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)	Neonatal Intensive Care Nurses' Knowledge and Beliefs Regarding Kangaroo Care in China: A National Survey
AUTHORS	Zhang, Yao; Deng, Qingqi; Zhu, Binghua; Li, Qiufang; Wang, Fang; Wang, Hua; Xu, Xinfen; Johnston , Linda

VERSION 1 – REVIEW

REVIEWER	Colette Cunningham University Hospital Waterford, Neonatal Intensive Care Unit, Waterford, Ireland
REVIEW RETURNED	20-Feb-2018

GENERAL COMMENTS	Overall, this research paper is justified in its relevance to the provision of KC in China and the development of policies and education strategies to implement it successfully as a primary standard of care in Chinese NICU's. However, there were some grammatical errors in the paper that need to be clarified and some outstanding clarification on bias and possible contamination that would be advisable to solve or report before this paper is accepted for possible publication. *The full title is not grammatically appropriate, please consider revising same. (for example, Nurses' knowledge and beliefs regarding kangaroo care in neonatal intensive care units in China). *Page 3 grammar error in the methods section of abstract (...comprised 90 items which were classified according TO...), (...Data WAS analyzed...). *Page 4 grammar error (...during the first few days of the infant??). A recurrent apparent omission in this paper is the clarification on whether there was possible contamination through education of the "Experienced Nurse" group. Questions that need to be clarified are: Was there a form of education that influenced these nurses to be willing to facilitate KC? Were the "Experienced Nurses" in the majority in the maternity hospitals where specialized care and expert staff would be more likely to be employed in the institution than the general hospital, thus inadvertently imparting knowledge informally and advising and promoting KC where the general hospital staff would be lacking this influence? This obviously may not be the case, but it must be considered, investigated and reported on to eliminate possible contamination and risk of bias. in the result section on page 6, it is reported that 391 of the 861 nurses worked in dedicated maternity hospitals. Were these 391 a percentage of the 411 that delivered KC as the "Experienced Nurses"? If so, it must certainly be clarified if unfair exposure to informal imparting of expertise regarding the benefits of KC took place. Reporting it in the paper makes the reader aware that contamination may have or may not have reflected the results presented.

	*Page 7 in the paragraph "Nursing knowledge of KC" has the first question of the survey asking if the nurses had experienced implementing KC. It is again an opportunity to clarify in the following results section of the paper if these nurses had some formal or informal training in KC that may have prompted them to facilitate it. *Page 11 in the discussion paragraph has a sentence that says..."our results show that even without informal training...", this is the first mention of training with regards to the nurses providing KC. This should be clarified pre the result section of the paper and not first introduced in the discussion. It still does not clarify the outstanding possibility of contamination from dedicated maternity staff informally imparting KC knowledge to nurses in the "Experienced Group". *The second sentence on page 12 of the paper has an incorrect sentence structure, please revise same. *On page 13 of the paper, it is said that the "Not Experienced KC" group lacked formal KC education and were easily misguided.....This again is problematic in its clarity of whether the "Experienced Group" were not educated either. It was previously said that neither group had formal training in KC facilitation, so why now state that the problem of lack of education influenced the "Not Experienced " group only and didn't supposedly impact the "Experienced Group"? *In the Recommendations for Practice section it is said that researchers should closely monitor the provision of KC to preterm infants. Should it not be said that all NICU nurses should monitor the provision of KC for preterm infants, once formally educated, and not just researchers? Nurses would be ideal advocates for its implementation as they are in a prime position as primary caregivers to implement it successfully as a routine primary standard of care in NICU's in China. Once these revisions have been clarified or reported on, this research paper should be published as it is of great importance in its ability to guide and formulate practice in NICU's across China. The paper's attributes include: -A clear and concise abstract. -Relevant and recognizable strengths and limitations. -An introduction that provides a strong background and justification for the research. -An appropriate data collection tool. -Minimisation of error with an aptly sized convenience sample. -Solid testing of the reliability of the data collection instrument. -Maintenance of confidentiality and appropriate statistical software. -Reporting of ethical considerations. -Impressive sample size and response rate.

REVIEWER	Rohan Joshi Eindhoven University Of Technology
REVIEW RETURNED	28-Feb-2018

GENERAL COMMENTS	The purpose of this study was to survey Chinese neonatal nurses about KC and investigate the differences between nurses who had experienced KC being delivered in the NICU versus those who had not. Major concerns: The introduction and the discussion section need considerable improvement in the way they are structured. At present, they are difficult to read and incoherent. Moreover, the standard of English is insufficient and needs a thorough revision and proofreading.

	Title: The title should indicate that this paper describes the results of a 'survey.' Abstract: Should be more succinct and to the point, especially the objectives. Introduction: The differences between KMC, KC and SSC are not clear to the reader. Ad hoc statistics of KC in South Africa are provided that do not fit into the narrative. 2nd para: Why is there insufficient knowledge about KC in China before 2016? Methods: Information about the pilot study is never discussed? How was this study administered? What were the findings? How were the results used to modify the survey of Engler? How many hospitals were the surveys sent to? Were these public or private hospitals? With regard to the practice of KC, there should be a breakdown based on geography. Results: How was experienced in KC defined? The results provided in multiple tables is far too detailed and lack focus. The differences between 'experienced with KC' versus 'not experienced with KC' seems arbitrary and quite unnecessary. Discussion: This section can be shortened and focused with more discussion on aspects that the results of this survey highlight, that a person skilled in the art and familiar with the Chinese healthcare system would be unaware of. It goes without saying that limiting parental visitation and inappropriate/insufficient NICU designs are a hindrance to KC. Those findings are not unique to the Chinese setting. There should be a discussion on why KC has a slow uptake in the Chinese setting despite being a proven therapy. This is where the survey, as administered fails in seeking answers to important questions since it has not been modified for the context in which it is administered.

VERSION 1 – AUTHOR RESPONSE

Replies to Reviewer 1

Specific Comments:

1：The full title is not grammatically appropriate, please consider revising same. (for example, Nurses' knowledge and beliefs regarding kangaroo care in neonatal intensive care units in China).

Response: Thank you for catching the grammatical error. We have revised the title to the following: 'Neonatal intensive care nurses' knowledge and beliefs regarding kangaroo care in China: A national survey'

2：**Page 3 grammar error** in the methods section of abstract (...comprised 90 items which were classified according TO...), (...Data WAS analyzed...).

Response: This error was revised to the following: 'This questionnaire comprised 90 items classified according to four domains: knowledge, practice, barriers and perception. Data were analysed using SPSS 20.0, and content analysis was used to summarize data derived from open-ended questions'.

3：**Page 4 grammar error** (...during the first few days of the infant??).

A recurrent apparent omission in this paper is the clarification on whether there was possible contamination through education of the "Experienced Nurse" group. Questions that need to be clarified are: Was there a form of education that influenced these nurses to be willing to facilitate KC? Were the "Experienced Nurses" in the majority in the maternity hospitals where specialized care and

expert staff would be more likely to be employed in the institution than the general hospital, thus inadvertently imparting knowledge informally and advising and promoting KC where the general hospital staff would be lacking this influence? This obviously may not be the case, but it must be considered, investigated, and reported on to eliminate possible contamination and risk of bias.
Response: This grammatical error was revised to the following: 'during the first few days of infants' lives'. We also clarified this matter in the 'Research Setting & Participants' section, following your suggestion.
A: Was there a form of education that influenced these nurses to be willing to facilitate KC?
Response: 'Experienced in KC' nurses, like 'Not Experienced' ones, had had no formal KC training. But we think there must have been some kind of informal training or education before they started to implement KC in their NICUs. And we added this explanation in 'Nurses' Knowledge of Kangaroo Care' section.
B:Were the "Experienced Nurses" in the majority in the maternity hospitals where specialized care and expert staff would be more likely to be employed in the institution than the general hospital, thus inadvertently imparting knowledge informally and advising and promoting KC where the general hospital staff would be lacking this influence?
Response: Although it is undeniable that nurses working in the maternity hospitals have more opportunities to attend academic lectures and conferences on maternal-infant healthcare than those who worked in general hospitals. We revised the discussion to reflect this confounding potential.

4：in the result section on **page 6**, it is reported that 391 of the 861 nurses worked in dedicated maternity hospitals. Were these 391 a percentage of the 411 that delivered KC as the "Experienced Nurses"? If so, it must certainly be clarified if unfair exposure to informal imparting of expertise regarding the benefits of KC took place. Reporting it in the paper makes the reader aware that contamination may have or may not have reflected the results presented.
Response: Thanks very much for this instructive suggestion. We clarified this point in the 'Results' section, under 'Demographic Characteristics of Participants': these 391 nurses were not all in theExperienced Nurses group (n=411), but were from among all participants in our study. We revised Table 1 as well to make this clearer.

Table 1: Descriptive Characteristics of Participants

Descriptive Characteristics	Number of Neonatal Nurses in Experienced in KC (n=411), n(%)	Number of Neonatal Nurses in Not Experienced in KC (n=450), n(%)
Gender		
Male	4 (1.0)	1 (0.2)
Female	407 (99.0)	449 (99.8)
Age		
18-25 years old	91 (22.1)	81 (18.0)
26-30 years	149 (36.3)	158 (35.1)
31-40 years	124 (30.2)	151 (33.6)
41-50 years	39 (9.4)	46 (10.2)
51-60 years	8 (2.0)	14 (3.1)
Highest Education Level		
Associate's Degree	147 (35.8)	169 (37.6)
Bachelor's Degree	251 (61.1)	256 (56.9)
Master's Degree	5 (1.2)	6 (1.3)
Other*	8 (1.9)	19 (4.2)
Hospital Types		
General Hospitals	169 (41.1)	301 (66.9)
Maternity Hospitals	242 (58.9)	149 (33.1)
NICU Level		
Level III	136 (33.1)	60 (13.3)
Level II	155 (37.7)	276 (61.3)
Level I	120 (29.2)	114 (25.3)

Geography		
Northeastern China	68 (16.6)	60 (13.3)
Eastern China	80 (19.5)	122 (27.1)
NorthernChina	100 (24.3)	39 (8.7)
Central China	33 (8.0)	36 (8.0)
Southern China	42 (10.2)	80 (17.8)
Southwestern China	16 (3.9)	46 (10.2)
Northwestern China	72 (17.5)	67 (14.9)

**Other: includes Doctoral Degree (n=2); Postgraduate Certificate (n=25)*

According to these findings, the number of NICU nurses working in general hospital in the No experienced KC group was larger than that working in maternity hospitals, andin the Experienced KC group, the reverse.

5：**Page 7** in the paragraph "Nursing knowledge of KC" has the first question of the survey asking if the nurses had experienced implementing KC. It is again an opportunity to clarify in the following results section of the paper if these nurses had some formal or informal training in KC that may have prompted them to facilitate it.
Response: Thanks for the valuable comments. In response to it, we added the following in the subsection on 'Nurses' Knowledge of Kangaroo Care': 'The findings showed that 58.9% (n=242) of these experienced KC nurses worked in dedicated maternity hospitals (and the others in general hospitals). In contrast, 66.9% (n=301) of no-experienced KC nurses worked in maternity units in general hospitals (and the others in dedicated maternity hospitals)'. We also clarified that nurses in maternity hospitals might be more likely to have had some informal training on KC or have had the opportunity to ask practical questions about the implementation and introduction of the practice and relevant guidelines.

6：**Page 11** in the discussion paragraph has a sentence that says..."our results show that even without informal training...", this is the first mention of training with regards to the nurses providing KC. This should be clarified prethe result section of the paper and not first introduced in the discussion. It still does not clarify the outstanding possibility of contamination from dedicated maternity staff informally imparting KC knowledge to nurses in the "Experienced Group".
Response: We appreciate the suggestion very much. To address it, we revised and clarified the discussion of informal training in 'Nurses' Knowledge of Kangaroo Care'. We also clarified there is not much the potential possibility of a confound or contamination from dedicated maternity staff informally imparting KC knowledge to nurses in the 'Experienced in KC Group', as the ratio of general hospital vs. maternity hospital nurses was very similar across groups.

7：**The second sentence on page 12** of the paper has an incorrect sentence structure, please revise same.
Response: This was revised to the following: 'Although KC is a key intervention for newborn health, there has been limited information available on KC practice in China, and parents and neonatal nurses generally cannot practice it with confidence'.

8：**On page 13 of the paper**, it is said that the "Not Experienced KC" group lacked formal KC education and were easily misguided.....This again is problematic in its clarity of whether the "Experienced Group" were not educated either. It was previously said that neither group had formal training in KC facilitation, so why now state that the problem of lack of education influenced the "Not Experienced " group only and didn't supposedly impact the "Experienced Group"?
Response: Thanks for your instructive comment. We tried to clarify that the nurses in the 'Experienced in KC Group' had not had formal training in KC but had very likely had informal training before they started implementation of KC in their NICUs. So that is why they may know KC better than nurses in the 'Not Experienced in KC' group. We demonstrated, however, that it would be better for both groups to have more knowledge and practical skills on KC.

9：**In the Recommendations for Practice section** it is said that researchers should closely monitor the provision of KC to preterm infants. Should it not be said that all NICU nurses should monitor the provision of KC for preterm infants, once formally educated, and not just researchers? Nurses would be ideal advocates for its implementation as they are in a prime position as primary caregivers to implement it successfully as a routine primary standard of care in NICU's in China.
Response: Thank you for catching this we used the wrong word. We have revised as follows: 'All NICU nurses should be encouraged to closely monitor KC delivery to prematureinfants'.

Replies to Reviewer 2
Major concerns: The introduction and the discussion section need considerable improvement in the way they are structured. At present, they are difficult to read and incoherent. Moreover, the standard of English is insufficient and needs a thorough revision and proofreading.
Specific Comments
1：Title: The title should indicate that this paper describes the results of a 'survey.'
Response: We have revised the title to the following: 'Neonatal intensive care nurses' knowledge and beliefs regarding kangaroo care in China: A national survey'.

2：Abstract: Should be more succinct and to the point, especially the objectives.
Response: Following your suggestion, we shortened the objective part in the abstract to the following: 'Kangaroo Care, a well-established parent-based intervention in neonatal intensive care units, with documented benefits for infants and their parents. In some countries, a modified version of kangaroo care called skin-to-skin care is routinely offered to infants who need neonatal intensive care; however, in China there remains a lack of knowledge and a reluctance to implement kangaroo care in hospitals. Therefore, our aim was to investigate the current knowledge, beliefs, and practices regarding kangaroo care among NICU nurses in China using the 'Kangaroo Care Questionnaire'.

3：Introduction: The differences between KMC, KC and SSC are not clear to the reader. Ad hoc statistics of KC in South Africa are provided that do not fit into the narrative.
2nd para: Why is there insufficient knowledge about KC in China before 2016?
Response：
A: Introduction: The differences between KMC, KC and SSC are not clear to the reader.
Response: We have revised the beginning of the 'Introduction' as follows: 'Kangaroo mother care (KMC) is an established, powerful, and easy-to-use method for promoting the health and well-being of preterm and full-term infants 1. The key features of KMC are as follows: early, continuous and prolonged skin-to-skin contact between mother and baby; exclusive breastfeeding (ideally); initiated in hospitals but can be continued at home; small babies discharged early ;adequate support and follow-up for home-based mothers; and a gentle and effective method, in that it reduces agitation, which is common in busy wards housing preterm infants KMC requires a very strict protocol 2; in contrast, Kangaroo Care (KC) is a broader term defined as skin-to-skin and chest-to-chest holding (sometimes called skin-to-skin contact) of the diaper-clad infant by a parent. A modified version of KC called intermittent skin-to-skin contact (SSC) is currently offered in resource-rich countries to infants who need neonatal intensive care; it is also offered to infants who require ventilator support or were born extremely premature 3. In contrast to KC, SSC is the practice of holding an infant upright on a parent's chest in a manner that provides maximum bare-skin ventral contact, thereby giving the newborn the opportunity to adjust outside the womb. Ideally, SSC is carried out immediately after birth and as often as parents can do it during the first few days of infants' lives.'.
B: Ad hoc statistics of KC in South Africa are provided that do not fit into the narrative.
Response: We revised the manuscript as follows: 'Over 82% of neonatal nurses practiced KC in their NICUs in the United States. More than 50% of all hospitals in South Africa also practice KC in some form or another. However, KC is applied much less in China.' We mentioned the statistics on KC in in US and in South Africa in order to emphasize the low application of KC in China, making for a distinctive situation.
C:Why is there insufficient knowledge about KC in China before 2016?
Response: Because of the sheer number of births and limited space in NICUs. There is little chance for nurses to know more about KC. Also, there is no formal, standard KC training or relevant guidelines across China. Gregson [1] in 2016 reported that kangaroo mother care is little known in China, but that with assistance from an international charity, UK midwives have helped to take

kangaroo care into China. KC remains novel and uncommon in China, however, and there is very little about this practice in Chinese peer-reviewed journals, even though KMC is recognized globally as an evidence-based solution for reducing mortality and improving health outcomes for babies in both high- and low-income countries.

4：Methods: Information about the pilot study is never discussed? How was this study administered? What were the findings? How were the results used to modify the survey of Engler? How many hospitals were the surveys sent to? Were these public or private hospitals? With regard to the practice of KC, there should be a breakdown based on geography.
Response: Thanks for your comments. We have described the details of the pilot study under 'Instruments' and also revised our manuscript as follows: 'A pilot study was undertaken with a convenience sample (n=68) in three public women's hospitals in Zhejiang province in order to determine the relevance of the items to the Chinese clinical context and to ascertain time taken to complete the survey. The Chinese version of the KCS is a 90-item questionnaire (79 quantitative items; 11 qualitative items) revised for thisstudy. As all Chinese nurses work full time, 9 questions regarding to working patterns were deleted. The questionnaire includes four (sub)scales respectively relating to Knowledge (17 items), Practice (18 items), Barriers (20 items), and Perceptions (24 items). Some quantitative items are answered on a five-point rating scale and others with true/false responses'.
A: Methods: Information about the pilot study is never discussed?
Response: We have now described the details of the pilot study in the 'Instruments' subsection.
B: How was this study administered? How many hospitals were the surveys sent to? Were these public or private hospitals?
Response: We sent the online survey to the three public women's hospitals in the city of Hangzhou, in Zhejiang Province.
C: What were the findings? How were the results used to modify the survey of Engler?
Response: We found that all nurses in China work full time; thus, 9 questions regarding to working patterns were deleted.
D: Withregard to the practice of KC, there should be a breakdown based on geography.
Response: Thanks for your valuable comments. We have added the breakdown by geography in the results section and in Table 1. We found that the majority of respondents in 'Experienced KC' group were from Northern and Eastern China. The main reason might be that these regions are more developed than other areas, but we think it is also associated with the response rate for each area.

Comment 5：Results: How was experienced in KC defined? The results provided in multiple tables is far too detailed and lack focus. The differences between 'experienced with KC' versus 'not experienced with KC' seems arbitrary and quite unnecessary.
Response: Thank you for your valuable comments. See our replies below.
A: Results: How was experienced in KC defined?
Response: We clarified the definition of 'Experienced KC' in 'Demographic Characteristics of Participants' in the results, as follows: 'We defined the standard for "experienced in KC" as implementation of at least 20 cases of KC in the last 12 months, which is widely recognized by the Chinese Association of Maternal and Child Health Care (the only authorized maternal and child healthcare organization in China)'.
B: Theresults provided in multiple tables is far too detailed and lack focus.
Response: Thank you for the comment. We deleted the previous Table 1, which covered the reliability and validity of the Mainland Chinese version of the Kangaroo Care Questionnaire. However, the other tables provide all the results of the survey. To make them easily readable, we have marked in bold for all the results with statically significant differences.
C: The differences between 'experienced with KC' versus 'not experienced with KC' seems arbitrary and quite unnecessary.
Response: Thanks for the comment. We understand your concern. The purpose of our study was to the current knowledge, beliefs, and practices regarding kangaroo care among NICU nurses in China and the current status of implementation of KC in China, which is at an early stage. To find out the potential barriers to KC, we expected, and found, the differences between 'Experienced in KC' group versus 'Not Experienced in KC' group in knowledge, perceptions, and practice were important.

6：Discussion: This section can be shortened and focused with more discussion on aspects that the results of this survey highlight, that a person skilled in the art and familiar with the Chinese healthcare system would be unaware of. It goes without saying that limiting parental visitation and inappropriate/insufficient NICU designs are a hindrance to KC. Those findings are not unique to the Chinese setting. There should be a discussion on why KC has a slow uptake in the Chinese setting despite being a proven therapy. This is where the survey, as administered fails in seeking answers to important questions since it has not been modified for the context in which it is administered.

Response： Thank you for your comments. See our replies below.

A: This section can be shortened and focused with more discussion on aspects that the results of this survey highlight, that a person skilled in the art and familiar with the Chinese healthcare system would be unaware of. It goes without saying that limiting parental visitation and inappropriate/insufficient NICU designs are a hindrance to KC. Those findings are not unique to the Chinese setting.

Response: Thank you for your valuable comments. We have cut our discussion down and separated it into four parts for the four scales, which may help it be clearer than before.

The main problem facing KC in China is that the Chinese healthcare system and government do not appreciate its importance. That is why we have written this paper and hope to publish it—to help make the Chinese government aware of the importance of KC. Indeed, these hindrances—limiting parental visitation and inappropriate NICU design—are not unique to the Chinese setting. But these are the biggest barriers for the current implementation of KC in China. We do think other barriers having distinctive characteristics of the Chinese setting, but not the biggest barrier for KC. Like the serious imbalance of distribution in medical resources of China. It is prevalent that the health resource unevenly distribution in different areas, higher quality resource are mostly concentrated in urban areas, while rural areas are relatively scarcity. Most of parents in rural areas in China would like to go to 'high quality' public hospitals in urban areas to give birth even if it's very far away from their home, which brings a lot of difficulties for them to implement KC while preterm infants were in hospital. We just want to clarify the current biggest barriers to implementing KC in China, which will call for more attention to promote the implementation of KC and change the unreasonable visitation policy and NICU design in China.

B: There should be a discussion on why KC has a slow uptake in the Chinese setting despite being a proven therapy. This is where the survey, as administered fails in seeking answers to important questions since it has not been modified for the context in which it is administered.

Response: We appreciate the suggestion very much. We have revised our manuscript as follows: 'Our study identified barriers to KC implementation including lack of consistentguidelines and standards, reluctance among medical staff to support KC due to safety fears, and hospital policy of denying parents access to NICU. Seidman's systematic review[23] proposed that resource-related barriers (lack of guidelines/education) and sociocultural barriers (concerns about medical conditions/care) negatively affected nurses; our study supports these points. Meanwhile, other studies also proposed that lack of knowledge and skills were main barriers to KC implementation [21,24-27], as well as medical staff reluctance to allow KC [26-29]. Resistance of medical staff is mainly associated with fear of harming infants and lack of experience and specific education in KC. These might be reasons why KC has had slow uptake in Chinese hospitals despite being a proven therapy'.

The reasons why KC has had a slow uptake in the Chinese setting relate to specific challenges and barriers around implementing it. Before this survey, we tried to promote KC in NICUs in women's hospital but met a lot of barriers in clinical practice. That's why we have done this survey: to identify the challenges and barriers around implementing KC in China, and then to try to solve them in order to facilitate KC.

Reference

1. Gregson S, Meadows J, Adams M, Williams S, Ruikan Y. Taking kangaroo care to China. *Midwives.* 2016;19:44-46.

VERSION 2 – REVIEW

REVIEWER	Colette Cunningham University Hospital Waterford Ireland
REVIEW RETURNED	25-Apr-2018

GENERAL COMMENTS	The structure of this article is very good and statistical and research methods are appropriate for the study undertaken. There is clarity of results and the discussion is well structured. The elimination of bias or acknowledgment of bias being attributable to the results is stated. This is very important for the reader and the use of this article in the formation of guidelines for other institutions. The topic is justified in its necessity and it has identified the need for education in KC across China. Further recommended research is warranted and this has been identified by the authors. The limitations are justified and the conclusion is concise. Minor revisions are needed in the form of sentence structure and grammar. I would otherwise recommend this article for publication. It has undeniably addressed the need for KC education in China.

REVIEWER	Rohan Joshi Eindhoven University Of Technology
REVIEW RETURNED	23-Apr-2018

GENERAL COMMENTS	1. Whatever differences the authors try to highlight between KC, KMS and SCC remain very vague. All three appear to be extended periods of skin-to-skin contact between infant and mother(or parent). Either this should be clarified upon or the authors should focus only on KC, which is the subject of this paper. 2. 2nd paragraph: A considerably better overview of the prevalence of kangarooing across the countries of the world can be given for countries which practice KC, those that don't and in particular outliers with regard geographical and cultural backgrounds. The outliers have more to teach than the countries that behave as expected – perhaps they implemented new regulatory changes or there were unique initiatives of private/public nature that catalysed change. The 2 data points that are currently provided are simply factual. They don't illuminate upon anything. 3. Penultimate paragraph: What is a 'high level' maternity hospital? Statistical Analysis: 'Data were analysed with Chi-squared for multinomial and (two-tailed) Fisher exact test. Two-sided $P<0.05$ was regarded as significant.' Both sentences are incomplete and should be fixed.

VERSION 2 – AUTHOR RESPONSE

Reply to Reviewer 1

The structure of this article is very good and statistical and research methods are appropriate for the study undertaken. There is clarity of results and the discussion is well structured. The elimination of bias or acknowledgment of bias being attributable to the results is stated. This is very important for the reader and the use of this article in the formation of guidelines for other institutions. The topic is justified in its necessity and it has identified the need for education in KC across China. Further

recommended research is warranted and this has been identified by the authors. The limitations are justified and the conclusion is concise. Minor revisions are needed in the form of sentence structure and grammar. I would otherwise recommend this article for publication. It has undeniably addressed the need for KC education in China.

Response: Thank you for your review. We appreciate your positive comments concerning our manuscript. The manuscript has been edited and proofread by Editage for English-language editing.

Reply to Reviewer 2
Thank you for the revision. Now, the Methods, results and in particular the discussion reads much more coherently. There remain some issues in the introduction:

1. Whatever differences the authors try to highlight between KC, KMS and SCC remain very vague. All three appear to be extended periods of skin-to-skin contact between infant and mother(or parent). Either this should be clarified upon or the authors should focus only on KC, which is the subject of this paper.

Response: Thank you for your comments. Although the subject of the paper is KC, KC is a broad term. Moreover, the definitions of KC, KMC and SSC are very similar, but not exact; therefore, we believe describing all three of them is warranted. We include additional information in our revised Introduction for clarity: 'Kangaroo care (KC), which is often also called kangaroo mother care (KMC) or skin-to-skin contact (SSC), is a method of neonatal care practiced on babies. This is typically performed with preterm infants, where the diaper-clad infant is held skin-to-skin with a parent, usually the mother. In contrast, KMC requires a very strict protocol. KMC is an established, powerful, and easy-to-use method for promoting the health and well-being of preterm and full-term infants1. The key features of KMC are as follows: early, continuous, and prolonged SSC between mother and baby; exclusive breastfeeding (ideally); initiated in hospitals but can be continued at home; small babies discharged early; adequate support and follow-up for home-based mothers; and a gentle and effective method, in that it reduces agitation, which is common in busy wards housing preterm infants2. Another modified version of KC—intermittent SSC—is the practice of holding an infant upright on a parent's chest in a manner that provides maximum bare-skin ventral contact, thereby giving the newborn the opportunity to adjust to the environment outside the womb3. Ideally, SSC is performed immediately after birth and as often as parents can do it during the first few days of the infant's life. Therefore, compared with KMC and SSC, the definition of KC is broader, and it is more widely used in clinical practice.'

2. 2nd paragraph: A considerably better overview of the prevalence of kangarooing across the countries of the world can be given for countries which practice KC, those that don't and in particular outliers with regard geographical and cultural backgrounds. The outliers have more to teach than the countries that behave as expected – perhaps they implemented new regulatory changes or there were unique initiatives of private/public nature that catalysed change. The 2 data points that are currently provided are simply factual. They don't illuminate upon anything.

Response: Thank you very much for your suggestions. Accordingly, we revised and clarified our second paragraph as follows: 'In Western and some non-Western countries, KC is a widespread, standardised, protocol-based care system for premature infants4. KC is widely known as a beneficial intervention to significantly improve the development of premature infants5 6. Over 82% of neonatal nurses practiced KC in their NICUs in the United States7. More than 50% of all hospitals in South Africa also practice KC in some form or another8. KC is widespread in neonatal intensive care units (NICUs) in several European countries (e.g. Belgium, Denmark, France, Italy, the Netherlands, Spain, Sweden, and the United Kingdom), which have reported encouraging results regarding parental participation (such as KC) in caring for babies9. However, KC is less utilized in China.'

3. Penultimate paragraph: What is a ‘high level’ maternity hospital?

Response: Thanks for your comments. We added the definition of ‘high level’ maternity hospital in the manuscript. High-level maternity hospitals means maternity hospitals in China that have over 500 beds and their own professional medical team. These hospitals are believed to have doctors with the best medical skills and provide high-quality medical care by employing outstanding medical techniques.

4. Statistical Analysis: ‘Data were analysed with Chi-squared for multinomial and (two-tailed) Fisher exact test. Two-sided P<0.05 was regarded as significant.’ Both sentences are incomplete and should be fixed.

Response: We apologize for this grammatical error, which we revised as follows: ‘Data were analysed with chi-squared tests for multinomial variables and Fisher’s exact tests (two-tailed). P-values < .05 (two-sided) were regarded as significant.’

VERSION 3 – REVIEW

REVIEWER	Rohan Joshi Eindhoven University of Technology
REVIEW RETURNED	03-Jul-2018

GENERAL COMMENTS	All comments raised in the previous review have been addressed.