## 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

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| **TITLE (PROVISIONAL)** | Development and evaluation of a WeChat-based life review program for cancer patients : Protocol for a randomized controlled trial |
| **AUTHORS** | Zhang, Xiaoling; Xiao, Huimin |

## VERSION 1 – REVIEW

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| **REVIEWER** | Michael Murphy<br>UNSW, Sydney, Australia, St. Vincent's Hospital, Sydney, Australia |
| **REVIEW RETURNED** | 06-Dec-2017 |

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| **GENERAL COMMENTS** | Overall<br><br>Unfortunately, this paper does not flow. Does not read as a native English speaker<br><br>It is difficult to read this paper. It is hard to decipher whether this is due to my own background, whether it is a confusing topic, language skills or all of these combined.<br><br>E.g. Page 7 & 8<br>Mixing up, and need to go back and forth to comprehend the specifics of the intervention. The development has parts of the components etc. Hard to decipher what is the previously 'known' intervention, what is the intervention that they have previously worked on, and what is the WeChat specific part.<br><br>Abstract<br>Language/ Spelling errors e.g. tailed in place of ? tailored<br><br>Explain synchronous/ asynchronous better<br><br>Dissemination - ? not needed to be here<br><br>Illiterates – soften the term e.g. people with poor literacy skills<br><br>Life review – an explanation that it is a psychological intervention is needed. It is a uncommonly used term in psycho-oncology. It is later defined in the manuscript.<br><br>Introduction |

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| | Language does not flow e.g. deaths among global cancer patients.<br><br>Points do not flow.<br><br>“suffering from psycho-spiritual well being” – this does not make sense, oxymoron<br><br>No sense of whether the stats relate to China/ rural/ regional e.g. internet coverage<br><br>Have to check references all the time<br><br>Life review - Weak references after the 1963 one<br><br>A sense that the authors might compare the intervention to other therapies briefly e.g. “Meaning-Centered Psychotherapy: A Form of Psychotherapy for Patients With Cancer”, and/or CBT etc. Give the reader a sense of this project.<br><br>Weak referencing in general e.g. unable to decipher easily which papers the authors are indicating on Page 4, lines 22/23.<br><br><br>Methods and analysis<br><br>It may seem simple, but what is the hypothesis/ where is it written?<br><br>Was ethics approval required?<br><br>They have filled in n = 46 for each group – this is not always the case in randomisation<br>They should remove all numbers e.g. 92, from the study flow chart<br><br>*Participants*<br>* with the information provided at present, it would be hard to confidently repeat this study*<br><br>What is the stage of cancer?<br>Advanced stage vs<br>Early<br><br>Any cancer e.g. haematological and brain cancers are included?<br><br>Need to place a (4) in the exclusions<br><br>How are they screening for psychiatric diagnosis and/or suicidality?<br><br><br>*Randomisation*<br>Surely they need to randomise more than 92 numbers<br><br>Mixing up bind/ blind |

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| | The intervention – as above 'E.g. Page 7 & 8<br>Mixing up, and need to go back and forth to comprehend the specifics of the intervention. The development has parts of the components etc. Hard to decipher what is the previously 'known' intervention, what is the intervention that they have previously worked on, and what is the WeChat specific part."<br>How many contact points/ much time is it expected that the facilitator have with the participant?<br><br>What is the control group?<br><br>Outcome measures<br>There are <u>*three*</u> primary outcome measures.<br><br>Are there procedures in place for distressed patients?<br><br>Discussion<br>Much repetition/ could be cut down<br>Language/ spelling errors<br><br>** it would be best if any revision was read by new reviewers. I have spent time reading and re-reading this paper and so would be biased in reading it in future. In order to make sure that it is accessible to the public, a 'clear without prior knowledge' person should be able to read it. I am no longer such a person. |

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| **REVIEWER** | Suzanne Chambers<br>Menzies Health Institute QLD, Australia |
| **REVIEW RETURNED** | 10-Feb-2018 |

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| **GENERAL COMMENTS** | Rationale and introduction:<br>The authors need to provide a more critical appraisal for the evidence that psychosocial distress is a major risk for cancer mortality and overview the strength and limitations of this hypothesis. Many would suggest (for example the NIH National Cancer Institute) that there is still no strong evidence that stress directly affects cancer outcomes.<br>Similarly a more critical reflection on the evidence for life review is needed. For example a recent systematic review concluded that while therapeutic life review is potentially beneficial for people near the end of life, results should be interpreted with caution due to the limited number of randomized controlled trials and associated methodological weaknesses (Chan et al, Palliative Medicine, 2017).<br>I am not sure what is meant by the statement that life review may conflict with patients' medical treatment or nursing care? Can the authors please expand on this?<br>Method:<br>Provide data to support the power analysis for all the three primary outcomes and provide deeper evidence for this. These analyses should be based on more than one study and should also refer to the literature on psychosocial interventions for anxiety and depression after cancer, of which there are many systematic reviews that should be referred to. The study may be under powered given likely attrition. How will missing data be managed? |

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| | How will you control for cancer type and stage and variations in treatment regimens?<br>How will adherence to the WeChat-based life review programme be monitored?<br>Frameworks for e health interventions have been produced (e.g., https://www.jmir.org/2014/6/e146/ however there are others) how does this study incorporate these type of guidelines?<br>More detail is needed about the process used to validate the WeChat-based life review programme.<br>General Remarks<br>The manuscript requires some editing for style and grammar. |

**VERSION 1 – AUTHOR RESPONSE**

| Reviewers | Comments | Responses |
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| **Reviewer 1** | **Abstract** | |
| | 1. Language/ Spelling errors e.g. tailed in place of ? tailored | Thank you. We have corrected the spelling errors. (See P2, L21) |
| | 2. Explain synchronous/ asynchronous better. | Thank you. We have provided explanations to describe synchronous/ asynchronous communication. (See P2, L32-42) |
| | 3. Dissemination ? not needed to be here. | Thank you. We have deleted it. |
| | 4. Illiterates-soften the term e.g. people with poor literacy skills. | Thank you. We have replaced “Illiterates” with “people with poor literacy skills”. (See P3, L13) |
| | 5. Life review-an explanation that it is a psychological intervention is needed. It is a uncommonly used term in psycho-oncology. It is later defined in the manuscript. | Thank you. We have provided explanations of the life review intervention. (See P2, L13-21 ) |
| | **Introduction** | |
| | 1. Language does not flow e.g. deaths among global cancer patients. | Thank you. We have rewritten the Introduction to make it readable. (See P4, L6-10 ) |

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| | 2. Points do not flow. | Thank you. We have re-organized the Introduction section. (See P4-6) |
| | 3. "suffering from psycho-spiritual well being"–this does not make sense, oxymoron. | Thank you. We have corrected this spelling error. It should be "suffering from psycho-spiritual distress". (See P5, L15 ) |
| | 4. No sense of whether the stats relate to China/rural/regional e.g. Internet coverage. | Thank you. We have re-organized the content of this section. (See P5, L26-28) |
| | 5. Have to check references all the time. | Thank you. We have carefully rechecked the references and revised the errors. |
| | 6. Life review - Weak references after the 1963 one. | Thank you. We have updated the references for the life review. (See P4-5) |
| | 7. A sense that the authors might compare the intervention to other therapies briefly e.g. "Meaning-Centered Psychotherapy: A Form of Psychotherapy for Patients With Cancer, and/or CBT etc. Give the reader a sense of this project. | Thanks for your advice. We have briefly compared the life review intervention with Meaning-Centered Psychotherapy and CBT. (See P4, L52-56; P5, L1-13) |
| | 8. Weak referencing in general e.g. unable to decipher easily which papers the authors are indicating on Page 4, lines 22/23. | Thank you for your kind reminder. We have added references in the corresponding position of this sentence. (See P5, L-31) |
| | **Methods and analysis** | |
| | 1. It may seem simple, but what is the hypothesis/ where is it written? | Thank you. We have written the hypothesis in the Introduction section. (See P6, L33-39 ) |
| | 2. Was ethics approval required? | Yes, ethics approval has been obtained, in July 2017, please see the "Ethics" section. (See P16,L38-46 ) |

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| | 3. They have filled in n = 46 for each group, this is not always the case in randomisation. They should remove all numbers e.g. 92, from the study flow chart. | Thank you. We have removed all numbers from the study flow chart. (See Figure 1 ) |
| | **Participants** | |
| | 1. with the information provided at present, it would be hard to confidently repeat this study. | Thank you. We have provided additional information in the Participants section. (See P6-7 ) |
| | 2. What is the stage of cancer? Advanced stage vs Early | Thank you. We will recruit patients with Stage Ⅲ or Ⅳ cancer. (See P7, L15) |
| | 3. Any cancer e.g. haematological and brain cancers are included? Need to place a (4) in the exclusions. | Thank you. Haematological and brain cancers are excluded in this study. We have added this exclusion in this section. (See P7, L1-26) |
| | 4. How are they screening for psychiatric diagnosis and/or suicidality? | Thank you. We will check patient medical records to screen for patients with a psychiatric diagnosis. The Scale for Suicide Ideation (SSI) will be used to identify patients with indications of suicide. (See P15, L18-31) |
| | **Randomisation** | |
| | 1. Surely they need to randomise more than 92 numbers. | Thank you. We have revised it. (See P7, L46-56) |
| | 2. Mixing up bind/blind | Thank you. We have corrected the spelling error. (See P8, L5-7) |
| | **Intervention** | |
| | 1. Mixing up, and need to go back and forth to comprehend the specifics of the intervention. The development has parts of the components etc. | Thank you. We have re-organized the Intervention Section, and described the previous life review |

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| | Hard to decipher what is the previously 'known' intervention, what is the intervention that they have previously worked on, and what is the WeChat specific part." | intervention and the WeChat specific part. (See P8, L12-56) |
| | 2. How many contact points/much time is it expected that the facilitator have with the participant? | Thank you. The facilitator performs the life review interview with the participant once a week, and after the interview, the facilitator will contact the participant twice to ask whether he/she would like to add something about the last interview. |
| | 3. What is the control group? | Thank you. We have provided an explanation to describe the control group. (See P14, L3-10) |
| | **Outcome measures** | |
| | 1. There are three primary outcome measures. Are there procedures in place for distressed patients? | Thank you. We have provided relevant information that identifies distressed patients with anxiety or depression. (See P14, L20, L28) |
| | **Discussion** | |
| | 1. Much repetition/ could be cut down | Thank you. We have cut down the repeated content and revised it. (See P16-18) |
| | 2. Language/spelling errors | Thank you. We have corrected the language/spelling errors. (See P17, L11) |
| **Reviewer 2** | **Rationale and introduction** | |

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| | 1. The authors need to provide a more critical appraisal for the evidence that psychosocial distress is a major risk for cancer mortality and overview the strength and limitations of this hypothesis. Many would suggest (for example the NIH National Cancer Institute) that there is still no strong evidence that stress directly affects cancer outcomes. | I agree with you. There is still no strong evidence that stress directly affects cancer outcomes. Indeed, it has been revealed that cancer mortality is associated with psychological distress, although publication bias may exist. A meta-analysis has also found a dose-response effect that indicates that higher levels of psychological distress is linked with a 41% increased risk of cancer death. (See P4, L10-27) |
| | 2. Similarly a more critical reflection on the evidence for life review is needed. For example, a recent systematic review concluded that while therapeutic life review is potentially beneficial for people near the end of life, results should be interpreted with caution due to the limited number of randomized controlled trials and associated methodological weaknesses (Chan et al, Palliative Medicine, 2017). | Thank you. A recent systematic review by Chan has been used to critically reflect on the effects of life review on advanced cancer patients. (See P4, L42-53) |
| | 3. I am not sure what is meant by the statement that life review may conflict with patients' medical treatment or nursing care? Can the authors please expand on this? | Thank you. It is the life review time-schedule that may conflict with patients' additional medical treatment or nursing care. (P5, L15-24). |
| | **Method** | |
| | 1. Provide data to support the power analysis for all the three primary outcomes and provide deeper evidence for this. These analyses should be based on more than one study and should also refer to the literature on psychosocial interventions for anxiety | Thank you. We have provided data to support the power analysis for all three primary outcomes. (See P7, L35-43) |

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| | and depression after cancer, of which there are many systematic reviews that should be referred to. The study may be under powered given likely attrition. How will missing data be managed? | Missing data management has been added in the Data analysis section. (See P16, L7-9) |
| | 2. How will you control for cancer type and stage and variations in treatment regimens? | Thank you. We include patients with stage Ⅲ or Ⅳ cancer, with the exception of hematological and brain cancer. These patients' KPS should be more than 40%. |
| | 3. How will adherence to the WeChat-based life review program be monitored? | Thank you. We have described how the WeChat-based life review program will be monitored. (See P11, L24-34) |
| | 1. Frameworks for e-health interventions have been produced (e.g., https://www.jmir.org/2014/6/e146/ however there are others) how does this study incorporate these types of guidelines? | Thank you. We have carefully read the guidelines for e-health Interventions, but did not find anything suitable, because these guidelines target behavioral interventions rather than psychological ones. In order to make our program reliable, we have invited experts to valid it. |
| | 5. More detail is needed about the process used to validate the WeChat-based life review program. | Thank you. We have provided more details about the process used to validate the WeChat-based life review program. (See P9, L9-29) |
| | **General Remarks** | |
| | 1. The manuscript requires some editing for style and grammar. | Thank you. We have invited a native English speaker to edit this manuscript. |