

Supplementary materials

Appendix I: Search Terms

Data Base	Search Term
CINAHL	(parent mediated OR parent* based or care* or guardian) AND (intervention* OR program* OR treatment* OR capacity building OR deliver* OR involvement OR implement*) AND (paediatric OR child* OR adolescent* OR youth) AND (neurodevelopmental disorders OR autism OR autism spectrum disorders OR asd OR attention deficit hyperactivity disorder OR adhd OR intellectual disability OR specific learning disorder OR motor disorders OR communication disorders) AND (rural* OR remote* OR regional* OR non-urban OR non metropolitan)
Psychinfo	("Parents"[MeSH Terms]) OR ("Caregivers" [MeSH Terms]) OR ("Guardians" [All Terms]) AND ("Parent-mediated" [All Fields]) OR ("Parent Training" [MeSH Terms]) OR ("Intervention" [MeSH Terms]) OR ("Program"[All Fields]) OR ("Collaboration" [MeSH Terms]) OR ("Training" [MeSH Terms]) AND ("Pediatrics" [MeSH Term]) OR ("Paediatrics" [All Fields]) OR ("Child"[All Fields]) OR "Children"[All Fields]) OR ("Adolescent" [All Fields]) OR ("Youth" [All Fields]) AND ("Neurodevelopmental Disorders [MeSH Term]) OR ("Autism Spectrum Disorders" [MeSH terms]) OR ("Attention Deficit Disorder with Hyperactivity" [MeSH terms]) OR ("Intellectual Disability" [All Fields]) OR ("Intellectual Development

	Disorder"[MeSH Terms]) OR ("Communication Disorders" [MeSH Terms]) OR ("Learning Disorders" [MeSH Terms]) OR ("Movement Disorders" [MeSH Terms]) AND ("Rural Environments" [MeSH Terms]) OR ("Rural Health" [MeSH Terms]) OR ("Rural" [All Fields]) OR ("Remote"[All Fields]) OR ("Regional" [All Fields])
ProQuest nursing and allied health database	(parent mediated OR parent* based or care* or guardian) AND (intervention* OR program* OR treatment* OR capacity building OR deliver* OR involvement OR implement*) AND (paediatric OR child* OR adolescent* OR youth) AND (neurodevelopmental disorders OR autism OR autism spectrum disorders OR asd OR attention deficit hyperactivity disorder OR adhd OR intellectual disability OR specific learning disorder OR motor disorders OR communication disorders) AND (rural* OR remote* OR regional* OR non-urban OR non metropolitan)
Ebscohost Psychology and behavioural sciences collection	(parent mediated OR parent* based or care* or guardian) AND (intervention* OR program* OR treatment* OR capacity building OR deliver* OR involvement OR implement*) AND (paediatric OR child* OR adolescent* OR youth) AND (neurodevelopmental disorders OR autism OR autism spectrum disorders OR asd OR attention deficit hyperactivity disorder OR adhd OR intellectual disability OR specific learning disorder OR motor disorders OR communication disorders) AND (rural* OR remote* OR regional* OR non-urban OR non metropolitan)
SocINDEX	(parent mediated OR parent* based or care* or guardian) AND (intervention* OR program* OR treatment* OR capacity building OR deliver* OR involvement OR implement*) AND (paediatric OR child* OR adolescent* OR youth) AND (neurodevelopmental disorders OR autism OR autism spectrum disorders OR asd OR attention deficit hyperactivity disorder OR adhd OR intellectual disability OR specific learning disorder OR motor disorders OR communication disorders) AND (rural* OR remote* OR regional* OR non-urban OR non metropolitan)

Appendix II: PRISMA-P

Characteristics of Effective Parent-Mediated Interventions for Parents of Children with Neurodevelopmental Disorders in Rural Areas: A Systematic Review Protocol

PRISMA-P (Preferred Reporting Items for Systematic review and Meta-Analysis Protocols) 2015 checklist: recommended items to address in a systematic review protocol*

Section and topic	Item No	Checklist item	Page
ADMINISTRATIVE INFORMATION			
Title:			Page 1
Identification -	1a	Identify the report as a protocol of a systematic review	
Update -	1b	If the protocol is for an update of a previous systematic review, identify as such	Not applicable
Registration.	2	If registered, provide the name of the registry (such as PROSPERO) and registration number	
Authors:			
Contact -	3a	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author	Page 1
Contributions.	3b	Describe contributions of protocol authors and identify the guarantor of the review	Page 14
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Amendments –	4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	Page 2
Support:			
Sources –	5a	Indicate sources of financial or other support for the review	Page 14
Sponsor –	5b	Provide name for the review funder and/or sponsor	Page 14
Role of sponsor or funder-	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol	NA
INTRODUCTION			

Rationale –	6	Describe the rationale for the review in the context of what is already known	Page 4
Objectives –	7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	Page 9
METHODS			
Eligibility criteria –	8	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review	Page 10
Information sources –	9	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage	Page 11
Search strategy –	10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	Page 11
Study records:			
Data management –	11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	Page 12
Selection process –	11b	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)	Page 13
Data collection process –	11c	Describe planned method of extracting data from reports (such as piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	Page 12 and Appendix II
Data items –	12	List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications	Page 13 and appendix II
Outcomes and prioritization –	13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	Page 13
Risk of bias in individual studies –	14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	Page 13
Data synthesis –	15a	Describe criteria under which study data will be quantitatively synthesised	Page 14
	15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from studies, including any planned exploration of consistency (such as I^2 , Kendall's τ)	
	15c	Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression)	
	15d	If quantitative synthesis is not appropriate, describe the type of summary planned	
Meta-bias(es) –	16	Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies)	Page 13

Confidence in cumulative evidence –	17	Describe how the strength of the body of evidence will be assessed (such as GRADE)	NA as not completing a meta-analysis
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*** It is strongly recommended that this checklist be read in conjunction with the PRISMA-P Explanation and Elaboration (cite when available) for important clarification on the items. Amendments to a review protocol should be tracked and dated. The copyright for PRISMA-P (including checklist) is held by the PRISMA-P Group and is distributed under a Creative Commons Attribution Licence 4.0.**

From: Shamseer L, Moher D, Clarke M, Ghersi D, Liberati A, Petticrew M, Shekelle P, Stewart L, PRISMA-P Group. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation. BMJ. 2015 Jan 2;349(jan02 1):g7647.

Appendix III: Data extraction tool

Systematic review details:				
Systematic Review title:	Characteristics of effective parent-mediated interventions for parents of children with neurodevelopmental disorders in rural areas: A systematic review			
Review objective:	Examine the characteristics of effective parent-mediated interventions for parents of children with neurodevelopmental disorders residing in rural areas.			
Review question/s:	What are the characteristics of effective parent-mediated interventions for parents of children with neurodevelopmental disorders living in rural areas?			
Inclusion/Exclusion Criteria				
Participants:	All publications will be included which present parent or children qualitative or quantitative outcomes.			
Concept:	All publications that discuss parent-mediated programs for parents of children and adolescent with neurodevelopmental disorders in rural areas will be included. This will include face to face, telehealth, educational or group-based parent mediated programs.			
Context:	The review will consider publications with participants living outside of urban spaces. The program provider could still be located in an urban area, via telehealth, for instance, but the participants (outcome) will be living in rural areas.			
Types of evidence:	We will include all qualitative, quantitative, and mixed methods research referring to parents or children’s outcomes. Literature published in English will be included. Studies published from 2013 to 2024			
Evidence source characteristics				
Citation details:	Author(s): Year: Title: Publication/Journal: DOI/URL:			
Language:	English			
Publication type:	Journal	Report	Book	Chapter

Study/publication method:	Analytical cross-sectional study	Case control study	Case report	Case series	Cohort study
	Diagnostic test accuracy study	Economic evaluation	Qualitative research	Quasi-experimental study	Randomised control trial
Ethics:	<input type="checkbox"/> Approval stated <input type="checkbox"/> No approval stated				
Aim of the study:					
Study funding sources:					
Possible conflicts of interest for study authors:					
Parent Program details:					
Country:					
Country classification (by income level)	<input type="checkbox"/> Low <input type="checkbox"/> Lower-middle <input type="checkbox"/> Upper-middle <input type="checkbox"/> High				
Participants details:					
Population description:					
Inclusion criteria:					
Exclusion criteria:					
Method of recruitment of participants:	<input type="checkbox"/> Phone <input type="checkbox"/> Mail <input type="checkbox"/> Clinic patient s <input type="checkbox"/> Voluntary <input type="checkbox"/> Other				
Total number of participants:					
Program age range (children)	_____ to _____ years of age.		<input type="checkbox"/> Not stated	Mean age (Years) ± SD	
Program age range (parent)	_____ to _____ years of age.		<input type="checkbox"/> Not stated	Mean age (Years) ± SD	
Gender distribution (child):	Male (____%)	Female (____%)	Non-binary (____%)	Not stated	
Socioeconomic status:	High (____%)	Middle (____%)	Low (____%)	Not stated	

Children neurodevelopmental disorders:	ASD	ADHD	Intellectual disability	Specific learning disorder
	Motor disorder	Communication disorder	Other	
Parental level of education:				
Socioeconomic status:	<div><input type="checkbox"/> High</div> <div><input type="checkbox"/> Medium</div> <div><input type="checkbox"/> Low</div> <div><input type="checkbox"/> Not stated</div>			
Number of withdrawals:				
Reason for withdrawals:				
Strategy details:				
Mode of delivery	<div><input type="checkbox"/> Face to face</div> <div><input type="checkbox"/> Online</div> <div><input type="checkbox"/> telehealth</div> <div><input type="checkbox"/> Mixed mode</div>			
Setting	<div><input type="checkbox"/> Home</div> <div><input type="checkbox"/> Clinic</div> <div><input type="checkbox"/> community</div> <div><input type="checkbox"/> Other</div>			
Professionals	<div><input type="checkbox"/> Occupational therapists</div> <div><input type="checkbox"/> Nurse</div> <div><input type="checkbox"/> Speech pathologist</div> <div><input type="checkbox"/> Physiotherapist</div> <div><input type="checkbox"/> Psychologist</div> <div><input type="checkbox"/> Doctor</div> <div><input type="checkbox"/> Multidisciplinary</div> <div><input type="checkbox"/> others</div>			
Duration (weeks)	<div><input type="checkbox"/> <1 week (less than a week)</div> <div><input type="checkbox"/> 1-4 weeks (Less than a month)</div> <div><input type="checkbox"/> 4-16 weeks (1-4 months)</div> <div><input type="checkbox"/> 16-26 weeks (Within 6 months)</div> <div><input type="checkbox"/> 26-34 weeks (6-8 months)</div> <div><input type="checkbox"/> 34-52 weeks (8 months to a year)</div> <div><input type="checkbox"/> >52 weeks (more than a year)</div>			
Frequency (sessions per week)	<div><input type="checkbox"/> 1</div> <div><input type="checkbox"/> 2-3</div> <div><input type="checkbox"/> 3-5</div> <div><input type="checkbox"/> 5-7</div>			

Intensity (minutes per session)	<input type="checkbox"/> Up to 30 minutes <input type="checkbox"/> 30 minutes – 60 minutes <input type="checkbox"/> 60 – 90 minutes <input type="checkbox"/> 90-120 minutes
Format of intervention	<input type="checkbox"/> Individual (one parent) <input type="checkbox"/> Individual (both parents) <input type="checkbox"/> Group based
Detail description of strategy:	
Number of withdrawals:	
Reason for withdrawals:	
Outcomes:	
Primary outcome(s) measured:	<p>Child</p> <input type="checkbox"/> Behaviour <input type="checkbox"/> Social functioning <input type="checkbox"/> Communication <input type="checkbox"/> Adaptive functioning <input type="checkbox"/> Other: _____
	<p>Parent</p> <input type="checkbox"/> Education <input type="checkbox"/> Communication <input type="checkbox"/> Parent-child relationship <input type="checkbox"/> Other: _____
Secondary outcome(s) measured:	<p>Child</p> <input type="checkbox"/> Behaviour <input type="checkbox"/> Social functioning <input type="checkbox"/> Communication <input type="checkbox"/> Adaptive functioning <input type="checkbox"/> Other: _____
	<p>Parent</p> <input type="checkbox"/> Education <input type="checkbox"/> Communication <input type="checkbox"/> Parent-child relationship <input type="checkbox"/> Other: _____
Source of outcome data	<input type="checkbox"/> Direct assessment of children with standardised measures <input type="checkbox"/> Direct assessment of children without standardised measures <input type="checkbox"/> Parent report using standardised measures. <input type="checkbox"/> Parent report without standardised measures
Casual effect	<input type="checkbox"/> Effective: description of treatment effect <input type="checkbox"/> Ineffective: description of treatment null effect <input type="checkbox"/> Other: _____
Key findings:	

