Author’s response to reviews

Title: Communication practices for delivering health behaviour change conversations in primary care: A systematic review and thematic synthesis

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Author’s response to reviews:

Thank you for this improved manuscript.

The further review provides some points which I would ask you to address prior to moving towards publication. In particular the methods should be very clear and justified, so addressing the points made by Reviewer 2 will be important, and I agree that some discussion of the concepts of health behaviour change talk and motivational interviewing in the context of your work would greatly enhance your paper. How your findings will be applied to practice (as per Reviewer 2s suggestions below) will also add value to the manuscript.

Reviewer reports:

Michelle DiGiacomo (Reviewer 2): Thank you for the opportunity to review this manuscript that analyses behaviour change talk in health care consultations. While I see that this manuscript has responded to several suggestions for revisions, I have some additional queries regarding the updated manuscript.
Authors’ response:

We would like to thank all three reviewers and the editor for their comments on this paper. We have responded to reviewer one extensively. Following this the paper was sent to two different reviewers: reviewer 2, and reviewer 3. In this second round of review there was a difference in the responses between reviewer two and three. Reviewer three highlighted our detailed response to all of reviewer one’s comments, which we also feel has significantly strengthened this paper, and reviewer 3 has also commented on the strength of our methods and discussion. Reviewer two’s comments differed from reviewer 1 and reviewer 3. Reviewer two has asked for a focus on motivational interviewing (MI). MI, however, is just one of many approaches aimed at encouraging behaviour change, and we have not reinterpreted our findings in light of MI in particular, as this was not a paper about MI. We have however, in response to reviewer 2 and editor comments, included discussion of how our findings relate to the MI approach.

We have further responded to all points raised by the reviewers and the editor particularly about methodological reporting, and how findings will be applied in practice, as the editor has suggested. As reviewer three has highlighted, we have followed rigorous methodological processes which are in place for reviewing and synthesizing this type of data. And we expand on this in our detailed responses below, and in the changes we have made to the manuscript.

We detail below how motivational interviewing theory, which focusses on boarder aspects of behaviour change discussions, differs from conversation analysis which focusses on the fine-grained detail of how conversations work in practice. Any similarities in terminology are superficial, and we have added clarification of this. We understand no reviewers on this paper were conversation analysts, so have provided a clear step by step explanation of this rigorous, empirical, and scientific approach to studying clinical interactions in our responses below.

1) Literature on motivational interviewing would likely provide useful information for the process of eliciting and managing behaviour change talk. Several concepts discussed in this paper (eg health behaviour change talk, resistance) are also discussed in literature on motivational interviewing, but this was absent. It is suggested that the authors unpack behaviour change concepts and features of dialogue in any revision.

Thank you for this comment about motivational interviewing. Motivational interviewing is a technique and a theory that can be taught and that, in the main, was not used by the clinicians who were studied in the papers that comprise this review. Instead conversation analysis (CA) and micro-level discourse analysis (DA) take an empirical approach, simply describing what was said and the nature of the responses that are generated. As such, this approach that can provide novel insights by building empirically from the bottom up, rather than imposing a top-down approach to health behaviour change talk. Conversation and micro-level discourse analysis produce “systematic and empirically grounded descriptions of concrete practices and their interactional consequences and functioning, it does not involve the kind of interpretation and theory generation that characterise [other] qualitative healthcare research.” ([1] p.8). We are happy to clarify how the seemingly similar terminology used between observation-based CA and DA, and theory-based motivational interviewing differ: Conversation analysis examines the patterns of conversation- for example a question followed by a response. The
phrasing of a question one way or another way is likely invite different responses. This is called ‘response relevance’[2, 3]. Some responses are ‘preferred’ and some are ‘dispreferred’. For example, a question may require an answer, but a question designed in a certain way may ‘prefer’ an agreement over other answer types, such as disagreement. ‘Preference’ in this case refers to linguistic design not ‘personal preference’. In conversation analysis, resistance is a valid and relevant response in many, but not all circumstances. Importantly, resistance doesn’t mean a patient is always ‘being resistive’ or ‘resistant to change’, it means that they are displaying interactional resistance through producing one of these dispreferred responses. We hope that this clarifies that languages used in this paper describe interactional linguistic features, and they do not have the same meaning as the terms when they are used in the motivational interviewing vernacular. As these concepts could be confused we have clarified the terms used in the revised version of the manuscript, providing a key terms and definitions as box 1.

Motivational interviewing is concerned with conversations at the broader level, whilst conversational analysis examines the fine-grained detail of how conversations work. For example, a key principle in MI is to ‘roll with resistance’ and one way this can be done is by listening reflectively. This comprises summarising, paraphrasing, and reflecting back to the patient what they are saying in a non-judgemental way. However, conversation analysis could show us for example, which ways of talking patients responds to as ‘non-judgemental’ or the ways that types of paraphrase are responded to (eg “you said”-prefaced paraphrases, compared to “what I’m hearing is…”-prefaced paraphrases”). Whilst MI advises to roll with resistance, the fine-gained approach and attended to grammar, sequence, prosody, and word choice used in CA and DA can highlight how resistance is generated, and how it could be avoided by, for example, wording things a little differently.

We thank the reviewer for their suggestion to “unpack behaviour change concepts and features of dialogue in any revision”. However, here we emphasise the aggregative approach which we took with this review, which is in line with current best-practice for synthesising conversation and discourse analytic studies [1]. That is, we aggregated data from the results sections and the from original authors’ interpretations. As reviewers we have no access to the original data, only to excerpts of conversational practices which illustrate the authors’ points. CA and DA work with systematic and orderly conversational features, not with theory, so higher level re-interpretation of results (as usual with a traditional qualitative systematic review) is not possible or appropriate. The best-practice approach which we followed allowed our reporting to closely reflect the conversational practices demonstrated in included studies, and did we did not seek to generate new theoretical concepts for these reasons.

Having emphasised the reasoning behind our aggregative approach it naturally follows that any ‘unpacking ’of behaviour change concepts would mean we first had to surmise what these are - as these concepts are not analyzed or discussed in the original papers. We have access only to the authors detailed interactional or linguistic analysis and partial experts to illustrate these. It is for these reasons we have not reinterpreted in light of motivational interviewing theory. However, some conversational practices identified in our paper are also those recommended in motivational interviewing. Avoiding being confrontational when faced with displays of resistance, and collaborating with patients are recommended by MI and were found to be effective in this review. Therefore, in our discussion (p30 lines 107-117 ), we have discussed the MI approach and how it relates to our findings here.

2) What was the rationale for only including discourse and conversational analysis studies?
We were interested in what clinicians say and how patients respond in consultations when health behaviour is discussed. We therefore confined our review to studies that had recorded consultations and analysed them. Post-hoc reports on the details of an interaction are subject to considerable recall and social desirability biases [4, 5]. Furthermore, conversation analysis and discourse analysis are the most rigorous and detailed methods available for analyzing talk and have a strong academic tradition of scholarship on which these methods rest [3, 6-10].

Because our aim was to examine how clinicians communicate with their patients about health behaviour change (HBC), and the responses each practice is likely to generate from patients, we included papers that examined interaction in micro-detail. This forensic attention to conversational and linguistic patterns can highlight conversational features likely to be positively or negatively received. Microlevel studies, like conversation and discourse analysis, explore in detail how language is used and are “concerned with the techniques and competencies involved in successful and unsuccessful conversation” p.63 [11]. To meet our aim, it was necessary that we aggregated studies which took a micro-level focus on the fine-grained detail of interaction, to highlight and differentiate between specific conversational practices. Any studies that used a theory, rather than empirical observation were therefore not relevant for our research question, as they could not identify and highlight these important conversational features.

Some linguistic coding schemes do operate at the microlevel [12, 13]. They provide tools and framework for researchers to code conversations quantitively. To do so these assume independence of measures, and talk is coded as representing a single meaning or action [12, 13]. However, as Robinson [14] states, one communicative device can convey more than one meaning at a time, and most schemes cannot accurately code for these multiple functions. Stivers [15], Heritage [16], and Mangione-Smith [17], for example, have shown that one type of communication strategy used by GPs, called an ‘online commentary’, can simultaneously reassure a patient, and act to forecast what prescription they will receive at the end of a consultation. This dual function cannot be identified using a quantitative coding system. Furthermore, these systems often code talk at its semantic value only. For example, in the RIAS approach ‘yeah’ is consistently coded as ‘agrees’, with no observation of the placement or context in which this utterance occurs [18]. Linguistic coding schemes also lack attention to the specificities of word choice and tone of voice [12, 13], which patients report are important when discussing behaviour change [19-21]. Furthermore, these schemes do not analyse utterances within their sequential context. For example, Stivers has shown that silence in specific sequential contexts, such as following a question, can be used to display “passive resistance” to a treatment recommendation p.50 [22]. However, linguistic coding schemes would not have been able to place silence within the wider sequential context, and uncover the interactional work this was doing [18].

Therefore, of the range of methods that could have been included, only conversation and discourse analysis which examine and explicate systematically observable features of interaction were included in our review. We had initially explained our rationale on p.6, and have expanded this explanation on lines 112-124, p6, in response to this comment. We now further describe the empirical methods used during the micro-level approaches of conversation and discourse analysis. We explicate why these methods are more appropriate for this particular research question than the coding frameworks, interview studies, and theoretical interpretations.

3) The origin of the search terms is unclear. Did you only use MeSH terms or others?
Search strategy 1 used the default keyword search (.mp.) for Ovid, meaning that we searched title, abstract, and keywords amongst other fields. This strategy was easily replicated in the social science databases as it is not reliant on MeSH terms.

Search strategy 2 did include MeSH terms. However, they were combined with ‘OR’ with a search line for searches in the default keyword search. This meant that at no point were we doing a MeSH only search.

We provide our full strategy in additional file 1. However, we agree that had not provided full-details in the body of text. Therefore, in response to this comment, and the editors request to further clarify our methods, we have expanded our section on data searching. We now have added detail to our search descriptions from lines 164-178, p8 which additionally includes the dates of each individual search, and we highlight where we have used free-text searches and where we have used free-text searches alongside MeSH terms.

4) If many studies were published in social science journals that were not coded with MeSH terms, leading to potentially missing relevant studies, why didn't you include additional non-MeSH terms?

We detail in our response to comment 3 above that at no point were we doing a MeSH only search. MeSH terms were included in search strategy 2, however, they were combined with ‘OR’ with a search line for searches in the default keyword search. We have also detailed in our response to comment 3 changes we have made to the manuscript to enhance the clarity in reporting of our search strategy here.

It is the case that many social science journals do not include MeSH terms. We thought it important to highlight this in our limitations as these relied on key-word searches only. However, the key social science journals included in Medline (Sociology of Health and Illness, and Social Science and Medicine) are given MeSH terms. We have now clarified in text that ‘some of these do not use MeSH terms’ rather than ‘these do not use MeSH terms’ (p27, line 33).

5) It is unclear why 2 search strategies were required?

Our initial knowledge of the field prior to starting this review showed two approaches to reporting. Either titles and abstracts focusing on one particular health behaviour, and how it was discussed, or those focusing more broadly on aspects of behaviours change. Both types of studies contained analysis and discussion of behaviour change talk. We therefore decided in two search strategies to appropriately capture studies reported in both of these ways.

We have further clarified the reasoning behind the two search strategies is outlined on lines 170 on page 8, before the full processes are described: “We used two different strategies to capture the variety of reporting in this field.”
In regards to the literature search strategies, was the first line necessary as discussions about behaviour change and various health states and patient-physician conversation are related to health. Not all health settings where behaviour change is a major topic were included but general practice and primary care were used. What about cardiac rehabilitation?

We are happy to clarify the reasoning behind our strategies here. We consulted with an experienced information specialist when designing this search. We do feel that this first line is necessary, as the role of this part of the strategy was to narrow the search specifically to the field of health.

The reviewer is right that one option for this search would be to list every setting where health behaviour change talk could possibly occur. However, due to the range of healthcare settings (and the variability in the names of setting depending on country), this list would be unlikely to be exhaustive and may have missed studies. We used an alternative strategy. The reason for the first line (\textit{(medic* or treatment* or care* or healthcare* or health* or patient* or doctor* or clinic* or physician* or primary care* or consult* or or general practi* or family practi*)}), which includes the terms ‘health’ and ‘care’ as well as ‘doctor’ and ‘patient’ (and synonyms and related terms) was to identify literature from the field of health and healthcare without listing all the healthcare settings where health behaviour change talk could possibly occur. This cast a broad search with results from many healthcare settings, as reflected in the amount of studies that we screened. The reason for the inclusion of primary care studies is not because the search did not identify studies from other settings, but because other studies identified did not meet our eligibility criteria.

It is unclear why organ donation and life support were included as search terms.

We considered the possibility that discussing advanced decisions around organ donation, or end of life care could be potentially relevant. This was because, although not repeated behaviours, these are sustained over the long-term. However, no papers retrieved both covered this topic and were eligible for inclusion.

It was mentioned in the limitations section that most of the included studies were from general practice, yet general practice was a search term. Had other health settings been included, they may also have been captured.

Please see our detailed response to comment 6 above. We designed our strategy with an information specialist who included terms to catch a range of healthcare settings which were not limited to primary care. The reason for the inclusion of primary care studies is not because the search did not identify studies from other settings, but because other studies identified did not meet our eligibility criteria.

Why was material from 1945 included if DA didn't being until the 1950s?

DA did indeed emerge fully as a discipline in the 1950s, and we state when each discipline emerged in text on page 8, line [167-169]: “We did not limit by date because conversation analysis emerged as a discipline in 1960s, and discourse analysis in the 1950s.” However, we were keen not to miss any early work form this emerging discipline that could have been potentially eligible so we searched from 1945,
or database inception, to ensure our search was thorough. Reviewer one had commented that this paper was overlong, therefore we have not added detailed clarification of this in text. This is because these dates increased rather than limited the studies we were screening, so we do not feel justification is necessary, as this choice will not mean we have missed any studies. However, if the editor would like us to clarify these dates in text we would be happy to do so.

10) Why were discussion sections included as data in addition to results (excerpts)? References to discussion sections appeared on page 16. These seem out of place and not necessarily helpful to the presentation of results.

The data extraction processes we followed were in line with best practice for conducting an aggregative data synthesis from conversation and discourse analysis studies [1].

Parry and Land’s guide for systematic reviewing conversation and discourse analytic studies recommend that the following aspects of data should be extracted: (1) Phenomenon (in brief); (2) Phenomenon in author’s own words; (3) Research question for this finding (if applicable); (4) Number of episodes pertaining to this finding; (5) Archetypal sequence; (6) Features of the talk in which the phenomenon is produced – i.e. aspects of the sequential/interactional context in which it arises; (7) Implications of these environmental [interactional] features; (8) Sequence and/or turn design features of the phenomenon; (9) Interactional effects of these design features (10) Overarching function of the phenomenon; (11) Author-proposed implications; (12) Other implications; (13) Reviewer’s notes.

These elements occur throughout the results and discussion section of these studies. Some features such as (2) Phenomenon in author’s own words; (7) Implications of these environmental [interactional] features, and (11) Author-proposed implications, were often only present in the discussion section. To have not extracted and included data from the discussion section would firstly be a deviation from best practice and, secondly, would have meant that the author’s interpretation of the implications of their findings could not have been included.

We have already stated in our response to comment 1, that these data necessitate an aggregative approach to analysis, and this is the approach which is recommended for synthesizing these types of data [1, 23]. The reason for this is because, as reviewers, we have no access to the original data, only to fragments of conversational practices which were chosen by the authors to illustrate their points. Without access to the original data we must rely on the author’s explication of the conversational practices they observed, and the meanings they attributed to this. These explications of practice and meaning are presented in both the results and discussion sections, and so we followed best practice and extracted and aggregated these data accordingly.

11) Page 15 - in the excerpt provided, the link is between the health issue and behaviours, the potential consequence and the motivation (being a new parent and wanting to be around for the baby). Getting the person to recognise that what they want (to be with baby - the motivation) is opposed to the potential consequence of the behaviour (not achieving weight loss). It is more than just linking the behaviour to a medically relevant concern; it is helping the person to recognise the dissonance between their behaviour and the desired outcome.
Thank you for this comment. However, the reviewer here is interpreting the data further than the evidence presented, rather than grounding analysis in observable and stable conversational practices. This is just one excerpt that the authors have used to illustrate a wider practice. The consistent feature of this wider practice identified by the authors (who had access to, and analysed, the full data set beyond this excerpt) is that weight is in some way associated with health.

As the reviewer states, this talk could serve the function of “helping the person to recognise the dissonance between their behaviour and the desired outcome”, but it also could not. A conversation analyst does not ask because they cannot know what internal effect this talk has on the patient’s thoughts and feelings. All we do know is how the patient responds to this talk. This response is the burden of proof used in conversation analysis (known as the next turn proof procedure)[24]. It is not surmising what something may be doing, or hypothesising what internal thoughts things may be generating, but showing consistent patterns between an action (e.g. linking weight and health) and how people respond (e.g. resistance displays).

12) Page 23 - Please explain what was interesting/important/relevant about the included excerpt before moving onto the final category.

This comment refers to excerpt 6 on page 22. What is relevant about this excerpt is that it illustrates how clinicians drop the topic in response to resistance displays, and move to discuss less delicate matters. We had previously indicated that excerpt 6 illustrated this point, however we have now expanded this section to better highlight the relevance of this excerpt (p.22, lines 202-205): “This is illustrated in excerpt 6 where the patient displays resistance to discussion of smoking and the doctor responds by changing the topic to talk about medication.”

13) Page 27 & 29 - if patient-initiated conversation was successful, how might clinicians facilitate this talk? This would be an important take-away for a clinician who reads this article looking for advice on having conversations about behaviour change with patients.

We agree this would be useful but there was no evidence presented on how clinicians can best facilitate talk after patient initiation. However, through initiating health behaviour change talk, the patient has displayed receptivity to subsequent discussion. This discussion could use the collaborative approach which we have outlined, as it focused in eliciting and incorporating patient views. It would be appropriate in this situation as the patient has displayed a willingness to share views and engage in discussion. We have added a section on page 28, lines [63-67] which outlines this important take-away for clinicians.

14) Page 30 - Lines 92-95 - it is stated that guidelines mention delicacy of discussion but provide little support on how to deal with resistance. Please link to literature that provides this support.

Thank you for this comment. We think the reviewer here is referring to literature on MI which purports...
to provide support in dealing with resistance. However, this literature, firstly, deals with resistance to change, not conversational displays of resistance, which, as we have detailed in our response to comment one, are different things. Secondly although MI theory does claim to address resistance, empirical studies of MI in practice shows that this is not necessarily the case. One study (excluded from this review due to Spanish language) used conversation analysis to examine how motivational interviewing is operationalized in practice [25]. The authors found that, when faced with resistance, some actions taken by clinicians “such as confronting non-negotiated problems, clinging to the protocol, or prematurely emphasizing willingness to change- shift the MI session towards the professional. This often triggers a defensive patient response and/or results in lost opportunities to help the patient reflect…”. Actions taken by clinicians to address patients with high resistance to change tended to enhance confrontational behaviours. Therefore, we have not linked to MI literature on this as we are not confident it provides the support to which the reviewer refers. We have, however, added references to smoking cessation, weight management, and alcohol-use guidelines which mention delicacy of discussion but provide little support on how to deal with resistance.

15) As previously mentioned, motivational interviewing addresses many of the issues identified in these results, such as how to deal with resistance and any revision should incorporate these concepts to assist clinicians in these types of conversations.

We would like to demur from this suggestion. MI purports to deal with resistance, but whether it does so in fact, or achieves behaviour change, is open to some question. For example, in the latest version of the Cochrane review of MI for smoking cessation (currently being finalized), there was no strong evidence to support the effectiveness of MI. Compared with no intervention, the risk ratio for abstinence for MI compared with no intervention was 0.82 (0.62 to 1.10). Adding MI to other smoking cessation interventions, the RR was 1.06 (0.84 to 1.35). Studies that incorporated fidelity testing gave an RR 0.87 (0.54 to 1.40), showing that whether fidelity was monitored or not did not make any difference to these conclusions.

We do not think it is reasonable to ask us to talk about one particular approach to behaviour change talk that is not promoted in guidelines in many countries and does not illuminate the findings of this review. This is not a study of MI nor did we approach the analysis with the lens of MI because this is not compatible with CA and DA practice and would undermine the approach we were seeking to follow. The strength of using conversation and discourse analysis in this case is that we were able to highlight conversational practices clinicians use when giving day-to-day behaviour change advice that fits within a typical consultation. By aggregating data from everyday behavior change talk we were able to make recommendations for everyday practice. Conversely, to use MI requires both additional training and, in many cases, consultation time. However, some principles of MI were evident in these day-to-day behaviour change conversations and, as we have detailed in our response to comment 1, we have included some discussion of how our result relate to MI in our discussion section (p.30, line 107-117)

16) Minor reference formatting issue - There are several places where "Error! Reference source not found" appears in text.

Thank you for highlighting this. We have amended these error messages.
Emmanouil Smyrnakis (Reviewer 3): This is a very interesting manuscript in a very important topic for PHC - the Health behaviour change talk.

First of all I would like to mention that authors took into consideration all recommended changes for reviewers that improved the final version of the manuscript.

It's a manuscript written in a simple scientific language - easy to understand by readers. They used methodology that follows the research methodology guidelines. Table and Results are presented appropriately and there are clear messages in discussion. There is a good discussion of results with relevant literature. Authors point out the limitation of the study - limitations that are expected at this kind of research. This paper rises new research questions that is really important for future studies.

1) Minor correction
p.17, line 77 [d) Patient initiated discussions] have to corrected to [c) Patient initiated discussions]

Thank you for highlighting this typo. We have amended the document accordingly.

1. Parry RH, Land V: Systematically reviewing and synthesizing evidence from conversation analytic and related discursive research to inform healthcare communication practice and policy: an illustrated guide. BMC Medical Research Methodology 2013, 13(69).
13. Roter D, Larson S: The Roter interaction analysis system (RIAS): utility and flexibility for


22. Stivers T: Parent resistance to physicians' treatment recommendations: one resource for initiating a negotiation of the treatment decision. (1041-0236 (Print)).

