Author’s response to reviews

Title: Impact of technology-based interventions for children and young people with type 1 diabetes on key diabetes self-management behaviours and prerequisites: A systematic review

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Editor comments

Comment 1: What is the agreement between the two reviewers for data extraction? How disagreement was handled? please details these in Methods

Response 1: “Initial agreement between authors was 76% however, after discussion clarifying criteria, there was 100% agreement without need for the third reviewer” - We have added these details to the methods section on page 6, line 132-133.

Comment 2: Shorten the paragraph on methodological quality of the studies

Response 2: We have now shortened this paragraph from 24 lines (Page 19-20, lines 453-476) to 14 lines (Page 20, lines 459-472)

Comment 3: Remove subtitles in the discussion

Response 3: All subtitles have now been removed
Comment 4: Shorten the conclusion by highlighting important findings of the study

Response 4: We have now shortened the conclusion as directed

Comment 5: Table- 2 and 3 can be moved as supplementary table

Response 5: We have moved Table 2 and Table 3 as supplementary tables and renamed Table 4 as Table 2 throughout

Comment 6: Table 4: the third column should read “clinical relevance” rather than summary. This should be a main outcome table.

Response 6: We have incorporated these suggestions into Table 2 (which was previously Table 4)

Reviewer 1

Comment 1: Recommend adding that CGM used in studies still required blood sugar checks for treatment (i.e. did not use Dexcom G5 or G6)

Response 1: We agree with this suggestion and have added this information on page 5, lines 109-113.

Comment 2: Introduction: second paragraph, first sentence--“technology-based interventions have potential to fully or partially replace face-to-face interaction with therapeutic staff...” Can you explain how this would occur, given that despite technologic advances, patients are still required and recommended to have quarterly visits with providers?

Response 2: We thank the reviewer for highlighting this and have now clarified within the text (page 4, lines 79-81) that technology-based interventions have the potential to augment existing services (which can mean replace existing services which are provided beyond regular visits) and not to replace the currently advised quarterly visits.

Comment 3: Methods: Under "Search methods" Line 121-122 "The reference lists or review articles were search by hand. Titles were [first] screened for ineligibility..."
Response 3: We have reordered these sentences into a more logical order. Page 6, lines 126-128.

Reviewer 2

Comment 1: It is unclear why studies using CGMs were included. Although this is a type of technology, it is different from the others included such as text messaging, mobile phone apps, etc. CGM could be argued as a type of treatment just like insulin pumps and meters. Unless a clear rationale is provided, studies of CGM as an intervention or health care strategy should not be included.

Response 1: We have now added the rationale for inclusion of CGM’s to page 5, lines 109-113.

Comment 2: I found the entire paper very dense to read. The reader gets lost in all of the text. A better approach would be to summarize the findings more broadly in each section using text and then use tables to describe each of the study's findings.

Response 2: We agree with this comment and thank the reviewer for it. We have attempted to be more concise throughout the manuscript.

Minor Comment 1: Please refrain from using the acronym CYP as it does not seem to be a common acronym in the extant literature.

Response 1: We have replaced the acronym CYP throughout the manuscript.

Minor Comment 2: Self-management strategies and self-management behaviors are used interchangeably. Please use the latter term.

Response 2: We thank the reviewer for this suggestions and have replaced all instances of ‘self-management strategies’ ‘self-management behaviours’.