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.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Learning a new way of living together: A qualitative study exploring the relationship changes and intervention needs of patients with cardiovascular disease and their partners
AUTHORS	Tulloch, Heather; Bouchard, Karen; Clyde, Matthew; Madrazo, Lorenzo; Demidenko, Natasha; Johnson, Susan; Greenman, Paul

VERSION 1 – REVIEW

REVIEWER	Sonal Patil, MD, MSPH Department of Family and Community Medicine, University of Missouri, USA
REVIEW RETURNED	18-Aug-2019

GENERAL COMMENTS	This qualitative study looks at the perceived needs and impact of CVD on the couple relationship. Additionally, the study provides directions for couples-based interventions for CVD management, which is an important contribution to the literature. Further information on methods is needed to assess generalizability and make valid conclusions about the results as mentioned below. Some patients had a clinician-patient relationship with the interviewers, but researchers do not explicitly state how many patients had previous relationships with the interviewers. Even though the researchers have mentioned the reasons and interests in the research topic, no mention of the influence of interviewers' bias and assumptions due to the previous clinician-patient relationship. Not clear mention of who was responsible for recruitment and how patients were approached for recruitment. How many patients refused and reasons for non-participation of patients are not mentioned (COREQ checklist states page 10 but only information on recruited participants and one dropout mentioned). Also, was the recruitment limited to 16 patients due to data saturation. Due to the clinician-patient relationships of researchers with recruited participants information on how description and explanation of research was done during the consent process should be provided as one couple dropped off from the study as it was stressful for the patients to speak about her heart condition; was it not clear to participants that their CVD diagnosis will be discussed during focus group? The setting and location of the focus groups are not mentioned. Field notes were not analyzed, but the reasons for this exclusion is not mentioned. As some interviewers had clinician-patient relationships field notes on contextual details and non-verbal expressions would be insightful. Even though researchers have marked quotations for if it was the spouse or the patient quotation, they have not provided information if quotations were from different participants (participant numbers are missing). Need to

	clarify major and minor categories from results to prioritize intervention resources. Also, explanation on why the transcribed documents were not returned to patients for validation is needed, especially as researchers included the focus group results in a caregiver guide for partners of patients at UOHI upon hospital discharge. Researchers recruited couples who were in relationships for >= 2years. The description of the sample does not include the range of years of couple relationships in recruited participants. It will be interesting to know if there is any interaction of a number of years of relationships and outcome categories of content analysis (was over the protection of patient common with longer duration of a relationship, and emotional and communication disconnection feature of relationships of shorter durations).

REVIEWER	Noa Vilchinsky Universitat Bar-Ilan, Department of Psychology
REVIEW RETURNED	09-Sep-2019

GENERAL COMMENTS	Thank you for the opportunity to review the manuscript titled, “Learning a new way of living together: A qualitative study exploring the relationship changes and intervention needs of patients with cardiovascular disease and their partners." Manuscript Number: bmjopen-2019-032948 This manuscript, via qualitative interviews and focus groups, shades light on interpersonal processes going on among partners coping with cardiac illness. The study also suggests paths for interventions based on the data accumulated from these participants regarding their needs while striving to cope with this health challenge. I am in complete agreement with the authors’ main statement, which is that the relationship component and caregivers’ needs in the context of cardiac illness must be investigated. In this sense, I see the paper as highly contributing to our awareness of this population and its specific needs. The paper is also very well written and the analysis has been performed in a satisfactory way. I have only few minor comments which I present in the order of the text and with the aim of improving the manuscript. 1. Abstract: the line: “little has been done to address this potentially important component of care”. This sentence was a bit vague in my opinion. It wasn’t clear as to what stands for: “important component of care”. Also, it wasn’t clear if the authors mean that not enough research has been done on this issue or that not enough clinical attention has been payed to the population under investigation. I suggest to edit for better clarity. 2. Introduction: page 5: “Supportive spouses may also model heart-healthy behaviours such as consuming fruits and vegetables and engaging in physical”. This is true only if the spouses are health-oriented themselves. I suggest deleting this sentence since it doesn’t provide a strong enough case for the importance of partners’ support. Another option is to base on previous findings showing that partners’ support contributes to better health promoting behaviors among cardiac patients. See for example an integration of findings in this regard in the chapter: Self-Management in the Context of Cardiac Impairments. In: E. Martz, (Ed.) (2017)., Promoting Self-Management of Chronic Impairments: Theories and Practice. Oxford: Oxford University Press.

	3. Discussion: page 21: The idea of attachment as playing a critical role in couples' relationship in the context of cardiac illness is indeed relevant and was studied among both cardiac patients (e.g. Spousal support and cardiac patients' Distress: The moderating role of attachment orientation. Journal of Family Psychology, 24, 2010, 508-512); and their caregivers (e.g. Cardiac caregivers' burden and depressive symptoms: The moderational role of attachment orientations. Health Psychology, 34, 2015, 262–269.). Yet, since in the current study participants were not interviewed with regard to their attachment orientations and since previous findings point to different processes than suggested in the current manuscript, I suggest to omit the paragraph regarding attachment. 4. Discussion: page 21: " It is apparent that partners have been neglected and deprived of care to date, despite their clear contribution to our health care system". This sentence should be backed up with more data. Few references that might be relevant: i. Revenson et al (2016). Caregiving in the Illness Context. Hampshire, England: Weily. ii. Undiagnosed, untreated, unknown: PTSD among cardiac patients' partners. 2017, Frontiers in Psychology, 8, 1-3. doi: 10.3389/fpsyg.2017.01265 5. Limitations: Since the interviews were taken place at one-time point only, the findings cannot reveal how intimate relationships and participants' needs in this context may change over time. As the effects of marital satisfaction may be different depending the cardiac illness timeline [e.g. Dekel, et al (2013). Marital satisfaction and depression among couples following men's acute coronary syndrome: Testing dyadic dynamics in a longitudinal design. British Journal of Health Psychology, 19, 347-362.], this lacuna may be discussed as well. Editorial 1. Page 6: "a feeling a loss of the partner" – is there a typo here? 2. Table 2, under "role changes"- should it be: "struggled with his doctors?

REVIEWER	Helle Spindler Aarhus University - Department of Psychology
REVIEW RETURNED	05-Nov-2019

GENERAL COMMENTS	Overall, a well written manuscript that focuses on an important, so far somewhat neglected area of research. As such, this manuscript adds to a growing body of research within this important area. Introduction Page 7, line 22-23 The authors state that three additional studies in this area were published, since review they cited. To my knowledge at least one additional paper (Nissen et al., 2016) covering this area has been published, possible more, hence the literature review in this area may not be exhaustive. Other than that, the introduction provides a good background for the paper as a whole, and the introduction of the ORBIT model is very relevant. Methods It is stated that the focus groups cover CVD and not specific diagnostic groups. While this provides a good starting point for a general understanding of couples needs and desires, this may

	preclude any specific needs and desires specific to a diagnostic group. As such, CVD covers a wide area of different diagnoses and these differences may results in different challenges. Hence, a few words regarding the choice of a general CVD group vs. a specific diagnostic group could be relevant in the methods section. Also, the study is conducted using only focus groups. Although it is argued that this provides an arena for patient and partner to share their different views on their joint experience, the disconnection and miscommunication mentioned in the results could suggests that either partner or patient may withhold important information in a focus group, that may be shared in an individual interview. This should be commented on in relation to a possible bias in information, also considering that one patient had to withdraw due to her distress when discussing her heart condition. Results The results section is relatively clear, however, some of the quotes seems redundant as they are a repetition (no new information), hence an approach in which some quotes are summed in prose rather than listed as in the current format may provide a more condense overview of the findings, to stay focused on the essence within each theme. Discussion Overall, the discussion deals with the core themes found in the analysis, however, some issues are discussed introducing entirely new literature without outlining the essence of this theory for the uninformed reader, ie. attachment theory. This provides a skewed line of focus from introduction to discussion as the discussion opens up a whole new line of theory that is not really covered. Reconsider the use of attachment theory and whether this could be used in a way that is better at connecting the introduction and discussion. Page 21 line 42-43 The authors write how they observe that some couples would collaborate and agree upon adjustments in lifestyle … - this could be discussed using “communal coping” as a theoretical framework, a framework, which has already been used to discuss couples coping in CVD. On page 23 research on calcification is all of a sudden used to substantiate some of the current findings, although this approach in discussing results has not been taken before. Although this may be relevant is seems that this paragraph as well may be condensed rather than stretching the argument. As such parts of the discussion could be sharpened and condensed while still getting the message across.

VERSION 1 – AUTHOR RESPONSE

Reviewer #1

This qualitative study looks at the perceived needs and impact of CVD on the couple relationship. Additionally, the study provides directions for couples-based interventions for CVD management, which is an important contribution to the literature.

Thank you for your positive feedback.

Some patients had a clinician-patient relationship with the interviewers, but researchers do not explicitly state how many patients had previous relationships with the interviewers. Even though the researchers have mentioned the reasons and interests in the research topic, no mention of the influence of interviewers' bias and assumptions due to the previous clinician-patient relationship.

We apologize for this omission. Four patient-participants were known to the clinician-researchers. The focus on these relationships was on individual care as part of cardiac rehabilitation. None of the spouses were known to the researchers. Due to our clinical experience, we were aware of a growing need for services for not only the patient, but also the partner. As such, couples were asked what they might help them cope better with heart disease. It is important to note that conventional content analysis (used in this study) ascribes to a "naturalistic" paradigm of research, which assumes that there are multiple perspectives of the data and that the researchers' positionality (i.e., their thoughts and feelings towards the data, subject matter, and participants) necessarily influences the data analysis; Hseish & Shannon, 2005). As such, researchers are mindful of how their relationship to the participant as well as the topic may ultimately shape their interpretation of the data. In contrast to more objectivist forms of coding data (e.g., summative forms of content analysis), these previous relationships or interests do not stand as barriers to the research process. Rather, they provide initial vantage points with which to view the data and provide more context to the area of study that will assist the researcher in his/her interpretations. Nevertheless, it is still important for a researcher using conventional content analysis to report and be mindful of how these relationships may shape the data (particularly with respect to power dynamics). We now explicitly state that number of clinician-patient relationships on page 9, as well as note the potential for bias in our limitations section.

Not clear mention of who was responsible for recruitment and how patients were approached for recruitment.
How many patients refused and reasons for non-participation of patients are not mentioned (COREQ checklist states page 10 but only information on recruited participants and one dropout mentioned).

We appreciate the reviewer's question and now recognize that additional information would be helpful to the reader. One of the researchers (HT) was responsible for recruitment. We used purposive sampling procedures to acquire participation from cardiac patients and their spouses. This is a non-probabilistic or non-random form of sampling that involved identifying individuals that have experienced a phenomenon of interest (i.e., cardiac event) and recruiting from this sample (in our case, making announcements at cardiac rehabilitation classes). Once this population was identified, we relied on the availability and willingness of individuals to participate in our study (Palinkas et al., 2015). That is, if interested, patients approached the recruiter, screened for eligibility, and scheduled for a focus group session. As this form of sampling does not aim to be "representative" of the target population in a statistical sense, the number of individuals eligible to participate but refused is not required. In this context, a comparison of the characteristics of those who participated versus those who did not, in order to evaluate whether the results were impacted by the characteristics of non-participants) is not conducted. We have added information regarding recruitment in the text (page 8).

Also, was the recruitment limited to 16 patients due to data saturation?

Yes, we were open to recruiting additional patients and running more groups, however, we are confident that data saturation was met with the 16 dyads. This number of participants is consistent with methods research evaluating the sample sizes required to achieve data saturation in focus group research (Guest et al., 2017; Hennink et al., 2019). We added a sentence on page 10 stating that data saturation was reached.

Due to the clinician-patient relationships of researchers with recruited participants, information on how description and explanation of research was done during the consent process should be provided as one couple dropped off from the study as it was stressful for the patients to speak about her heart condition; was it not clear to participants that their CVD diagnosis will be discussed during focus group?

We appreciate the reviewer's question. As noted above, the first author (HT) made announcements to potential participants in cardiac rehabilitation. In these announcements, she stated, "We recognize that dealing with a heart condition can be difficult for patients and their significant others. We are recruiting patients and their partners to participate in a focus group meeting so that we might better understand your experiences and concerns with heart disease. Our goal is to improve the services we offer to patients and their partners." A similar message was stated before the start of the focus group. As such, it was made clear to all participants that we would be discussing their CVD condition and how that condition impacts their relationship. Despite these statements and consent to participate, one patient found it difficult to continue discussing her cardiac condition. This is not entirely surprising. Our clinical experience and previous research (Hare et al., 2014; Vilchinsky et al., 2017) indicates that many patients with CVD experience distress post cardiac event. To assist the reader, we have added the announcement statements in the methods section on page 8.

The setting and location of the focus groups are not mentioned.

We apologize for this omission. We have now added that the focus groups were conducted in a meeting room at the hospital.

Field notes were not analyzed, but the reasons for this exclusion is not mentioned. As some interviewers had clinician-patient relationships, field notes on contextual details and non-verbal expressions would be insightful.

We must apologize for our mis-use of the term field notes. Our notes should not have been classified as field notes. We recognize that field notes are used as a means for documenting relevant contextual information that inform data analysis (for a description of field notes and their uses in qualitative research, please see Phillip & Lauderdale, 2018). The notes that were taken in our research more closely resemble prompts for additional questions to be asked during the focus groups. We collected minimal contextual information (e.g., researcher impressions of the data, demeanor of participants, etc.) during the data collection process; as such, we determined that these notes would not provide any further value to our interpretations of the data, thus were not analyzed formally. We apologize for misleading the reader and we now stated clearly on page 9 that field notes were not taken.

Even though researchers have marked quotations for if it was the spouse or the patient quotation, they have not provided information if quotations were from different participants (participant numbers are missing).

We apologize for this omission. We have now added participant numbers to the quotes provided.

Need to clarify major and minor categories from results to prioritize intervention resources.

We appreciate the reviewer's suggestion. However, it is important to note that conventional content analysis is primarily a qualitative form a data analysis that goes beyond the counting of words or messages found in the data (Vaismoradi et al., 2013). Instead, language is classified into categories that represent similar meanings in order to develop an understanding of underlying patterns found in the data. It is not typical in content analysis, using a conventional approach, to rank categories in terms of significance. Indeed, some researchers have cautioned against counting codes and ranking categories as there is a danger of missing out on the context (Morgan, 1993). For example, frequent occurrence of a code might reflect the participants' willingness or ability to talk about a certain subject rather than indicate the significance of an experience to a particular topic. As such, we did not establish a hierarchy of categories (i.e., major and minor) and therefore did not prioritize intervention resources based on these categories.

Also, explanation on why the transcribed documents were not returned to patients for validation is needed, especially as researchers included the focus group results in a caregiver guide for partners of patients at UOHI upon hospital discharge.

Thank you for pointing out this omission. While we recognize that there are certain advantages to interviewee transcript review (ITR) such as reducing unequal power relations amongst the researcher and participant and providing an opportunity to clarify opinions/experiences, there are also disadvantages of ITR. For example, ITR can be cumbersome for participants and can raise ethical concerns (e.g., the sensitive nature of information - medical history, relationship concerns). Furthermore, there is evidence that ITR may produce transcripts that are only minimally higher in quality (Hagens et al., 2009). On a practical level, previous research also notes that few participants respond to requests to review transcripts. We acknowledge that there is still an ongoing debate about whether to undergo ITR (Mero-Jaffe, 2011), but in light of the disadvantages reported, we opted to not return the transcribed documents to participants. A statement explaining our reasoning may be found on page 9.

Researchers recruited couples who were in relationships for >= 2years. The description of the sample does not include the range of years of couple relationships in recruited participants. It will be interesting to know if there is any interaction of a number of years of relationships and outcome categories of content analysis (was over the protection of patient common with longer duration of a relationship, and emotional and communication disconnection feature of relationships of shorter durations).

We appreciate your interest. Unfortunately, we did not collect data on the number of years in the couple relationship. We now acknowledge this limitation in the discussion section and note that future research would do well to include and analyze by this variable as suggested.

Reviewer #2

This manuscript, via qualitative interviews and focus groups, shades light on interpersonal processes going on among partners coping with cardiac illness. The study also suggests paths for interventions based on the data accumulated from these participants regarding their needs while striving to cope with this health challenge.
I am in complete agreement with the authors' main statement, which is that the relationship component and caregivers' needs in the context of cardiac illness must be investigated. In this sense, I see the paper as highly contributing to our awareness of this population and its specific needs.

Thank you. We appreciate the reviewer's interest in this work.

The paper is very well written and the analysis has been performed in a satisfactory way.

Thank you for your positive feedback.

I have only few minor comments which I present in the order of the text and with the aim of improving the manuscript.

1. Abstract: the line: "little has been done to address this potentially important component of care". This sentence was a bit vague in my opinion. It wasn't clear as to what stands for: "important component of care". Also, it wasn't clear if the authors mean that not enough research has been done on this issue or that not enough clinical attention has been payed to the population under investigation. I suggest to edit for better clarity.

We apologize for the vague statement and lack of clarity. It has been revised to read "...little research has been done to address the couple relationship as a potentially important component of cardiac care."

2. Introduction: page 5: "Supportive spouses may also model heart-healthy behaviours such as consuming fruits and vegetables and engaging in physical". This is true only if the spouses are health-oriented themselves. I suggest deleting this sentence since it doesn't provide a strong enough case for the importance of partners' support. Another option is to base on previous findings showing that partners' support contributes to better health promoting behaviors among cardiac patients. See for example an integration of findings in this regard in the chapter: Self-Management in the Context of Cardiac Impairments. In: E. Martz, (Ed.) (2017)., Promoting Self-Management of Chronic Impairments: Theories and Practice. Oxford: Oxford University Press.

Thank you for this suggestion. We have deleted this sentence.

3. Discussion: page 21: The idea of attachment as playing a critical role in couples' relationship in the context of cardiac illness is indeed relevant and was studied among both cardiac patients (e.g. Spousal support and cardiac patients' Distress: The moderating role of attachment orientation. Journal of Family Psychology, 24, 2010, 508-512); and their caregivers (e.g. Cardiac caregivers' burden and depressive symptoms: The moderational role of attachment orientations. Health Psychology, 34, 2015, 262–269.). Yet, since in the current study participants were not interviewed with regard to their attachment orientations and since previous findings point to different processes than suggested in the current manuscript, I suggest to omit the paragraph regarding attachment.

We appreciate the reviewer's point and have deleted this paragraph as a result.

4. Discussion: page 21: "It is apparent that partners have been neglected and deprived of care to date, despite their clear contribution to our health care system". This sentence should be backed up with more data.
i. Revenson et al (2016). Caregiving in the Illness Context. Hampshire, England: Weily.
ii. Undiagnosed, untreated, unknown: PTSD among cardiac patients' partners. 2017, Frontiers in Psychology, 8, 1-3. doi: 10.3389/fpsyg.2017.01265

We appreciate this suggestion. We have added these references, as well as a statement that many caregivers experience trauma symptoms, to support our claims on page 21.

5. Limitations: Since the interviews were taken place at one-time point only, the findings cannot reveal how intimate relationships and participants' needs in this context may change over time. As the effects of marital satisfaction may be different depending the cardiac illness timeline [e.g. Dekel, et al (2013). Marital satisfaction and depression among couples following men's acute coronary syndrome: Testing dyadic dynamics in a longitudinal design. British Journal of Health Psychology, 19, 347-362.], this lacuna may be discussed as well.

We appreciate the reviewer's point and thank her for this additional reference. We have added this point to our limitation section.

Page 6: "a feeling a loss of the partner" – is there a typo here?

We thank the reviewer for her careful review. This error has been fixed.

Table 2, under "role changes"- should it be: "struggled with his doctors?

Again, we appreciate the reviewer's careful review. In this case, the text is correct. The caregiver struggled with doctors and nurses saying "take care of yourself." We have added participant type (patient/partner) to the table to facilitate understanding.

Reviewer #3

Overall, a well written manuscript that focuses on an important, so far somewhat neglected area of research. As such, this manuscript adds to a growing body of research within this important area.

Thank you for your positive feedback on our writing as well as the acknowledgement that this is an important area of research.

Page 7, line 22-23
The authors state that three additional studies in this area were published, since review they cited. To my knowledge at least one additional paper (Nissen et al., 2016) covering this area has been published, possible more, hence the literature review in this area may not be exhaustive.

We thank the reviewer for bringing this paper to our attention. We note, however, that this study is in an oncology context. Our paper, in contrast, focuses exclusively on research in the cardiovascular context. To clarify this point to the reader, we have added "in a cardiac context" in this sentence.

Further, as it is always possible that a study was missed in our literature search, we now state, “Since this review, ***to our knowledge***, three additional studies ***in the cardiac context*** were published.”

Other than that, the introduction provides a good background for the paper as a whole, and the introduction of the ORBIT model is very relevant.

Thank you for your positive feedback regarding the introduction.

It is stated that the focus groups cover CVD and not specific diagnostic groups. While this provides a good starting point for a general understanding of couples needs and desires, this may preclude any specific needs and desires specific to a diagnostic group. As such, CVD covers a wide area of different diagnoses and these differences may results in different challenges. Hence, a few words regarding the choice of a general CVD group vs. a specific diagnostic group could be relevant in the methods section.

We appreciate the comments, and agree that the couples’ needs may vary depending on the CVD diagnosis. We chose to include CVD of any kind as previous research in this context/population has been restricted to select populations (e.g., patients with atrial fibrillation, heart failure). Our aim was to explore how heart disease, in general (i.e., not disease specific), impacted couple relationships. Data saturation was met with this diverse sample. Future research would do well, however, to recruit a larger number of dyads from many diagnostic groups in order to determine if different challenges and needs are highlighted by each group. The size of our current sample precluded these analyses. We now note this limitation and call for future research in our discussion.

Also, the study is conducted using only focus groups. Although it is argued that this provides an arena for patient and partner to share their different views on their joint experience, the disconnection and miscommunication mentioned in the results could suggests that either partner or patient may withhold important information in a focus group, that may be shared in an individual interview. This should be commented on in relation to a possible bias in information, also considering that one patient had to withdraw due to her distress when discussing her heart condition.

Focus groups were chosen in this study as this method is useful for facilitating interactive and intensive discussions among participants with shared experiences (e.g., heart event affecting couple relationships). Focus groups position participants as experts of their social worlds and can help to reduce unequal power relationships amongst the researcher and participant that can often manifest in individual interviews. Individual interviews, however, may be more appropriate when discussing sensitive information and are less prone to social desirability bias. We acknowledge that it is possible that participants withheld information in the group format and that this information may have been more likely to be expressed in either a couples-based interview or in an individual interview. However, as a main focus of the study was to elicit participants’ needs for intervention, we opted to use focus groups. Nevertheless, we have included a comment about the potential limitation of focus groups in our discussion. We also recommend that future work consider augmenting focus groups with individual interviews, particularly if the interview questions may be personal in nature or possibly invoke some discomfort.

The results section is relatively clear, however, some of the quotes seems redundant as they are a repetition (no new information), hence an approach in which some quotes are summed in prose rather than listed as in the current format may provide a more condense overview of the findings, to stay focused on the essence within each theme.

As suggested, we removed redundant quotes. We hope that this provides a more condensed overview of the findings.

Overall, the discussion deals with the core themes found in the analysis, however, some issues are discussed introducing entirely new literature without outlining the essence of this theory for the uninformed reader, ie. attachment theory. This provides a skewed line of focus from introduction to discussion as the discussion opens up a whole new line of theory that is not really covered. Reconsider the use of attachment theory and whether this could be used in a way that is better at connecting the introduction and discussion.

We appreciate this and the previous reviewer's opinion. As per reviewer #2's suggestion, this section has been deleted.

Page 21 line 42-43
The authors write how they observe that some couples would collaborate and agree upon adjustments in lifestyle … - this could be discussed using "communal coping" as a theoretical framework, a framework, which has already been used to discuss couples coping in CVD.

Thank you for this suggestion. We agree with your comments that including a discussion of "communal coping" within the manuscript is appropriate. This discussion is now included on page 20. We state: "Similar to findings from a study of couples managing atrial fibrillation, we observed that some couples would collaborate and agree upon adjustments in lifestyle as a way to cope with uncertainty. Developing shared appraisals of a stressor, that is, viewing a problem as "ours" versus "yours," and then engaging in collaborative problem solving has been described as a process of communal coping. Burgeoning evidence indicates that these shared appraisals may facilitate better adjustment to chronic illness and improve health behaviours." Please note that references for this text are found in the main paper.

On page 23 research on calcification is all of a sudden used to substantiate some of the current findings, although this approach in discussing results has not been taken before. Although this may be relevant is seems that this paragraph as well may be condensed rather than stretching the argument. As such parts of the discussion could be sharpened and condensed while still getting the message across.

We completely agree with your point and have condensed the argument as suggested.

References:

Guest, G., Namey, E., & McKenna, K. (2017). How Many Focus Groups Are Enough? Building an Evidence Base for Nonprobability Sample Sizes. *Field Methods*, *29*(1), 3–22.

Hagens, V., Dobrow, M.J. & Chafe, R. (2009). Interviewee Transcript Review: assessing the impact on qualitative research. *BMC Med Res Methodol* **9,** 47 doi:10.1186/1471-2288-9-47

Hare, D., Roukhsati, S., Johansson, P. & Jaarsma, T. (2014). Depression and cardiovascular disease: A clinical review. *European Heart Journal*, 35 (21): 1365-72. doi: 10.1093/eurheartj/eht462.

Hennink, M. M., Kaiser, B. N., & Weber, M. B. (2019). What Influences Saturation? Estimating Sample Sizes in Focus Group Research. *Qualitative Health Research*, *29*(10), 1483–1496. https://doi.org/10.1177/1049732318821692

Hsieh, H. & Shannon, S. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research,* 15 (9): 1277-88.

Mero-Jaffe, I. (2011). 'Is that what I Said?' Interview Transcript Approval by Participants: An Aspect of Ethics in Qualitative Research. *International Journal of Qualitative Methods*, 10 (3), 231-47. https://doi.org/10.1177/160940691101000304

Morgan DL. (1993). Qualitative content analysis: a guide to paths not taken. *Qualitative Health Research,* 3: 112–121.

Palinkas LA, Horwitz SM, Green CA, Wisdom JP, Duan N, Hoagwood K. (2015). Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research. *Adm Policy Ment Health*; 42(5):533–544. doi:10.1007/s10488-013-0528-y

Phillippi, J. & Lauderdale, J. (2018). A guide to field notes for qualitative research: Context and conversation. Qualitative Health Research, Feb;28(3):381-388. doi: 10.1177/1049732317697102.

Vaismoradi, M., Turunen, H. & Bondas, T. (2013). Content analysis and thematic analysis: Implications for conducting a qualitative descriptive study. Nursing and Health Sciences, 15, 398-405.

Vilchinsky, N., Ginzburg, K., Fait, K. & Foa, E. (2017). Cardiac-disease-induced PTSD (CID-PTSD) : A systematic review. Clinical Psychology Review, 55; 92-106.

VERSION 2 – REVIEW

REVIEWER	Sonal Patil University of Missouri, Department of Family and Community Medicine.
REVIEW RETURNED	26-Dec-2019

GENERAL COMMENTS	The authors have addressed all reviewer comments satisfactorily.

REVIEWER	Noa Vilchinsky Bar-Ilan University
REVIEW RETURNED	27-Dec-2019

GENERAL COMMENTS	One minor typo I have detected on page 9: "Field notes were note taken" I guess it should be: "not taken".

REVIEWER	Helle Spindler Aarhus University - Department of Psychology
REVIEW RETURNED	20-Jan-2020

GENERAL COMMENTS	The resubmission has clearly improved the manuscript and almost all of my concerns have been met. However, the authors state that the paper suggested as highly relevant to include, Nissen et al, 2016 is not applicable as it concerns oncology. This is simply not the case, as is evident from the title of the publication in question. Nissen, N. K., Jónsdóttir, M., Spindler, H., & Zwisler, A. D. O. (2018). Resistance to change: Role of relationship and communal coping for coronary heart disease patients and their partners in making lifestyle changes. Scandinavian journal of public health, 46(6), 659-666. In addition to the title mentioning both the role of the relationship as well as communal coping in CVD, the paper in question is based on qualitative methods, ie. focusgroup and individual interview and does not use diagnostic groups. Hence, the overlap between this paper and the manuscript in both methods and content is considerable. Based on this I would very much like to make sure that no other relevant papers are not included in this manuscript and I suggest that the authors urgently consider redoing their literature search, in order to achieve this goal before publication goes ahead.

VERSION 2 – AUTHOR RESPONSE

RESPONSES TO REVIEWERS

Reviewer #1

No comments to address.

Reviewer #2

I enjoyed reviewing this paper very much. Well done for a very nice and contributing paper! One minor typo I have detected on page 9: "Field notes were note taken" I guess it should be: "not taken".

Thank you again for your positive comments! We have corrected this typo.

Reviewer #3

The resubmission has clearly improved the manuscript and almost all of my concerns have been met. However, the authors state that the paper suggested as highly relevant to include, Nissen et al, 2016 is not applicable as it concerns oncology. This is simply not the case, as is evident from the title of the publication in question. Nissen, N. K., Jónsdóttir, M., Spindler, H., & Zwisler, A. D. O. (2018). Resistance to change: Role of relationship and communal coping for coronary heart disease patients and their partners in making lifestyle changes. Scandinavian journal of public health, 46(6), 659-666. In addition to the title mentioning both the role of the relationship as well as communal coping in CVD, the paper in question is based on qualitative methods, ie. Focus group and individual interview and does not use diagnostic groups. Hence, the overlap between this paper and the manuscript in both methods and content is considerable. Based on this I would very much like to make sure that no other relevant papers are not included in this manuscript and I suggest that the authors urgently consider redoing their literature search, in order to achieve this goal before publication goes ahead.

We thank the reviewer for providing the full reference to the Nissen article. There was some confusion as the previous comment noted that it was published in 2016, but it is now clear that it was published in 2018. As such, we were able to locate the article. Nonetheless, to ensure that we did not miss any other relevant papers, we enlisted our librarian to conduct a broad review of the literature on couples/partners of patients with CVD. The search strategy is below. The librarian reviewed all 1140 titles and was able to reduce the list of relevant articles to 264. I (HT, first author) then reviewed those 264 titles and was able to reduce the list to 80 potentially relevant articles that had not already been cited in our manuscript. I then reviewed all abstracts of these 80 articles. If it was not clear by the abstract, I reviewed the full paper; 16 papers were reviewed in full. The following were considered irrelevant and not cited in our manuscript for the following reasons: 1) 5 papers focused on spousal caregiver demands, lived experience and coping, but did not refer to the couple relationship (e.g., list of demanding tasks such as transportation); 2) 5 papers reported rates of sexual function/concerns of the patient or partner only with no or limited reference to the relationship (e.g., ratings of relationship satisfaction); 3) 1 paper simply reported the topics patients shared with their partner (e.g., physical symptoms), but not how/if this affected the relationship; and, 4) 2 reported patients' and spouses' health beliefs, mental health and/or coping, unrelated to the couple relationship. We now reference the three remaining articles (including the Nissen et al., 2018 article and another that was published since our original submission) in our introduction.

Search	Query	Items found
#23	Search (#20 AND #21) Filters: published in the last 10 years	1140
#22	Search (#20 AND #21)	2344
#21	Search (("Cardiovascular System"[Mesh] OR "Cardiovascular Diseases"[Mesh] OR "Cardiac Catheters"[Mesh] OR "Pacemaker, Artificial"[Mesh] OR "Cardiac Imaging Techniques"[Mesh] OR "Cardiology"[Mesh] OR "Cardiac Catheterization"[Mesh] OR "Cardiac Surgical Procedures"[Mesh] OR cardiac*[tiab] OR heart*[tiab] OR cardiolog*[tiab] OR cardiovasc*[tiab] OR coronary[tiab] OR vascular*[tiab] OR cerebrovasc*[tiab] OR arterial*[tiab] OR artery[tiab] OR arteries[tiab] OR aorta[tiab] OR aortic[tiab] OR vein*[tiab] OR venous*[tiab] OR valve[tiab] OR valvular[tiab] OR ventric*[tiab] OR arrhythm*[tiab] OR cardiomyopath*[tiab] OR infarct*[tiab] OR stroke*[tiab] OR hypertens*[tiab] OR endocardi*[tiab] OR myocardi*[tiab] OR pericardi*[tiab] OR angiog*[tiab] OR angioc*[tiab] OR Electrocardiograph*[tiab] OR	4368229

	Electrocardiogram*[tiab] OR ECG[tiab] OR EKG[tiab] OR ECGs[tiab] OR EKGs[tiab] OR holter*[tiab]))	
#20	Search ("Spouses"[Majr] OR "Sexual Partners"[Majr] OR "Marital Status"[Majr] OR Spouse*[ti] OR spousal[ti] OR Partner[ti] OR partners[ti] OR Married[ti] OR Marriage[ti] OR Marital[ti] OR Patient-partner[ti] OR Partner-patient[ti] OR Couple[ti] OR Couples-based[ti] OR Couple-based[ti] OR Couple-oriented[ti] OR intimate[ti] OR romantic[ti])	54297

VERSION 3 – REVIEW

REVIEWER	Helle Spindler Aarhus University - Department of Psychology
REVIEW RETURNED	03-Mar-2020

GENERAL COMMENTS	It has been a pleasure to read this resubmission, and I find that all my questions have been answered. Although initiated by my typo, a rerun of the literature review resulted in another 2 relevant articles being retrieved, hence, there is no doubt that the literature review is now up to date!