Author’s response to reviews

Title: Using narratives to impact health policymaking: A systematic review

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Author’s response to reviews:

To:
Rosanna Gonzalez-Mcquire
Managing Editor
Health Research Policy and Systems

Subject: Response Letter

Manuscript Title: “Using narratives to impact health policymaking: A systematic review"

Ref. No.: HRPS-D-18-00168

Dear Dr. Gonzalez-Mcquire,

Thank you for the opportunity to revise and resubmit the above referenced manuscript to your esteemed journal. We thank the reviewers for the helpful comments, upon which we reviewed the manuscript. Kindly find below our responses to the Reviewers and a description of the changes made to the manuscript. We hope you find them satisfactory.

Sincerely,
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Please see our point by point reply below. The Reviewers’ comments are in bold font, our responses are in regular font, extracts from the paper are in italic font with modified text underlined.

Reviewer #1

Comment 1: This is a well-done paper. In my view it would be a useful contribution to the literature.

Response 1: We greatly appreciate the positive feedback on the manuscript.

Comment 2: However, it could be strengthened by addressing the following…I would suggest some brief acknowledgement and engagement with relevant literature from health communications, persuasion, marketing and cognitive science (e.g. on system I vs system II thinking, as explicated by Kahneman).

Response 2: Thank you for the valuable suggestion.

We have added the below section to table 1:

Kahneman’s Two-System way of thinking

Kahneman distinguishes between two systems of thinking: ‘System 1’ (Thinking Fast) is the intuitive way of thinking and making decisions (i.e., relying on heuristic or cognitive shortcuts that develop as part of people’s experiences) while ‘System 2’ (Thinking Slow) is the analytical and deliberate way of making decisions (i.e. weighing the advantages and disadvantages) (7). Systems 1 and 2 are differentially activated by different aspects of narratives.

We have also revised the introduction section as follows (pages 4-5):
Narratives can facilitate information processing and provide value and emotional appeal to the information provided (8, 10). Additionally, people can relate to narrative information regardless of their level of literacy, expertise or culture (11, 12). These narratives have demonstrated to be both memorable and persuasive (13, 14). Table 1 describes three theoretical perspectives explaining the persuasiveness of narratives (8, 15-20).

**Table 1: Description of models relevant to narratives**

The communication literature offers some insights on the effects of different ways of communicating information on behavior. First, individuals make choices based on incorporating both factual and narrative information; narrative information influences individuals’ choices directly (system 1) and indirectly via cognitions (system 2); and the persuasiveness of narrative or statistical information varies depending on the characteristics and experiences of the recipients (21, 22). These insights imply that it is naive to assume that it is sufficient to present people with “facts”, and expect that they will weigh these in a rational manner and act accordingly (23).

There is growing recognition among experts in the field of public policymaking of the need to incorporate narrative as an important component of the broad evidence base required to inform complex policymaking processes (32, 33). This is particularly so given that policy decisions are often value-driven and political, not just evidence-based choices (34); and that policymakers and public health professionals operate on a different hierarchy of evidence compared to researchers (35). For instance, policymakers prefer information that is concise, appealing, and relevant to current health policy debates (39-41).

As highlighted by Cairney and Kwiatkowski, policymakers attach cognitive and emotional shortcuts to thought and action, often without fully understanding the reasons for that action. Therefore, “bombarding” them with evidence can be less effective than presenting them with compelling stories or using other framing techniques to exploit harness their cognitive biases (33). In this sense, narrative information can be more useful than statistical data, partly because the latter can be seen as too complex, not policy-relevant, tedious or lacking context-sensitivity (34, 35).

The use of narratives in the policy environment can help identify important policy issues, point to problems with existing policies, provide evidence that a program or law is working as intended, and assist policymakers in thinking about the consequences of policy options (10, 39, 42, 44). For instance, personal stories of breast cancer have been key in creating significant changes in health policies and legislative allocations in the United States (44). While there is a growing number of reports on the use of narrative-based interventions to shape policymaking, we are not aware of any systematic synthesis of that body of evidence.

Comment 3: There could be more discussion on potential pitfalls and ethical issues in the use of narrative in the policy process, e.g. risks of oversimplification (e.g. policy based on single cases) and manipulation.
Response 3: We thank the reviewer for raising this important point. We have added the following paragraph to the implication for policy section (page 20):

Findings also allude to potential pitfalls and ethical concerns that should be taken into consideration when using narratives. First, because of the selective nature of narratives, narrators may omit details of a story or exaggerate it, so the story may not be representative of the larger reality (the case of children with cancer where optimistic “cure” or “hope” stories were selectively used). Second, the reliance on narratives without scientific evidence may lead policymakers to adopt policies that may be ineffective or even harmful or waste resources (the case of breast cancer therapy that was later proven to be ineffective). Third, narratives may produce biased results based on the views of one or a select number of individuals (the case of discontinuing morcellator use). Because of the affective nature of narratives, policymakers may give higher priority to diseases with more tragic stories such as cancer and HIV at the expense of other diseases with similar or higher burden such as cardiovascular diseases ((36, 61).

Additional in-text comments

Comment 4: Page 3: not clear how this is relevant to policy “Narrative is increasingly being used in clinical settings as a tool for diagnostics, therapeutics and the education of patients, students and practitioners (21-26). Systematic reviews of the effects of narratives on clinical decision-making found evidence supporting their efficacy at changing screening behavior and influencing individuals' medical decisions (2, 27, 28).”

Response 4: Thank you. We have deleted this paragraph from the introduction section (page 4).

Comment 5: page 3: This is a bit muddled; would benefit from revision. There is a mix in this paragraph and the next on narrative for persuasion and narrative for analysis

Response 5: Thank you for the comment. We have revised this section as follows (pages 4-5):

There is growing recognition among experts in the field of public policymaking of the need to incorporate narrative as an important component of the broad evidence base required to inform complex policymaking processes (32, 33). This is especially so given that policy decisions are often value-driven and political, not just evidence-based choices (34); and that policymakers and public health professionals operate on a different hierarchy of evidence compared to researchers (35). For instance, policymakers prefer information that is concise, appealing, and relevant to current health policy debates (39-41).

As highlighted by Cairney and Kwiatkowski, policymakers combine cognitive and emotional shortcuts to thought and action, and they often do so without fully understanding the reasons for that action. Therefore, bombarding them with evidence can be less effective than telling simple stories or using other framing techniques to exploit their cognitive biases (Cairney and Kwiatkowski, 2017). In this sense, narrative information can be more useful than statistical data,
partly because the latter can be seen as too complex, not policy-relevant, tedious or lacking context-sensitivity (42, 43).

The use of narratives in the policy environment can help identify important policy issues, point to problems with existing policies, provide evidence that a program or law is working as intended, and assist policymakers in thinking about the consequences of policy options (10, 39, 42, 44). For instance, personal stories of breast cancer have been key in creating significant changes in health policies and legislative allocations in the United States (44). While there is a growing number of reports on the use of narrative-based interventions to shape policymaking, we are not aware of any systematic synthesis of that body of evidence.

Comment 6: (page 6; study selection): “We conducted calibration exercises for the reviewers prior to proceeding with the selection process to ensure validity of the process”. It would be good to add a few more sentences, here elaborating on this process

Response 6: Thank you. We have added the following statement to the study selection section of the methods (pages 8):

Prior to the selection process, all the reviewers participated in a calibration exercise using a randomly selected sample of 100 citations. The calibration exercise allowed us to pilot the eligibility criteria to ensure they are applied in the same way across reviewers, thus enhancing the validity of the process.

Comment 7: page 10 “The author remarked: “Poster children were strategically used throughout the mid-to-late twentieth century to advance principles of early cancer detection and prompt treatment; to illustrate or, at times, exaggerate promising biomedical advances in the field; and to elicit emotional responses and donations from a wide audience during the escalation of the war against cancer”. This is an important issue that could warrant more attention in the paper than it currently receives.

Response 7: Thank you for the comment. We further reflect on this point in the summary of findings section of the discussion, as follows (pages 16-17):

However, there is also evidence of undesirable effects of using narratives (36, 54, 59). In one case study, narrative use led to widespread insurance reimbursement of a therapy for breast cancer that was later proven to be ineffective (36). Another case study described how the use of narrative inappropriately exaggerated the perceived risk of a procedure, which led to limiting its use and preventing a large number of patients from its benefits (59). A third case study described how optimistic “cure” or “hope” stories of children with cancer were selectively used to raise money for cancer research that ignored the negative realities such as the limited gains made in certain pediatric cancers, the high costs of treatment, and the high prevalence of mental and physical disabilities caused by experimental chemotherapy protocols (54).

We also reflect on this point in the implication for policy section, as follows (pages 20):
Findings also allude to potential pitfalls and ethical concerns that should be taken into consideration when using narratives. First, because of the selective nature of narratives, narrators may omit details of a story or exaggerate it, so the story may not be representative of the larger reality (the case of childhood cancer where optimistic “cure” or “hope” stories were selectively used that ignored the negative realities). Second, the reliance on narratives without scientific evidence may lead policymakers to adopt policies that may be ineffective or even harmful or waste resources (the case of reimbursing a therapy for breast cancer that was later proven to be ineffective). Third, narratives may produce biased results based on the views of one or a select number of individuals (the case of discontinuing morcellator use). Because of the affective nature of narratives, policymakers may give higher priority to diseases with more tragic stories such as cancer and HIV at the expense of other diseases with similar or higher burden such as cardiovascular diseases ((36, 61).

Comment 8: page 13 “there may be greater population benefits and lesser risks from continuing than from discontinuing morcellator use”. A little more elaboration here would be helpful

Response 8: Thank you. We have revised the paragraph as follows (pages 15-16):

Rosenbaum reflected on the case of 40-year old Amy Reed who underwent a hysterectomy with intraoperative morcellation for presumptively benign uterine fibroids (which turned out to contain leiomyosarcoma), thus causing it to disperse. Following her death, Reed’s husband launched a campaign to ban morcellators which was picked up by The Wall Street Journal. Extensive media coverage featuring the faces of women dying of leiomyosarcoma exaggerated the risk of leiomyosarcoma, while the benefits of morcellation remained largely invisible and, thus, “unavailable”. Subsequently, the Food and Drug Administration (FDA) undertook a review to quantify the risk of disseminating occult uterine cancers that cannot be reliably detected preoperatively. Six months later, the FDA issued a black-box warning stating that morcellation was contraindicated in perimenopausal or postmenopausal women and in “candidates or en bloc tissue removal”. Many institutions banned morcellation and some insurers stopped covering the procedure or began requiring prior authorization. The author explained that medical products are associated with two types of risk, those caused by using the products and those caused by preventing their use; the morcellation controversy is an example of the latter case given that “there may be greater population benefits and lesser risks from continuing than from discontinuing morcellator use”(59). However, disproportionate focus on harms caused by use rather than nonuse skewed risk perception.

Comment 9: page 16: “would help establish the ideal exposure frequency, duration and type of format to maximize the impact of narrative intervention”. There is no reason to believe that there is one single formula of exposure frequency, duration, etc.. The art and science of communication cannot be distilled into a single solution

Response 9: Thank you. We have deleted the abovementioned statement accordingly (page 18).
Comment 10: page 16: “Despite the increased interest in narratives (6, 21, 32, 33), the evidence base on their impact on health policymaking is of very low certainty”.... And no doubt highly case-specific, a realist evaluation perspective is helpful here.

Response 10: Thank you for the comment. We have reflected on the importance of conducting realist evaluation to gain richer understanding of narratives in the implication for research section, as follows (page 19):

“This systematic review highlights the challenges of assessing the impact of narrative interventions on health policymaking given the complex nature of these interventions, the difficulties in using experimental methods, and the multiple factors influencing the policymaking process (45, 74, 79). Therefore, more rigorous primary research is needed to gain a better understanding of narrative interventions beyond whether or not they are effective to why and under what circumstances.

Given that narratives qualify as complex interventions, a particular focus should be on conducting realist evaluation studies. Unlike traditional impact evaluation that establishes whether change in outcomes can be directly attributed to an intervention, realist evaluation focuses on the processes and contexts of implementation that yield impact (75). Thus, by examining ‘what works, for whom and why’, insights are gained about the interactions between interventions, implementers and health systems that make interventions more or less successful (76, 77). This is critical to inform the design of context-specific strategies and understand how the influence of narrative information can differ across various health systems and socioeconomic realities. Also, qualitative studies can help explore the knowledge, beliefs, and attitudes of policymakers towards narrative information, including their role in the policymaking process.

Comment 10: page 17: “Until such research is conducted, we suggest using narratives for influencing policy options for which there is high enough certainty evidence supporting its effectiveness.” This is not a realistic expectation. Regardless of our technocratic ideals, those involved in the real world policy scrum will continue to make use of the full range of rhetorical tools, including narratives. More appropriate here may be a call for those with evidence expertise to seek stronger more effective partnership relationships with those involved in advocacy and seek to the extent feasible to influence them.

Response 10: Thank you for the comment. We have amended the implication for policy section based on Reviewer 1 and Reviewer 2 comments, as follows (pages 20):

Our findings suggest that while narratives may have positive influence on health policy change, they may sometimes lead to undesirable outcomes. Findings also allude to potential pitfalls and ethical concerns that should be taken into consideration when using narratives. First, because of the selective nature of narratives, narrators may omit details of a story or exaggerate it, so the story may not be representative of the larger reality (the case of childhood cancer where optimistic “cure” or “hope” stories were selectively used that ignored the negative realities). Second, the reliance on narratives without scientific evidence may lead policymakers to adopt
policies that may be ineffective or even harmful or waste resources (the case of reimbursing a therapy for breast cancer that was later proven to be ineffective). Third, narratives may produce biased results based on the views of one or a select number of individuals (the case of discontinuing morcellator use). Because of the affective nature of narratives, policymakers may give higher priority to diseases with more tragic stories such as cancer and HIV at the expense of other diseases with similar or higher burden such as cardiovascular diseases ((36, 61).

These limitations and potential pitfalls do not mean that there should be no place for narratives in informing health policymaking. It does, however, mean that narratives need to be held to standards of validity (6, 81, 82). For instance, Hyman insists that those using narratives provide persuasive evidence of typicality and completeness before assigning any weight to their stories (83). Sharf calls for effectively combining the emotional pathos of stories with rhetorical proof (36).

In light of the above, we suggest using narratives that are rooted in evidence to influence health policymaking. Those designing or using narrative information need to consider all the above discussed challenges and potential pitfalls. This would be best achieved by building strong and effective partnerships between ‘evidence experts’ and those involved in advocacy. Also, narratives could be used to support policies that are based on widely agreed on principles, such as those of human rights and medical ethics, e.g., access to basic health services, non-discriminatory health policies.

Reviewer #2:

Overall comment: This is a well written article that meets the required standards of systematic review. I am not very familiar with the use of narrative-based interventions in health policy making so this was an interesting new field of research for me. You have clearly captured the formal state of the art for this relatively novel approach in your review. However, I'm not sure that the objective (review evidence on the impact of narrative-based interventions on the health policy making process) has been fully met. I'm not sure that this could be met, since I cannot imagine a situation where narrative based interventions are ever the only factor that influences the health policy making process. As we know policy making is a complex and messy process, with many factors playing a role. I would imagine that narrative based evidence/interventions are used in almost every policy making process at the very least during informal discussions, and yet this is often not captured formally and it's hard to imagine how one might design a study to track the impact of narrative-based interventions alone. Hence, I'm not surprised you were unable to answer this question. However you don't give much insight into how you might tackle this differently now that you are much more familiar with the literature. The Second point I would like to make is that as somebody working in the field of health policy I would really like to know more about how narratives can be useful, how to use them and how to study their impact. Eg. If one is conducting a retrospective policy analysis, how can we capture narratives especially informal ones? Is this something for example we should include in semi-structured interview guide with key informants? Regarding your conclusion - I think that the final sentence (until such research is conducted, narratives should only be used to advocate for policies supported by convincing research evidence base) needs to be altered. Surely, regardless of whether narratives
are impactful, we should only ever make policies based on convincing research evidence base. I have three main suggestions

Overall response: We appreciate the positive feedback on the paper. The Reviewer raised three important points, and subsequently grouped them into three main suggestions (listed below). We provide detailed responses to each of the suggestions.

Comment 1: Could you ever meet the objectives of this study and could they be met with a systematic lit review? I would like to see you discuss this more in your paper and with the benefit of your understanding of the literature, suggest how you might get a richer understanding of narratives outside of the confines of a systematic review.

Response 1: Thank you for your comment. We agree with the reviewer that the existing evidence base precludes any robust inferences about the effectiveness of narrative interventions for health policy-related knowledge translation at this time.

Acknowledging the above, our systematic review attempted to synthesize the existing body of evidence on this topic in order to answer the question of the impact of narratives on health policymaking. This is why we included all study designs to account for the diverse literature on narratives and the complex nature of evidence in the policy sector. One major value of systematic reviews is the opportunity to identify research gaps and to discuss needs for future research in specific topics or fields. This is particularly relevant for this review given that the low quality of available evidence weakens any inferences about effectiveness. The gaps in the existing evidence base have been highlighted in the systematic review.

We have revised the title of the manuscript as follows:

Using narratives to impact health policymaking: A systematic review

We have also amended the wording of the objective to replace ‘impact of narratives interventions’ with ‘use of narrative interventions’, as follows (page 5):

The objective of this study was to systematically synthesize the evidence on the use of narratives to influence health policymaking.

In light of the existing literature on narratives, we strongly agree with the Reviewer on the need to conduct primary research to get a richer understanding of narratives beyond whether or not it was effective to why and under what circumstance. Accordingly, we have revised the implication for research section as follows (page 19):

“Despite the increased interest in narratives (6, 21, 32, 33), the evidence base on their impact on health policymaking is of very low certainty. This systematic review highlights the challenges of assessing the impact of narrative interventions on health policymaking given the complex nature of these interventions, the difficulties in using experimental methods, and the multiple factors influencing the policymaking process (45, 74, 79). Therefore, more rigorous primary research is
needed to gain a better understanding of narrative interventions beyond whether or not they are effective to why and under what circumstances.

Given that narratives qualify as complex interventions, a particular focus should be on conducting realist evaluation studies. Unlike traditional impact evaluation that establishes whether change in outcomes can be directly attributed to an intervention, realist evaluation focuses on the processes and contexts of implementation that yield impact (75). Thus, by examining ‘what works, for whom and why’, insights are gained about the interactions between interventions, implementers and health systems that make interventions more or less successful (76, 77). This is critical to inform the design of context-specific strategies and understand how the influence of narrative information can differ across various health systems and socioeconomic realities. Also, qualitative studies can help explore the knowledge, beliefs, and attitudes of policymakers towards narrative information, including their role in the policymaking process.

Comment 2: Could you give some guidance to researchers on how they can use narratives?

Response 2: Thank you for your comment. While we have initially planned to provide guidance on how to use narrative to influence health policymaking as part of this review, the included studies did not provide the necessary information for that. Indeed, those studies provided very limited description of the narrative interventions, in terms of frequency and duration of exposure to the narrative, content of the narrative (e.g. plot, characters, moral of story), and perceived credibility of speaker of message. Thus, questions remain about how to construct and present narrative information.

Having said this, we highlight two emerging patterns that might inform the optimal use of narratives. First, all but four studies used meta-narrative which combined the stories of a large number of people to convey a thematic, systemic story as opposed to focusing on a single event or individual (i.e. episodic stories). A second observation was the importance of establishing relationship with media outlets and maximizing opportunities to disseminate the narrative information.

We have added the following paragraphs to the “summary of findings and interpretation” section of the discussion (pages 16-17):

“The majority of included studies did not provide information on the definition or content of narratives, the theoretical framework underlying the narrative intervention or the possible predictors of the success of narrative-based interventions. Only one study explicitly discussed how the framing of the attributes of narrative (i.e., sequenced events, characters, time, location, etc.) influenced policymaking differentially in two different parts of Australia (Sydney and Melbourne) (55). Thus, uncertainties remain about how to construct and present narrative information.

Having said this, we highlight two emerging patterns that might inform the optimal use of narratives. First, all but four studies used meta-narrative which combined the stories of a large
number of people to convey a thematic, systemic story as opposed to focusing on a single event or individual (i.e. episodic stories). Second, the importance of establishing relationship with media outlets and maximizing opportunities to disseminate the narrative information was emphasized in several studies. Indeed, six of the included studies highlighted the involvement of media, as an important catalyst for policy change (54, 56, 60, 61, 65, 67). In four studies, the narrative was picked up by media (54, 56, 60, 67) whereas in two studies, active effort was made to engage the media and maximize the reach of the narrative information (61, 65). Unfortunately, there is also a lack of reliable evidence on the use of media interventions to influence health policymaking (71).

Comment 3: Could you give some guidance to researchers on how they can study narratives and ensure their impact is captured in the literature going forward?

Response 3: As already reflected in comment 1, researchers should consider conducting realist evaluations to gain a better and richer understanding of the use of narratives to influence health policymaking, particularly since these qualify as complex interventions. Researchers are also encouraged to promote better reporting of studies in this field, taking into account guidelines for reporting of complex interventions when describing the narrative interventions.

As mentioned above, we have added the following paragraph to the implication for research section (page 19):

“Despite the increased interest in narratives (6, 21, 32, 33), the evidence base on their impact on health policymaking is of very low certainty. This systematic review highlights the challenges of assessing the impact of narrative interventions on health policymaking given the complex nature of these interventions, the difficulties in using experimental methods, and the multiple factors influencing the policymaking process (45, 74, 79). Therefore, more rigorous primary research is needed to gain a better understanding of narrative interventions beyond whether they are effective or not to why and under what circumstances.

Given that narratives qualify as complex interventions, a particular focus should be on conducting realist evaluation studies. Unlike traditional impact evaluation that establishes whether change in outcomes can be directly attributed to an intervention, realist evaluation focuses on the processes and contexts of implementation that yield impact (75). Thus, by examining ‘what works, for whom and why’, insights are gained about the interactions between interventions, implementers and health systems that make interventions more or less successful (76, 77). This is critical to inform the design of context-specific strategies and understand how the influence of narrative information can differ across various health systems and socioeconomic realities. Also, qualitative studies can help explore the knowledge, beliefs, and attitudes of policymakers towards narrative information, including their role in the policymaking process.
Comment 4: Can you alter the conclusion to avoid endorsing non-evidence based policy making. Surely, regardless of whether narratives are impactful, we should only ever make policies based on convincing research evidence base.

Response 3: Thank you for raising this important point. We have revised the implication for policy section as follows, taking into account both Reviewer 1 and Reviewer 3 comments (page 20):

Our findings suggest that while narratives may have positive influence on health policy change, they may sometimes lead to undesirable outcomes. Findings also allude to potential pitfalls and ethical concerns that should be taken into consideration when using narratives. First, because of the selective nature of narratives, narrators may omit details of a story or exaggerate it, so the story may not be representative of the larger reality (the case of childhood cancer where optimistic “cure” or “hope” stories were selectively used that ignored the negative realities). Second, the reliance on narratives without scientific evidence may lead policymakers to adopt policies that may be ineffective or even harmful or waste resources (the case of reimbursing a therapy for breast cancer that was later proven to be ineffective). Third, narratives may produce biased results based on the views of one or a select number of individuals (the case of discontinuing morcellator use). Because of the affective nature of narratives, policymakers may give higher priority to diseases with more tragic stories such as cancer and HIV at the expense of other diseases with similar or higher burden such as cardiovascular diseases ((36, 61).

These limitations and potential pitfalls do not mean that there should be no place for narratives in informing health policymaking. It does, however, mean that narratives need to be held to standards of validity (6, 81, 82). For instance, Hyman insists that those using narratives provide persuasive evidence of typicality and completeness before assigning any weight to their stories (83). Sharf calls for effectively combining the emotional pathos of stories with rhetorical proof (36).

In light of the above, we suggest using narratives that are rooted in evidence to influence health policymaking. Those designing or using narrative information need to consider all the above discussed challenges and potential pitfalls. This would be best achieved by building strong and effective partnerships between ‘evidence experts’ and those involved in advocacy. Also, narratives could be used to support policies that are based on widely agreed on principles, such as those of human rights and medical ethics, e.g., access to basic health services, non-discriminatory health policies.

Reviewer #3:

Comment 1: Thank you for the comprehensive work. The article follows the recommended reporting for systematic reviews (PRISMA), includes all key points and is generally well written and easy to read. I accepted the review because I was curious to understand how you had conceptualised the topic, and I think you really did a reasonable good job. I fully agree with your statement on page 15 that the topic is challenging. I can very well imagine that you got into
problems along the review process - not least because a lack of standardised vocabulary/terminology made it difficult from the start to formulate the exact review question, use PICO and translate everything into an appropriate search strategy and eligibility criteria. So I would like to congratulate you for selecting an interesting topic and not backing off from the challenge, and for a good attempt to apply a rigorous and transparent process to obtain the relevant evidence.

Response 1: Thank you for your interest in this topic. We appreciate the positive feedback and encouragement.

Comment 2: I still have concerns that you may have not captured what you were originally looking for. Among others because I think that there is a lack of research in this topic area, and a large part of the evidence will not be found in scientific journals and databases but will be rather hidden on websites of NGOs, advocacy groups and similar.

Response 2: Thank you for your comment. We agree with the Reviewer that some of the relevant evidence might be published in the grey literature. Therefore, we did search resources that include grey literature, such as Google Scholar and the WHO Global Health Library and Communication and Mass Media Complete. While we could have searched additional grey literature resources, we don't expect that we would have found any major additional evidence. In any case, we have added the following statement to the strength and limitation section of the manuscript (page 17):

A major challenge in conducting this review was how to best conceptualize and categorize narratives given the absence of clear definition and operationalization of narrative information. This made it difficult to decide on the eligibility of some of the studies and to abstract data. This is why we relied on a consensus approach to screening and data abstraction, and iteratively revised our conceptualization of narrative. Although, we did search resources that include grey literature (e.g., Google Scholar and the WHO Global Health Library and Communication and Mass Media Complete), we could have searched additional resources such as websites of NGOs, advocacy groups and donors.

Comment 3: However, I also think that your approach shows some weaknesses. What I am missing is a clear review question with a more complete description of its components (e.g. under the P of PICO, what is meant with 'specific communities' or 'groups'?).

Response 3: Thank you for your comment. We have clarified the PICO components and eligibility criteria as follows (pages 5-7):

Study design and definitions

For the purpose of this study, we conceptualized a narrative as an illustration of an experience in a story-like format, presented in either the first or the third person (2). The terms that we
considered as referring to “narratives” include storytelling, anecdotes, exemplars, testimonials, and policy narratives (7, 27). Given that the goal of this review was to inform those interested in using narrative information to affect health policymaking, we restricted our eligibility to studies where the primary purpose of using narrative was to affect policymaking (i.e., narrative as planned intervention). The narrative could be presented in any format (e.g. verbal, print, audio/radio, video) or perspective (first- or third-person narrative).

Public policy refers to government policy and includes programs, plans, rules, legislation, guidelines, statements or positions taken by government or governmental department with the aim of achieving population-level change (whether at the sub-national, national or international level) (45). This excludes policies confined to one institution only or those related to individual-level clinical interventions (46). We only considered public policies pertaining to health.

Eligibility criteria

We used the following eligibility criteria:

Type of studies: We included a range of types of studies to account for the diverse literature on narratives and the complex nature of evidence in the policy sector (47). Specifically, we included randomized studies, non-randomized studies (e.g., cohort studies, before and after studies, retrospective studies, and cross-sectional studies), process evaluation studies, economic studies, qualitative studies, stakeholder analyses, policy analyses and case studies. We excluded news articles, books, letters, commentaries, opinion pieces, proposals, reviews and studies published in abstract format only. We also excluded studies where narrative was mentioned as part of background information only.

We did not exclude studies based on date of publication or language.

– Population: We included studies where the narrative intervention targeted legislators, policymakers, representative of professional associations, governmental representatives or any other individuals involved in health policymaking. We excluded studies where the narrative intervention targeted patients or people in their individual capacity (e.g., in a clinical setting).

– Interventions: Narrative information used as standalone or as part of a multi-component intervention with the primary purpose of influencing health policymaking in a real-world setting. We excluded studies where narrative was not an explicit or deliberate component of the intervention. We also excluded studies that assessed message-framing only or that used narrative for information delivery without any link to the policy cycle.

– Comparison: We included studies regardless of whether or not they have a comparison group.

– Outcomes: We included studies that examined the influence of narrative information on any of the stages of health policymaking in a real-world setting(48). We stratified
findings according to the stages of policymaking, as defined by the Stages Heuristic framework: 1) agenda-setting; 2) policy formulation; 3) policy adoption; 4) policy implementation; and 5) policy evaluation (see Table 2 for detailed definition of the different stages (48, 49) (50, 51)). We excluded studies that assessed proxy outcomes such as changes in knowledge, beliefs, attitude, preferences or intentions. We also excluded studies that involved individuals making hypothetical decisions. Additionally, we excluded studies that assessed the impact of narrative on public opinion only or that examined policymaking processes beyond the health or health-related sector.

Settings: We included any country, state or community

Comment 4: I think that that would have helped with the search concepts and list of search terms to be used (I am missing some terms for the intervention part, e.g. storytelling or messaging, and also terms for the outcome part like health communication, information dissemination etc.). It would have helped the review team to develop and apply the eligibility criteria for the selection, and ultimately the readers to be able to follow the rationale of the authors. I am also missing a clear structure of the searches. It looks like the two search concepts used were the I of the PICO, i.e. the intervention 'narratives' on the one hand combined with AND with the O of the PICO, i.e. the outcome 'policy impact' on the other. But some of the searches seem to jump back and forth and are difficult to follow, and the use of the Boolean operators are also not always clear. Question and eligibility criteria are essential and will impact immediately all further steps of the review process. It is of course not possible to develop and re-run the searches at this stage of the work. I also still think that despite some flaws, the article is worth being published.

Response 4: Thank you for your comment.

Given the lack of standardized terminology for narrative, we opted for a search strategy that would achieve a balance between specificity and sensitivity. Thus, we purposely focused the search strategy on the “I” and “O” components of the PICO question. The inclusion of all PICO components in the search strategy would have generated a very narrow search with the risk of losing relevant articles. The three previously published systematic reviews examining the effects of narrative on individual health behavior (i.e., in clinical settings) used the same approach to searching, i.e., combining terms for the intervention (i.e., ‘narrative’) and the outcomes (‘behavioral change’) (2, 21, 72). Not including terms for the population should have decreased specificity (and consequently increasing the load of work) but should also have increased sensitivity (and consequently decreasing the chance of missing an eligible study).

To generate a list of search terms/key words for each concept, we conducted the following: first, we undertook an initial targeted search of the literature, followed by an analysis of the text words contained in the title and abstract of potentially relevant studies as well as of the index terms used to describe the article. Also, we reviewed the search strategies of relevant systematic reviews. This helped generate an initial list of key words relevant to each of the two concepts: ‘narrative’ and ‘public policy’, respectively. We used truncations (*) to capture variations in key words. For instance, “story*” would capture all variations of the word including “stories, storytelling, story-telling, story-teller, storyteller).
We did not include search terms for ‘health communication’ and ‘information dissemination’ as we did not judge those to be under the scope of our systematic review. Instead, we opted to be more specific and capture those terms that are most relevant to our systematic review. For instance, under “communication” in Medline, we only selected the concept “narration”, which is most relevant to our search.

As for the structure of the search strategy, for each concept, we included both free text words and medical subject heading (i.e. Mesh words). We first listed all the terms for the concept “narrative” as Mesh terms and then as free words, and then combined them using ‘OR’. We then listed all the terms for the concept “public policy” as free texts, and then as Mesh terms, and then combined these using “OR”. However, for this second concept, we also used ‘AND’ to combine terms such as “government AND decision-making”.

We have re-arranged the order of the search lines to avoid potential confusions in terms of the search “seeming to jump back and forth” while maintaining the exact content.

We have revise the search strategy section to clarify the above, as follows (page 7):

We searched the following electronic databases up to February 2017: Medline, PsycINFO, Cochrane Library, Cumulative Index to Nursing and Allied Health Literature (CINAHL), WHO Global Health Library and Communication and Mass Media Complete. The search strategy combined two different concepts: ‘narrative’ and ‘public policy’. To generate a list of search terms for each concept, we conducted the following: first, we undertook an initial targeted search of the literature, followed by an analysis of the text words contained in the title and abstract of potentially relevant studies as well as of the index terms used to describe the article. Also, we reviewed the search strategies of relevant systematic reviews. This helped generate an initial list of terms relevant to each of the two concepts: ‘narrative’ and ‘public policy’, respectively:

- Narrative: e.g. narrative, narration, testimonial, anecdote, exemplar, story,
- Public Policy: e.g. policy, public policy, health policy, reform, lobbying, regulation, law enforcement, policymaking, government, law, legislation, decree, jurisprudence, advocacy, decision-making

The search included both free text words and medical subject heading. We used the Boolean operator ‘OR’ to combine the terms within each concept and the Boolean Operator ‘AND’ to combine the different concepts. We did not use any search filter for study type, language or date of publication. The search strategy was validated by an experienced medical librarian (see Additional file 1).

We complemented the electronic database searches with a variety of approaches to identify additional literature, including grey literature. We manually searched Google Scholar and relevant journals like Health Affairs. We also screened the reference lists of included studies and relevant systematic reviews. In addition, we contacted the authors of relevant articles and conference proceedings for further information or additional material.
Comment 5: However, I would suggest to keep the presentation of the obtained results but, in addition, develop it further to make it also a ‘methods’ paper, put more emphasis on the discussion and elaborate further on the methodological challenges faced along the review process, the lessons learned and the authors’ suggestions for future improvements to support readers facing similar methodological problems.

Response 5: Thank you for the suggestion. We prefer to keep this paper focused on the topic of storytelling as opposed to turning it into a methods paper’. In any case, we do describe some of the challenges we have faced in the strength and limitation sections, as depicted below (page 17):

A major challenge in conducting this review was how to best conceptualize and categorize narratives given the absence of clear definition and operationalization of narrative information. This made it difficult to decide on the eligibility of some of the studies and to abstract data. This is why we relied on a consensus approach to screening and data abstraction, and iteratively revised our conceptualization of narrative.

Also, while some might criticize our use of stages heuristic framework - considered by some scholars to assume linearity of the policymaking process -, we opted to use this framework as it is considered one of the most prominent public policy framework. More importantly, it did facilitate synthesis of findings and provide a simplified and useful way to view the entire policy process.

Comment 6: To further improve the manuscript I would also suggest to be clearer on the review question, maybe try to indeed formulate it as a proper question, and more specific regarding the PICO components, and eligibility criteria.

I hope you find my suggestions helpful and wish you good luck and success with the publication and your future work.

Response 6: Thank you for your comment. As already reflected in response 3, we have clarified the PICO components and eligibility criteria as follows (page 5-7):

Study design and definitions

For the purpose of this study, we conceptualized a narrative as an illustration of an experience in a story-like format, presented in either the first or the third person (2). The terms that we considered as referring to “narratives” include storytelling, anecdotes, exemplars, testimonials, and policy narratives (7, 27). Given that the goal of this review was to inform those interested in using narrative information to affect health policymaking, we restricted our eligibility to studies where the primary purpose of using narrative was to affect policymaking (i.e., narrative as planned intervention). The narrative could be presented in any format (e.g. verbal, print, audio/radio, video) or perspective (first- or third-person narrative).
Public policy refers to government policy and includes programs, plans, rules, legislation, guidelines, statements or positions taken by government or governmental department with the aim of achieving population-level change (whether at the sub-national, national or international level) (45). This excludes policies confined to one institution only or those related to individual-level clinical interventions (46). We only considered public policies pertaining to health.

Eligibility criteria

We used the following eligibility criteria:

Type of studies: We included a range of types of studies to account for the diverse literature on narratives and the complex nature of evidence in the policy sector (47). Specifically, we included randomized studies, non-randomized studies (e.g., cohort studies, before and after studies, retrospective studies, and cross-sectional studies), process evaluation studies, economic studies, qualitative studies, stakeholder analyses, policy analyses and case studies. We excluded news articles, books, letters, commentaries, opinion pieces, proposals, reviews and studies published in abstract format only. We also excluded studies where narrative was mentioned as part of background information only.

We did not exclude studies based on date of publication or language.

— Population: We included studies where the narrative intervention targeted legislators, policymakers, representative of professional associations, governmental representatives or any other individuals involved in health policymaking. We excluded studies where the narrative intervention targeted patients or people in their individual capacity (e.g., in a clinical setting).

— Interventions: Narrative information used as standalone or as part of a multi-component intervention with the primary purpose of influencing health policymaking in a real-world setting. We excluded studies where narrative was not an explicit or deliberate component of the intervention. We also excluded studies that assessed message-framing only or that used narrative for information delivery without any link to the policy cycle.

— Comparison: We included studies regardless of whether or not they have a comparison group.

— Outcomes: We included studies that examined the influence of narrative information on any of the stages of health policymaking in a real-world setting (48). We stratified findings according to the stages of policymaking, as defined by the Stages Heuristic framework: 1) agenda-setting; 2) policy formulation; 3) policy adoption; 4) policy implementation; and 5) policy evaluation (see Table 2 for detailed definition of the different stages (48, 49) (50, 51)). We excluded studies that assessed proxy outcomes such as changes in knowledge, beliefs, attitude, preferences or intentions. We also excluded studies that involved individuals making hypothetical decisions. Additionally,
we excluded studies that assessed the impact of narrative on public opinion only or that examined policymaking processes beyond the health or health-related sector.

– Settings: We included any country, state or community

Thank you