

PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Correlates of mobile screen media use among children aged 0-8: a systematic review
AUTHORS	Paudel, Susan; Jancey, Jonine; Subedi, Narayan; Leavy, Justine

VERSION 1 – REVIEW

REVIEWER	Trina Hinkley Institute for Physical Activity and Nutrition, Deakin University
REVIEW RETURNED	24-Oct-2016

GENERAL COMMENTS	<p>This review summarises the literature relating to correlates of young children's mobile screen media use. Given the potentially increasing use of such devices, understanding the factors which may be associated with that use in vulnerable populations such as very young children, is essential. The authors provide a robust review of existing literature. However, there are some concerns which require attention prior to publication.</p> <p>* The introduction is not as clear as it could be. I have made some specific comments throughout which may be useful. In short, some sections seem repetitive and some not particularly relevant to the topic at hand. Further, some information which would be useful, such as prevalence of time in mobile screen media use, seems to be neglected.</p> <p>* Please use 'sex' throughout rather than 'gender' - sex is the biological construct we measure (i.e. male, female) whereas gender is the social construction of identity (e.g. homosexual, transsexual)</p> <p>* I encourage the authors to update their search to a more recent time point, particularly given the fact that such studies are only published in recent years.</p> <p>* my major concern for this paper is the non-consistent use of terms to describe the behaviours of interest. The authors appropriately use 'mobile screen media' in the title but this seems to be used interchangeably with 'screen time' which is generally used to refer to total screen time. As such, 'screen time' is not specific enough for this paper. I am not sure if the instances in which screen time is used to describe the behaviour of interest actually refer to total screen time or some other behaviour. I would encourage the authors to pick one term, define it early in the paper, and then use it consistently throughout to refer to their specific behaviours of interest.</p>
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	<p>* There are multiple typographic, spelling and grammatical errors throughout the paper. I encourage the authors to have someone skilled in these arts to thoroughly proof read the paper before resubmission.</p> <p>* The results section seems a little long given the small number of studies and findings available for reporting. The authors may be able to more succinctly report the major findings in this section.</p> <p>* The discussion largely reports the results with some links with previous research. It would be good if the authors could go further than this - discuss only those most 'important' findings - e.g. most consistent or most unusual - consider causal mechanisms, include much more discussion on the limitations of the literature reviewed (for instance, there is no mention of the study type or domains of correlates reported), and provide guidance for future research - what are the most critical things to consider in this emerging field.</p> <p>* with respect to the cross-sectional nature of the included studies, I caution the authors to soften some of their conclusions - cross-sectional studies cannot provide evidence of the impact of a correlate on a behaviour.</p> <p>The reviewer also provided a marked copy with additional comments. Please contact the publisher for full details.</p>
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REVIEWER	Tanja Matarma Faculty of clinical medicine, University of Turku, Finland
REVIEW RETURNED	14-Nov-2016

GENERAL COMMENTS	<p>Overall comments: I was happy to read the paper as the overall the paper seems adequate and legible. The categories selected are fine and the results are well written following these categories. Overall interpretation on the language is good and all the more specific criteria are told to be reported elsewhere. The ethical issues are covered. However, I address one moderate issue and some minor issues to resolve. The page lines were not continuous throughout the paper, thus, I refer to pages and lines in each comment.</p> <p>The outcome measure: I found this contradictory how you presented the outcome measure and what was actually included in the review. In p.7 line 22-23 the purpose of the review states that "...to identify the correlates of mobile screen media use.." and in page 8, line 17 it is stated that "this review focuses on mobile screen media devices rather than on traditional fixed screens." However, in p.9 line 12 it is said "...and d) any media device (defined as a combination of traditional media with at least one form of mobile screen media devices." Thus, what exactly is the outcome measure; only the mobile devices or also traditional ones such as TV? Or if it is both, then be precise please. In the studies included in this review, they do not focus only on mobile devices. Later on the terms used are "screen-viewing" (in page 13 line 2) or "screen time". You should specify the outcome measure term with what it includes and be consistent throughout the paper.</p>
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Minor comments:

- There were few typing errors which made it hard to follow the idea in the text, e.g. page 25 line 2: "reviewsfocusing on.." and "..screen timereport that.."

- To add, couple sentences needs revising; in p.22 lines 11-13; p.23 lines 1-4.

- In few sentences something is missing from sentence; in p.9 line 16, add with mobile devices after "..time"; in p. 19 line 11, add 'that' after found in "Lauricella et al. found.."; and in page 24, it says "it should be noted self-reported data,.. " which is unclear.

- In page 4 in Strengths, second paragraph: "..the findings, and gaps and limitations.." > remove the first and; and "..of the literature and highlighting.." > change to highlighted.

- Table 1 reports the search strategy over medline, that is OK. But, couldn't the point 23 have been "use" or "using" or "time" or similar time measuring words? Chosen words might limit the search in the end when combining all 5 and 21 and 24? Please explain the search strategy thoroughly. No word "correlate(s)" on search strategy? Even though the criteria are presented elsewhere, this review lacked slightly more specific details on the criteria and search strategy.

- The SN 23 was not explained in the text.

- Page 10 lines 6-8. Email alerts were created for the rest of the year 2015 for some databases but not for all. I find this confusing, could you please justify this decision?

- Page 12 line 4: How may participated to the exclusion process of papers? Please specify.

- Quality report was done and studies' qualities reported in tables. However, no further elaborated discussion on the effect of quality on results were made. I understand conclusions were hard to make but maybe few lines discussing on the quality of papers versus results?

- Discussion, page 22, line 7: The review was not conducted between 2009 and 2015 but the inclusion criteria was this. Please correct.

- Page 23, line 19: parents who used media screen in total? At all? Some amount? Please specify.

- Page 24, line 16: "..association for any media use.." with family incomes I reckon? Higher or lower? Please specify the direction of the association.

- Page 24, line 19: "..ownership and access.." ..of what? Please specify.

- Was the selection bias in the studies included in the review not reported? If were then it would be valuable to add them to this report as well.

- No limitations were expressed for search strategy. Were there any on your opinion?

	<p>- Conclusion: I would consider recommending further studies including both traditional and mobile devices in future research as when studying only one part of the "screen time" it excludes the other out and both, using mobile and traditional devices, are affecting child's sedentary behavior and physical activity.</p> <p>- Flow chart of the inclusion and exclusion of studies would have been valuable</p>
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REVIEWER	Fiona Scott The University of Sheffield, United Kingdom
REVIEW RETURNED	18-Nov-2016

GENERAL COMMENTS	<p>This systematic review is timely and much needed. The methodology appears broadly appropriate within the disciplinary framework (public health) and its related epistemological assumptions. My main objections lie with the framing of the review, particularly with the limited criticality shown in the interpretation of existing/ previous studies the 'background' section and some of the inferences/ language used in the 'discussion' section. Whilst the systematic review itself seems to be objective (within the disciplinary framework and its related epistemological assumptions), this limited criticality means that the review comes across as having a broadly negative rather than positive bias in its framing of children's engagement with screens.</p> <p>The 'background' section frames the systematic review rather uncritically. Whilst it is drawing on reputable studies and statistics, meaning is sometimes inferred rather than explained (for example, page 7, line 1 "an Australian study reported that 61% of Australians would choose a mobile phone over a television" – what point are the authors trying to make here?) The authors do not address the wealth of existing literature that contests some of these points of view.</p> <p>Page 6 - the statement on lines 8-10 "the daily screen time of traditional media such as television has decreased..." requires more nuance. For some age groups (e.g. 3-4) watching live TV on the TV set is still the dominant media activity (in the UK, see Ofcom's media use and attitudes report, 2016)</p> <p>Page 6 - the statement on line 11-12 "due to its impact on children's sedentary behaviour and play opportunities" is contestable. Some studies have shown a correlation (though not proven causation) between parent-reported screen time and 'sedentary' behaviours. There is a wide range of literature that contests the idea that children's engagement with screen is sedentary (e.g. Lewis, 2011, Marsh et al., 2005) and indeed suggests that children play actively with and during engagement with screens (Bird & Edwards, 2014).</p> <p>Page 6 - the statement on line 14-16 "guidelines recommend" – global perspectives on screen time for under 2s are rapidly shifting, for example, the AAP recently lifted its complete ban on screen time for under 2s.</p> <p>Page 6 - the statement on line 20-22 "use of screen media for entertainment" – it is important to note that the lines between 'entertainment' and 'education' are much contested</p>
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	<p>– see for example Davidson (2009) on social literacy learning at home with digital platforms.</p> <p>Page 7 - lines 5-6 "access to at least one screen" – whilst this figure may be true, many studies suggest that the trend re: children viewing alone in their bedrooms is actually reversing (see the Ofcom media use and attitudes report, 2015).</p> <p>Page 7 - lines 10-11 "potentially ignoring the negative effects" – the studies cited point to parent use of screens/devices with their children and correlations between screen time and negative effects, but they do not suggest that parents are 'ignoring the negative impact' such activities may have. It is necessary to consult parent attitude literature to understand parent opinions and decision making re: their children's use of screens/devices.</p> <p>Page 24 – lines 11-14 "both positive and negative impacts" – the authors acknowledge that children's increased skills with, and use of, mobile screens can have positive and negative impacts. They then suggest two negative impacts and no positive impacts. This may be a small point, but combined with the framing of the 'background' section, comes across as symptomatic of the review's broadly negative rather than positive bias in its framing of children's engagement with screens.</p> <p>Page 25 – lines 7-8 "parents are using these devices as babysitters" – the use of the term 'babysitters' and 'pacifiers' here seems inappropriate and judgmental rather than academic. Likewise "parent may not be aware" seems purely speculative. Again, it is necessary to consult parent attitude literature to understand parent opinions and decision making re: their children's use of screens/devices.</p> <p>In the 'results' section (p. 15), the authors point out that "no association was found between the use of smartphones, tablets or any other touchscreens and child's gender and body mass index". They return to gender in their discussion, but not the BMI. I found this disappointing, as it is an important finding and in conflict with the authors' characterization of screen time as 'sedentary' in the 'background' section.</p> <p>I have selected 'no' for question 2 of the 'review checklist' because the following sentence may need further consideration: "Research indicates these young children are exceeding daily screen time recommendations". As highlighted above, global perspectives on screen time for under 2s are rapidly shifting, for example, the AAP recently lifted its complete ban on screen time for under 2s.</p>
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REVIEWER	Dr. Raymond CK Chung The Hong Kong Polytechnic University
REVIEW RETURNED	19-Dec-2016

GENERAL COMMENTS	The research topic itself was hot but it was simply a systematic review to identify all the trials related to correlational factors of mobile screen media among 0-8 years old children. The authors were highly recommended to add the meta-analysis components to summarize all important findings for all eligible studies.
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	<p>Otherwise, it was not important to specify all statistical indicators like adjusted odds ratio and standardized coefficients etc. The flowchart in figure 1 was clear but it seems that it was not essential for a systematic review unless a meta-analysis had been conducted. Overall speaking, this manuscript had lots of space for improvement before it could be considered for publication.</p> <p>Major revisions:</p> <ol style="list-style-type: none"> 1) All tables and figures should be placed at the back of the manuscript; 2) Please include the meta-analysis component including detection of publication bias by funnel plot analysis or Egger regression and fixed or random-effect models etc to strengthen the content of this manuscript and increase its significant impact on this hot research topic about correlational factors of mobile screen media among kids aged 0-8; 3) On page 11, Table 1, it was not too much meaningful to quote the numbers for each search item; 4) The whole manuscript should be revised with caution as there were lots of grammar mistakes; 5) The format of the whole manuscript should be revised again as the current format was not idealistic and rather messy.
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REVIEWER	M Sriram Iyengar Texas A&M Health Science Center, USA
REVIEW RETURNED	13-Feb-2017

GENERAL COMMENTS	<p>This systematic review "Correlates of mobile media use among children aged 0-8" has been done diligently, taking into account the requirements for high-quality systematic reviews. However the paper suffers from several major issues.</p> <ol style="list-style-type: none"> 1) Really not the fault of the authors, is that only 8 papers finally satisfied review criteria causing a serious limitation on the value of this study. Even worse, some variables appeared in only 2 or 3 of the papers reviewed. 2) One study that was included, by Wu was located in Hong Kong, whereas the 7 others were in the US and UK. While the US and UK share similar cultures and language, Hong Kong seems to be unlikely to be very similar. Therefore, including it in a study concerning cultural factors needs further justification. 3) A statement such as "This review found that older young children (4-8 years) were more likely to have higher mobile screen media use" found on page 22 line 10 implies some kind of statistical analysis was done across all the papers, perhaps combining data from several studies. More explanation is needed to justify this statement. 4) Further, given that the comparison group is 0 - 3 years old, is the above statement surprising? It seems highly unlikely that infants less than 1 year old are given access to mobile devices or have the capability or interest to indulge in mobile screen use. <p>In summary, although there are some interesting aspects to this paper, the low sample size and concerns such as #3 and #4 above seriously dilute the value of this paper in a major archival journal. However, it could be of interest in a conference or workshop.</p>
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VERSION 1 – AUTHOR RESPONSE

Response to comments from Trina Hinkley

Comment: The introduction is not as clear as it could be. I have made some specific comments throughout which may be useful. In short, some sections seem repetitive and some not particularly relevant to the topic at hand. Further, some information which would be useful, such as prevalence of time in mobile screen media use, seems to be neglected.

Author's response:

The introduction has been revised as suggested. Please refer to the first and second paragraph of introduction.

Comment:

Please use 'sex' throughout rather than 'gender' - sex is the biological construct we measure (i.e. male, female) whereas gender is the social construction of identity (e.g. Homosexual, transsexual).

Author's response:

Gender has been replaced by sex as suggested throughout the manuscript.

Comment: I encourage the authors to update their search to a more recent time point, particularly given the fact that such studies are only published in recent years.

Author's response:

The search has been updated and papers published till March 2017 have been included. Please refer to Methods and Results section.

Comment:

My major concern for this paper is the non-consistent use of terms to describe the behaviours of interest. The authors appropriately use 'mobile screen media' in the title but this seems to be used interchangeably with 'screen time' which is generally used to refer to total screen time. As such, 'screen time' is not specific enough for this paper. I am not sure if the instances in which screen time is used to describe the behavior of interest actually refer total screen time or some other behaviour. I would encourage the authors to pick on term, define it early in the paper, and then use it consistently throughout to refer to their specific behaviors of interest.

Author's response:

Mobile screen media use was the primary outcome measure. Mobile screen media use refers to children's use of mobile screens, such as mobile phones, electronic tablets, handheld computers or PDAs. The term 'screen time' is used to denote both the fixed screens and mobile media screen device use. This terminology is used when referring to the screen time guidelines for children and to refer to other articles that have studied children's total screen time including both fixed and mobile screens.

Comment: There are multiple typographic, spelling and grammatical errors throughout the paper. I encourage the authors to have someone skilled in these arts to thoroughly proof read the paper before re-submission.

Author's response:

Manuscript has been checked for errors and corrected accordingly.

Comment:

The results section seems a little long given the small number of studies and findings available for reporting. The authors may be able to more succinctly report the major findings in this section.

Author's response:

The results have been reduced.

Comment: The discussion largely reports the results with some links with previous research. It would be good if the authors could go further than this- discuss a) only those most important findings - e.g. most consistent or most unusual - b) consider causal mechanisms c) include much more discussion on the limitations of the literature reviewed (for instance, there is no mention of the study type or domains of correlates reported), and d) provide guidance for future research- what are the most critical things to consider in this emerging field.

Author's response:

The discussion has been revised.

Comment:

Can the authors please justify this age range? It does not align with national or international recommendation age groupings, covers a very big amount of time in terms of development, and covers the transition to school when children's behaviours, and potential correlates of those behaviours, are highly likely to change. That is, it is not clear that a correlate of a behaviour in a 2 year old will show the same association in a 6 year old.

Author's response:

Yes we understand and we discussed this issue prior to commencing the review. Authors in this area do not report their findings against these age recommended international age categories. Therefore we created appropriate age categories for the articles included in this review.

Recommendations for studies to use the international age categories when undertaking this research may be required.

Response to comments from Tanja Matarma

Comment: The outcome measure: I found this contradictory how you presented the outcome measure and what was actually included in the review. You should specify the outcome measure with what it includes and be consistent throughout the paper.

Author's response:

Mobile screen media use was the primary outcome measure. Mobile screen media use refers to children's use of mobile screens, such as mobile phones, electronic tablets, handheld computers or PDAs. The term 'screen time' is used to denote both the fixed screens and mobile media screen device use. This terminology is used when referring to the screen time guidelines for children and to refer to other articles that have studied children's total screen time including both fixed and mobile screens.

These definitions have been added to the manuscript. Please refer to Methods: outcome measure.

Comment:

Grammatical errors

Author's response:

Grammatical errors have been corrected as suggested.

Comment: Email alerts were created for the rest of the year 2015 for some databases but no for all. I find this confusing, could you please justify this decision?

Author's response:

Email alerts were created for the three major databases as the results obtained from the other databases predominantly duplicated those of the major databases.

Comment:

Quality report was done and studies' qualities reported in tables. However, no further elaborated discussion on the effect of quality results were made. I understand conclusions were hard to make but maybe few lines discussing on the quality of papers versus results?

Author's response:

All potential articles were scored using the Downs and Black (1998) against the categories of reporting, confounding, bias and external validity to achieve a score of between 1 and 10. Since all the included papers had a quality score higher than 5, it can be said that all these papers were quality papers.

This has been mentioned in the results section. Please refer to Results: study characteristics.

Comment:

Was the selection bias in the studies included in the review not reported? If were then it would be valuable to add them to the report as well.

Author's response:

We consider this beyond the scope of this review as the studies reviewed did not report this.

Comment: No limitations were expressed for search strategy. Were there any on your opinion?

Author's response:

We did not search the grey literature or include qualitative studies. This has been discussed in the limitations section of the manuscript.

Comment: I would consider recommending further studies including both traditional and mobile devices in future studies.

Author's response:

Thank you this has been added to the manuscript. Please refer to Conclusion.

Response to comments from Fiona Scott

Comment:

My main objections lie with the framing of the review, particularly with the limited criticality shown in the interpretation of existing/previous studies in the background section and some of the inferences/language used in the discussion section.

Author's response:

Thank you we have reviewed sections of the manuscript and made changes

Comment: Page 6 - the statement on lines 8-10 "the daily screen time of traditional media such as television has decreased") requires more nuance. For some age groups (eg. 3-4) watching live TV set is still the dominant media activity.

Author's response:

The authors agree that watching television is still the dominant media activity. However, studies indicate that mobile media use is increasing and slowly replacing television viewing (Kabali et al., 2015).

Comment:

Page 6-the statement on line 11-12 "due to its impact on children's sedentary behavior and play opportunities" is contestable. /a wide range of literature suggests that children play actively with and during engagement with screens.

Author's response:

We agree it is contestable. A statement regarding the benefits of mobile screen media use has been added in the background section (Radesky, Schumacher, & Zuckerman, 2015; Troseth, Russo, & Strouse, 2016)

Comment:

AAP recently lifted its ban on screen time for under 2s

Author's response:

Thanks for updating this. Authors have corrected the statement regarding this. Please refer to second paragraph of the background section (Radesky et al., 2015)

Comment:

Page 25-lines 7-8 "parents are using these devices as babysitters"-the use of term 'babysitters' and pacifiers' here seems inappropriate and judgmental rather than academic.

Author's response:

We agree. These terms have been replaced with 'behavioral regulation tools' as used in published scientific papers (Radesky et al., 2015)

Comment:

It is necessary to consult parent attitude literature to understand parent opinions and decision making re: their children's use of screens/devices.

Author's response:

Thank you but we believe this is beyond the scope of this project.

Comment:

Page 24 – lines 11-14-"both positive and negative impacts"-the authors acknowledge that children's increased skills with, and use of, mobile screens can have positive and negative impacts. However, the only negative impacts have been discussed.

Author's response:

Thank you for pointing this. Positive impacts has also been added to the manuscript. Please refer to the discussion section.

Comment: I have selected 'no' for question 2 of the 'review checklist' because the following sentence may need further consideration. "Research indicates that these young children are exceeding daily screen time recommendations". As highlighted above, global perspectives on screen time for under 2s are rapidly shifting, for example, the AAP recently lifted its complete ban on screen time for under 2s.

Author's response:

Thank you. The authors have corrected this statement. Please refer to the background section.

Response to comments from Raymond CK Chung

Comment:

Please include the meta-analysis component including detection of publication bias by funnel plot analysis or egger regression and fixed or random-effect models.

Author's response:

In this review, 13 studies were eligible for inclusion and the findings were segregated across different mobile media types making it difficult to undertake further analysis. The findings are largely descriptive, we feel that they add to our understanding about the correlates of mobile screen media use in the context of their increasing use among young children.

Comment:

The whole manuscript should be revised with caution as there were lots of grammar mistakes.

Author's response:

Grammatical and typographical errors have been corrected.

Comment: The format of the whole manuscript should be revised again as the current format was not idealistic and rather messy.

Author's response:

We have reviewed the manuscript to ensure it meets the journals requirements.

Response to comments from Sriram Iyengar

Comment:

One study that was included, by Wu was located in Hong Kong, whereas the 7 others were in the US and UK. While the US and UK share similar cultures and language, Hong Kong seems to be unlikely to be very similar. Therefore, including it in a study concerning cultural factors needs further justification.

Author's response:

Hong Kong is a developed county that was a British colony. We feel it is suitable for inclusion in this review because the statistics regarding screen use in Hong Kong are comparable to other developed countries (Wu et al., 2014).

Comment:

A statement such as "This review found that older young children (4-8 years) were more likely to have higher mobile screen media use "found on page 22 line 10 implies some kind of statistical analysis was done across all the papers, perhaps combining data from several studies. More explanation is needed to justify this statement.

Author's response:

Statistical analysis was not conducted as this review is descriptive.

Comment: Further, given that the comparison group is 0 - 3 years old, is the above statement surprising? It seems highly unlikely that infants less than 1 year old are given access to mobile devices or have the capability or interest to indulge in mobile screen use.

Author's response:

Studies have shown that even children less than 1 year have access to mobile devices and are using them. For example, a study carried out in Philadelphia, USA found that 10% of under 1 children owned a tablet while 4% owned a mobile phone. Likewise, 43% of under 1 children were using mobile devices on a daily basis (Kabali et al., 2015).

References

Cillero, I. H., & Jago, R. (2010). Systematic review of correlates of screen-viewing among young children. *Preventive Medicine*, 51(1), 3-10.

Duch, H., Fisher, E. M., Ensari, I., & Harrington, A. (2013). Screen time use in children under 3 years old: a systematic review of correlates. *Int J Behav Nutr Phys Act*, 10(1), 1-10.

Kabali, H. K., Irigoyen, M. M., Nunez-Davis, R., Budacki, J. G., Mohanty, S. H., Leister, K. P., & Bonner, R. L. (2015). Exposure and use of mobile media devices by young children. *Pediatrics*, 2015-2151.

Radesky, J. S., Schumacher, J., & Zuckerman, B. (2015). Mobile and interactive media use by young children: the good, the bad, and the unknown. *Pediatrics*, 135(1), 1-3.

Troseth, G. L., Russo, C. E., & Strouse, G. A. (2016). What's next for research on young children's interactive media? *Journal of Children and Media*, 10(1), 54-62.

Vanderloo, L. M. (2014). Screen-viewing among preschoolers in childcare: A systematic review. *BMC Pediatrics*, 14(1), 205.

Wu, C. S. T., Fowler, C., Lam, W. Y. Y., Wong, H. T., Wong, C. H. M., & Loke, A. Y. (2014). Parenting approaches and digital technology use of preschool age children in a Chinese community. *Italian Journal of Pediatrics*, 40(1), 1-8.

VERSION 2 – REVIEW

REVIEWER	Tanja Matarma University of Turku, Finland, Faculty of Medicine
REVIEW RETURNED	24-Apr-2017

GENERAL COMMENTS	<p>Several corrections are made. Few notifications are left to revise and they are presented below. Lines are not numbered throughout the text, therefore, comments by title and thereafter by page if needed and lines.</p> <p>BACKGROUND</p> <p>Lines 2-4: “..and newer handheld mobile screen media..” First sentence as a whole confusing or if meant “handheld mobile device” as a term, unknown term for me and if meant as such, it is illogical.</p> <p>Lines 9-10: “..has drastically increased.” This drastic change from traditional to mobile screens is evident (and bit surprising) based on Kabali et al. study, which you refer. I am only wondering whether such ex-posure would be this drastic in everywhere, as in Europe or perhaps in Nordic countries? The trend might be such but not necessarily this drastic anywhere else in the world than in low-income country side US, where this study was conducted. At least rethink to soften the generalizing sense when referring to this study. You have indeed specified the region e.g. in the lines 22-23, use this way when referring to earlier studies.</p>
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METHODS

The term screen time and mobile screen media are now well described and clarifies the issue mentioned in first review.
Table 2: "Database: Ovid Medline (R) 1946 to 20th October 2015" > correct to March 2017

RESULTS

Lines 9-11: Was the "mobile screen media use" possible to be "extracted" from these 11 studies? I am wondering this, because you stated that in these 11 studies, the "screen viewing" is the primary outcome measure, which again includes both fixed and mobile screens. I recommend considering clarifying this even though conclusions can be drawn when reading further in the next page on lines 4-8. For me it is not clearly enough described, what these 11 studies had as an outcome measure.

Line 18: "...2 hours or more than 2 hours." ..2 hours of what? Please clarify.

Page 13, line 21: "...there was no any association.." no any > correct to not any or no association?

Page 21, line 5: Correct children's to children or children's smthng. Children is plural.

DISCUSSION

Page 23, lines 8-9: Correct "eight studies" to 11 and "between 2009 to 2015" to ..2017 to correspond the expanded database search details.

Page 24, lines 2-5: In the end of line 2. This..what? Please clarify to what you refer with "this". This could be because.. revise the beginning of this sentence. Line 5: "implications" or effects or influence?

Page 25, line 7: The dot away before "...from employed parents.."

Page 25, line 22: Revise the first sentence, something missing.

All in all: Consider elaborating the discussion on the following subjects:

- Incomes and screen time
- The number of media devices
- Parental age

> Why do you believe, based on included studies, the results on these themes were inconsistent or controversial, other than not having enough studies in these subjects? Any indications from these studies included? Were outcome measure/s in the studies different?

CONCLUSION

Line 17: "a healthy media diet". Is this a correct and used term? Consider.

Line 21: "...valid and reliable objective measures" Is objective measuring of screen mobile viewing a real-istic suggestion? What would these objective measures be in young children? I reckon the parental proxy being the best for assessing the screen time or mobile screen time with young children.

REVIEWER	Fiona Scott Postgraduate Researcher, The University of Sheffield, United Kingdom
REVIEW RETURNED	11-May-2017

GENERAL COMMENTS	<p>The authors have addressed some, but not all, of the comments from my review of their first submission. Where the authors have addressed the comments from my first review, they have sometimes failed to take on board their meaning. As a result, my main criticism from the first review stands, i.e. the authors still show some limited criticality in the interpretation of existing/previous studies in the background section and some of the inferences/language used in the discussion section.</p> <p>Some specifics:</p> <ul style="list-style-type: none"> - In terms of the nuance missing, I find it problematic that the abstract starkly states: “the mobile screen devices are replacing traditional fixed screen devices such as television and desktop computers”. It’s not as straightforward as that – the Ofcom report I referred the authors to has been ignored and brings out a lot of nuance (e.g. how these trends are different for different groups within the age bracket 0-8). Furthermore, the majority of homes still have television sets and the majority of 0-8s still watch television on the main TV set – it might be fair to say that studies show a decline in the time spent watching on a TV set and an increase in time spent using touchscreen devices, the way this is characterised in the abstract is reductive. Others (e.g. Marsh) have pointed out the blurred boundaries between various activities. If we consider the example of apple airplay, children can play televisual content from a mobile device (tablet, smartphone) on the main TV set. Is this mobile screen device screentime or fixed screen device screen time? It’s really difficult to pick up on this kind of nuance in using quantitative surveys. - I commented on the broadly negative bias of the paper. The response feels a little tokenistic. In my first review, I noted that the authors claims about sedentary behaviour and play opportunities were problematic. As I said in my first review, there’s a wide range of literature that contests the idea that young children's engagement with screens is sedentary (e.g. Lewis, 2011, Marsh et al., 2005) and indeed suggests that children play actively with and during engagement with screens (Bird & Edwards, 2014). Perhaps the authors feel this body of work is outside their disciplinary milieu, but it needs to be acknowledged! If the authors fail to engage with empirical work showing contradictory findings, the paper becomes biased and is therefore not suitable for publication. <p>The authors suggest they have addressed the negative bias: “We agree it is contestable. A statement regarding the benefits of mobile screen media use has been added in the background section (Radesky, Schumacher, & Zuckerman, 2015; Troseth, Russo, & Strouse, 2016)”. However, the potential benefits added are “greater retention of taught materials through mobile apps and use of videophone apps to maintain face-to face connection with distant family members”. The authors haven’t addressed the topics I explicitly raised – i.e. the characterization of screen use as sedentary and not playful.</p>
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	<p>As a smaller point, the statement they refer to (page 3) currently reads: “Nevertheless, there are few benefits of using these interactive mobile screen media devices” (p. 3). I’m not sure if this is a typo and the authors meant “a few”, or if they really meant “there are few benefits” (!) – either way it’s still very negative.</p> <p>- Again, in relation the idea that children’s engagement with screens is sedentary, the authors didn’t address my original comment about BMI. In the ‘results’ section (p. 15), the authors point out that “no association was found between the use of smartphones, tablets or any other touchscreens and child’s [...] body mass index”. BMI isn’t returned to in the discussion, which seems odd. It is an important thing to highlight and it conflicts with the authors’ characterization of screen time as ‘sedentary’ in the background section.</p> <p>- In my first review, I pointed out that comments like “parents may not be aware that they are contributing to the development of their children’s mobile screen media use behaviours” are purely speculative and that it is necessary to consult parent attitude literature to understand parent opinions and decision making re: their children’s use of screens/devices. It probably is beyond the scope of this project, but the point I was trying to make is that it’s inappropriate to speculate on whether or not parents are aware without any evidence. I’d recommend just changing the wording. The authors have put in a reference to Wu et al., 2014, but as far as I can tell this paper doesn’t support the claim? Likewise (p. 25, line 13-14), is the term ‘behavioral regulation tools’ (though better than ‘babysitters’) still a little harsh compared with the papers you’re referencing – e.g. Raesky et al. (2016) talk about using mobile tech to ‘calm upset children’.</p>
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REVIEWER	Raymond CK Chung Department of Rehabilitation Sciences, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong.
REVIEW RETURNED	24-Apr-2017

GENERAL COMMENTS	The authors insisted to report this manuscript as a systematic review only but still not willing to add the meta-analytic component of this paper by pooling the effect size according to point 2 raised by reviewer. The authors should try to do meta-analysis with appropriate statistical testing and give strong reasons why meta-analytic review was not included in this manuscript.
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VERSION 2 – AUTHOR RESPONSE

Response to comments from Tanja Matarma

Background

Comment:

Background Lines 2-4: "...and newer handheld mobile screen media.." First sentence as a whole confusing or if meant "handheld mobile device" as a term, unknown term for me and if meant as such, it is illogical.

Author's response:

This has been changed to "mobile screen media devices".

Comment:

Lines 9-10: "...has drastically increased." This drastic change from traditional to mobile screens is evident (and bit surprising) based on Kabali et al. study, which you refer. I am only wondering whether such exposure would be this drastic in everywhere, as in Europe or perhaps in Nordic countries? The trend might be such but not necessarily this drastic anywhere else in the world than in low-income country side US, where this study was conducted. At least rethink to soften the generalizing sense when referring to this study. You have indeed specified the region e.g. in the lines 22-23, use this way when referring to earlier studies.

Author's response:

Thank you for pointing this out. We agree that although the use of mobile devices is increasing worldwide, the increase might not be so drastic everywhere. The sentence has been revised as suggested and the word "drastic" has been removed and "especially in many developed countries" has been added (see page 1, line 9-13).

Methods

Comment:

Methods Table 2: "Database: Ovid Medline (R) 1946 to 20th October 2015" > correct to March 2017

Author's response:

Thanks for indicating the error in the date. It has been corrected.

Results

Comment:

Lines 9-11: Was the "mobile screen media use" possible to be "extracted" from these 11 studies? I am wondering this, because you stated that in these 11 studies, the "screen viewing" is the primary outcome measure, which again includes both fixed and mobile screens. I recommend considering clarifying this even though conclusions can be drawn when reading further in the next page on lines 48. For me it is not clearly enough described, what these 11 studies had as an outcome measure.

Author's response:

Eleven of the 13 studies indicated screen viewing as their primary outcome measure. However, four studies reported an association specific to smart phones (1-4) and electronic tablets (1, 3, 5, 6). One study (7) reported combined results for touchscreens (smartphones and electronic tablets) while the other six studies reported correlates for electronic media, that included both traditional (e.g. televisions, computers) and new devices (e.g. mobile phones and electronic tablets) (8-13). These results have been reported separately in tables 4 and 5.

To ensure better clarity, this information has also been added to Table 3 under the heading "Description of Studies".

Comment:

Line 18: "..2 hours or more than 2 hours." ..2 hours of what? Please clarify.

Author response

The following has been added "Less than two hours and more than two hours of screen media use" (see page 14 line 6)

Comment:

Page 13, line 21: "..there was no any association.." no any > correct to not any or no association?

Author response

This has been corrected to "no association" (see page 15,line 10)

Comment:

Page 21, line 5: Correct children's to children or children's something. Children is plural.

Author response

This has been corrected.

Discussion

Comment

Page 23, lines 8-9: Correct "eight studies" to 11 and "between 2009 to 2015" to 2017 to correspond the expanded database search details.

Author response

This has been corrected.

Comment

Page 24, lines 25: In the end of line 2. This..what? Please clarify to what you refer with "this". This could be because. Revise the beginning of this sentence. Line 5: "implications" or effects or influence?

Author response

This has been corrected (see page 25 line 3).

Comment

Page 25, line 7: The dot away before "from employed parents"

Author response

This has been corrected.

Comment

Page 25, line 22: Revise the first sentence, something missing.

Author response

The whole paragraph has been rephrased. See page 25, last paragraph.

Comment

All in all: Consider elaborating the discussion on the following subjects:
Incomes and screen time; the number of media devices: Parental age

Author's response:

More information has been added to the discussion as suggested. See below (see page 26-27).

“Mixed associations were found between family income and children’s mobile screen media use. Children from high-income families were using touchscreens for longer durations than those from low-income families (7), which may be due to greater ownership and access to touchscreen devices in these households. Conversely, a study on electronic media use (both fixed and mobile screens) concluded no association between family income and children’s screen time (14), while, the number of media devices at home, and in the child’s bedroom were positively associated with mobile screen media use (2), which is consistent with other studies (15, 16). It seems that when these devices are in the bedroom, children have easy access and autonomy to use them, ultimately leading to increased use (15). This also holds true in the case of traditional media devices such as televisions and computers (15, 17).

Use of mobile screen media devices was higher among children whose parents believed in their pacifying effects, with parents using these devices as behavioural regulation tools to secure free time or when busy with household chores or shopping (18-22). Studies have shown that although parents are aware of the negative effects of using these devices for longer durations, many of them are high screen users themselves and are comfortable allowing their children to use these devices (23, 24). Parents are concerned about their children going online, but research indicates they are less concerned about their children using a smartphone or watching television (25).”

Comment:

Why do you believe, based on included studies, the results on these themes were inconsistent or controversial, other than not having enough studies in these subjects? Any indications from these studies included? Were outcome measure/s in the studies different?

Author's response:

Eleven of these studies indicated screen viewing as the primary outcome measure. However, four studies reported an association specific to smart phones (1-4) and electronic tablets (1, 3, 5, 6). One study (7) reported combined results for smartphones and electronic tablets, while six studies reported correlates for electronic media, that included both traditional (e.g. televisions, computers) and new hand held media devices (e.g. mobile phones and electronic tablets) (8-13). These results have been reported separately in tables 4 and 5.

Conclusion

Comment:

Line 17: “a healthy media diet”. Is this a correct and used term? Consider.

Author's response:

The term “healthy media diet” is a term used in books and published papers (26-28).

Comment:

Line 21: “..valid and reliable objective measures” Is objective measuring of screen mobile viewing a realistic suggestion? What would these objective measures be in young children? I reckon the parental proxy being the best for assessing the screen time or mobile screen time with young children.

Author's response:

We agree that parental proxy is the most used data collection method for children's screen use. However, it cannot be denied that it is prone to bias. Therefore, we recommend measuring children's handheld mobile screen media device use via an objective measures. A smartphone/tablet application that measures screen time use could be an objective measure. Christensen MA, Bettencourt L (29) used a mobile phone App that automatically operates in the background without disrupting normal use of the smartphone. Number of minutes in each hour that the screen is turned on is recorded. This could be an area worthy of future research

Response to comments from Fiona Scott

Comment:

In terms of the nuance missing, I find it problematic that the abstract starkly states: "the mobile screen devices are replacing traditional fixed screen devices such as television and desktop computers". It's not as straightforward as that – the Ofcom report I referred the authors to has been ignored and brings out a lot of nuance (e.g. how these trends are different for different groups within the age bracket 0-8). Furthermore, the majority of homes still have television sets and the majority of 0-8s still watch television on the main TV set – it might be fair to say that studies show a decline in the time spent watching on a TV set and an increase in time spent using touchscreen devices, the way this is characterised in the abstract is reductive. Others (e.g. Marsh) have pointed out the blurred boundaries between various activities. If we consider the example of apple airplay, children can play televisual content from a mobile device (tablet, smartphone) on the main TV set. Is this mobile screen device screen time or fixed screen device screen time? It's really difficult to pick up on this kind of nuance in using quantitative surveys.

Author's response:

The abstract has been revised as suggested.

We agree that the boundaries are quite blurred at times making it difficult to differentiate whether a particular activity is related to fixed screen or a mobile screen. However, in this review, we have entirely relied on how a particular activity is classified in the papers. The recommended Ofcom report has been reviewed and cited where relevant.

The first sentence of the abstract has been changed to:

"Young children (0-8years) are increasingly exposed to mobile screen media devices such as smartphones and electronic tablets, with studies reporting a decline in the time spent using traditional media devices such as television and an increase in the use of mobile screen media devices". Please see Page 1, line 7-8.

Comment:

I commented on the broadly negative bias of the paper. The response feels a little tokenistic. In my first review, I noted that the author's claims about sedentary behaviour and play opportunities were problematic. As I said in my first review, there's a wide range of literature that contests the idea that young children's engagement with screens is sedentary (e.g. Lewis, 2011, Marsh et al., 2005) and indeed suggests that children play actively with and during engagement with screens (Bird & Edwards, 2014). Perhaps the authors feel this body of work is outside their disciplinary milieu, but it needs to be acknowledged! If the authors fail to engage with empirical work showing contradictory findings, the paper becomes biased and is therefore not suitable for publication. The authors suggest they have addressed the negative bias: "We agree it is contestable. A statement regarding the benefits of mobile screen media use has been added in the background section (Radesky, Schumacher, & Zuckerman, 2015; Troseth, Russo, & Strouse, 2016)".

However, the potential benefits added are "greater retention of taught materials through mobile apps and use of videophone apps to maintain face-to-face connection with distant family members".

The authors haven't addressed the topics I explicitly raised – i.e. the characterization of screen use as sedentary and not playful.

Author response:

The following has been added to the background on page 4 line 20.

“Likewise, engagement with active video games have been reported to promote light to moderate physical activity (18).

Comment:

As a smaller point, the statement they refer to (page 3) currently reads: “Nevertheless, there are few benefits of using these interactive mobile screen media devices” (p. 3). I'm not sure if this is a typo and the authors meant “a few”, or if they really meant “there are few benefits” (!) – either way it's still very negative.

Author's response:

Thanks for indicating the error. It has been corrected. Please refer to Background page 4 line : line 18.

Comment:

Again, in relation the idea that children's engagement with screens is sedentary, the authors didn't address my original comment about BMI. In the 'results' section (p. 15), the authors point out that “no association was found between the use of smartphones, tablets or any other touchscreens and child's [...] body mass index”. BMI isn't returned to in the discussion, which seems odd. It is an important thing to highlight and it conflicts with the authors' characterization of screen time as 'sedentary' in the background section.

Author's response:

BMI has now been discussed in the Discussion section. See page 25 line 20-25. The following has been added:

This review found no association between child's BMI and mobile screen media use. In contrast to this, a prospective study carried out in Finland reported that the increase in screen time during a two year follow up period was smaller for children who had lower BMI at 13 months (30), while previous research reported a positive association between TV viewing and being overweight but no association with computer use (17).

Comment:

In my first review, I pointed out that comments like “parents may not be aware that they are contributing to the development of their children's mobile screen media use behaviours” are purely speculative and that it is necessary to consult parent attitude literature to understand parent opinions and decision making re: their children's use of screens/devices. It probably is beyond the scope of this project, but the point I was trying to make is that it's inappropriate to speculate on whether or not parents are aware without any evidence. I'd recommend just changing the wording. The authors have put in a reference to Wu et al., 2014, but as far as I can tell this paper doesn't support the claim?

Author's response:

This sentence has been revised to include parent's attitudes about children's media use. The following has been added “Studies have shown that although parents are aware of the negative effects of using these devices for longer durations, many of them are high screen users themselves and are comfortable allowing their children to use these devices (23, 24). Parents are concerned about their children going online, but research indicates they are less concerned about their children using a smartphone or watching television (25).

Please refer to the Discussion section. Page 27, line 11.

Comment:

Likewise (p. 25, line 1314), is the term 'behavioural regulation tools' (though better than 'babysitters') still a little harsh compared with the papers you're referencing – e.g. Raesky et al. (2016) talk about using mobile tech to 'calm upset children'.

Author's response:

The term "behavioral regulation tools" has been used in published papers, such as Radesky et.al. (2015). For example the authors state "The use of mobile media to occupy young children during daily routines such as errands, car rides, and eating out is becoming a common behavioral regulation tool: what the industry terms a "shut-up toy" (21).

Response to comments from Raymond CK Chung

Comment:

The authors insisted to report this manuscript as a systematic review only but still not willing to add the metaanalytic component of this paper by pooling the effect size according to point 2 raised by reviewer. The authors should try to do metaanalysis with appropriate statistical testing and give strong reasons why metaanalytic review was not included in this manuscript.

Author's response:

There are 13 studies included in this review, however, the findings are disaggregated across four media types (smartphones, tablets, touchscreens and any media device). These cannot be combined to obtain the summary estimate. For example, only one study reported correlates specific to touchscreens and four studies reported an association specific to smart phones. Parental media use is studied by three papers but the measure of association is different. In regard to electronic tablets most of the reported correlates are studied only once.

Therefore we do not believe a meta-analysis is appropriate. Though the findings are largely descriptive, we feel that they add to our understanding about the correlates of mobile media use in the context of their increasing use among young children.

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VERSION 3 – REVIEW

REVIEWER	Fiona Scott The University of Sheffield, United Kingdom
REVIEW RETURNED	22-Jul-2017

GENERAL COMMENTS	<p>I can't find a response to the reviewer's comments this time and am wondering if the authors attached this?</p> <p>A few frustrating niggles persist, all in relation to previous reviewer comments that have not been fully addressed.</p> <p>1. The authors have removed comments about screen devices replacing traditional TV. The description in the abstract is better. However, I'm still uncertain about the replacement text on p. 4. The wording doesn't accurately reflect what is said in the Ofcom report. The authors say: "children are increasingly using mobile screen media devices for focused solitary viewing" and cite the 2016 Ofcom report as a source for this. This sounds like an increase in solitary media behaviors, which isn't actually what the Ofcom report is saying at all - it says: "Children are watching a wide range of content, with the TV set becoming an increasingly important focus for family time and children using portable devices for more focused, solitary viewing."</p> <p>2. There is still no acknowledgement that many writers have pointed out the increasingly blurred boundaries between various media (and non media) activities. If we consider the example of apple airplay, children can play televisual content from a mobile device (tablet, smartphone) on the main TV set. Is this mobile screen device screentime or fixed screen device screen time?</p> <p>3. I appreciate the inclusion of two further comments that discuss positive impacts of children's engagement with media (specifically, that engagement with some mobile screen devices might be playful and that engagement with active video games has been reported to promote light to moderate physical activity). The authors have, however, still ignored the point that we need to be far more careful about what we describe as 'playful/less playful' and 'sedentary' (c.f. the comment a view lines up that: "This increasing exposure and accessibility to mobile screen media devices has public health implications, for children's sedentary behaviour and play opportunities", which now sits alongside reference to literature suggesting children's digital engagement can be active and playful!). Maybe a sentence to bring out this tension and note that it depends what your definitions of 'play' and 'sedentary' are? I think that you need to give your own definitions of what 'sedentary' and 'playful' mean in relation to media engagement.</p>
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	<p>4. Finally, on the issue of BMI, the authors have finally discussed the fact that their review suggests no association between the use of smartphones, tablets or any other touchscreens and a child's BMI. They then introduce new papers conflicting with this finding, which I suppose is valid, but seems a little odd at this stage. It feels a little as if the authors are now actively trying to contest a finding of their own review because it does not fit with what they expected to find (i.e. seeking out new lit to justify their continued use of the term 'sedentary' despite their review not backing this up?)</p>
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REVIEWER	Raymond CK Chung The Hong Kong Polytechnic University, Hong Kong
REVIEW RETURNED	21-Jul-2017

GENERAL COMMENTS	Though the authors said that they could not do the meta-analysis due to some reasons, they should write this down as one of the study limitation and they should also suggest some ways to pursue future studies so that meta-analysis could be done in the forthcoming future.
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VERSION 3 – AUTHOR RESPONSE

Reviewer: 4

Reviewer Name: Raymond CK Chung

Comment 1:

Though the authors said that they could not do the meta-analysis due to some reasons, they should write this down as one of the study limitation and they should also suggest some ways to pursue future studies so that meta-analysis could be done in the forthcoming future.

Response 1:

Thank-you for the comment. The reason for not conducting a meta-analysis has been added to the limitations section page 28, line 2-6. Please see: Finally, meta-analysis was not conducted due to the study findings being segregated across different mobile screen media types, making the findings largely descriptive. Future research in this area should consider undertaking randomised controlled trials with larger sample sizes and (standardised) study outcomes that can be aggregated and compared.

Reviewer: 3

Reviewer Name: Fiona Scott

Comment 1:

The authors have removed comments about screen devices replacing traditional TV. The description in the abstract is better. However, I'm still uncertain about the replacement text on p. 4. The wording doesn't accurately reflect what is said in the Ofcom report. The authors say: "children are increasingly using mobile screen media devices for focused solitary viewing" and cite the 2016 Ofcom report as a source for this.

This sounds like an increase in solitary media behaviors, which isn't actually what the Ofcom report is saying at all - it says: "Children are watching a wide range of content, with the TV set becoming an increasingly important focus for family time and children using portable devices for more focused, solitary viewing."

Response 1:

Thank-you for your interpretation of the 2016 Ofcom report. We have re-paraphrased this sentence from the Ofcom report (2016) to better reflect the meaning, it now reads "Though television is still the dominant media for family time, solitary viewing by children is mostly achieved using mobile screen media devices" (7). See page 5, line 10-12.

Comment 2:

There is still no acknowledgement that many writers have pointed out the increasingly blurred boundaries between various media (and non media) activities. If we consider the example of apple airplay, children can play televisual content from a mobile device (tablet, smartphone) on the main TV set. Is this mobile screen device screen time or fixed screen device screen time?

Response 2:

We are reporting the findings from studies that report mobile screen device use. The blurring of boundaries comes with the exponential growth in the digital landscape, as such there are now many ways in which to access content as you have highlighted. As we did not report on access to content via any cloud based or apple air play we have not integrated this into the manuscript commentary. However, this suggestion appears to be an interesting area of research and we look forward to reading your work with young children's engagement with television and related media in the digital age.

Comment 3:

I appreciate the inclusion of two further comments that discuss positive impacts of children's engagement with media (specifically, that engagement with some mobile screen devices might be playful and that engagement with active video games has been reported to promote light to moderate physical activity). The authors have, however, still ignored the point that we need to be far more careful about what we describe as 'playful/less playful' and 'sedentary' (c.f. the comment a view lines up that: "This increasing exposure and accessibility to mobile screen media devices has public health implications, for children's sedentary behaviour and play opportunities", which now sits alongside reference to literature suggesting children's digital engagement can be active and playful!). Maybe a sentence to bring out this tension and note that it depends what your definitions of 'play' and 'sedentary' are? I think that you need to give your own definitions of what 'sedentary' and 'playful' mean in relation to media engagement.

Response 3:

Sedentary is a term that is consistently described as sitting or lying (except when sleeping) (Australian Physical Activity and Sedentary Behaviour Guidelines 2015). In the cited review (Downing et al 2015), sedentary was described as activities undertaken in a sitting or reclining position, while quiet play was described as looking at books, listening to stories, and playing on computers. We do not feel there is a need to create our own definitions. However, as you have noted there is literature that suggests digital engagement can be active and we have added a statement to that end. See page 5, line 13-15. "This increasing exposure and accessibility to mobile screen media devices creates a conundrum. On one hand mobile screen devices may increase children's sedentary behaviour, but they also have the potential to increase play opportunities, creating a tension for public health, and parents alike."

Comment 4:

Finally, on the issue of BMI, the authors have finally discussed the fact that their review suggests no association between the use of smartphones, tablets or any other touchscreens and a child's BMI. They then introduce new papers conflicting with this finding, which I suppose is valid, but seems a little odd at this stage. It feels a little as if the authors are now actively trying to contest a finding of their own review because it does not fit with what they expected to find (i.e. seeking out new lit to justify their continued use of the term 'sedentary' despite their review not backing this up?)

Response 4:

We have attempted to synthesise the literature in this area to address your previous comment in R2, that BMI was not addressed. Contrasting findings is an appropriate way to structure the discussion. We are sorry but we are unsure what your comment is alluding to.

References:

Department of Health. Australia's Physical Activity and Sedentary Behaviour Guidelines: Australian Government; 2015 [Available from: <http://www.health.gov.au/internet/main/publishing.nsf/content/health-pubhlth-strateg-phys-act-guidelines#npa05>

Downing KL, Hnatiuk J, Hesketh KD. Prevalence of sedentary behavior in children under 2years: A systematic review. Preventive Medicine. 2015;78:105-14.

VERSION 4 – REVIEW

REVIEWER	Fiona Scott The University of Sheffield, United Kingdom
REVIEW RETURNED	20-Sep-2017

The reviewer completed the checklist but made no further comments.