Report Supplementary Material 3: Process Evaluation Extraction and Quality Appraisal

(See Evans et al. 2023, Systematic Reviews. This article is published under license to BMJ [1])

Table of Contents

1. Conceptually and/or Empirically Rich Data Extraction and Coding Tree

- i) Study characteristics (ID = 8255759) [Selectable (show checkbox)]
    - o 1) Intervention description (ID = 8255877) [Selectable (show checkbox)]
    - o 2) Participant characteristics (ID = 8255760) [Selectable (show checkbox)]
      Brief details about participants including children and others.
    - o 3) Methods (ID = 8255761) [Selectable (show checkbox)]
      Methods used to assess context, implementation and acceptability.
- ii) Context (ID = 8255846) [Selectable (show checkbox)]
    - o 1) Socio-cultural (ID = 8255847) [Selectable (show checkbox)]
      This domain comprises explicit and implicit behaviour patterns, including their embodiment in symbols and artefacts; the essential core of culture consists of historically derived and selected ideas and values that are shared among members of a group [12] It not only refers to the conditions in which people are born, grow, live, work and age but also embraces the social roles a human being takes in as a family member, community member or citizen and the relationships inherent to these roles. Constructs such as knowledge, beliefs, conceptions, customs, institutions and any other capabilities and habits acquired by a group are comprised by this domain .
    - o 2) Political (ID = 8255849) [Selectable (show checkbox)]
      The political domain focuses on the distribution of power, assets and interests within a population, as well as the range of organisations involved, their interests and the formal and informal rules that govern interactions between them [30]. The domain also comprises the health care system and the securing of its accessibility.
    - o 3) Legal (ID = 8255850) [Selectable (show checkbox)]
      The legal domain is concerned with the rules and regulations that have been established to protect a population's rights and societal interests.
    - o 4) Ethical (ID = 8255851) [Selectable (show checkbox)]
      The ethical domain embraces reflections of morality, which encompasses beliefs, standards of conduct and principles that guide the behaviour of individuals and institutions [37]. Ethical issues at stake or in conflict, within systematic reviews/health technology assessments on a complex intervention, are addressed.
    - o 5) Epidemiological (ID = 8255852) [Selectable (show checkbox)]
      This domain refers to the distribution of disease/conditions, the attributable burden of disease as well as determinants of needs in human populations [9]. Therefore, it also includes demographics.
    - o 6) Geographical (ID = 8255853) [Selectable (show checkbox)]
      The geographical characteristics refer to the broader physical environment, landscapes and resources, both natural and transformed by humans, available at a given location. As such, it also comprises the

infrastructure at a given location, which could result in geographical isolation.

- o 7) Socio-economic (ID = 8255854) [Selectable (show checkbox)]
This domain comprises the economic resources of a community and the access of a population to these resources [7, 28]. It also shows the relationship between an economy and its society.
- iii) Implementation (ID = 8255859) [Selectable (show checkbox)]
  - o 1) Implementation theory / strategy (ID = 8255860) [Selectable (show checkbox)]
A theory and/or a strategy to explain how the intervention should be adopted, implemented and sustained in order to maximise implementation -- Implementation Theory: • Which theoretical underpinning guides the implementation? • How does this theory interact with the setting and the context? • How does this theory interact with the intervention? An implementation theory attempts to explain the causal mechanisms of implementation [24]. Implementation Strategy: • Which implementation strategies are employed during implementation? • How do these implementation strategies interact with the setting and the context? • How do these implementation strategies interact with the intervention? Implementation strategies encompass all methods and means to ensure the adoption and sustainment of interventions [54, 55]. They comprise a set of activities that are chosen and tailored to fit a specific context [34, 56] or to create such a context [34]
  - o 2) Implementation agents (ID = 8255864) [Selectable (show checkbox)]
• Which implementation agents are involved in the implementation effort? • How do these implementation agents interact with the setting and the context? • How do these implementation agents interact with the intervention? Implementation agents comprise all individuals and organisations engaged with (i) deciding to implement a given intervention (e.g. funders, administrators), (ii) implementing this intervention (e.g. providers, advocates, physicians, nurses) or (iii) being the target or otherwise affected by an intervention (e.g. patients and their families, consumers) [37]
  - o 3) Implementation outcomes (ID = 8255865) [Selectable (show checkbox)]
•Which implementation outcomes are reported? • How do these implementation outcomes interact with the intervention outcomes? An implementation outcome is the result or implication of the implementation effort and forms part of good monitoring and evaluation practice.
    - ▪ a) Reach (ID = 8255866) [Selectable (show checkbox)]
The absolute number, proportion, and representativeness of individuals who are willing to participate in a given initiative,

intervention, or program, and reasons why or why not. -- RE-AIM Framework
- b) Receipt (ID = 8255867) [Selectable (show checkbox)]
  "The extent to which participants actively engage with, interact with, are receptive to, and/or use materials or recommended resources" --Linnan and Steckler (2002)
- c) Fidelity (ID = 8255869) [Selectable (show checkbox)]
  The degree to which an intervention was implemented as it was prescribed in the original protocol or as it was intended by the program developers
- iv) Acceptability (ID = 8255870) [Selectable (show checkbox)]
  "The perception among implementation stakeholders that a given treatment, service, practice, or innovation is agreeable, palatable, or satisfactory" -- Proctor et al, 2007
  - o 1) Target population (ID = 8255872) [Selectable (show checkbox)]
  - o 2) Implementers (ID = 8255873) [Selectable (show checkbox)]
  - o 3) Funders (ID = 8255874) [Selectable (show checkbox)]
  - o 4) Other stakeholders (ID = 8255875) [Selectable (show checkbox)]

2. Conceptually and/or Empirically Thin Data Extraction and Coding Tree

- i) Study characteristics (ID = 8146028) [Not selectable (no checkbox)]
    - 1) Intervention description (ID = 8187138) [Selectable (show checkbox)]
    - 2) Participant characteristics (ID = 8146029) [Selectable (show checkbox)]
      Brief details about participants including children and others.
    - 3) Methods (ID = 8146031) [Selectable (show checkbox)]
      Methods to assess implementation and acceptability.
- ii) Context (ID = 8146032) [Selectable (show checkbox)]
  Context - how contextual characteristics impact upon implementation and activation of the theory of change. Contextual characteristics will be classified according to the CICI framework geographical; epidemiological; legal; socio-economic; socio-cultural; ethical; and political. We will discriminate between contextual factors specific to the intervention and those which characterise TAU.
- iii) Implementation (ID = 8146033) [Selectable (show checkbox)]
  Implementation - processes of activating the implementation theory; achieving the implementation strategy and using proposed implementation agents. Quantifiable assessments of implementation including reach, receipt and fidelity will be extracted.
- iv) Acceptability (ID = 8146034) [Selectable (show checkbox)]
  Acceptability will be considered as the experiences of all stakeholders, including participants, delivery agents and service funders, and their interactions with the interventions.
- Check for participant involvement (ID = 8160798) [Not selectable (no checkbox)]
  Do they mention priority outcomes?
    - Yes (ID = 8199820) [Selectable (show checkbox)]
    - No (ID = 8199821) [Selectable (show checkbox)]
- iii) Implementation (ID = 8255856) [Selectable (show checkbox)]

3. **Conceptually and/or Empirically Rich Process Evaluation Quality Appraisal Tool** [2]

- 1. Reliability/Trustworthiness: Were steps taken to increase rigour in the sampling? (ID = 8445254) [Selectable (show checkbox)]
  Consider whether: *the sampling strategy was appropriate to the questions posed in the study (e.g. was the strategy well reasoned and justified?); *attempts were made to obtain a diverse sample of the population in question (think about who might have been excluded; who may have had a different perspective to offer); *characteristics of the sample critical to the understanding of the study context and findings were presented
  - o High (ID = 8445255) [Selectable (show checkbox)]
    High reliability/trustworthiness
  - o Medium (ID = 8445256) [Selectable (show checkbox)]
  - o Low (ID = 8445257) [Selectable (show checkbox)]
  - o Unclear (ID = 8445259) [Selectable (show checkbox)]
    Try not to use this option. Please only select if you are absolutely uncertain and cannot decide between high/medium/low.
- 2. Reliability/Trustworthiness: Were steps taken to increase rigour in the data collected? (ID = 8445734) [Selectable (show checkbox)]
  Consdier whether:*data collection tools were piloted/(and if quantitative) validated; *(if qualitative) data collection was comprehensive, flexible and/or sensitive enough to provide a complete and/or vivid and rich description of people's perspectives and experiences (e.g. did the researchers spend sufficient time at the site/with participants? Did they keep 'following up'? Was more than one method of data collection used?); * steps were taken to ensure that all participants were able and willing to contribute (e.g. processes for consent, language barriers, power relations between adults and children/young people).
  - o High (ID = 8445738) [Selectable (show checkbox)]
    High reliability/trustworthiness
  - o Medium (ID = 8445739) [Selectable (show checkbox)]
  - o Low (ID = 8445740) [Selectable (show checkbox)]
  - o Unclear (ID = 8445742) [Selectable (show checkbox)]
- 3. Reliability/Trustworthiness: Were steps taken to increase rigour in the analysis of the data? (ID = 8445745) [Selectable (show checkbox)]
  Consider whether: * data analysis methods were systematic (e.g. was a method described/can a method be discerned?); *diversity in perspective was explored; * (if qualitative) the analysis was balanced in the extent to which it was guided by preconceptions or by the data); *the analysis sought to rule out alternative explanations for findings (in qualitative research this could be done by, for example, searching for negative cases/exceptions, feeding back preliminary

results to participants, asking a colleague to review the data, or reflexivity; in quantitative research this may be done by, for example, significance testing).

- o High (ID = 8445747) [Selectable (show checkbox)]
  High reliability/trustworthiness
- o Medium (ID = 8445750) [Selectable (show checkbox)]
- o Low (ID = 8445751) [Selectable (show checkbox)]
- o Unclear (ID = 8445777) [Selectable (show checkbox)]

- 4. Reliability/Trustworthiness: Were the findings of the study grounded in/supported by the data? (ID = 8445755) [Selectable (show checkbox)]
  Consider whether: *enough data are presented to show how the authors arrived at their findings; *the data presented fit the interpretation/support claims about patterns in data; *the data presented illuminate/illustrate the findings; *(for qualitative studies) quotes are numbered or otherwise identified and the reader can see that they don't just come from one or two people.
  - o High (ID = 8445757) [Selectable (show checkbox)]
    High reliability/trustworthiness
  - o Medium (ID = 8445758) [Selectable (show checkbox)]
  - o Low (ID = 8445759) [Selectable (show checkbox)]
  - o Unclear (ID = 8445760) [Selectable (show checkbox)]

- 5. Usefulness: Please rate the findings of the study in terms of their breadth and depth. (ID = 8445761) [Selectable (show checkbox)]
  Consider whether: (NB: it may be helpful to consider 'breadth' as the extent of description and 'depth' as the extent to which data has been transformed/analysed); *a range of issues are covered; * the perspectives of participants are fully explored in terms of breadth (contrast of two or more perspectives) and depth (insight into a single perspective); *richness and complexity has been portrayed (e.g. variation explained, meanings illuminated); *there has been theoretical/conceptual development.
  - o High (ID = 8445762) [Selectable (show checkbox)]
    High usefulness
  - o Medium (ID = 8445763) [Selectable (show checkbox)]
  - o Low (ID = 8445764) [Selectable (show checkbox)]
  - o Unclear (ID = 8445765) [Selectable (show checkbox)]

- 6a. Usefulness: To what extent does the study privilege the perspectives and experiences of children and young people? (ID = 8445766) [Selectable (show checkbox)]
  Consider: * whether there was a balance between open-ended and fixed response options; *whether children were involved in designing the research; * whether there was a balance between the use of an a priori coding framework and induction in the analysis; *the position of the researchers (did they consider it important to listen to the perspectives of children?); * whether steps were taken to assure confidentiality and put young people at ease.

- o High (ID = 8445767) [Selectable (show checkbox)]
    High usefulness
  - o Medium (ID = 8445768) [Selectable (show checkbox)]
  - o Low (ID = 8445769) [Selectable (show checkbox)]
  - o Unclear (ID = 8445770) [Selectable (show checkbox)]
  - o N/A (ID = 8474181) [Selectable (show checkbox)]
- 6b. Usefulness: To what extent does the study privilege the perspectives of carers, social care professionals and other adult stakeholders? (ID = 8459399) [Selectable (show checkbox)]
  Consider whether: * there was a balance between open-ended and fixed response options; *whether children were involved in designing the research;
  - o High (ID = 8459400) [Selectable (show checkbox)]
  - o Medium (ID = 8459401) [Selectable (show checkbox)]
  - o Low (ID = 8459402) [Selectable (show checkbox)]
  - o Unclear (ID = 8459403) [Selectable (show checkbox)]
  - o N/A (ID = 8474182) [Selectable (show checkbox)]
- 7. Overall: What weight would you assign to this study in terms of the reliability/trustworthiness of its findings? (ID = 8445783) [Selectable (show checkbox)]
  Guidance:
  Think (mainly) about the answers you have given to questions 1 to 4 above.
  - o High (ID = 8445784) [Selectable (show checkbox)]
    Overall high reliability/trustworthiness
  - o Medium (ID = 8460881) [Selectable (show checkbox)]
  - o Low (ID = 8460883) [Selectable (show checkbox)]
  - o Unclear (ID = 8445785) [Selectable (show checkbox)]
- 8. Overall: What weight would you assign to this study in terms of the usefulness of its findings for this review? (ID = 8445786) [Selectable (show checkbox)]
  Guidance: Think (mainly) about the answers you have given to questions 5 and 6 above and consider: *the match between the study aims and findings and the aims and purpose of the synthesis; *its conceptual depth/explanatory power.
  - o High (ID = 8445787) [Selectable (show checkbox)]
    High usefulness
  - o Medium (ID = 8445788) [Selectable (show checkbox)]
  - o Low (ID = 8445789) [Selectable (show checkbox)]
  - o Unclear (ID = 8445790) [Selectable (show checkbox)]

4. References

1. Evans R, MacDonald S, Trubey R, Noyes J, Robling M, Willis S, *et al.* Interventions targeting the mental health and wellbeing of care-experienced children and young people in higher-income countries: Evidence map and systematic review. *Syst Rev* 2023;**12**:1-33.
2. Rees R, Oliver K, Woodman J, Thomas J. The views of young children in the UK about obesity, body size, shape and weight: a systematic review. *BMC public health* 2011;**11**:1-12.