



STUDY PROTOCOL

REVISED

Children and young people's experiences of living with developmental coordination disorder/dyspraxia: study protocol for a qualitative evidence synthesis [version 4; peer review: 2 approved]

Áine O'Dea ¹, Susan Coote¹, Katie Robinson ¹⁻³¹School of Allied Health, University of Limerick, Castletroy, Limerick, Ireland²Health Research Institute, University of Limerick, Castletroy, Limerick, Ireland³Ageing Research Centre, University of Limerick, Castletroy, Limerick, Ireland**V4** First published: 28 Oct 2019, 2:28
<https://doi.org/10.12688/hrbopenres.12958.1>Second version: 05 Aug 2020, 2:28
<https://doi.org/10.12688/hrbopenres.12958.2>Third version: 16 Oct 2020, 2:28
<https://doi.org/10.12688/hrbopenres.12958.3>Latest published: 18 Jan 2021, 2:28
<https://doi.org/10.12688/hrbopenres.12958.4>

Abstract

Background

Children with developmental coordination disorder (DCD) face significant challenges to deal with everyday activities due to underlying motor proficiency difficulties. These challenges affect children and young people's participation; that is, involvement in daily life situations. Recent years have seen a growing body of qualitative research examining children's experiences of living with DCD. Meta-ethnographic synthesis offers a rigorous approach to bring together the findings of discrete qualitative studies to be synthesised in order to advance the conceptual understanding of living with DCD, which is not well conceptualised in the literature to date. Conducting a meta-ethnographic synthesis will help to illuminate the meaning of children and young people's experiences of DCD regarding their involvement in everyday activities and situations.

Aim

This study aims to systematically review and synthesise qualitative literature regarding children and young people's experiences and views of everyday life and living with DCD.

Methods

The method of qualitative evidence synthesis that will be followed in this review is a meta-ethnography. The eMERGe and PRISMA reporting guidelines will be adhered to. Ten databases will be searched; Academic Search Complete, AMED, CINAHL, ERIC, MEDLINE, PsychArticles, PsychInfo, EMBASE, SPORTDiscus, and Web of Science.

Open Peer Review

Reviewer Status

Invited Reviewers

1

2

version 4

(revision)

18 Jan 2021



report



version 3

(revision)

16 Oct 2020



report



version 2

(revision)

05 Aug 2020



report



version 1

28 Oct 2019



report



report

1. **Motohide Miyahara** , Hirosaki University, Hirosaki, Japan

Tessa Pocock, University of Auckland, Auckland, New Zealand

2. **Rob Brooks** , Leeds Beckett University, Leeds, UK

The Joanna Briggs Institute Checklist will be used by two independent reviewers to appraise all included papers. PROSPERO registration number [CRD42019129178](#)

Discussion

The findings of this meta-ethnography will endeavour to inform future research, policy and practice. In particular, the results will help to inform the design of future complex interventions to meet the needs of children and young people with DCD. Dissemination will involve the publication of the results in a peer-reviewed journal. Increasingly researchers and policymakers are calling for services to be informed by the perspective and voice of children with DCD. Therefore, a policy brief will be published so that the findings are widely available.

Keywords

Developmental Coordination Disorder, children, young people, meta-ethnography

Any reports and responses or comments on the article can be found at the end of the article.

Corresponding author: Áine O'Dea (aine.odea@ul.ie)

Author roles: **O'Dea Á:** Conceptualization, Data Curation, Formal Analysis, Methodology, Project Administration, Writing – Original Draft Preparation, Writing – Review & Editing; **Coote S:** Methodology, Supervision, Writing – Review & Editing; **Robinson K:** Conceptualization, Formal Analysis, Methodology, Supervision, Writing – Review & Editing

Competing interests: No competing interests were disclosed.

Grant information: ÁOD is a full time PhD scholar on a structured PhD programme in health service research and population health, funded by the Health Research Board (SPHeRE/2013/1), Ireland. This programme funds postgraduate fees and a stipend for four years. *The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.*

Copyright: © 2021 O'Dea Á *et al.* This is an open access article distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

How to cite this article: O'Dea Á, Coote S and Robinson K. **Children and young people's experiences of living with developmental coordination disorder/dyspraxia: study protocol for a qualitative evidence synthesis [version 4; peer review: 2 approved]** HRB Open Research 2021, 2:28 <https://doi.org/10.12688/hrbopenres.12958.4>

First published: 28 Oct 2019, 2:28 <https://doi.org/10.12688/hrbopenres.12958.1>

REVISED Amendments from Version 3

The authors would like to thank the reviewer for his feedback on this manuscript. The third paragraph has been edited to enhance the clarity regarding the quality of evidence on the intervention effect. Additional information has been provided to explain meta-ethnography. The manuscript has been edited for grammar and in-text citations.

Any further responses from the reviewers can be found at the end of the article

Introduction

Children with developmental coordination disorder (DCD) struggle to master numerous everyday activities that involve motor coordination (APA, 2013), for example, self-care, leisure and academic activities including feeding, sports, and writing (Summers *et al.*, 2008; Van der Linde *et al.*, 2015). The core features of this diagnostic condition are: A) learning and execution of coordinated motor skills is below the expected level for age given the opportunity for skill learning; B) motor skill difficulties significantly interfere with activities of daily living and impact academic/school, leisure and play; C) onset is in the early developmental period; and D) motor skill difficulties are not better explained by intellectual delay, visual impairment or other neurological conditions that affect movement (APA, 2013). Prevalence rates of DCD are considered to be between 5 and 6% of the population (Blank *et al.*, 2019). However, international prevalence rates vary from between 1.8% to 20% of the paediatric population (Valentini *et al.*, 2015). The reasons from such variance are the prevalence rate is associated with the diversity of methods used, such as sample population, measurement tools, and cut-off percentiles for DCD (Valentini *et al.*, 2015).

The consequences of DCD are enduring (Blank *et al.*, 2019), and affect children and young people's participation; that is, involvement in daily life situations (WHO, 2007) across, social, academic, work, vocational and leisure areas (O'Dea & Connell, 2016; Kirby *et al.*, 2011). Adverse, secondary health outcomes associated with DCD include poor cardiovascular health and obesity (Cairney *et al.*, 2010), and mental health difficulties such as anxiety and depression (Harrowell *et al.*, 2017; Pratt & Hill, 2011). Secondary health outcomes persist across the lifespan with adults with DCD describing higher levels of depression and anxiety (Hill & Brown, 2013).

Evidence regarding the effectiveness of interventions to treat DCD is not clear due to the quality of the available evidence (Miyahara *et al.*, 2020). A recent meta-review of systematic reviews and meta-analyses of interventions for children with DCD found that of the eight included reviews the methodology of only one (Miyahara *et al.*, 2017), was judged using AMSTAR 2 terminology to be acceptably high (Miyahara *et al.*, 2020). This meta-review also highlighted that the conclusions of these recent reviews are not consistent. This inconsistency creates challenges for practitioners. The highest quality review included in the meta-review was a Cochrane review that found no strong evidence to support the efficacy of task-oriented interventions for children and young people with DCD (Miyahara *et al.*, 2017), an

approach commonly used in practice (Withers *et al.*, 2017). In contrast, Smits-Engelsman *et al.* (2018), systematic review and meta-analysis found that activity-oriented and body function oriented interventions can have a positive effect on motor function and skills. Of note, the authors suggest that the results should be interpreted with caution, given the variance in methodology quality and the large confidence intervals (Smits-Engelsman *et al.*, 2018). Furthermore, the research evidence regarding which interventions are effective at improving outcomes addressing participation in everyday life situations for children and young people with DCD is not clear (O'Dea *et al.*, 2019). Given the current state of the evidence base, the robust development and evaluation of interventions for children with DCD have been identified as a priority (Miyahara *et al.*, 2017; O'Dea *et al.*, 2019).

The International Classification of Functioning (ICF) framework provides a contemporary vision of health and functioning (World Health Organisation, 2001). It proposes that disability results from the interaction between environmental and personal factors (World Health Organisation, 2001). Research in DCD has adopted the terminology of the ICF and considers outcomes at the activity and participation level important (Smits-Engelsman *et al.*, 2018). Reflecting these perspectives, international clinical practice guidelines for DCD state that intervention should consider the child and family identified goals, related to activity and participation within the environmental context (Blank *et al.*, 2019). Therefore, the perspectives of children and young people with DCD should be central to intervention development in practice and research. Qualitative research has much to offer clinicians and researchers working with children and young people with DCD. It can illuminate the meaning of their experiences regarding their involvement in everyday activities and situations i.e. their participation (Taylor & Francis, 2013), and their perspectives, views and experiences of their life situations (Söderbäck *et al.*, 2011).

In the past, there has been greater attention to researching the perceptions and experiences of parents of children with DCD rather than focusing on the experience of the children or young people themselves. This body of research addresses topics such as raising a child with DCD and accessing services and support for their child with DCD (Maciver *et al.*, 2011; Missiuna *et al.*, 2006; Missiuna *et al.*, 2007; Morgan & Long, 2012; Novak *et al.*, 2012). Importantly, findings from qualitative studies suggest that parental perceptions are different to those of children and young people with DCD (Jasmin *et al.*, 2018; Morgan & Long, 2012; Timler *et al.*, 2018), for example, parental assessment in comparison to young people's self-assessment of motor competence highlights that parents recognise fewer motor difficulties than the young person (Timler *et al.*, 2018). With regard to effective interventions and participation in home and community environments, parents prioritise training and coaching on DCD to help facilitate their child's learning and autonomy with activities of daily living; whereas, as children with DCD, prioritise aspects such as play (Jasmin *et al.*, 2018; Morgan & Long, 2012). Therefore, qualitative research on the experiences and perspectives of parents of children with DCD should not be considered to represent the experiences and perspectives of children with DCD.

According to the United Nations Convention on the Rights of the Child (1989), children are entitled to express opinions and to have a say in matters that affect their lives ([Children's Rights Alliance, 2010](#)). Similarly, authors ([Lynch & Lynch, 2013](#); [McQuinn et al., 2019](#)) and policy documents ([Ombudsman for Children's Office, 2019](#)) state that the perspectives of children and young people with disabilities need to be included in practice and research. Indeed, children and young people value potential contributions with research ([Lynch & Lynch, 2013](#); [Söderbäck et al., 2011](#)) and empirical studies indicate that children are capable of contributing their opinions, views and preferences for therapeutic intervention ([Dunford et al., 2005](#)). Despite the acknowledgement that children are knowledgeable, capable and proficient research participants ([Christensen & Prout, 2005](#)), children with disabilities continue to be overlooked as active research participants ([Stafford, 2017](#)).

Recent years have seen a growing body of qualitative research examining children's experiences of living with DCD ([Payne et al., 2013](#)) and related topics, such as identity and self-management ([Lingam et al., 2014](#)), priorities and preferences for treatment ([Dunford et al., 2005](#)), participation ([Jasmin et al., 2018](#)) and quality of life ([Zwicker et al., 2018](#)). To the best of our knowledge, no qualitative evidence synthesis has integrated children and young people's subjectively reported experiences of living with DCD. Therefore, a meta-ethnographic approach, informed by [Noblit & Hare's \(1988\)](#) seven-stage process for conducting a meta-ethnography was chosen as the method of qualitative evidence synthesis for this review. Meta-ethnography offers a methodology for synthesising multiple qualitative research studies. A strength of meta-ethnographic synthesis is the capacity to bring numerous qualitative research studies together to detail a narrative that is greater than the sum of its parts ([Murray & Stanley, 2016](#)). Therefore, a meta-ethnographic synthesis achieves more than aggregation or combination of the included studies. Through translating the findings from the included studies into one another ([Noblit & Hare, 1988](#)), meta-ethnographic synthesis aims to create novel interpretations and conceptual innovation of the phenomena being explored ([Malpass et al., 2009](#)).

Through the process of translating studies into one another ([Noblit & Hare, 1988](#)), the aim of meta-ethnography is to create novel interpretations and conceptual innovation of the phenomenon being studied ([Malpass et al., 2009](#)). Conducting a meta-ethnographic synthesis of existing qualitative studies reporting the experiences of children and young people with DCD will advance our understanding of what it is like to live with DCD, which is not well conceptualised in the literature to date and will identify gaps in the current qualitative literature. Furthermore, qualitative synthesis can help inform the future development and implementation of complex interventions ([France et al., 2019a](#)), which is an identified priority for children and young people with DCD ([Camden et al., 2019](#)).

Objective

The principal objective of this study is to systematically review and synthesise qualitative literature regarding children and young

people's experiences and views of everyday life and living with DCD.

Methods

Qualitative evidence synthesis involves synthesising multiple qualitative primary research studies ([France et al., 2019b](#)). Various methods of qualitative evidence synthesis exist, for example, metanarrative, meta-study, critical interpretative synthesis, thematic synthesis and meta-ethnography ([Barnett-Page & Thomas, 2009](#)). A meta-ethnographic approach has been chosen as the method of qualitative evidence synthesis for this review because it is "provides the opportunity for us to carefully consider the relationship between studies, understand the issues and to comprehend the reality of everyday life" ([Noblit & Hare, 1988](#), p. 77). It requires an interpretive approach to synthesis. The meta-ethnographic synthesis approach of [Noblit & Hare \(1988\)](#) will be employed as described by [Cahill et al. \(2018\)](#). It involves a seven-stage process; it moves beyond the collation of qualitative evidence and towards the generation of new understandings. In health services research, meta-ethnographic synthesis has become a popular methodology for qualitative evidence synthesis ([Ring et al., 2011](#)), and it is the most popular approach to qualitative evidence in healthcare ([Cahill et al., 2018](#)). However, the methodology must be conducted and reported proficiently ([Cahill et al., 2018](#)), if new evidence on how people experience their own health condition and health and well-being is to be generated. Robust reporting is essential to the process of synthesis, and for new interpretations to be generated ([France et al., 2019a](#)), therefore the eMERGe reporting guideline, aimed at increasing the transparency and completeness of conducting and reporting a meta-ethnography guided the development and preparation of this protocol ([France et al., 2019a](#)).

PHASE 1 - Selecting meta-ethnography and getting started

Phase one of a meta-ethnography involves reporting the rationale and the context for the study. To the best of our knowledge, no meta-ethnography exists to date, which has synthesised the child and young person's experience of living with DCD. Therefore, the predominant reasons for choosing a meta-ethnographic approach in this review was that it would enable the researchers to develop a conceptual understanding of children's subjective experiences of everyday life and living with DCD. This systematic review is registered with the International Prospective Register of Systematic Reviews (PROSPERO): registration number [CRD42019129178](#).

PHASE 2 - Deciding what is relevant

Search strategy

There is no methodological agreement concerning the need to search for all possible articles to complete a 'good' qualitative synthesis ([Toye et al., 2014](#)). However, for this review, we chose to complete an extensive systematic search strategy for ten databases, Academic Search Complete, AMED, CINAHL, ERIC, MEDLINE, PsychArticles, PsychInfo, EMBASE, SPORTDiscus, and Web of Science. The rationale being that we wanted to capture all possible qualitative studies that have examined children and young people's perspectives of living with DCD.

We did not envisage a large volume of papers that is 40 or more articles. However, it was deemed necessary to capture a wide range of studies, in order to obtain enough data representing children’s experiences, and allow robust conceptual categories to be developed (Toye *et al.*, 2014). Booth (2016) recognised the challenges associated with searching grey literature. Describing a time-consuming process with the potential for marginal follow up of the unpublished literature (Booth, 2016). For these reasons, the authors chose not to include grey literature sources. These were not included as they have the potential to “swamp” data from naturally thinner studies (Booth, 2016). However, the authors will search for published articles resulting from these identified in the search.

To complement, the clarity and reporting of the search strategy and procedures, we used the Preferred Reporting Items for Systemic Reviews and Meta-Analysis Protocols (PRISMA-P) checklist (Moher *et al.*, 2015). A thorough search string was formulated based upon the comprehensive review of DCD literature by Smits-Engelsman *et al.* (2018), and a review paper focused on searching for qualitative research (Booth, 2016). The keywords used were “Developmental Coordination Disorder/DCD” and “qualitative research” alongside thesaurus and Medical Subject Headings terms (MeSH). A librarian from the University of Limerick reviewed the search strategy and provided guidance. The search strategy used in MEDLINE is presented as an example (Table 1).

Study selection

The SPIDER (Sample, Phenomenon of Interest, Design, Evaluation, and Research type) search strategy tool helped to structure the criteria developed to screen studies, firstly by title and abstract and, subsequently, by full-text review (Cooke *et al.*, 2012). Table 2 outlines each aspect of SPIDER and inclusion/exclusion criteria. Included studies will describe a sample of children aged five to eighteen years with a diagnosis of DCD or probable DCD according to the Diagnostic and Statistical Manual of Mental Disorders 5th Edition (DSM-V) criteria (APA, 2013). Where children are described as having probable DCD, the authors of studies must outline the profile of participants

so that categorisation of how each criterion of the DSM-V was fulfilled can be evaluated.

1. Motor impairment scores are recorded as less than the 15th percentile on a standardised motor test.
2. Describe how the participants’ everyday activities are affected because of the motor skills difficulties.
3. Explain the participants cognitive ability and confirm that it is within the normal intellectual ranges.
4. Indicate that no underlying medical condition is reported by parents, guardians, teachers, or health professionals.

Participants with DCD and a co-occurring specific learning difficulty or neurodevelopmental diagnosis such as Attention Deficit Disorder Hyperactivity will be included as co-occurrence is common (Blank *et al.*, 2019). Furthermore, studies examining parental and children’s views will be included, but it must be possible to extract the data on the child’s views and experiences of living with DCD, as the phenomenon of interest under investigation is children and young people’s views, opinions, and experiences of everyday life and living with DCD. All studies using a qualitative design, including mixed methods studies that report extractable qualitative data from the child’s perspective, will be included. The setting of the study will not be limited. All peer-reviewed articles published in English will be included. Due to pragmatic reasons of time and the financial burden associated with translation, searches will be limited to English publications only. No date limit will be applied to the search to capture all possible citations.

Studies will be excluded, if (a) they include a sample of children with a range of neurodevelopmental diagnoses and the qualitative data for the children with DCD cannot be extracted, or (b) the data presented is aggregated (for example, a mix of parent and child data that cannot be easily identifiable). Finally, systematic reviews, study protocols, and theses will be excluded.

Once, the search strategy has been completed in each of the identified databases, the citations retrieved will be uploaded to

Table 1. MEDLINE search strategy.

S1	Motor Skills Disorder* OR developmental coordination disorder OR clumsiness OR clumsy OR in-coordination OR dys-coordination OR minimal brain dysfunction OR minor neurological dysfunction OR motor delay disorder OR perceptual-motor impairment OR motor coordination difficulties OR motor learning difficulties OR mild motor problems OR non-verbal learning disability OR non-verbal learning disorder OR non-verbal learning dysfunction OR motor coordination problems OR sensorimotor difficulties OR sensory integrative dysfunction OR physical awkwardness OR physically awkward OR psychomotor disorders OR motor control and perception OR developmental dyspraxia OR perceptual motor dysfunction OR minimal cerebral dysfunction
S2	qualitative OR experience* OR perception* OR perspective* OR case stud* OR interview* OR focus group* OR mixed methods OR participant observation OR transcript* OR ethnograph* OR phenomenol* OR grounded theor* OR grounded-theor* OR purposive sample OR lived experience* OR narrative* OR life experience* OR life stor* OR action research OR observational method OR thematic analysis OR narrative analysis OR field stud* OR field-notes OR videorecording
S3	child OR children OR adolescent OR teen OR teenager OR youth OR young person OR young adult
S4	S1 AND S2 AND S3

Table 2. Inclusion and exclusion criteria.

	Inclusion Criteria	Exclusion criteria
Sample	<p>Children aged five to eighteen years with a diagnosis of DCD or probable DCD.</p> <p>Participants with DCD and a co-occurring specific learning difficulty or neurodevelopmental diagnosis such as ADHD will be included as co-occurrence is very common (Blank <i>et al.</i>, 2019).</p> <p>Participants must meet the Diagnostic and Statistical Manual of Mental Disorders 5th Edition (DSM-V) criteria for DCD.</p> <p>Where children and young people are described as having probable DCD, the authors must outline how each criterion of the DSM-V was fulfilled:</p> <ol style="list-style-type: none"> 1. motor impairment scores below the 15th percentile on a standardised motor test; 2. describe how the participants' activities of daily living are affected as a result of the motor skills difficulties 3. explain the participants cognitive ability and confirm that it is within the normal intellectual ranges 4. indicate that no underlying medical condition is reported by parents, guardians, teachers or health professionals. <p>Studies examining parental and child experiences will be included, but it must be possible to extract data on the child and young person views and experiences of living with DCD.</p>	<p>Children younger than five years will be excluded as a diagnosis of DCD is not confirmed below five years of age (Blank <i>et al.</i>, 2019).</p> <p>Studies that include a sample of children and young people with a different diagnosis will be excluded if it is not possible to extract the views and experiences of children and young people with DCD within such studies.</p> <p>Studies examining the opinions and experiences of parents of children with DCD will be excluded.</p>
Phenomenon of interest	Children and young people who describe their views, opinions and experiences of living with DCD.	
Design	Qualitative or mixed-methods studies reporting primary qualitative data (e.g., data collected through qualitative methods such as interviews, focus groups, or participant observation etc.)	Where the qualitative data from the child cannot be identified, such as summaries or aggregated data of parent and child experiences, these papers will be excluded.
Evaluation	Qualitative analysis of experiences, feelings, views, opinions, and experiences of living with DCD. All settings such as school, home, community, etc. will be included.	Studies where a method of qualitative analysis is not described.
Research type	Peer-reviewed journal articles and thesis. Full text available in English Published between No date limit- 2019	Systematic reviews, protocols, theoretical work, editorials, opinion pieces and dissertations, grey literature.

Endnote software and the duplicate citations removed. These citations will be exported to Rayyan software, to facilitate the screening of the papers by title and abstract (Ouzzani *et al.*, 2016). Whilst, quantitative synthesis recommend a prescribed requirement for two reviewers to screen articles, qualitative synthesis do not share this requirement as a protection against bias (Booth *et al.*, 2013). Instead, reviewer resources could be employed more efficiently, to enhance the quality of analysis and interpretation (Booth *et al.*, 2013). Therefore, 10% of papers will be screened by title and abstract to check for consistency by KR. If there is any ambiguity about an article title or abstract, it will be added for full-text review. Two independent reviewers (ÁOD and KR) will use the selection criteria to conduct a

full-text review for all included papers. Where any discrepancies arise at the full-text review stage, these differences will be resolved through discussion. If it is challenging to resolve differences of opinion, a third reviewer (SC) will help to facilitate a final decision. The PRISMA-P flowchart will be populated to present the results generated at each stage of the process (Moher *et al.*, 2015).

Quality appraisal of the included studies

This meta-ethnography aims to add to the conceptual understanding of living with DCD from the child and young person's perspective so that it can inform practice, research and policy; therefore, the studies included in this qualitative evidence

synthesis must be ‘good enough’ (Toye *et al.*, 2013). Toye *et al.* (2013) present a conceptual model of quality, which centres on conceptual clarity and interpretive rigour; and the researchers advocate the need for such a model to be used when completing meta-ethnography. The two principal features are defined as 1) “Conceptual clarity (how has the author articulated a concept that facilitates theoretical insight)”, and 2) “Interpretive rigour (What is the context of interpretation? How inductive are the findings? Has the interpretation been challenged?)” (Toye *et al.*, 2013). In line with this conceptual model of quality, we have selected the Joanna Briggs Institute (JBI) Checklist for Qualitative Research (Joanna Briggs Institute, 2017) to appraise all included papers. The JBI checklist is the most sensitive tool when examining methodological validity, given its focus on congruity including descriptive, interpretative, theoretical, external and evaluative validity (Hannes *et al.*, 2010).

All included papers will be critically appraised by two independent reviewers (ÁOD and KR) using the JBI Checklist (Joanna Briggs Institute, 2017). The JBI tool will be used to inform judgements about the methodological quality of the articles; decisions will be categorised as ‘include’ or ‘exclude’ and comments on the decisions will be recorded. The outcomes of the critical appraisal process will be compared and any variances in decisions will be discussed to reach consensus on the appraisal. If the involvement of a third reviewer is necessary, SC will contribute to the final decision-making process. In light of the quality appraisal results, the synthesis and interpretation of the included studies will be discussed.

PHASE 3—Reading included studies

Data extraction and synthesis

The analytical and synthesis process in meta-ethnography commences by reading the studies, described as phase three by France *et al.* (2019a) and Noblit & Hare (1988). Reading and re-reading the studies in depth is a fundamental aspect to data extraction and continues to be an iterative process during data extraction and synthesis (Toye *et al.*, 2014). The views, perceptions, or concepts presented in the results and discussion of primary studies are considered the raw data of meta-ethnography (Toye *et al.*, 2014). These concepts and ideas are labelled as second-order constructs and are derived from the researcher’s analysis and interpretation of the research participants words used to describe their experiences of the phenomenon such as living with DCD, also known as first-order constructs or key concepts (Toye *et al.*, 2014).

Previous authors have emphasised the importance of deciding what data to extract, and process of completion (Toye *et al.*, 2014; Wong *et al.*, 2018). In this review, two independent reviewers will use a Microsoft Excel sheet to collate information on the characteristics of each study, such as citation, study setting/country, sample size, participant characteristics, aims of the study, data collection and methods, and summary of findings. ÁOD will also upload a PDF of each paper to QSR International’s NVivo 12 software. The first- and second-order constructs will be extracted and interpreted; the researchers (AOD and KR)

will generate codes that describe and explain the key concepts within each study. NVivo software will provide an organised database through which interpretation can be completed. The researchers ÁOD and KR will code second-order findings as they present within each paper. These interpretations and synthesis of the second-order constructs become the third-order constructs (Noblit & Hare, 1988). No second-order constructs that are considered unrelated to the phenomena or experience of living with DCD will be included for synthesis (Toye *et al.*, 2014).

PHASE 4 - Determining how studies are related

Phase four of meta-ethnography involves determining how studies are related (France *et al.*, 2019a). Following coding of second-order constructs, ÁOD and KR will meet regularly to discuss and compare their concepts and determine how the studies relate to each other, and the review question (France *et al.*, 2019a) and will involve Mandy Stanley (MS) an invited expert in the area of meta-ethnography at this and subsequent stages. These meetings will aim to challenge the interpretation of concepts and compare them across each study. This method of identifying the similarities and differences, across the included studies will be a prerequisite step that informs the “translation” process described as phase five by (Noblit & Hare, 1988).

PHASE 5 - Translating studies into one another

Phase five; the next stage will involve translating studies into each other (Noblit & Hare, 1988). France *et al.* (2019a) suggest that translation can be performed in different ways. In this review, the authors will follow a method described by Toye *et al.* (2014). Toye & colleagues (2014) suggest that constructs should be constantly compared until similarities and differences between concepts can be organised into conceptual categories to represent the third-order constructs. Given that the sample of children and young people included in this study is 5 to 18 years, the primary studies may report a variety of experiences depending upon the age of the included sample. It will be essential to preserve the context and meaning of the identified concepts during the translation concerning any subgroups such as age, as recommended by Campbell *et al.* (2003). For this reason, the method of constant comparison across studies was deemed more appropriate rather than translating studies in chronological order (Toye *et al.*, 2014).

Once preliminary conceptual categories are created, ÁOD will present the findings to the broader research team, including SC and MS. Through discussions, these third-order constructs will be further developed and refined.

PHASE 6 & 7 Synthesizing translations and Expressing the synthesis

The final stages, phase six and seven, will involve the research team synthesising the conceptual categories into a line of argument, which provides greater conceptual understanding to the phenomena of interest as a whole; that is children and young people with DCD perspectives and experiences of everyday life and living with DCD. The conceptual categories and line of argument synthesis will be presented narratively; tables and

figures will be created to support the narrative account. The findings of this meta-ethnography endeavour to inform future research, policy and practice. Therefore, dissemination will involve the publication of the results in a peer-reviewed journal. An infographic designed policy brief will be published, to capitalise on knowledge translation and target a broader audience of policymakers, service providers, and clinicians. The policy brief will be distributed to advocacy groups who work on behalf of children and young people with DCD. Knowledge translation is challenging; in the context of childhood disability it is imperative that findings are easily accessible and usable (Novak & Honan, 2019). Given the national and international focus upon promoting the voice of the child, the findings of this study must be presented in an easily accessible format for all possible stakeholders (Ombudsman for Children's Office, 2019).

Discussion

Limitations and strengths

To the best of our knowledge, we believe this is the first systematic review to integrate and synthesise the findings of qualitative studies on the views and experiences of children and young people living with DCD. The findings of this review will be relevant for researchers, practitioners, and policymakers working with children and young people with DCD. Given that there is a paucity of evidence regarding effective interventions to improve participation outcomes for children with DCD (Novak & Honan, 2019; O'Dea *et al.*, 2019), the results of this review

will add to the empirical evidence when designing a complex intervention for children with DCD to improve participation in everyday life. Thus, adding to research knowledge and reducing research waste by synthesising and conceptualising available evidence that can be used in the development of a complex intervention (Bleijenberg *et al.*, 2018).

Addressing rigour is an essential aspect for the qualitative researcher. It is necessary to recognise that ÁOD is a PhD scholar and an Occupational Therapist who has worked clinically with children and young people with DCD. The other members of the research team have extensive research experience in a range of methodologies. It is envisaged that the meetings to discuss the analysis and interpretation of results will challenge any possible pre-existing assumptions that may influence results.

Data availability

Underlying data

No data are associated with this article.

Reporting guidelines

Figshare: PRISMA-P checklist for "Children and young people's experiences of living with developmental coordination disorder/dyspraxia: study protocol for a qualitative evidence synthesis". <https://doi.org/10.6084/m9.figshare.10002788.v2> (O'Dea *et al.*, 2019).

References

- APA: **Diagnostic and Statistical Manual of Mental Disorders: DSM-5.** Arlington, VA, USA., American Psychiatric Publishing Inc. 2013.
[Publisher Full Text](#)
- Barnett-Page E, Thomas J: **Methods for the synthesis of qualitative research: a critical review.** *BMC Med Res Methodol.* 2009; **9**(1): 59.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
- Blank R, Barnett AL, Cairney J, *et al.*: **International clinical practice recommendations on the definition, diagnosis, assessment, intervention, and psychosocial aspects of developmental coordination disorder.** *Dev Med Child Neurol.* 2019; **61**(3): 242–285.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Bleijenberg N, de Man-van Ginkel JM, Trappenburg JCA, *et al.*: **Increasing value and reducing waste by optimizing the development of complex interventions: Enriching the development phase of the Medical Research Council (MRC) Framework.** *Int J Nurs Stud.* 2018; **79**: 86–93.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Booth A: **Searching for qualitative research for inclusion in systematic reviews: a structured methodological review.** *Syst Rev.* 2016; **5**: 74.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
- Booth A, Carroll C, Iltott I, *et al.*: **Desperately seeking dissonance: identifying the disconfirming case in qualitative evidence synthesis.** *Qual Health Res.* 2013; **23**(1): 126–141.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Cahill M, Robinson K, Pettigrew J, *et al.*: **Qualitative synthesis: A guide to conducting a meta-ethnography.** *Br J Occup Ther.* 2018; **81**(3): 129–137.
[Publisher Full Text](#)
- Cairney J, Hay JA, Veldhuizen S, *et al.*: **Developmental coordination disorder, sex, and activity deficit over time: a longitudinal analysis of participation trajectories in children with and without coordination difficulties.** *Dev Med Child Neurol.* 2010; **52**(3): e67–72.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Camden C, Meziane S, Maltais D, *et al.*: **Research and knowledge transfer priorities in developmental coordination disorder: Results from consultations with multiple stakeholders.** *Health Expect.* 2019; **22**(5): 1156–1164.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
- Campbell R, Pound P, Pope C, *et al.*: **Evaluating meta-ethnography: a synthesis of qualitative research on lay experiences of diabetes and diabetes care.** *Soc Sci Med.* 2003; **56**(4): 671–684.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Children's Rights Alliance: **The United Nations Convention on the Rights of the Child.** Dublin; Ireland: Children's Rights Alliance. [Accessed 09 Sept 2019]; 2010.
[Reference Source](#)
- Christensen P, Prout A: **Researching Children and Childhood.** In: GREENE S, HOGAN D. (eds.) *Researching Children's Experience: Approaches and Methods.* Thousand Oaks, United States: Sage Publications Ltd. 2005; **35**(6): 993–994.
[Publisher Full Text](#)
- Cooke A, Smith D, Booth A: **Beyond PICO: the SPIDER tool for qualitative evidence synthesis.** *Qual Health Res.* 2012; **22**(10): 1435–1443.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Dunford C, Missiuna C, Street E, *et al.*: **Children's Perceptions of the Impact of Developmental Coordination Disorder on Activities of Daily Living.** *Br J Occup Ther.* 2005; **68**(5): 207–214.
[Publisher Full Text](#)
- France EF, Cunningham M, Ring N, *et al.*: **Improving reporting of**

- meta-ethnography: the eMERGE reporting guidance.** *BMC Med Res Methodol.* 2019a; **19**(1): 25.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
- France EF, Uny I, Ring N, *et al.*: **A methodological systematic review of meta-ethnography conduct to articulate the complex analytical phases.** *BMC Med Res Methodol.* 2019b; **19**(1): 35.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
- Hannes K, Lockwood C, Pearson A: **A comparative analysis of three online appraisal instruments' ability to assess validity in qualitative research.** *Qual Health Res.* 2010; **20**(12): 1736–1743.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Harrowell I, Hollén L, Lingam R, *et al.*: **Mental health outcomes of developmental coordination disorder in late adolescence.** *Dev Med Child Neurol.* 2017; **59**(9): 973–979.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
- Hill EL, Brown D: **Mood impairments in adults previously diagnosed with developmental coordination disorder.** *J Ment Health.* 2013; **22**(4): 334–340.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Jasmin E, Tétrault S, Larivière N, *et al.*: **Participation and needs of children with developmental coordination disorder at home and in the community: Perceptions of children and parents.** *Res Dev Disabil.* 2018; **73**: 1–13.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Joanna Briggs Institute: **JBI critical appraisal checklist for qualitative research.** 2017.
[Reference Source](#)
- Kirby A, Edwards L, Sugden D: **Emerging adulthood in developmental co-ordination disorder: parent and young adult perspectives.** *Res Dev Disabil.* 2011; **32**(4): 1351–1360.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Lingam RP, Novak C, Emond A, *et al.*: **The importance of identity and empowerment to teenagers with developmental co-ordination disorder.** *Child Care Health Dev.* 2014; **40**(3): 309–318.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Lynch R, Lynch H: **Exploring children's decisions to participate in occupational therapy research.** *Irish Journal of Occupational Therapy.* 2013; **40**(1): 22–30.
[Reference Source](#)
- Maciver D, Owen C, Flannery K, *et al.*: **Services for children with developmental co-ordination disorder: the experiences of parents.** *Child Care Health Dev.* 2011; **37**(3): 422–429.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Malpass A, Shaw A, Sharp D, *et al.*: **"Medication career" or "moral career"? The two sides of managing antidepressants: a meta-ethnography of patients' experience of antidepressants.** *Soc Sci Med.* 2009; **68**(1): 154–168.
[PubMed Abstract](#) | [Publisher Full Text](#)
- McQuinn S, Delnord M, Sweeney MR, *et al.*: **Making the Lives of Children and Young People More Visible in Europe. Consensus on Child and Young People's Health and Well-Being Indicators for Europe: A Delphi Process.** *Child Indic Res.* 2020; **13**: 951–966.
[Publisher Full Text](#)
- Missiuna C, Moll S, King S, *et al.*: **A trajectory of troubles: parents' impressions of the impact of developmental coordination disorder.** *Phys Occup Ther Pediatr.* 2007; **27**(1): 81–101.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Missiuna C, Moll S, Law M, *et al.*: **Mysteries and mazes: parents' experiences of children with developmental coordination disorder.** *Can J Occup Ther.* 2006; **73**(1): 7–17.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Miyahara M, Hillier SL, Pridham L, *et al.*: **Task-oriented interventions for children with developmental co-ordination disorder.** *Cochrane Database Syst Rev.* 2017; **7**(7): CD010914.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
- Miyahara M, Lagisz M, Nakagawa S, *et al.*: **Intervention for children with Developmental Coordination Disorder: how robust is our recent evidence?** *Child Care Health Dev.* 2020; **46**(4): 397–406.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Moher D, Shamseer L, Clarke M, *et al.*: **Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement.** *Syst Rev.* 2015; **4**(1): 1.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
- Morgan R, Long T: **The Effectiveness of Occupational Therapy for Children with Developmental Coordination Disorder: A Review of the Qualitative Literature.** *Br J Occup Ther.* 2012; **75**(1): 10–18.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Murray C, Stanley M: **Meta-synthesis demystified.** In: Shoba, N. and Stanley, M. (eds.) *Qualitative Research Methodologies for Occupational Science and Therapy.* London and New York: Routledge. 2016.
- Noblit GW, Hare RD: **Meta-ethnography: Synthesizing qualitative studies.** California: Sage Publications. 1988.
[Publisher Full Text](#)
- Novak C, Lingam R, Coad J, *et al.*: **'Providing more scaffolding': parenting a child with developmental co-ordination disorder, a hidden disability.** *Child Care Health Dev.* 2012; **38**(6): 829–835.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Novak I, Honan I: **Effectiveness of paediatric occupational therapy for children with disabilities: A systematic review.** *Aust Occup Ther J.* 2019; **66**(3): 258–273.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
- O'Dea A, Connell A: **Performance difficulties, activity limitations and participation restrictions of adolescents with developmental coordination disorder (DCD).** *Br J Occup Ther.* 2016; **79**(9): 540–9.
[PubMed Abstract](#) | [Publisher Full Text](#)
- O'Dea Á, Coote S, Robinson K: **PRISMA-P-checklist for "Children and young people's experiences of living with developmental coordination disorder/dyspraxia: study protocol for a qualitative evidence synthesis".** docx. 2019.
- O'Dea Á, Robinson K, Coote S: **Effectiveness of interventions to improve participation outcomes for children with developmental coordination disorder: A systematic review.** *Br J Occup Ther.* 2019; **83**(4): 256–273.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Ombudsman for Children's Office: **BEYOND LIMITS 19: empowering young people with disabilities [Online].** <https://www.oco.ie/news/beyond-limits-empowering-young-people-with-disabilities/>. 2019.
[Reference Source](#)
- Ouzzani M, Hammady H, Fedorowicz Z, *et al.*: **Rayyan-a web and mobile app for systematic reviews.** *Syst Rev.* 2016; **5**(1): 210.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
- Payne S, Ward G, Turner A, *et al.*: **The social impact of living with developmental coordination disorder as a 13-year-old.** *Br J Occup Ther.* 2013; **76**(8): 362–369.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Pratt ML, Hill EL: **Anxiety profiles in children with and without developmental coordination disorder.** *Res Dev Disabil.* 2011; **32**(4): 1253–1259.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Ring N, Jepson R, Ritchie K: **Methods of synthesizing qualitative research studies for health technology assessment.** *Int J Technol Assess Health Care.* 2011; **27**(4): 384–90.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Smits-Engelsman B, Vinçon S, Blank R, *et al.*: **Evaluating the evidence for motor-based interventions in developmental coordination disorder: A systematic review and meta-analysis.** *Res Dev Disabil.* 2018; **74**: 72–102.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Söderbäck M, Coyne I, Harder M: **The importance of including both a child perspective and the child's perspective within health care settings to provide truly child-centred care.** *J Child Health Care.* 2011; **15**(2): 99–106.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Stafford L: **'What about my voice': emancipating the voices of children with disabilities through participant-centred methods.** *Child Geogr.* 2017; **15**(5): 600–613.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Summers J, Larkin D, Dewey D: **Activities of daily living in children with developmental coordination disorder: dressing, personal hygiene, and eating skills.** *Hum Mov Sci.* 2008; **27**(2): 215–229.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Taylor B, Francis K: **Qualitative Research in the Health Sciences.** London and New York: Routledge. 2013.
[Publisher Full Text](#)
- Timler A, McIntyre F, Hands B: **Adolescents' self-reported motor assessments may be more realistic than those of their parents.** *Br J Occup Ther.* 2018; **81**(4): 227–233.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Toye F, Seers K, Allcock N, *et al.*: **'Trying to pin down jelly' - exploring intuitive processes in quality assessment for meta-ethnography.** *BMC Med Res Methodol.* 2013; **13**: 46.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
- Toye F, Seers K, Allcock N, *et al.*: **Meta-ethnography 25 years on: challenges and insights for synthesising a large number of qualitative studies.** *BMC Med Res Methodol.* 2014; **14**: 80.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
- Valentini NC, Clark JE, Whittall J: **Developmental co-ordination disorder in socially disadvantaged Brazilian children.** *Child Care Health Dev.* 2015; **41**(6): 970–979.
[PubMed Abstract](#) | [Publisher Full Text](#)
- Van der Linde BW, Van Netten JJ, Otten B, *et al.*: **Activities of Daily Living in Children With Developmental Coordination Disorder: Performance, Learning, and Participation.** *Phys Ther.* 2015; **95**(11): 1496–1506.
[PubMed Abstract](#) | [Publisher Full Text](#)
- World Health Organisation: **International classification of functioning, disability and health: ICF.** Geneva: World Health Organisation. 2001.
[Reference Source](#)
- WHO: **International Classification of Functioning, Disability & Health: Children and Youth Version: ICF-CY.** Switzerland, World Health Organisation, 2007.
[Reference Source](#)
- Withers R, Tsang Y, Zwicker JG: **Intervention and management of developmental coordination disorder: Are we providing evidence-based services? Intervention et traitement d'un trouble du développement de la coordination : Les ergothérapeutes fournissent-ils des services fondés sur les faits scientifiques?.** *Can J Occup Ther.* 2017; **84**(3): 158–167.
[PubMed Abstract](#) | [Publisher Full Text](#)

Wong AYL, Forss KS, Jakobsson J, *et al.*: **Older adult's experience of chronic low back pain and its implications on their daily life: Study protocol of a systematic review of qualitative research.** *Syst Rev.* 2018; **7**(1): 81.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)

Zwicker JG, Suto M, Harris SR, *et al.*: **Developmental coordination disorder is more than a motor problem: Children describe the impact of daily struggles on their quality of life.** *Br J Occup Ther.* 2018; **81**(2): 65–73.
[Publisher Full Text](#)

Open Peer Review

Current Peer Review Status:  

Version 4

Reviewer Report 25 January 2021

<https://doi.org/10.21956/hrbopenres.14357.r28664>

© 2021 Miyahara M et al. This is an open access peer review report distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.



Tessa Pocock

Community Health, School of Nursing, University of Auckland, Auckland, New Zealand

Motohide Miyahara 

Department of Clinical Psychological Science, School of Medicine, Hirosaki University, Hirosaki, Japan

We are happy with the final revision and grateful for the authors who have sincerity taken our comments on board to the end. Congratulations!

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Qualitative meta-synthesis.

We confirm that we have read this submission and believe that we have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Version 3

Reviewer Report 04 November 2020

<https://doi.org/10.21956/hrbopenres.14266.r28154>

© 2020 Miyahara M et al. This is an open access peer review report distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.



Motohide Miyahara 

Department of Clinical Psychological Science, School of Medicine, Hirosaki University, Hirosaki,

Japan

Tessa Pocock

Community Health, School of Nursing, University of Auckland, Auckland, New Zealand

The authors took the reviewers' comments seriously and addressed most of the issues raised.

The third paragraph in the introduction improved its accuracy, but it is still confusing as it is. If the authors want to present competing views, they need to introduce the existence of the different views in the first topic sentence. It is also helpful for the reader to explain what creates the two completely opposing views on the existing evidence on the intervention effect. The key issue may be the quality of evidence (Miyahara, Lagisz, Nakagawa, & Henderson, 2020)¹.

The authors use the term evidence in the third and fifth paragraphs, but the meanings are quite different between the paragraphs. The authors are encouraged to use a different term in the fifth paragraph.

The authors adequately justified the reasons for focusing on children's view in terms of intervention development.

The sixth paragraph justify the study of children's views well, but the use of meta ethnography is not explained in the seventh paragraph. In the second sentence in the method section, the authors explain that they chose meta-ethnography because it is interpretative rather than aggregative. The reader may wonder, if they understand the difference between interpretive and aggregative meta analysis, why it is important to choose the interpretive method of synthesis rather than aggregative methods. Please explain fully.

Please also carefully check the formatting of in-text citations and have a very good look at grammar, including punctuations (e.g., colons and semicolons).

References

1. Miyahara M, Lagisz M, Nakagawa S, Henderson S: Intervention for children with developmental coordination disorder: How robust is our recent evidence?. *Child Care Health Dev.* 2020; **46** (4): 397-406 [PubMed Abstract](#) | [Publisher Full Text](#)

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Qualitative meta-synthesis.

We confirm that we have read this submission and believe that we have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however we have significant reservations, as outlined above.

Version 2

Reviewer Report 13 August 2020

<https://doi.org/10.21956/hrbopenres.14222.r27776>

© 2020 Miyahara M et al. This is an open access peer review report distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.



Motohide Miyahara

Department of Clinical Psychological Science, School of Medicine, Hirosaki University, Hirosaki, Japan

Tessa Pocock

Community Health, School of Nursing, University of Auckland, Auckland, New Zealand

The authors did amend the introduction, accurately reflecting the conclusion by Miyahara et al. (2017). However, this is a topic sentence of the paragraph and the rest of the paragraph does not follow well without adjusting the entire paragraph. In fact, the whole introduction is rather fragmented. As the other reviewer suggests, there is a room for improvement in the introduction in terms of justifying the study theoretically, practically, and methodologically. The current introduction still appears sketchy, missing the explanations for why children's perspective is important and why a qualitative synthesis needs to be conducted by meta ethnography. The minor points have been addressed in a satisfactory manner.

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Qualitative meta-synthesis.

We confirm that we have read this submission and believe that we have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however we have significant reservations, as outlined above.

Version 1

Reviewer Report 03 February 2020

<https://doi.org/10.21956/hrbopenres.14040.r27052>

© 2020 Brooks R. This is an open access peer review report distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.



Rob Brooks

School of Clinical and Applied Sciences, Leeds Beckett University, Leeds, UK

Thank you for the opportunity to review this paper. The authors begin to provide a justification for the need for this review study and outline a comprehensive approach to their methodology. There are a number of strengths to this study and some areas that could benefit from further

consideration.

Abstract

The abstract provides a brief overview of the study. This includes some detail of background, methodology and outcomes.

Abstract specific feedback:

- In the abstract and in the introduction the authors refer to 'In the past...' it would be helpful to know if this a reference to past research?
- There is an interchangeable use of the term's children and children and young people – it would be good to be consistent.
- The abstract mentions experience of relationships but this idea is not really brought through in to the main introduction.
- There is an overuse of semi-colons, shorter sentences may address this.

Introduction

Overall, the authors draw on a range of literature and offer a gap in knowledge for their study. The presentation of DCD and its consequences are clearly presented. There are a number of terms used related to the ICF, including activities, body functions and participation. Use of the ICF in the paper may help situate the discussion more clearly. There is perhaps an over presentation/discussion of interventions for DCD, which is not the focus of this study. The paper describes a 'pressing need' and that is 'timely' for this study but offers limited justification for this.

Introduction specific feedback:

- The authors list specific everyday activities - dressing, feeding, writing, but then also include broader taxonomies – self-care and leisure. Consider greater constancy.
- Is DCD prevalence universal, are there any international studies that could be drawn on?
- The authors refer to recent systematic reviews and meta-analyses – (plural) but you only reference one of each. Consider revision.
- There are a number of references missing from the reference list, for example Wilson *et al.*, 2013 and Hana and Rodgers, 2002.

Methods and related sections

This section is an area of strength for the paper. The authors have shown clarity and been methodical. The research design is appropriate to the study objective. Some of the information in this section repeats information in Table 2 which may not be needed. There is a clear strategy for study selection, quality appraisal, and data extraction.

Methods specific feedback:

- The authors describe how meta-ethnography has become popular – are there any relevant studies that demonstrate this?
- You are using a range of databases but not appear to be any relating to education (such as ERIC), where experiences of school could be published.
- Consider the addition of the term juvenile to the search criteria.

- The inclusion of studies where the participants with probable DCD needs justification.
- Your review of title and abstract by only one reviewer should be reconsidered.
- Please check the reference for the JBI Qualitative methodology checklist.

Is the rationale for, and objectives of, the study clearly described?

Partly

Is the study design appropriate for the research question?

Yes

Are sufficient details of the methods provided to allow replication by others?

Yes

Are the datasets clearly presented in a useable and accessible format?

Not applicable

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Occupational therapy, paediatrics, child and adolescent mental health, qualitative research.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Author Response 23 Jul 2020

Aine O'Dea, University of Limerick, Castletroy, Ireland

Reviewer 2- Comment 1

In the abstract and the introduction the authors refer to 'In the past...' it would be helpful to know if this a reference to past research?

Response: The authors have clarified and rephrased this sentence in the abstract.

Reviewer 2- Comment 2

There is an interchangeable use of the term's children and children and young people – it would be good to be consistent.

Response: Consistency of terms has been addressed throughout.

Reviewer 2- Comment 3

The abstract mentions experience of relationships, but this idea is not really brought through into the main introduction.

Response: We have amended the abstract to remove reference to 'relationships' and re-orientate that sentence towards children's experiences in general.

Reviewer 2- Comment 4

There is an overuse of semi-colons, shorter sentences may address this.

Response: This has been addressed.

Reviewer 2- Comment 5

The authors list specific everyday activities - dressing, feeding, writing, but then also include broader taxonomies – self-care and leisure. Consider greater constancy.

Response: The authors have rephrased that sentence in the introduction to distinguish between specific activities and broader categories of activities

Reviewer 2- Comment 6

Is DCD prevalence universal; are there any international studies that could be drawn on?

Response: Prevalence is discussed in a little further detail to acknowledge variation in international prevalence rates.

Reviewer 2- Comment 7

The authors refer to recent systematic reviews and meta-analyses – (plural), but you only reference one of each. Consider revision.

Response: The authors have corrected the phrasing.

Reviewer 2- Comment 8

There are a number of references missing from the reference list, for example, Wilson *et al.*, 2013 and Hanna and Rodgers, 2002.

Response: The missing references have been added

Reviewer 2- Comment 9

The authors describe how meta-ethnography has become popular – are there any relevant studies that demonstrate this?

Response: The authors have added the reference to highlight the popular use of meta-ethnography in health services research.

Reviewer 2- Comment 10

You are using a range of databases but not appear to be any relating to education (such as ERIC), where experiences of school could be published.

Response

We recognise that searching ERIC could yield further relevant studies. As such, we have included this database.

Reviewer 2- Comment 11

Consider the addition of the term juvenile to the search criteria.

Response: We recognise that adding the term juvenile may have been helpful. We will acknowledge the omission of this search term as limitations when we prepare the synthesis for publications.

Reviewer 2 - Comment 12

The inclusion of studies where the participants with probable DCD needs justification.

Response: We have clarified that where children are described as having probable DCD, the authors of studies must outline the profile of participants. So that categorisation of how

each criterion of the DSM-V was fulfilled can be evaluated.

Reviewer 2- Comment 13

Your review of title and abstract by only one reviewer should be reconsidered.

Response: While quantitative synthesis recommends a prescribed requirement for two reviewers to screen articles, qualitative synthesis does not share this requirement as protection against bias (Booth *et al.*, 2013). Instead, reviewer resources could be employed more efficiently, to enhance the quality of analysis and interpretation (Booth *et al.*, 2013). Therefore, 10% of papers will be screened by title and abstract to check for consistency by KR, now stated in the 'study selection' section.

Reviewer 2- Comment 14

Please check the reference for the JBI Qualitative methodology checklist.

Response: This has been addressed

Competing Interests: No competing interests were disclosed.

Reviewer Report 03 December 2019

<https://doi.org/10.21956/hrbopenres.14040.r26940>

© 2019 Miyahara M *et al.* This is an open access peer review report distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.



Motohide Miyahara 

Department of Clinical Psychological Science, School of Medicine, Hirosaki University, Hirosaki, Japan

Tessa Pocock

Community Health, School of Nursing, University of Auckland, Auckland, New Zealand

It is an honour and privilege to be asked to review this protocol. I am invited probably because I co-authored one of the first qualitative synthesis studies concerning young people with disability with my former student, Tessa Pocock who served as the first author for the study (Pocock & Miyahara, 2017¹) which derived from her Honour's dissertation. Currently a PhD student, Tessa expressed her interest to learn how to peer-review a paper, so I invited her to be a co-reviewer. When she decided to perform qualitative meta-synthesis, I assigned her to read a book entitled, "Meta-Study of Qualitative Health Research" by Paterson, Thorne, Canam, and Jillings (2001)². This book contained the information about meta-ethnography which is planned to be used in O'Dea, Coote, and Robinson's proposed study.

The study protocol starts with the brief account of children with developmental coordination disorder (DCD), followed by the impact of DCD on children's life participation and health. To counter the negative impact of DCD, the contemporary health service delivery model targets

children's perspectives on goal-setting in participating in desirable life situations. This approach can benefit from qualitative studies tapping into the experiences of children with DCD. However, the number of such studies are limited and hardly synthesized. Therefore, the proposed study is worth conducting not only to fill the research gap, but also to inform the health service providers to develop and implement appropriate service. After searching, selecting, and extracting data from target studies, the meta-ethnographic approach will be applied to synthesize the data, following the process specified by Noblit and Hare (1988)³.

The protocol is written clearly with a well-justified rationale and purpose. While the choice of meta-ethnography is appropriate for the purpose, the reader who is unfamiliar with the particular approach would benefit from further explanation, starting with a clarification of why this particular approach was selected, whether meta-ethnography is applied to ethnographic studies or other types of qualitative studies, and some basic tenets of meta-ethnography. The planned process is consistent with the steps illustrated by Noblit and Hare (1988)³ and the protocol authors should be able to carry out the protocol as they plan.

Taking advantage of this opportunity, we would like to point out one minor yet significant discrepancy. At the beginning of the third paragraph of Introduction, the protocol authors state that "task-oriented interventions are effective" citing Miyahara, Hillier, Pridham, and Nakagawa (2017)⁴ and Smits-Engelsman *et al.* (2018)⁵. Although the latter review concludes as such, the former review maintains that there is no strong evidence that supports the efficacy of task-oriented approach, which is more consistent with the second sentence than the review by Smits-Engelsman *et al.* (2018)⁵. The protocol authors are encouraged to amend these two sentences in the final report which we very much look forward to reading.

In addition, we suggest slight modification and/or clarification be made to the following points:

Introduction

- Third paragraph: Provide reference details for "Hanna & Rodgers, 2002" citation.

Methods

- To be consistent with the abstract, clarify how the eMERGe reporting guidelines will be used in the rest of the review process.

Search strategy

- First sentence, second line: comma is not necessary after "search for".
- Alongside the nine listed databases, please clarify whether grey literature is also being searched for. If not, please justify/state why.
- Please clarify whether a librarian was consulted during the development of the search strategy.

Study selection

- Fourth paragraph: What is the rationale for having two independent reviewers screen only the full text? Can an additional reviewer assist with all or a set number of the title and abstract screening, too?

Table 2

- Inclusion criteria, Sample, point 3: "cognitively ability" should be 'cognitive ability'. This change should be made in the text under the table as well.

- Exclusion criteria, Research type: should grey literature be listed here? Do the protocol authors consider opinion pieces and dissertations as grey literature?

Quality appraisal of the included studies

- Please clarify *what* should be congruent in the sentence: “The JBI checklist is the most sensitive tool when examining methodological validity, given its focus on **congruity**.”

Data extraction and synthesis

- First paragraph, first sentence: Remove brackets from the reference to France et al., 2019; Noblit & Hare, 1988.
- Fourth paragraph, third sentence: Remove brackets from the reference to Toye et al., 2014.
- Fourth paragraph, sixth sentence: Remove brackets from the reference to Campbell et al., 2003.
- Fifth paragraph, first sentence: Remove comma after “Once”.
- Fifth paragraph, first sentence: Would it also be helpful to have the invited expert involved earlier in the meta-ethnography process, rather than just looking at the preliminary findings (if possible)?
- Sixth paragraph, third sentence: Remove comma from after “meta-ethnography”.
- Sixth paragraph, eighth sentence: “Nation” should be ‘national’.

References

1. Pocock T, Miyahara M: Inclusion of students with disability in physical education: a qualitative meta-analysis. *International Journal of Inclusive Education*. 2018; **22** (7): 751-766 [Publisher Full Text](#)
2. Paterson BL, Thorne SE, Canam C, Jillings C: Meta-Study of Qualitative Health Research. *Sage Publishing*. 2001.
3. Meta-ethnography: Synthesizing qualitative studies. *Sage Publishing*. 1988.
4. Miyahara M, Hillier S, Pridham L, Nakagawa S: Task-oriented interventions for children with developmental co-ordination disorder. *Cochrane Database of Systematic Reviews*. 2017. [Publisher Full Text](#)
5. Smits-Engelsman B, Vinçon S, Blank R, Quadrado VH, et al.: Evaluating the evidence for motor-based interventions in developmental coordination disorder: A systematic review and meta-analysis. *Res Dev Disabil*. 2018; **74**: 72-102 [PubMed Abstract](#) | [Publisher Full Text](#)

Is the rationale for, and objectives of, the study clearly described?

Yes

Is the study design appropriate for the research question?

Yes

Are sufficient details of the methods provided to allow replication by others?

Yes

Are the datasets clearly presented in a useable and accessible format?

Not applicable

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Qualitative meta-synthesis.

We confirm that we have read this submission and believe that we have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Author Response 23 Jul 2020

Aine O'Dea, University of Limerick, Castletroy, Ireland

Reviewer 1 - Comment 1. "While the choice of meta-ethnography is appropriate for the purpose, the reader who is unfamiliar with the particular approach would benefit from further explanation, starting with a clarification of why this particular approach was selected, whether meta-ethnography is applied to ethnographic studies or other types of qualitative studies, and some basic tenets of meta-ethnography".

Response: In the methods section, an enhanced description of the approach is presented regarding an introductory article describing the approach (Cahill et al., 2018).

Reviewer 1- Comment 2. "We would like to point out one minor yet significant discrepancy. At the beginning of the third paragraph of Introduction, the protocol authors state that "task-oriented interventions are effective" citing Miyahara, Hillier, Pridham, and Nakagawa (2017) and Smits-Engelsman et al. (2018). Although the latter review concludes as such, the former review maintains that there is no strong evidence that supports the efficacy of task-oriented approach, which is more consistent with the second sentence than the review by Smits-Engelsman et al. (2018). The protocol authors are encouraged to amend these two sentences in the final report, which we very much look forward to reading.

Response: We have amended this section to acknowledge that the evidence regarding the efficacy of interventions to treat DCD is not clear (Miyahara *et al.*, 2017) and clarified that the Cochrane review by Miyahara and colleagues found that no strong evidence exists that supports the efficacy of task-oriented interventions for children and young people with DCD

Reviewer 1- Comment 3. To be consistent with the abstract, clarify how the eMERGe reporting guidelines will be used in the rest of the review process.

Response: The authors have amended the layout of the protocol so that each phase of the seven phases are attended to under the appropriate heading. Thus reflecting the layout of the eMERGe reporting guidelines and how the review will be conducted.

Reviewer 1- Comment 4 "Alongside the nine listed databases, please clarify whether grey literature is also being searched for. If not, please justify/state why"

Response: Booth (2016) recognised the challenges associated with searching grey literature. Describing a time-consuming process with the potential for marginal follow up of the unpublished literature (Booth, 2016). For these reasons, the authors chose not to include grey literature sources. This is now explicitly stated in the search strategy section.

Reviewer 1- Comment 5 "Please clarify whether a librarian was consulted during the

development of the search strategy”.

Response: A librarian from the University of Limerick reviewed the search strategy and provided guidance. This is now explicitly stated in the search strategy section.

Reviewer 1- Comment 6 What is the rationale for having two independent reviewers screen only the full text? Can an additional reviewer assist with all or a set number of the title and abstract screening, too?

Response: While quantitative synthesis recommends a prescribed requirement for two reviewers to screen articles, qualitative synthesis does not share this requirement as protection against bias (Booth *et al.*, 2013). Instead, reviewer resources could be employed more efficiently, to enhance the quality of analysis and interpretation (Booth *et al.*, 2013). 10% of papers will be screened by title and abstract to check for consistency by KR, now detailed in the ‘study selection’ section.

Reviewer 1- Comment 7 Exclusion criteria, Research type: should grey literature be listed here? Do the protocol authors consider opinion pieces and dissertations as grey literature?

Response: For the reasons stated above, we chose not to include grey literature sources. Furthermore, theses were not included as they have the potential to “swamp” data from naturally thinner studies (Booth, 2016). However, the authors will search for published articles resulting from theses identified in the search. This is now stated in the ‘study selection’ section.

Reviewer 1- Comment 8. Please clarify what should be congruent in the sentence: “The JBI checklist is the most sensitive tool when examining methodological validity, given its focus on congruity.”

Response: We have clarified this by expanding the sentence: “The JBI checklist is the most sensitive tool when examining methodological validity, given its focus on congruity including, descriptive, interpretative, theoretical, external and evaluative validity (Hannes *et al.*, 2010).”

Reviewer 1- Comment 9 Would it also be helpful to have the invited expert involved earlier in the meta-ethnography process, rather than just looking at the preliminary findings (if possible)?

Response: We have amended the plan and will now involve the invited expert for the early stages of analysis and interpretation. This is now explicitly stated in ‘Phase 4’ (page 11).

Competing Interests: No competing interests were disclosed.