MN, USA
REVIEW RETURNED	07-May-2018

GENERAL COMMENTS	<p>This is an interesting and well written paper that makes an important contribution to the literature on shared decision-making.</p> <p>Detailed comments:</p> <ol style="list-style-type: none"> 1. The authors describe the participation rate as 98.6%, but this was the proportion of people who agreed to participate and not the proportion of people who completed the survey and were included in the analysis. I suggest that the authors reword this sentence, and describe it as the rate of initial agreement to participate rather than the “participation rate”, which is potentially misleading. 2. The completion rate was relatively low at 38.7%, suggesting that the analysed participants may have been a very selective group of clinicians with a particular interest in SDM. This limitation should be added in the discussion where the authors mention that the online panel members might not have been representative of the full US populations of these professionals. Because of the selection bias, comparisons between different professional groups represented were likely more generalizable than statements about the whole group of participants. The statement in the conclusion “The positive attitudes toward SDM expressed in this sample suggest that acceptance of SDM may be becoming a norm within the healthcare field” seems somewhat daring considering the likely highly selective group of participants. 3. Do the authors know at what point in the survey non-completers dropped out? And if so, was there a question at which point non-completers frequently decided to drop out?
-------------------------	--

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

Reviewer Name: Trudy van der weijden

Institution and Country: Maastricht University

the Netherlands

Please state any competing interests: none commercial interests declared

Intellectual interest is perhaps somewhat present as I've co-authored Elwyn's BMJ 2017 paper on the 'new model of SDM'. But in my view I've not experienced any obstacles to critically assess this paper.

Please leave your comments for the authors below

This is an interesting, well-executed and well-written study with relevant findings, such as on the existence of the 'Dunning-Kruger effect'.

Main comments

Reviewer comment: Apparently no grant was obtained for this study? So, who paid for the up to \$30 per respondent incentive? What was the role of this SERVO company? Why would these health care professionals join this SERMO panel? Is any selection bias or socially desirable behavior possible?

Author response: Thank you for this important question. The study was financed with Dartmouth College institutional research funds, which paid for respondent incentives; we have added this information to the manuscript's funding statement:

"The study was financed with Dartmouth College institutional research funds." (page 11)

SERMO recruited participants, administered the survey, and disbursed participant honoraria; the associated strengths and limitations associated with panel recruitment are now clarified in the discussion's strengths and limitations section:

"We used a healthcare market research company to implement the survey for ease of recruitment, survey administration, and disbursement of honoraria. Use of a healthcare market research company for survey administration and disbursement of honoraria allowed the research team no access to respondents' personally identifiable information, which may have favorable implications in limiting common survey response biases such as social desirability. However, our sample was derived from an online panel of respondents and may not be representative of the full US populations of these professionals, allowing for possible selection bias." (page 9)

Reviewer comment: Data analysis and results: Why did you not relate the average knowledge score to the item on the definition of SDM, why was it reported as two different concepts? Or why was it not related to the single item question? This single item question is also about knowledge, as it seems to me. As the respondent is primed on questions regarding SDM, this single item question tests him or her also on knowledge, I think, instead of about their performance.

Author response: *Thank you for these suggestions. We have added the analysis you describe to the method and results sections, and introduced the idea of the single-item question testing knowledge in the discussion section:*

Method: "We compared mean knowledge scores across responses to the multiple choice item representing Emanuel's four models of the physician-patient relationship,[28] as well as by response to the SDM definition item." (page 4)

Results: "Mean knowledge scores were relatively consistent across responses to the multiple-choice item representing four models of the physician-patient relationship. The few (n=9) respondents favoring a paternalistic approach demonstrated the least SDM knowledge (5.11; 95% CI 3.51-6.72) and respondents favoring deliberative (5.92; 95% CI 5.68-6.16) and informative (5.92; 95% CI 5.69-6.14) approaches had the highest average knowledge scores. Descriptions of the four models of the physician-patient relationship are available under the 'Preferred approach to decision-making subheading below." (page 5)

Results: "We did not identify substantial differences in mean knowledge scores by SDM definition, as the few respondents who defined SDM as patient and clinician jointly involved and included a reference to evidence had a mean knowledge score of 5.44 (95% CI 4.35-6.54), those who correctly identified the participants in SDM but did not mention evidence averaged 5.94 (95% CI 5.69-6.18), and those who defined SDM incorrectly averaged 5.83 (95% CI 5.62-6.04)." (page 6)

Discussion: "Further, as respondents were asked about their preferred physician-patient relationship model at the end of the survey after respondents were primed with two batteries of SDM-related items, it is possible that this item reflects knowledge of SDM as much, if not more, than it demonstrates respondents' preferred approaches to clinical decision-making."

Reviewer comment: Data analysis: I do not seem to have read the results of the logistic regression analyses (?). I did find results of subgroup analyses, but did not find any reported odds ratios.

Author response: *Thank you for this comment. We have now included complete logistic regression results as supplemental materials.*

Minor comments

Reviewer comment: The abstract should give the total number of panel members that were approached; 272 out of

Author response: *Thank you - we have added response rate information to the abstract and the manuscript's results section:*

"250 physicians were sent a generic email invitation to participate, of whom 100 completed the survey. 3300 nurse practitioners and physician assistants were invited, among whom 172 completed the survey."

Reviewer comment: PA = practice assistants?

Author response: PA refers to physician assistant; this is now clarified in the introduction:

"This model is increasingly prominent across the healthcare delivery spectrum, with advanced practice clinicians such as nurse practitioners (NPs) and physician assistants (PAs), who have their own patient panels, order and perform tests and procedures, and prescribe medications, working alongside physicians from cardiology wards to primary care clinics[2,3]." (page 2)

Reviewer comment: The knowledge test was built with true-false items. Not with true-false-? (don't know) items. In the latter you could have calculated true minus false rates, which some researchers regard as psychometrically superior. Why did you not give the ?-escape.

Author response: Thank you for this comment; we have added this point about true-false survey design to the discussion's limitations section:

"Additionally, the true-false design of the knowledge items without a 'don't know' option limits our ability to differentiate incorrectly-answered items as reflective of a lack of knowledge versus an incomplete understanding of the currently available research evidence." (page 10)

Reviewer comment: You mention a recommended number of minimum of 10 observations per parameter for the logistic regression analysis. I was taught that the minimum nr is 20 (?). but I'm not a statistician...

Author response: *We are aware of several rules of thumb regarding the minimum number of events per variable in logistic regression analysis. We have referenced Peduzzi's (1996) guideline in the*

method section and added reference to Vittinghoff's 2007 work indicating a more flexible number of events required per variable:

"Our goal was therefore to recruit 50 participants per clinician type (i.e., family medicine physician, surgery physician, family medicine PA, surgery PA, family medicine NP, surgery NP) to total 300 participants and allow the recommended but flexible minimum of five to 10 observations per parameter in logistic regression analysis.[31,32] (page 4)

Reviewer comment: Discussion: on page 8 and 9 you mention 'select knowledge items'.. I do not understand what that means.

Author response: We have clarified this wording to refer to "*several knowledge items.*" (pages 8 & 9)

Reviewer comment: Discussion: page 9: Can you elaborate a bit more on the unexpected finding of time NOT really being perceived as an important barrier?

Author response: Thank you for this suggestion. We have updated this section to call for further research in diverse and more representative samples to validate our findings and to delineate in which contexts time is perceived as a barrier to SDM:

"More research among diverse and representative samples is needed to validate these findings, and to further examine and delineate the contexts in which SDM is viewed as a burden due to time constraints versus those in which time is not believed to be a barrier." (page 9)

Reviewer: 2

Reviewer Name: Claudia C Dobler

Institution and Country: Mayo Clinic, Rochester, MN, USA

Please state any competing interests: None declared

Please leave your comments for the authors below

This is an interesting and well written paper that makes an important contribution to the literature on shared decision-making.

Detailed comments:

Reviewer comment: The authors describe the participation rate as 98.6%, but this was the proportion of people who agreed to participate and not the proportion of people who completed the survey and were included in the analysis. I suggest that the authors reword this sentence, and describe it as the rate of initial agreement to participate rather than the "participation rate", which is potentially misleading.

Author response: Thank you for this comment. We have adopted your suggested wording:

"The rate of initial agreement to participate was 98.6%..." (page 4)

Reviewer comment: The completion rate was relatively low at 38.7%, suggesting that the analysed participants may have been a very selective group of clinicians with a particular interest in SDM. This limitation should be added in the discussion where the authors mention that the online panel members might not have been representative of the full US populations of these professionals. Because of the selection bias, comparisons between different professional groups represented were likely more generalizable than statements about the whole group of participants. The statement in the

conclusion “The positive attitudes toward SDM expressed in this sample suggest that acceptance of SDM may be becoming a norm within the healthcare field” seems somewhat daring considering the likely highly selective group of participants.

Author response: *We have updated this statement to acknowledge the select nature of the sample and moderate the language as follows:*

“The positive attitudes toward SDM expressed in this select sample suggest the possibility that acceptance of SDM may be an emerging norm within the healthcare field.” (page 10)

Reviewer comment: Do the authors know at what point in the survey non-completers dropped out? And if so, was there a question at which point non-completers frequently decided to drop out?

Author response: *While we are unfortunately unable to obtain information on sample drop-out at the item level, we have data indicating that 15 dropped out in the first several screening items establishing eligibility, 230 were excluded from participation because their respective quotas were full at the time they accessed the survey, 149 were excluded because they did not meet the inclusion criterion requiring a specialization in family medicine or surgery, and only one person dropped out in the main body of the survey. We have added this information to the results section:*

“With regard to survey non-completers, 15 dropped out in the first several screening items establishing eligibility, 230 were excluded from participation because their respective quotas were full at the time they accessed the survey, 149 were excluded because they did not meet the inclusion criterion requiring a specialization in family medicine or surgery, and one person dropped out in the main body of the survey.” (page 5)

VERSION 2 – REVIEW

REVIEWER	Trudy van der Weijden School CAHPRI, Maastricht university, the Netherlands
REVIEW RETURNED	18-Jun-2018
GENERAL COMMENTS	The authors provided satisfactory responses to the comments. The statistics seem fine, but I'm not a statistician....