

INPLASY PROTOCOL

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None declared.

Systematic review protocol of the effectiveness of occupation-based and occupation-focused interventions used in occupational therapy to improve participation in everyday activities for young children with a disability

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Review question / Objective: The aim of this review was to identify, appraise, evaluate and synthesise evidence of the effectiveness of interventions using occupations and/or occupational performance outcomes in improving activities of daily living and participation of young children with a disability. The PICOS framework was used to develop the review question: Population – children with a disability under the age of 10. Intervention – interventions which are both occupation-based and occupation-focused provided by an occupational therapist in groups or individually, incorporating participation in everyday occupations in the most natural context possible or focusing directly on participation in everyday occupations instead of focusing on improving underlying functions in order to better participate in everyday occupations (1)(Fisher, 2013). Control – alternative occupational therapy (OT) intervention, alternative non-OT intervention or no intervention. Outcome – improved participation in everyday occupations assessed before and after the intervention, measured by standardized assessment tools or self-report measures of occupational performance, engagement and participation. Study characteristics – Systematic Review of original studies (levels I and II, Joanna Briggs Institute) including Randomised Controlled Trials (RCTs) or quasi-experimental designs (eg. with Pre-test – post-test or historic/retrospective control group study). Research Question: “What is the evidence for the effectiveness of occupation-based and occupation-focused interventions in improving participation in everyday occupations for young children with a disability?”

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 30 June 2022 and was last updated on 30 June 2022 (registration number INPLASY202260117).

INTRODUCTION

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effectiveness of interventions using occupations and/or occupational performance outcomes in improving activities of daily living and participation of young children with a disability. The PICOS

framework was used to develop the review question: Population – children with a disability under the age of 10. Intervention – interventions which are both occupation-based and occupation-focused provided by an occupational therapist in groups or individually, incorporating participation in everyday occupations in the most natural context possible or focusing directly on participation in everyday occupations instead of focusing on improving underlying functions in order to better participate in everyday occupations (1) (Fisher, 2013). Control – alternative occupational therapy (OT) intervention, alternative non-OT intervention or no intervention. Outcome – improved participation in everyday occupations assessed before and after the intervention, measured by standardized assessment tools or self-report measures of occupational performance, engagement and participation. Study characteristics – Systematic Review of original studies (levels I and II, Joanna Briggs Institute) including Randomised Controlled Trials (RCTs) or quasi-experimental designs (eg. with Pre-test – post-test or historic/retrospective control group study). Research Question: “What is the evidence for the effectiveness of occupation-based and occupation-focused interventions in improving participation in everyday occupations for young children with a disability?”

Rationale: Children with a disability are known to experience participation restrictions (2) and occupational therapists play an important role in paediatric health service delivery and community programs with the primary goal of enabling children’s participation in activities in their everyday life contexts (3,4). The profession of occupational therapy is founded on the use of occupation as a therapeutic method (5) on the assumption that health and well-being are interlinked with engagement in occupations (6) and a return to the theoretical underpinnings of occupational therapy in practice has been promoted during the last two decades (7-10). Impacts of childhood disability may be pervasive with downstream influences (environmental

consequences) further limiting participation and early intervention to support young children is recommended (11). Novak and Honan (12), undertook a comprehensive review and meta-analysis of systematic reviews of the effectiveness of paediatric occupational therapy, this included many interventions that focused on body functions and/or activity capacity such as bimanual hand skills or communication or turn-taking behaviours. Furthermore, their review did not separate out interventions for younger, especially pre-school children, from older children (12). Although Brooks and Bannigan (13) recently reviewed occupational therapy interventions, the focus of their review included interventions only used in mental health settings for children and adolescents. A lack of research exists about the effectiveness of occupation-based and occupation-focused interventions in paediatric occupational therapy (14) with a focus on younger children across disabilities and settings, which this systematic review aims to address.

Condition being studied: This review focuses on children with a disability including intellectual, physical or mental disabilities, as well as neurodevelopmental disorders, often experience difficulties performing activities of daily living and participating in everyday occupations. Neurodevelopmental disorders/disabilities have a life long impact on development, impacting on skill acquisition as well as psychosocial functions influencing personal care, school/vocational, and leisure and social participation. The definition of disability in this review is based on the biopsychosocial model as proposed in the International Classification of Function- Children and Youth version (ICF-CY), capturing a multidimensional perspective and avoiding a pure medical or a completely socially created view of disability (15). Children with neurodevelopmental disorders and/or disability are commonly referred to Occupational Therapists, although may experience long waiting times for assessment and intervention (16, 17). Early intervention is recommended to avoid

impact of secondary consequences such as social isolation outlined in the 'Environmental Stress' hypothesis (11). Occupational Therapy interventions should incorporate occupation within the therapy (occupation-based) or as therapeutic outcomes (occupation-focused). This review therefore will identify and evaluate the evidence for occupation-based and occupation-focused interventions to improve daily activities and participation for children aged 10 years or younger.

METHODS

Search strategy: Databases MEDLINE, PsycINFO, CINAHL, ERIC, OTseeker, and the Cochrane databases for trials (CENTRAL) were searched as well as reference lists of papers retrieved for appraisal and the first author's (EF) previous scoping review (18). The search strategy was conducted as follows with slight variations for each database after consulting the thesaurus: (MeSH „Child“ OR infan* OR toddler* OR Kid* OR Child*) AND (MeSH „Neurodevelopmental Disorders“ OR disabilit* OR disabled OR impariment*) AND (MeSH "Occupational Therapy" OR occupational therapist" OR "occupation-based" OR "occupation based" OR "occupation-focused" OR "occupation focused" OR "occupation-cent*" OR "occupation cent*" OR "context-based" OR "context based" OR "participation-based" OR "participation based" OR "co-occupation" OR "activity-based" OR "activity-focus*" OR "activity based" OR "activity focus*").

Participant or population: Children under the age of 10 years, with a disability or neurodevelopmental disorder. Studies with a broader age range were included if the mean age of participants was under 10 years or if results were reported separately for the population of interest.

Intervention: Occupational therapy interventions which use everyday occupations or activities of daily living as the means of intervention and focus immediately on improving occupational performance or participation in everyday

occupations (1). Interventions which aim to improve body functions or structures in order to better participation outcomes are excluded from the review.

Comparator: Alternative intervention or no intervention.

Study designs to be included: Original studies level I or II according to the Joanna Briggs Institute (19) representing Randomised Controlled Trials (RCTs) or quasi-experimental designs (e.g. non-RCTs with a pre- post- intervention comparison containing a control group), published between Jan-2001 and Mar-2022 in English or German. Original studies level I or II according to the Joanna Briggs Institute (19) representing Randomised Controlled Trials (RCTs) or quasi-experimental designs including Randomised Controlled Trials (RCTs) or quasi-experimental designs (eg. with Pre-test – post-test or historic/ retrospective control).

Eligibility criteria: 1. Studies describing occupation-based or occupation-focused interventions provided by an occupational therapist. 2. Studies with quantitative data including a formal outcome measure assessing participation in everyday occupations. 3. Studies describing interventions for children with a disability under the age of 10. 4. Original studies published in English or German between 2001 and 2022. Excluding articles if full text not available and if includes older children, results are not reported separately for those under 10 years of age.

Information sources: A comprehensive literature search was carried out by one author (EF) with the aid of a librarian at Jönköping University in databases MEDLINE, PsycINFO, CINAHL, ERIC, OTseeker, and the Cochrane databases for trials (CENTRAL). Additionally, reference lists of papers retrieved for appraisal were searched and the first author's (EF) previous scoping review (18). Initial searches were conducted in April 2021 and a follow-up search in March 2022.

Main outcome(s): Improved participation in everyday occupations following an intervention delivered as an occupation-based, or occupation-focused intervention, measured by standardized assessment tools or self-report measures of occupational performance, engagement and participation.

Additional outcome(s): None.

Data management: Database searches were performed by one author (EF) with the aid of a librarian at Jönköping University. EndNote X9 was used for organizing search results and de-duplication. Study selection was performed by author EF in consultation with author FL. Data extraction was performed using Joanna Briggs Institute System for the Unified Management, Assessment and Review of Information (JBI SUMARI, 2017) and a bespoke extraction form including details about intervention, population, setting, outcome measures and results relevant to the review question. Critical appraisal was performed independently by authors EF and DG. Disagreements were discussed with author FL until consensus was reached.

Quality assessment / Risk of bias analysis: Methodological quality of included studies was assessed by two independent reviewers (EF, DG), based on relevant JBI critical appraisal checklists and results discussed with the third author (FL) if necessary, until consensus was reached. Studies were categorized as high, moderate or low quality based on the methodology by Krasny-Pacini et al. (2014). High quality studies were considered to meet 75% of the methodological criteria outlined in the relevant JBI checklist; moderate rated studies met between 50-74% of criteria and those less than 50% rated of lower quality (20). Studies with very low quality (less than 40% yes answers) were excluded from the synthesis in this review.

Strategy of data synthesis: Data from standardized assessment tools or self-report measures of occupational

performance, engagement and participation were included. A synthesis without meta-analysis (SWiM) of results was conducted, presenting the effect direction along with descriptive statistics, p-values and study quality (22, 23). Data are presented in narrative and table format to support data presentation. Levels of evidence are considered in relation to the down-grading of papers from a Level I to Level II if methodological issues or risk of bias reduce confidence in interpretation of findings.

Subgroup analysis: Narrative analysis of differing interventions and intervention, dosing, dosage and context of delivery.

Sensitivity analysis: None undertaken due to anticipated challenges in definitions, differing populations of children included and applications of diagnostic criteria, differences in methodologies and differences in outcome measures used.

Language: Studies published in English or German were included.

Country(ies) involved: Sweden, Germany.

Keywords: disability; paediatrics; occupational therapy; intervention; participation; family of participation-related constructs (fPRC); evidence; effectiveness; systematic review.

Dissemination plans: This review was initially conducted as a Master's thesis and presented to students at Jönköping University. Methodology was updated to include independent appraisal of included studies and it is planned to publish the results of the review in a peer-reviewed journal of the field and in relevant conference presentations such as Children, Young People and Families annual conference in the UK.

Contributions of each author:

Author 1 - Evelin Fischer - This systematic review was originally performed as a Master thesis by the first author and updated for publication. Author 1 contributed to Conceptualization,

Methodology design, Data curation and management, Formal analysis, quality appraisal, Project administration, Resources, Validation, Writing original draft and writing, review and editing manuscript for publication.

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Author 2 - Dido Green - Author 2 contributed to: Methodology design, , Formal analysis, quality appraisal, Supervision, Resources, Validation, and writing, review and editing manuscript for publication.

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Author 3 - Frida Lygnegård - Author 3 contributed to Refinement of research concept, Methodology design, Data curation and management, Formal analysis, quality appraisal, Project administration, Resources, Supervision, Validation, review of original draft and writing, review and editing of final manuscript.

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Review Stage at time of this submission:

Other. Registration of the review was not possible prospectively due to limits of time for the Masters thesis course completion. Not all MSc theses are of a standard worthy of publication and prospective publication of MSc student scoping and systematic reviews is not therefore considered as policy at Jönköping University.

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