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How Best to Perform Co-Research With Children and Adolescents: A Rapid Qualitative Evidence Synthesis

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Abstract

In recent years, emphasis has grown on involving children and adolescents in research. Co-research allows these age groups to be equal partners in research, ensures that their perspectives and experiences are considered, and empowers them to express their views and expertise on their own lives. However, involving children and young people in co-research poses complex challenges and raises multifaceted issues. This review provides insights from previous co-research processes and outlines the characteristics of an ideal co-research process. A rapid qualitative evidence synthesis was conducted to synthesize the qualitative research on co-research experiences with children and adolescents. We searched three electronic databases up to May 2023 and carried out supplementary searches. Two reviewers screened 742 abstracts and 169 full-text articles to select studies that met our eligibility criteria. From 48 eligible studies, we sampled 30 to synthesize based on the data richness for qualitative content analysis. Our synthesis highlights key factors that are crucial in co-research processes with children and adolescents. We developed a framework consisting of six key themes: the sociocultural factors, ethics, setting factors, project management, interpersonal factors, and individual factors of the young co-researchers. These themes involve various factors (e.g., children's and adolescents' rights, power imbalances, support structures, remuneration/incentives, trust, and time availability) that must be considered. The challenges and facilitators encountered throughout the co-research process were synthesized. In addition, we provide an overview of targeted co-research methods for young age groups, which offers valuable guidance for future co-research initiatives.

Keywords

co-research, participatory research, qualitative research, children, adolescents, participatory methods

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Introduction

Traditionally, research involving children and adolescents has included them as passive subjects rather than active participants, with research being conducted *on them* rather than *with or by them* (United Nations Human, 1989; World Health Organization, 2019). This paradigm has been criticized for its lack of genuine engagement with and empowerment of young individuals in shaping research agendas and outcomes (Hart, 1992). A paradigm shift toward participatory research has increasingly recognized the benefits of co-research and the importance of involving children and adolescents as active partners in the research process (Hart, 1992). Actively involving these age groups in the research process ensures that their perspectives and experiences are considered, leading to more relevant and meaningful outcomes. This participatory approach holds particular significance for children and adolescents as it not only empowers them but also fosters a sense of ownership and agency, which can positively impact their well-being (Warraitch, Wacker et al., 2024; World Health Organization, 2019). In addition to strengthening their personal resources, participatory research also fosters a culture of participation that can contribute to further societal development (Freire et al., 2022).

Participatory research with young individuals offers numerous benefits, such as fostering solidarity, strengthening democratic decision-making, and achieving better decision-making by incorporating the perspectives, needs, and values of children and young people (World Health Organization, 2019). Yet, participatory research with children and adolescents requires sensitivity and reflexivity due to the power imbalance between adult and young co-researchers (Bradbury-Jones et al., 2018).

Given the significance of children's participation in research, various terms have emerged to describe participatory methodologies, including *community-based research*, *participatory action research*, and *citizen science* (Bakhtiar et al., 2023). While co-research is a dynamic and diverse approach, with different studies interpreting and implementing it in various different ways, for the purpose of this paper, we adopt the term *co-research* (Spriggs & Gillam, 2019) to represent the following: In studies following a co-research approach, children and adolescents are actively involved in the research process rather than being consulted or acting as study objects at different stages (Boylorn, 2008). To illustrate, in co-research projects, children and adolescents actively engage not only as interviewers or observers but also as advisers shaping research questions, as data collectors conducting interviews with peers, or as contributors analyzing data and disseminating findings within their communities. Thus, participating children and adolescents are seen as equal partners in the research, working together and sharing roles and responsibilities (Hüpping & Velten, 2023) as joint contributors and investigators in one or several stages of the research process (Bakhtiar et al., 2023; Spriggs & Gillam, 2019). Although the research projects are often initiated by adults, children and adolescents are given an increasing degree of self-directed action in the process (Hüpping & Velten, 2023).

Despite the growing recognition of co-research methodologies, a need remains to understand the complex interplay between research methods and children's participation opportunities (Sevón et al., 2023). Recent literature reviews have highlighted factors that promote or hinder the implementation of co-research with children and adolescents (Bakhtiar et al., 2023; Warraitch, Lee et al., 2024). This qualitative evidence synthesis aims to comprehensively examine the experiences, facilitators, barriers, lessons learned, and methodological aspects of co-research studies involving children and adolescents. Specifically, it seeks to: 1) establish a framework of factors to consider for successful co-research with children, 2) identify challenges and facilitators within the co-research process, and 3) map target-group-oriented methods and methodological considerations.

By providing these insights, this review aims to support future research teams in designing and conducting meaningful co-research projects with children and adolescents.

Materials and Methods

We adopted a rapid review approach and streamlined the review process following guidance provided by the Cochrane Rapid Review Methods Group (Garritty et al., 2024). Additionally, we utilized the methods proposed by Shaw et al. for conducting a rapid best-fit model for framework synthesis (Shaw et al., 2020). We registered our study protocol on the Open Science Framework (OSF) prior to starting the review process: https://doi.org/10.17605/OSF.IO/AGPZM. Throughout this paper, we adhered to the Enhancing transparency in reporting the synthesis of qualitative research (ENTREQ) statement (Tong et al., 2012).

Criteria for Considering Studies in This Review

We used the SPIDER framework for mixed-methods qualitative research (Cooke et al., 2012) to structure the research questions and eligibility criteria and added further relevant elements to the eligibility criteria (Cooke et al., 2012). A detailed table with the inclusion and exclusion criteria can be found in Table S1 (online supplementary file). In short, we included research on the barriers and facilitators, lessons learned, challenges, solutions, and methods experienced during co-research with children and adolescents (between 8 and 19 years). In these studies, children and adolescents must have taken the role of researchers or co-researchers, that is, been actively included in several stages of the research process (i.e., setting the research questions, preparing the research process, carrying out the research, analyzing the data, disseminating the research results) and not only in one research stage (e.g., data collection). We included studies using a

qualitative research approach and mixed-methods studies, as well as evidence syntheses, written in English and German from 2000 onward. Furthermore, we included studies conducted in lower-middle, middle- and high-income countries according to the World Bank classification (World Bank), as co-research in countries with low-income economies may face additional barriers, such as limited funding and resources or a lack of infrastructure.

Search Methods for the Identification of Relevant Research

Due to the review's broad scope, we chose to adapt the tailored search approach proposed by Cooper et al. (Cooper et al., 2022). Initially, we planned to conduct the literature searches in an iterative manner, alternating search and literature selection steps. After the scoping searches and a discussion of the preliminary search findings, an experienced information specialist conducted searches on May 15, 2023, in the bibliographic databases Scopus (Elsevier), Social Sciences Citation Index (Web of Science/Clarivate), and base-search.net (BASE) to identify evidence syntheses (see Tables S2–S5 in the online supplementary file). The scoping searches showed that these databases are highly relevant to our topic. The database searches were limited to evidence syntheses, as they provided already synthesized data and answers to our research questions. Thus, we could incorporate a broader array of studies than by searching for primary studies only. We then manually screened the reference lists of the included studies and literature suggestions provided by scientific advisory board members. Since these steps yielded a large number of eligible studies covering a sufficient variety of concepts, we decided against further search iterations.

Selection of Studies

We developed a review form for abstract and full-text screening that reflected our inclusion and exclusion criteria. We piloted it with the team (KS, AW, DR, UG) using 50 abstracts and adapted it after a joint discussion. We planned to screen only a subset of abstracts (i.e., 20%) dually (two independent screeners), and to then proceed with single-reviewer screening as rapid review methods suggest (Garritty et al., 2024). However, as reviewer agreement (KS, AW, DR) was not high enough to justify single-reviewer screening (Cohen's kappa: 0.44 and 0.56), we proceeded with double-reviewer screening throughout. Selection based on the abstract was sometimes challenging because it was often unclear which participatory approach was used, in which research stages children and adolescents were included, or whether the reflections on the co-research process were reported. Therefore, a senior researcher (UG) additionally checked all excluded abstracts, so as not to miss any relevant studies.

We then pulled the full texts of all the included references and conducted a pilot exercise for full-text screening with the whole team using the same five full texts. Then we used single-reviewer screening, and one person (DR) screened all the excluded full texts to ensure no relevant studies were accidentally excluded. Any disagreements between the abstract and full-text review were discussed among the reviewers or by consulting another reviewer.

We used the Covidence systematic review software (Veritas Health Innovation, Melbourne, Australia; available at https://www.covidence.org) to manage our screening process, upload search results, screen abstracts and full texts, and resolve disagreements. All results were tracked in the EndNote reference manager, Version 20 (Clarivate, Philadelphia, PA, US).

Sampling of Studies

After we identified all the eligible texts, we decided to sample a maximum of 30 texts for data analysis, as a larger amount of study data would have impaired the analysis quality and qualitative evidence synthesis aims for variation in concepts. We used a combination of maximum variation purposive sampling and criterion sampling strategies (Suri, 2011) to allow for the broadest possible variation within the included texts and to account for the richness of data presented in the papers. For that, we calculated a sampling score that comprised a respective sub-score for both the data richness and for the inclusion of young co-researchers in the phases of involvement. We then developed a data richness rating system, which was based on methods reported in previous studies (Ames et al., 2019, 2023). For our purposes, we assessed the data richness in five content categories: barriers and facilitators, recommendations, ethical considerations, methodological characteristics, and target-group-oriented methods. We then rated the data richness based on a 3-point scale with values between 0–2, where 0 = no richness, 1 = some richness, and 2 = a good amount of richness. To calculate the data richness sub-score, we added the ratings for each of the five categories, so scores between 0 and 10 were possible. We did not sample any texts with data richness sub-scores of 0–3 or any with a sub-score of 4 or 5 if they had no scores of 2 in any of the five content categories. We prioritized texts with a sub-score of 8–10. For the phases of involvement sub-score, we noted in which of the following seven phases children and/or adolescents were actively involved and added them together to build the sub-score: preparatory work, recruitment phase, research design and question, data collection, data analysis and interpretation, dissemination, and evaluation. Because we defined *co-research* as requiring youth involvement in more than one research phase, the phases of involvement sub-scores ranged from 2–7. We prioritized texts with sub-scores of 5–7. We then ranked the remaining texts based on the data richness sum-score and the phases of involvement sub-scores and sampled them until we reached 30 texts (Table S6).

Data Extraction

We developed a structured data extraction sheet in Microsoft Excel, with the following data fields: author, publication year, title, language, co-research approach as labeled by the authors, phases of involvement, level of involvement, sample characteristics (age of involved children and adolescents), study context (setting, country), study design, and data richness. We pilot-tested the data extraction with two data-rich papers and discussed the extraction categories among the team, which led to amendments. Data from all sampled texts were extracted by one reviewer; a second reviewer provided oversight and checked for completeness and accuracy. Deviating from the study protocol, we used the MAXQDA software for the qualitative data analysis (VERBI Software, 2021) instead of Microsoft Excel® to extract and analyze the key findings.

Data Management, Analysis, and Synthesis

We used our objectives and research questions as the initial framework for data coding, following the approach detailed by Shaw et al. (Shaw et al., 2020). Consistent with a constructivist worldview (Creswell & Creswell, 2017), we focused on data related to experiences, lessons learned, facilitators, barriers, challenges, possible solutions, and target-group-oriented methods for conducting co-research with children and adolescents of different age groups. We further incorporated our previous experience and understanding of the relevant background literature within the topic area of participatory research and co-research, as well as a socioecological understanding of the factors influencing (Gal, 2017) research projects with children and adolescents, to form the initial coding framework. We started the coding process with one data-rich paper and assigned codes along our initial framework categories. As these initial categories were very broad, we realized that a more granular coding scheme was needed and incorporated new categories based on the data. We then used a sequential approach to the analysis, that is, adding one paper at a time and validating and potentially expanding or revising the framework, following the content analysis approach developed by Mayring (Mayring, 2000, 2014).

Two researchers (KS, AW) coded and categorized the data from the included sampled studies, consulting with each other in cases of uncertainty. During the data analysis and framework development, the core data analysis team (KS, AW) met frequently to discuss any changes to the framework. Furthermore, other research team members (UG, DR) discussed the framework at different stages of the analysis process.

For the synthesis, we chose to develop a graphical representation of the framework alongside summarizing tables.

Scientific Advisory Board

For the co-research project, we set up an advisory board of scientific experts with expertise in co-research with young people. We invited them to take part in an online workshop, where we presented and discussed our initial findings with them. Their feedback on the initial findings, tips from practical experience, and suggestions for key papers were incorporated into the review as it progressed. From the nine original persons contacted, three participated in the online workshop and provided further literature.

Results

Study Selection Results

We identified 892 records through the database searches and 86 additional records through other sources (Figure 1).

After removing the duplicates, 742 records remained. Subsequently, 573 records were excluded following abstract screening, resulting in 169 study records in the full-text screening. Based on the full texts, we included 48 studies that met our eligibility criteria. We sampled 30 studies for in-depth qualitative synthesis, selected based on data richness and the component score for phases of involvement.

Study Characteristics

Table 1 shows an overview of the characteristics and description of the 30 sampled studies: the co-research approach, research aim, study design, whether the perspective of children and adolescents was included, the setting in which the co-research project was implemented, the research process phases involving young co-researchers, and the key sample characteristics.

The study characteristics of the remaining 18 non sampled included studies, together with the reason for non sampling, are listed in Table S6 in the online supplementary file.

Ten of the included sampled records were evidence syntheses (Bakhtiar et al., 2023; Bovarnick et al., 2019; Bradbury-Jones et al., 2018; Fløtten et al., 2021; Forshaw & Woods, 2022; Fountain et al., 2021; Freire et al., 2022; Gibbs et al., 2020; Malorni et al., 2022), including a wide range from 9 to 112 studies. Five included texts (Coad, 2007; Jørgensen, 2019; Montreuil et al., 2021; Sandoval & Messiou, 2020; Tilley & Taylor, 2018) were narrative reviews, and 15 (Budin-Ljosne et al., 2022; Cullen et al., 2023; Flicker et al., 2008; Gardner et al., 2019; Holliday et al., 2020; Lee et al., 2012, 2020; Loveridge et al., 2023; Madrigal et al., 2016; Maglajlic, 2010; O'Brien & Moules, 2007; Powers & Tiffany, 2006; Smith et al., 2002; Spriggs & Gillam, 2019; Vyas et al., 2022) were primary studies. Most sampled studies originated from the United States (n = 20), the United Kingdom (n = 14), and Canada (n = 10). Other countries in which the studies were conducted were the Netherlands, Finland, Sweden, Australia, Argentina, South Africa, Norway, Ireland, Sweden, Portugal, New Zealand, Bosnia-Herzegovina, and Mexico.

Eighteen studies (Bakhtiar et al., 2023; Cullen et al., 2023; Flicker et al., 2008; Fountain et al., 2021; Freire et al., 2022;

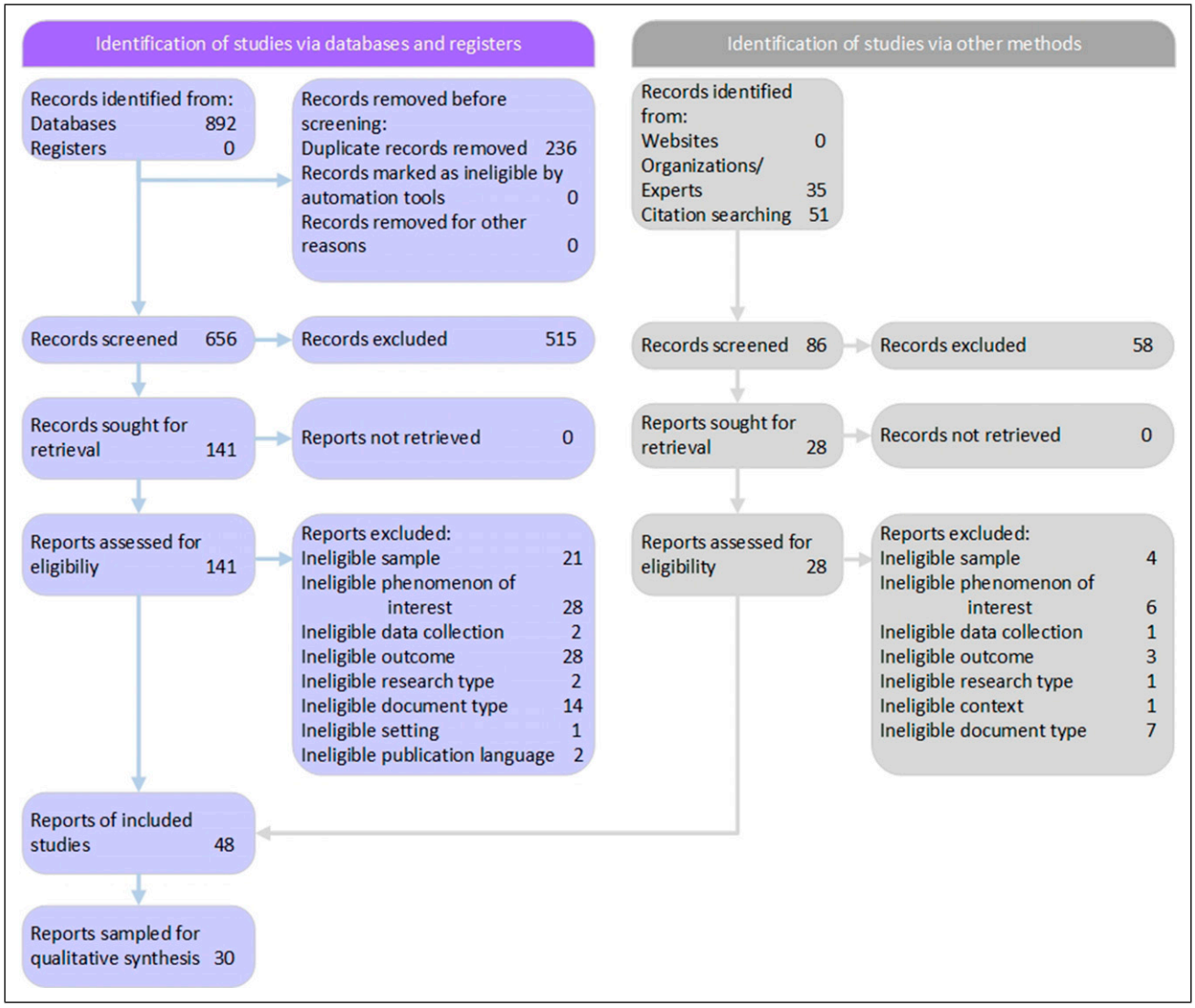

Figure 1. PRISMA Flow Diagram of the Qualitative Evidence Synthesis.

Gibbs et al., 2020; Holliday et al., 2020; Jørgensen, 2019; Loveridge et al., 2023; Maglajlic, 2010; Malorni et al., 2022; McCabe et al., 2023; Montreuil et al., 2021; O'Brien & Moules, 2007; Powers & Tiffany, 2006; Sandoval & Messiou, 2020; Spriggs & Gillam, 2019; Tilley & Taylor, 2018) included children (8–14 years old), and 21 (Budin-Ljosne et al., 2022; Cullen et al., 2023; Flicker et al., 2008; Fountain et al., 2021; Freire et al., 2022; Gardner et al., 2019; Gibbs et al., 2020; Holliday et al., 2020; Jørgensen, 2019; Lee et al., 2012, 2020; Loveridge et al., 2023; Madrigal et al., 2016; Malorni et al., 2022; McCabe et al., 2023; Powers & Tiffany, 2006; Sandoval & Messiou, 2020; Smith et al., 2002; Spriggs & Gillam, 2019; Tilley & Taylor, 2018; Vyas et al., 2022) included adolescents (15–19 years old). In two studies, no exact age range was given, but the included co-researchers were described as children (Spriggs & Gillam, 2019) or young people (Smith et al., 2002) ranging from 3 to 26 years old. In 14 studies (Bakhtiar et al., 2023; Bradbury-Jones et al., 2018; Cullen et al., 2023; Flicker et al., 2008; Forshaw & Woods, 2022; Fountain et al., 2021; Gardner et al., 2019; Lee et al., 2012, 2020; Madrigal et al., 2016; Maglajlic, 2010; O'Brien & Moules, 2007; Tilley & Taylor, 2018; Vyas et al., 2022), children's/adolescents' perceptions of co-research were integrated with the views of adults, which is also documented in the study characteristics (see Table 1). Methods to integrate young co-researchers' perspectives encompassed their written feedback notes, which were collected by surveys, evaluation focus groups with young co-researchers, and the adult researchers' transcription of young co-researchers' key statements in meeting or in-depth field notes during or after working group meetings. Information on gender was only provided in eight studies (Cullen et al., 2023; Freire et al., 2022; Jørgensen, 2019; Lee et al., 2012; Loveridge et al., 2023; Malorni et al., 2022; McCabe et al., 2023; Vyas et al.,

Table 1. Study Characteristics of the 30 Sampled Studies.

Reference	Study design [number of included studies for reviews/ number of cases for primary studies]	Research approach and main research aim	Perspective of yCR integrated	Setting	Age (years) and number of yCR	Gender of yCR	Vulnerable or marginalized subgroup	Phases of involvement of yCR in the research process
Bakhtiar et al. (2022)	Systematic literature review [*n* = 25]	• Approach: Child-led research, children as co-researchers, youth-led participatory research • Aim: To investigate study variations, motivations, theoretical frameworks, child researcher involvement	Yes	School, non-governmental organization, after-school program	8–14: x, n = NR 15–19: -	NR	—	- Preparatory work - Recruitment phase - Research design & question - Data collection - Data analysis and interpretation - Dissemination, transfer and implementing changes
Bovarnick et al. (2019)	Scoping review [*n* = 112]	• Approach: Child/ youth-led participatory research • Aim: To learn about involvement of children and young people in participatory research on sexual violence	NR	NR	NR	NR	Affected by sexual violence; different SES groups included	- Preparatory work - Recruitment phase - Research design & question - Data collection - Data analysis and interpretation - Dissemination, transfer and implementing changes

(continued)

Table 1. (continued)

Reference	Study design [number of included studies for reviews/ number of cases for primary studies]	Research approach and main research aim	Perspective of yCR integrated	Setting	Age (years) and number of yCR	Gender of yCR	Vulnerable or marginalized subgroup	Phases of involvement of yCR in the research process
Bradbury-Jones et al. (2018)	Qualitative systematic review [*n* = 13]	• Approach: Participatory research • Aim: To explore the potential of participatory spaces to recalibrate opportunities for marginalized groups	Yes	Community (programs), health care settings	8-14; n = x 14-19: x; n = NR N = 122 (8–24 years)	NR	Children in care and/or who have experienced abuse, neglect or violence; disabled children; children with illness/mental health issues; LGBTQ young people	- Preparatory work - Recruitment phase - Research design & question - Data collection - Data analysis and interpretation - Dissemination, transfer and implementing changes
Coad (2007)	Narrative review [*n* = NR]	• Approach: Activities that aim to facilitate consultation, audit, and/or research • Aim: To describe the impacts of youth engagement on mental health research	NR	NR	8–14: x, n = NR 15–19: x, n = NR	NR	—	- Research design & question - Data collection - Data analysis and interpretation - Dissemination, transfer and implementing changes
Cullen et al. (2023)	Primary study [*n* = 26]	• Approach: Youth participatory action research (PAR) • Aim: To integrate the voices of youth with lived experiences as co-researchers to improve research of childhood experiences of intimate violence	Yes	School, community	8–14: x, n = NR 15–19: x, n = NR	10 women, 1 gender nonconforming/non-binary, and 1 man	—	- Research design & question - Data collection - Data analysis and interpretation - Dissemination, transfer and implementing changes

(continued)

Table 1. (continued)

Reference	Study design [number of included studies for reviews/ number of cases for primary studies]	Research approach and main research aim	Perspective of yCR integrated	Setting	Age (years) and number of yCR	Gender of yCR	Vulnerable or marginalized subgroup	Phases of involvement of yCR in the research process
Flicker et al. (2008)	Primary study [*n* = 7 cases]	• Approach: Participatory action research • Aim: To outline the theoretical basis of the e-PAR model, the article provides a development overview and discusses implications for practice and research	Yes	Community, neighborhood	8–14: x, n = 41 15–19: x, *n* = 9	NR	Members of the LGBTQ community who are experiencing the challenges of migration	- Research design & question - Data collection - Data analysis and interpretation - Dissemination, transfer and implementing changes
Flotten et al. (2021)	Scoping review [*n* = 14]	• Approach: Co-research • Aim: To investigate the engagement of adolescent co-researchers at different stages of a research project	NR	Hospital, community	8-14: x; n = NR 14-19: x: n = N N = 173 (10–25 years)	NR	—	- Preparatory sork - Recruitment phase - Research design & question - Data collection - Data analysis and interpretation - Dissemination, transfer and implementing changes

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Table 1. (continued)

Reference	Study design [number of included studies for reviews/ number of cases for primary studies]	Research approach and main research aim	Perspective of yCR integrated	Setting	Age (years) and number of yCR	Gender of yCR	Vulnerable or marginalized subgroup	Phases of involvement of yCR in the research process
Forshaw and Woods, (2022)	Systematic review [*n* = 10]	• Approach: PAR/ student-led research • Aim: To identify key features contributing to effective student participation in the co-production of comprehensive well-being strategies	Yes	School	NR	NR	—	- Preparatory work - Recruitment phase - Research design & question - Data collection - Data analysis and interpretation-dissemination, transfer and implementing changes
Fountain et al. (2021)	Systematic review [*n* = 39]	• Approach: Community-based participatory research • Aim: To assess the extent to which PhotoVoice projects empower participants	Yes	School, community	8–14: x, n = NR 15–19: x, n = NR N = 590 (Min. 4; max. 36, average number per project, 10 yCR; 8–26 years)	NR	—	- Recruitment phase - Research design & question - Data collection - Data analysis and interpretation

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Table 1. (continued)

Reference	Study design [number of included studies for reviews/ number of cases for primary studies]	Research approach and main research aim	Perspective of yCR integrated	Setting	Age (years) and number of yCR	Gender of yCR	Vulnerable or marginalized subgroup	Phases of involvement of yCR in the research process
Freire et al. (2022)	Systematic review [*n* = 26]	• Approach: Participatory approaches • Aim: To identify and synthesize methods and approaches enabling the involvement of children, adolescents, families, and carers in participatory research	NR	Schools (mainly), hospitals, community settings, community health settings, and participants' homes (*n* = 1)	8–14: x, n = 204 8–14: - 8–14: - 15–19: x, *n* = 97	Reported in 2 studies with 34 females and 40 females	Physical disabilities	- Preparatory work - Recruitment phase - Research design & question - Data collection - Data analysis and interpretation - Dissemination, transfer and implementing changes
Gardner et al. (2019)	Primary study [*n* = 1 case]	• Approach: PAR • Aim: To recount the application of PAR to amplify youth voice, cultivate leadership, and promote change, detailing the approach's benefits and challenges, summarizing key research findings, and exploring PAR's role in knowledge creation and youth leadership	Yes	neighborhood	8–14: - 15–19: x, *n* = 33	NR	Unemployed youth	- Preparatory work - Recruitment phase - Research design & question - Data collection - Data analysis and interpretation - Dissemination, transfer and implementing changes

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Table 1. (continued)

Reference	Study design [number of included studies for reviews/ number of cases for primary studies]	Research approach and main research aim	Perspective of yCR integrated	Setting	Age (years) and number of yCR	Gender of yCR	Vulnerable or marginalized subgroup	Phases of involvement of yCR in the research process
Gibbs et al. (2020)	Systematic review [*n* = 9]	• Approach: Youth-led PAR • Aim: To examine the use of technology in scaling up participatory research in youth-led PAR projects with adolescents	NR NR	School, community	8–14: x, n = NR 15–19: x, *n* = NR N = 530 (10–19 years)	NR	—	- Recruitment phase - Research design & question - Data collection - Data analysis and interpretation - Dissemination, transfer and implementing changes
Holliday et al. (2020)	Primary study [*n* = 1 case]	• Approach: Community-based participatory research • Aim: To identify common practices, lessons learned, and to reflect on challenges experienced during the implementation of a community-based participatory research project		Community organizations	8–14: x, n = NR 15–19: x, n = NR N = 15 (14–18 years)	NR	—	- Research design & question - Data collection - Data analysis and interpretation - Dissemination, transfer and implementing changes

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Table 1. (continued)

Reference	Study design [number of included studies for reviews/ number of cases for primary studies]	Research approach and main research aim	Perspective of yCR integrated	Setting	Age (years) and number of yCR	Gender of yCR	Vulnerable or marginalized subgroup	Phases of involvement of yCR in the research process
Jørgensen (2019)	Narrative review [*n* = 40]	• Approach: Children as co-researchers, children as researchers, participatory research with children, peer-led research by children • Aim: To present findings of children's involvement in research, examining it separately and comparing it with themes from the literature on service user involvement	NR	Community organizations, schools	8–14: x, n = NR 15–19: x, n = NR	Reported in 5 studies: 37 girls/21 boys	Young refugees (one included study), adolescents with learning disabilities (in one included study)	- Preparatory work - Recruitment phase - Research design & question - Data collection - Data analysis and interpretation - Dissemination, transfer and implementing changes
Lee et al. (2012)	Primary study [*n* = 1 case]	• Approach: Community-based research • Aim: To discuss methodological strategies employed in a community-based research project and highlight lessons learned	Yes	Community organization	8–14: - 15–19: x, *n* = 15	7 female; 8 male	Immigrants	- Preparatory work - Recruitment phase - Research design & question - Data collection - Data analysis and interpretation - Dissemination, transfer and implementing changes

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Table 1. (continued)

Reference	Study design [number of included studies for reviews/ number of cases for primary studies]	Research approach and main research aim	Perspective of yCR integrated	Setting	Age (years) and number of yCR	Gender of yCR	Vulnerable or marginalized subgroup	Phases of involvement of yCR in the research process
Lee et al. (2020)	Primary study [*n* = 1 case]	• Approach: Youth-led arts-based PAR • Aim: To examine how arts-based approaches facilitate meaningful participation for youth who have experienced migration	Yes	Community organization	8–14: - 15–19: x, *n* = 144 N = 952 (15–25 years)	NR	Migrants/refugees	- Recruitment phase - Research design & question - Data collection - Data analysis and interpretation - Dissemination, transfer and implementing changes
Budin-Ljøsne et al. (2022)	Primary study [n = 1 case]	• Approach: Youth engagement • Aim: To share experiences in policy development for youth engagement in a large-scale European project	NR	Health policy context to prevent obesity	8–14: - 15–19: x, n = NR	NR	10% of the youth participating come from families of low SES	- Recruitment phase - Research design & question - Data collection - Data analysis and interpretation - Dissemination, transfer and implementing changes
Loveridge et al. (2023)	Primary study [*n* = 1 case]	• Approach: Participatory research • Aim: To investigate ethical moments, including negotiating consent, co-design, and power dynamics within a project	NR	Youth center	8–14: x, n = NR 15–19: x, n = NR N = 14 (14–20 years)	5 male, 9 female	Indigenous	- Research design & question - Data collection - Data analysis and interpretation - Dissemination, transfer and implementing changes

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Table 1. (continued)

Reference	Study design [number of included studies for reviews/ number of cases for primary studies]	Research approach and main research aim	Perspective of yCR integrated	Setting	Age (years) and number of yCR	Gender of yCR	Vulnerable or marginalized subgroup	Phases of involvement of yCR in the research process
Madrigal et al. (2016)	Primary study [n = 1 case]	• Approach: Participatory research • Aim: To explore the youths' engagement in a wide range of research and action processes in the context of environmental health literacy	Yes	School, community	8–14: - 15–19: x, *n* = 15	NR	Latinx	- Preparatory work - Recruitment phase - Research design & question - Data collection - Data analysis and interpretation - Dissemination, transfer and implementing changes
Maglajlic (2010)	Primary study [n = 3 cases]	• Approach: Community-based participation • Aim: To underscore the pivotal role of PAR in facilitating child participation	Yes	School, community	8–14: x, n = NR 15–19: -	NR	—	- Research design & question - Data collection - Data analysis and interpretation - Dissemination, transfer and implementing changes

(continued)

Table 1. (continued)

Reference	Study design [number of included studies for reviews/ number of cases for primary studies]	Research approach and main research aim	Perspective of yCR integrated	Setting	Age (years) and number of yCR	Gender of yCR	Vulnerable or marginalized subgroup	Phases of involvement of yCR in the research process
Malorni et al. (2022)	Scoping review [*n* = 40]	• Approach: Youth PAR • Aim: To unravel the intricacies of youth PAR by scrutinizing relational practices within the literature	NR	Out-of-school setting	8–14: x, n = NR 15–19: x, n = NR	13 projects reported: Over half were cisgender girls or young women (n = 8 projects); 2 projects reported that yCR were trans or non-binary	Marginalized based on racial and ethnic identity (Latinx, African American, or black) and LBGTQIA or queer teams (2 projects) 2 projects reported immigration status at a broad level 2 sources explicitly noted the participation of disabled youth or youth with disabilities 6 projects mentioned the working-class or low-income backgrounds of youth	- Preparatory work - Recruitment phase - Research design & question - Data collection - Data analysis and interpretation - Dissemination, transfer and implementing changes
McCabe et al. (2023)	Systematic review [*n* = 14]	• Approach: Patient engagement/ youth engagement • Aim: To describe the impacts of youth engagement on mental health research	NR	Inpatient, outpatient, community, schools, residential treatment	8–14: x, n = 4 15–19: x, *n* = 97	7 studies reported: 8 male, 18 female	Patients with mental health issues	- Preparatory work - Recruitment phase - Research design & question - Data collection - Data analysis and interpretation - Dissemination, transfer and implementing changes

(continued)

Table 1. (continued)

Reference	Study design [number of included studies for reviews/ number of cases for primary studies]	Research approach and main research aim	Perspective of yCR integrated	Setting	Age (years) and number of yCR	Gender of yCR	Vulnerable or marginalized subgroup	Phases of involvement of yCR in the research process
Montreuil et al. (2021)	Realist review [*n* = 57]	• Approach: Participatory research • Aim: To synthesize existing literature, shedding light on the contextual factors, mechanisms, and outcomes associated with children's participation	NR	Especially school setting	8–14: x, n = NR 15–19: -	NR	—	- Recruitment phase - Research design & question - Data collection - Data analysis and interpretation - Dissemination, transfer and implementing changes
O'Brien and Moules (2007)	Primary study [n = 1 case]	• Approach: Participatory research • Aim: To review the processes of a research project investigating the utilization and non-utilization of services within a local area	Yes	School	8–14: x, n = NR 15–19: -	NR	—	- Preparatory work - Recruitment phase - Data collection - Evaluation
Powers and Tiffany (2006)	Primary study [n = 4 cases]	• Approach: Participatory research • Aim: To describe 4 projects illustrating active youth participation in research	NR	Community setting	8–14: x, n = NR 15–19: x, n = NR N = 65–70 (13–19 years)	NR	Homeless youth	- Recruitment phase - Research design & question - Data collection - Data analysis and interpretation - Evaluation

(continued)

Table 1. (continued)

Reference	Study design [number of included studies for reviews/ number of cases for primary studies]	Research approach and main research aim	Perspective of yCR integrated	Setting	Age (years) and number of yCR	Gender of yCR	Vulnerable or marginalized subgroup	Phases of involvement of yCR in the research process
Sandoval and Messiou (2022)	Narrative review [*n* = 27]	• Approach: Co-research • Aim: To investigate the selection and involvement of student researchers/ co-researchers in the research process	NR	Inclusion and school areas	8–14: x, n = NR 15–19: x, n = NR	NR	—	- Data collection - Data analysis and interpretation - Dissemination, transfer and implementing changes
Smith et al. (2002)	Primary study [n = 1 case]	• Approach: Co-research • Aim: To address questions about practicalities, validity, ethics, and value in participatory research with young people; to reflect on challenges faced during project implementation	NR	NR	8–14: - 15–19: x, n = NR	NR	—	- Preparatory work - Research design & question - Data collection - Data analysis and interpretation
Spriggs and Gillam (2017)	Primary study [n = 1 case]	• Approach: Co-research • Aim: To explore ethical complexities of involving children as co-researchers	NR	NR	8–14: x, n = NR 15–19: x, n = NR	NR	Indigenous people, and some in disadvantaged or disaster contexts; 3 researchers talked about co-research with young people among other participant groups, e.g., sex workers, people from refugee backgrounds and people from disadvantaged communities	- Data collection - Data analysis and interpretation - Dissemination, transfer and implementing changes

(continued)

Table 1. (continued)

Reference	Study design [number of included studies for reviews/ number of cases for primary studies]	Research approach and main research aim	Perspective of yCR integrated	Setting	Age (years) and number of yCR	Gender of yCR	Vulnerable or marginalized subgroup	Phases of involvement of yCR in the research process
Tilley and Taylor (2018)	Narrative review [*n* = 30]	• Approach: Participatory research, action research, community-based research, arts-based research • Aim: To explore ethical implications and advocate for an inclusive research praxis that incorporates youth voices in design, data collection, analysis	Yes	School, community	8–14: x, n = NR 15–19: x, n = NR	NR	—	- Research design & question - Data collection - Data analysis and interpretation - Dissemination, transfer and implementing changes
Vyas et al. (2022)	Primary study [n = 1 case]	• Approach: Community-based PAR study • Aim: To assess the involvement of an adolescent advisory group in informing the sexual and reproductive needs of immigrant adolescents	Yes	Community	8–14: - 15–19: x, n = NR N = 10 (14–19 years)	7 girls, 3 boys	Immigrants	- Recruitment phase - Data collection and analysis - Data analysis and interpretation - Evaluation

yCR = young co-researcher; n = number; N = total number of participants; NR = not reported; SES = socioeconomic status; x = age group is represented; - = age group is not represented; LGBTQ = lesbian, gay, bisexual, transgender, queer youth; LBGTQIA = lesbian, gay, bisexual, transgender, queer, inter, asexual youth; Latinx = people of Latin American cultural or ethnic identity in the United States.

2022). In those studies, more young female co-researchers participated. In the sampled studies, gender was often presented based on a binary understanding. Only in two studies were gender-diverse young co-researchers engaged (Cullen & Walsh, 2019; Malorni et al., 2022). Within the sampled studies, the predominant usage centers around the terms *participatory research* (n = 16) and *co-research* (n = 6). However, other terms have also been used, such as *child-led research*, *youth engagement*, *student-led research*, and others.

Co-research mainly took place in schools, community organizations, after-school programs, healthcare settings, youth centers, and within community or neighborhood-based programs. One study included hospitals and participants' homes (Freire et al., 2022).

Sixteen sampled studies (Bovarnick et al., 2019; Bradbury-Jones et al., 2018; Budin-Ljosne et al., 2022; Flicker et al., 2008; Freire et al., 2022; Gardner et al., 2019; Jørgensen, 2019; Lee et al., 2012, 2020; Loveridge et al., 2023; Madrigal et al., 2016; Malorni et al., 2022; McCabe et al., 2023; Powers & Tiffany, 2006; Spriggs & Gillam, 2019; Vyas et al., 2022) conducted co-research with vulnerable or marginalized groups. These studies defined vulnerability or marginalization based on diverse characteristics (e.g., ethnicity, socioeconomic status, disability, migration status, illness, unemployment, homelessness), or they used a more general description of disadvantaged or indigenous communities.

Phases of Involvement

All sampled studies actively involved children and adolescents as researchers in at least two research phases. Table 1 provides a detailed overview of the young co-researchers' phases of participation in the respective studies. These phases are organized as follows: preparatory work, recruitment phase, research design and research questions, data collection, data analysis and interpretation and dissemination, knowledge transfer, and implementing changes. The emphasis in most studies was on engaging young co-researchers primarily in the data collection, analysis, and interpretation phases. In only five studies were children and adolescents involved in the research design and research question development (Coad, 2007; Cullen et al., 2023; Flicker et al., 2008; Freire et al., 2022; Gardner et al., 2019).

Represented Perspectives: Adult versus Young Co-Researchers

Fourteen of the sampled studies explicitly addressed the young co-researchers' perspectives and experiences (Bakhtiar et al., 2023; Bradbury-Jones et al., 2018; Cullen et al., 2023; Flicker et al., 2008; Forshaw & Woods, 2022; Fountain et al., 2021; Gardner et al., 2019; Lee et al., 2012, 2020; Madrigal et al., 2016; Maglajlic, 2010; O'Brien & Moules, 2007; Tilley & Taylor, 2018; Vyas et al., 2022).

However, none of the included sampled studies focused on their perspectives alone; instead, adult perspectives were always integrated. Comparing the adults' and young co-researchers' perspectives, it emerges that adult co-researchers specifically reported lessons learned about technical and project management issues, such as funding, recruitment, time management, and relationship management with schools or parents as well as expectation management on an interpersonal level (Bakhtiar et al., 2023; Bradbury-Jones et al., 2018; Budin-Ljosne et al., 2022; Cullen et al., 2023). The young co-researchers' learned lessons focused more on the interpersonal–especially relating to role conflicts (Bradbury-Jones et al., 2018), team building (Forshaw & Woods, 2022), and the need for appropriate communication tools (Flicker et al., 2008) as well as positive encouragement from the adult co-researchers (Cullen et al., 2023; Madrigal et al., 2016)–and the individual level. Self-worth and self-esteem were mentioned by young co-researchers as an influential factor on the co-research process in four studies (Gardner et al., 2019; Lee et al., 2020; Madrigal et al., 2016; Vyas et al., 2022). An adult researcher stated, "Some youth researchers noted struggling with feelings of self-worth, especially in relation to their identity, using their voice, and their academic abilities" (Cullen et al., 2023, p. 11). Some young co-researchers reported that motivational factors were highly relevant: for example, they were motivated to participate if the project correlated with their personal interests and if they perceived they could make an impact (Maglajlic, 2010; Vyas et al., 2022). Concerns reported both by children and adults comprised issues of power imbalances between the adult and young co-researchers (Tilley & Taylor, 2018). In one study, a young co-researcher reflected: "Adults don't take children seriously. That is a problem that needs to be addressed" (Maglajlic, 2010).

Framework: Navigating Co-Research Paradigms: What to Consider for Good Co-Research With Children and Adolescents?

During the analysis, we identified the factors considered good for co-research and categorized them into six themes. These were plotted as layers in the framework: sociocultural factors, ethics, setting factors, project management, interpersonal factors, and individual factors of young co-researchers. Each theme (i.e., layer) is summarized in Figure 2 and described in detail in the following sections.

Sociocultural Factors. Sociocultural factors refer to the cultural norms, societal structures, and values that shape how children and adolescents are perceived and involved as co-researchers, including aspects such as child welfare culture and adult-centeredness in societies. Six sampled studies addressed the influence of sociocultural factors on co-research with children and adolescents (Bakhtiar et al., 2023; Fløtten et al., 2021;

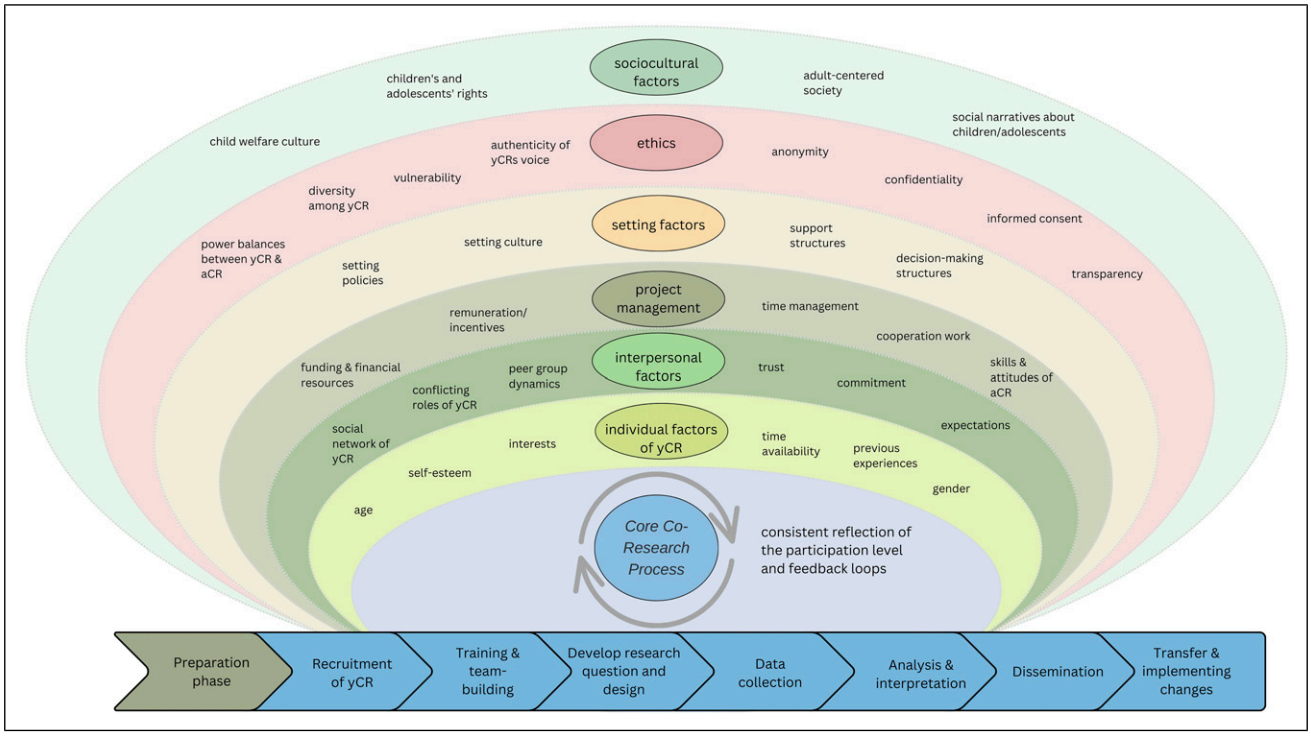

Figure 2. Framework: What to Consider for Good Co-Research With Children and Adolescents. Abbreviations: CR = Co-Research, yCR = Young Co-Researcher, aCR = Adult Co-Researcher.

Jørgensen, 2019; Lee et al., 2020; Montreuil et al., 2021; O'Brien & Moules, 2007).

One identified factor at this layer is the child welfare culture. The authors of a realist review (Montreuil et al., 2021) highlighted that in Western cultures, the prevailing child welfare culture, which is rooted in principles of child protection, influences the extent to which young co-researchers are involved in projects within their interests or that could be beneficial to them (Montreuil et al., 2021). This cultural factor interacts with children's and adolescents' rights. Children and adolescents are not only seen as individuals in need of protection, but also as "rights holders," affirming their right to active participation as described in Articles 12 and 13 in the UNCRC (United Nations Human Rights), as Jørgensen's review pointed out (Jørgensen, 2019). Adult-centeredness in society is another identified sociocultural factor influencing the co-research process (Fløtten et al., 2021), as adults' knowledge is more highly appreciated and prioritized over knowledge generated by children (Bakhtiar et al., 2023; Fløtten et al., 2021; O'Brien & Moules, 2007). In a project by Lee et al. (Lee et al., 2020), the impact of this adult prioritization was perceived as challenging by adult co-researchers, as this could be the potential internalization of societal narratives by children and young people, which may lead them to feel inadequate for typical "adult roles" (e.g., as researchers) or to devalue their knowledge.

Ethics. Ethics refers to the principles and considerations that adult co-researchers must consider to ensure the responsible conduct of co-research with children and adolescents, including issues such as power dynamics, diversity, vulnerability, anonymity, confidentiality, and informed consent. The majority of the sampled studies (n = 17) mentioned ethical considerations within the co-research processes (Bakhtiar et al., 2023; Bovarnick et al., 2019; Bradbury-Jones et al., 2018; Budin-Ljosne et al., 2022; Coad, 2007; Cullen et al., 2023; Fløtten et al., 2021; Freire et al., 2022; Jørgensen, 2019; Lee et al., 2020; Madrigal et al., 2016; McCabe et al., 2023; Montreuil et al., 2021; Smith et al., 2002; Spriggs & Gillam, 2019; Tilley & Taylor, 2018).

Power balances between young and adult co-researchers were identified as an ethical influencing factor on co-research. In Loveridge et al.'s primary study (Loveridge et al., 2023), power was observed to "circulate" between individuals and groups. The Flottens et al. (Fløtten et al., 2021) review found that, in most cases, children and adolescents must be invited by the adult co-researcher to participate in the research project and are less likely, or do not have the opportunity, to take the initiative themselves (Fløtten et al., 2021). The adult co-researchers in the co-creation project reported by Budin-Ljøsnes et al. (Budin-Ljosne et al., 2022) acknowledged their stronger authority, higher rhetorical skills, and greater research experience compared to the young co-researchers. Imbalances may also emerge from the researchers' affiliations with a university or other privileged aspects of their biography,

as highlighted in the following quote from a scoping review by Bovarnick et al. (Bovarnick et al., 2019). An adult researcher reflected that young co-researchers brought their "previous negative experiences with adults in authority into the research situation, voicing suspicion of procedures like notetaking and audio-recording. If a child closely associates the researcher with an institution supporting the study, her or his perception of the researcher's power (and by extension, their own lack of choice and agency) could be magnified further" (Tilley & Taylor, 2018, p. 15).

Jørgensen's review (Jørgensen, 2019) highlighted the challenges adult co-researchers described, which is to see children and adolescents as vulnerable and in need of protection on one hand but as competent on the other.

While some studies approach co-research projects with the goal of resolving power issues (McCabe et al., 2023), others perceive power dynamics as an inevitable or normal element inherent in relationships (Jørgensen, 2019; Loveridge et al., 2023; O'Brien & Moules, 2007; Tilley & Taylor, 2018). As highlighted by the authors of the Montreuil et al. review (Montreuil et al., 2021), addressing the power imbalance between adult and young co-researchers may involve granting younger co-researchers the opportunity to set their own agenda or actively engage in decision-making at various stages of the co-research as well as create a collaborative partnership based on trust, respect, and rapport (McCabe et al., 2023). In their review, Freire et al. (Freire et al., 2022) found that collaboratively developing "group rights" in the beginning of the co-research process served as a concrete document that reassured each member of the research team, promoting a sense of safety and community.

The diversity of young people's voices emerges as an additional ethical concern, as identified by the authors of Bakthiar et al.'s systematic review (Bakhtiar et al., 2023). The adult co-researchers in two participatory projects emphasized the significance of diverse backgrounds (e.g., health status, gender, digital access, and digital literacy) (Budin-Ljosne et al., 2022; Lee et al., 2020). The Montrieul et al. review (Montreuil et al., 2021) further expanded this perspective by introducing the additional layer of considering different cultural backgrounds or individuals at risk of marginalization. They added a further layer of complexity, pointing out that despite co-research projects aiming to represent young people's voices authentically, challenges persisted due to the subjectivity involved in interpreting diverse voices. The young co-researchers in the Cullen et al. project (Cullen et al., 2023) summarized their experience and extended the concept of diversity beyond demographics, also emphasizing the young co-researchers' individual strengths, contributions, skills, knowledge, and interests. In one primary study and in one systematic review, it was found out that collaborating with schools is a facilitator to encompass various socioeconomic backgrounds (Budin-Ljosne et al., 2022; McCabe et al., 2023).

Adult co-researchers in three reviews described vulnerability as a challenge in all phases, as many ethical considerations arise in terms of reproducing stigmatization within the research project (Bradbury-Jones et al., 2018), and the threat of retraumatization exists when certain vulnerable groups research sensitive topics (e.g., sexual violence) (Bovarnick et al., 2019; Tilley & Taylor, 2018). In addition, two primary studies showed that vulnerable groups may have other pressing issues in their daily lives and do not have the capacity to participate in co-research projects (Loveridge et al., 2023; Madrigal et al., 2016). Two reviews elaborated that certain communities, such as youths with migration backgrounds or disabilities, feel silenced in their daily lives, and these experiences must be considered when adult researchers approach silenced societal communities (Bradbury-Jones et al., 2018; Tilley & Taylor, 2018). In certain instances, adult co-researchers may lack the necessary competencies to effectively engage with vulnerable groups, as highlighted by two reviews (Jørgensen, 2019; Montreuil et al., 2021). To engage and reach out to vulnerable groups, it is key to build trustful cooperation with organizations and communities where the groups are based, as Smith et al. discovered (Smith et al., 2002).

Anonymity and confidentiality are factors located on the ethics layer. In co-research processes, special demands on anonymity arise. Jørgensen et al.'s review (Jørgensen, 2019) showed that some researchers argue against mandating anonymity for young co-researchers, as the following quote from an adult co-researcher states, "The requirement for children to be anonymous is unjust and disempowering as it limits their ability to show pride in the work they have done" (Jørgensen, 2019, p. 13). The authors of two reviews (Bovarnick et al., 2019; Coad, 2007) suggested that young co-researchers should have the autonomy to decide whether to be identified at various stages of the project. Spriggs and Gillam (Spriggs & Gillam, 2019) interviewed adult co-researchers who emphasized the importance of recognizing that when young co-researchers interview their peers they may gain access to knowledge adults would not otherwise have.

Montreuil et al.'s (Montreuil et al., 2021) and Budin-Ljøsne et al.'s (Budin-Ljosne et al., 2022) reviews stated the significance of training in ethics, informed consent, and practical strategies to counteract the potential anonymity and confidentiality challenges associated with the data collection methods used by young co-researchers. In the context of informed consent, the scoping review by Flotten et al. (Coad, 2007; Fløtten et al., 2021) suggested that integrating flexibility in terms of withdrawing their consent to the process enables young co-researchers to exercise autonomy by potentially stepping back from specific project stages or the entire research process as needed. The Bovarnick et al. scoping review (Bovarnick et al., 2019; Coad, 2007) highlighted that open discussions about potential risks associated with the research should be facilitated by adult co-researchers.

Setting Factors. Most of the sampled studies conducted co-research projects in settings (Table 1) such as schools, organizations, and community centers, with 14 sampled studies providing more detailed insights into setting-specific factors (Bakhtiar et al., 2023; Bovarnick et al., 2019; Fløtten et al., 2021; Forshaw & Woods, 2022; Gardner et al., 2019; Jørgensen, 2019; Madrigal et al., 2016; Maglajlic, 2010; Mayring, 2000; McCabe et al., 2023; Montreuil et al., 2021) . When implementing a co-research approach, it becomes imperative to consider the specific setting culture and policies. Setting culture refers to the shared values, practices, and norms within a particular environment, while policy and decision-making structures outline the formal rules, procedures, and hierarchies that guide actions and decisions. Support structures refer to the resources, mentorship, and frameworks available to facilitate the research process and ensure effective collaboration.

The respective culture within settings significantly shapes the feasibility and success of co-research endeavors. While potential hierarchical structures within the adult–child dynamic may influence the participation dynamics, concerns regarding potential disorder and the delicate balance between inclusion and performance expectations contribute to the intricate nuances of how setting culture impacts co-research (Bakhtiar et al., 2023; Malorni et al., 2022). Adult researchers in four reviews acknowledged that the effectiveness and sustainability of co-research projects depend on support structures—networks of resources, guidance, and assistance that foster young co-researchers' active involvement and well-being. Practical measures, such as holding sessions in familiar settings, providing peer and/or professional support, and seeking feedback from the young co-researchers, were identified as effective strategies (Bovarnick et al., 2019; Fløtten et al., 2021; McCabe et al., 2023; Montreuil et al., 2021).

Decision-making structures play a key role in shaping the participatory nature of co-research projects, providing the framework, processes, and mechanisms that facilitate young co-researchers' active involvement. This factor was widely acknowledged both by the review authors (Bakhtiar et al., 2023; Jørgensen, 2019; McCabe et al., 2023) and as a conclusion by the adult co-researchers from the primary studies (Gardner et al., 2019; Madrigal et al., 2016; Maglajlic, 2010). These structures aim to create feedback loops and voting mechanisms throughout the co-research process, ensuring that young co-researchers' perspectives are not only considered but actively integrated into the decision-making processes (Bakhtiar et al., 2023; Gardner et al., 2019; Jørgensen, 2019; Madrigal et al., 2016; Maglajlic, 2010; McCabe et al., 2023; Montreuil et al., 2021; Vyas et al., 2022).

Since schools were the setting in most of the sampled studies (n = 16), the following section will focus on the specific characteristics of schools as a context for co-research. In school settings, an array of policies directly impacts co-research initiatives. The tension among teachers, balancing educational commitments with the ultimate responsibility for decisions, underscores the necessity of aligning collaborative research practices with the established setting culture and policy within the chosen setting (Mayring, 2000). In one review, teachers voiced (Jørgensen, 2019) worries about the potential for "anarchy" and emphasized that their educational, legal, and moral obligations, along with their duty of care for pupils, necessitated taking "ultimate responsibility for decisions." Hierarchical structures within the adult–child dynamic, as discussed in the context of schools in the Bakhtiar et al. review (Bakhtiar et al., 2023), may impact participation dynamics. This could, for example, lead to young co-researchers giving priority to socially desirable behavior, thus undermining their freedom of choice in favor of adult co-researchers. Another issue, discussed by two reviews (Bakhtiar et al., 2023; Forshaw & Woods, 2022), is that there may be a change within the teaching staff, which may mean that students and teachers could no longer participate in the co-research process. Time constraints related to the school structure are an uncontrollable factor that can influence co-research in a school setting because the co-research project must be accommodated in the regular timetable, as one review pointed out (Forshaw & Woods, 2022). The Forshaw et al. review (Forshaw & Woods, 2022) highlights that schools with a democratic culture, where pupils are empowered to use their voice, positively influence co-research projects. Staff in such schools tend to be more motivated and committed. Furthermore, established decision-making structures offer students a framework to excel as co-researchers, as they are accustomed to leadership, active participation, and responsibility (Forshaw & Woods, 2022).

Project Management. Project Management refers to the strategic planning and organization required to ensure the success of co-research projects, including securing funding, remuneration and incentives for young co-researchers, time management aspects, cooperation work, and adult co-researchers' skills and attitudes. A total of 16 sampled studies included project management aspects in the context of co-research projects and indicated that adequate project management is a key factor in successful co-research projects (Bovarnick et al., 2019; Bradbury-Jones et al., 2018; Cullen et al., 2023; Flicker et al., 2008; Gibbs et al., 2020; Holliday et al., 2020; Jørgensen, 2019; Loveridge et al., 2023; Madrigal et al., 2016; Malorni et al., 2022; McCabe et al., 2023; O'Brien & Moules, 2007; Powers & Tiffany, 2006; Smith et al., 2002; Tilley & Taylor, 2018; Vyas et al., 2022).

Adult co-researchers suggested that funding influences an entire project's trajectory and success and must be secured prior to recruiting co-researchers (Flicker et al., 2008). Two systematic reviews suggested that maintaining a flexible budget is important when considering activities proposed by young co-researchers, and a lack of funding holds the risk of

hindering child- and youth-developed initiatives (Forshaw & Woods, 2022; McCabe et al., 2023).

Providing remuneration was commonly viewed as a way to show appreciation for the effort and expertise that young co-researchers contribute to projects, two reviews suggested (Bovarnick et al., 2019; McCabe et al., 2023). The issue of providing direct payments to young co-researchers is controversial, and is particularly challenging for those under the age of 14, as Jørgensen et al.'s review pointed out (Jørgensen, 2019). The review by Fountain et al. (Fountain et al., 2021) therefore suggested the use of vouchers instead of money while Jørgensen et al. (Jørgensen, 2019) suggested field trips, class credits, and community service hours as alternatives. Other possibilities for remuneration can be public presentations, job references, certificates, or shared publications. Cullen et al.'s (Cullen et al., 2023) primary study suggested that remuneration must be discussed with young co-researchers and adapted to their needs.

Well-considered time management is much needed in co-research. Successful engagement in different co-research phases requires time, and inadequate time allocation can lead to the exclusion of young co-researchers from different aspects of the research, as Jørgensen et al.'s scoping review found (Jørgensen, 2019). The establishment and cultivation of relationships with co-researchers, along with the iterative nature of co-research involving continuous dialogue and collaboration, were identified as time-intensive challenges by the adult co-researchers in the Loveridge et al. primary study (Fountain et al., 2021; Loveridge et al., 2023). Aligning activities with co-researchers' time resources is paramount for sustained participation, as seven sampled studies showed (Bovarnick et al., 2019; Bradbury-Jones et al., 2018; Holliday et al., 2020; Madrigal et al., 2016; Powers & Tiffany, 2006; Spriggs & Gillam, 2019; Tilley & Taylor, 2018).

Effective project management requires continuous cooperative work with partners in the collaborative organization, school, community, etc., taking into consideration the organizations' setting-specific dynamics and potential challenges, such as staff changes. These requirements are highlighted in two reviews (Malorni et al., 2022; McCabe et al., 2023) and two primary studies (Holliday et al., 2020; Smith et al., 2002).

Adult co-researchers in the Flicker et al. primary study (Flicker et al., 2008) emphasized the need for skilled adult co-researchers. Above that, an open-minded approach that allows an understanding and appreciation of young co-researchers' different perspectives and experiences is another key competence of adult co-researchers. The reflexivity and patience of adult co-researchers plays a key role in examining power structures and providing a space where young participants feel valued, as seven studies found (Cullen et al., 2023; Maglajlic, 2010; Malorni et al., 2022; McCabe et al., 2023; Smith et al., 2002; Spriggs & Gillam, 2019). Six studies highlighted that adult co-researchers must be aware of inequalities or issues when it comes to young co-researchers' different literacies and backgrounds and reflect on their own backgrounds and moral parameters (Bovarnick et al., 2019; Gibbs et al., 2020; Malorni et al., 2022; O'Brien & Moules, 2007; Tilley & Taylor, 2018).

Interpersonal Factors. All the sampled studies mentioned that interpersonal factors that entail social network, conflicting roles, peer group dynamics, trust, commitment, and expectations play a crucial role in shaping the dynamics of co-research projects.

Regarding the influential factor of the social network of young co-researchers, challenges might arise if parents perceive young co-researchers' tasks as time-consuming, and they might have concerns about their children's or other family members' exposure to potential negative impacts (Cullen et al., 2023; Forshaw & Woods, 2022; Lee et al., 2020; Tilley & Taylor, 2018). Two systematic reviews elaborated ways to involve parents and the wider school community, such as through informational leaflets, films, or websites, or by inviting parents to open evenings or presentations (Bovarnick et al., 2019; Forshaw & Woods, 2022).

The sampled literature showed that young co-researchers may find themselves grappling with conflicting roles. They may encounter competing loyalties and obligations when interviewing individuals with whom they share a past or future (Bradbury-Jones et al., 2018; Malorni et al., 2022; Spriggs & Gillam, 2019). To resolve these challenges, it is essential to take the co-researchers' perspectives about their roles into account and allow open discussions when planning research (McCabe et al., 2023). An adult researcher's quote illustrated: "Interviewing people who they have a past or a future with … hearing something that might have implications for family or other community members that they, in a normal circumstances, would act on and here they are with really two loyalties… are they a researcher or are they community member of family member in that context and how they negotiate that" (Spriggs & Gillam, 2019, p. 9).

Peer group dynamics play a crucial role on an interpersonal level. In co-research teams, children and adolescents may possess varying levels of rhetorical and leadership or other abilities, thereby contributing to potential power imbalances within the group (Budin-Ljosne et al., 2022; Lee et al., 2020). Peer group dynamics can also can be helpful and exciting, as the following quote from a young co-researcher illustrated: "When you are with a group, sometimes they will you show [something] that you might have missed and that you wouldn't have done by yourself" (Flicker et al., 2008, p. 296). Another young co-researcher stated, "Meeting new people and seeing what kind of experiences that we share that was the best part" (Vyas et al., 2022, p. 8).

Bovarnick et al. (Bovarnick et al., 2019) described that the potential for developing hierarchies is sometimes linked to individuals' different experiences of oppression.

Several studies emphasized that trust-building between young and adult co-researchers is a fundamental precondition for co-research (Coad, 2007; Forshaw & Woods, 2022; Loveridge et al., 2023; McCabe et al., 2023). To enforce trust,

the authors of one primary study suggested it is crucial that adult co-researchers demonstrate transparency about decisions and decision-making processes (Vyas et al., 2022). Three systematic reviews showed that important circumstances for trust-building are creating safe and inclusive spaces for young co-researchers (Fountain et al., 2021; Jørgensen, 2019; McCabe et al., 2023). Working together with persons with whom children and adolescents already feel safe and respected can also be an enabler, but a systematic review suggested adult co-researchers' need to be reflexive due to existing power relations between teachers and pupils (Forshaw & Woods, 2022). The following quote from a young co-researcher illustrates how children can think about what prejudices adults have about working with children: "Adults usually think that collaboration with children is harmless and they don't take it seriously. That is one of the main reasons why children don't collaborate with adults. They think we are too childish to be involved in sorting out our problems" (Maglajlic, 2010, p. 212).

Maintaining commitment over time was identified as a challenge as well as an enabler of co-research. Crafting incentive strategies tailored to young co-researchers' needs, assessing time commitments, and implementing regular feedback or accountability sessions can enhance commitment (Gardner et al., 2019; Holliday et al., 2020). Two systematic reviews (Bradbury-Jones et al., 2018; Fountain et al., 2021) and one scoping review (Malorni et al., 2022) underscored the importance of accessible and flexible practices that accommodate various schedules and preferences. One case study indicated that one lesson learned was that obtaining commitment in the co-research process is crucial, especially considering the diverse time availabilities of young co-researchers (e.g., exams in a school context) (Gardner et al., 2019). Two systematic reviews (Malorni et al., 2022; McCabe et al., 2023) and one case study (Flicker et al., 2008) stated that the retention of young co-researchers can be supported by the establishment of clear goals and individual and collective indicators of success, so achievements can be recognized and celebrated. Another case study by Loveridge et al. (Loveridge et al., 2023) reported that it is important to send updates to facilitate the commitment of people who are unable to attend. To reinforce young co-researchers' commitment, effective expectation management (e.g., about work and time expenditure or about the impact of the project) is needed (Bakhtiar et al., 2023; Freire et al., 2022; Lee et al., 2012; McCabe et al., 2023; Montreuil et al., 2021).

Individual Factors of Young Co-Researchers. Individual factors refer to the characteristics and personal circumstances of young co-researchers that can impact their engagement and contributions in co-research projects. Of the sampled studies, 12 further explored how young co-researchers' individual factors influence co-research projects (Bakhtiar et al., 2023; Bovarnick et al., 2019; Budin-Ljosne et al., 2022; Coad, 2007; Cullen et al., 2023; Forshaw & Woods, 2022; Freire et al., 2022; Gardner et al., 2019; Lee et al., 2012, 2020; Madrigal et al., 2016).

The sampled studies showed that young co-researchers bring an individual set of characteristics distinct from adults that must be considered, significantly influencing the dynamics of co-research projects. Age and developmental stage are important determinants when considering the capabilities of young co-researchers. In the context of co-research projects, two systematic reviews (Bakhtiar et al., 2023; Freire et al., 2022) emphasized that age encompasses various aspects, such as reading ability and the aptitude to comprehend ranking tasks. In a systematic review (Freire et al., 2022), it was critically concluded: "It appears as though little attention was paid to the developmental level of the child and adolescent co-researchers beyond their age or school level. Some authors grouped co-researchers into younger and older age groups, but this appeared to be for convenience, utilizing school years or particular groups, rather than an intentional developmental approach as authors did not report adapting the activities or methods between these groupings to address developmental differences or discuss the impact of the different levels of development" (Freire et al., 2022, p. 12). Tilley et al. (Tilley & Taylor, 2018) also discovered, in their narrative review, that in terms of methodological issues, it is more about the young co-researchers' developmental stage and abilities than age.

Based on the results of four studies (Bakhtiar et al., 2023; Coad, 2007; Freire et al., 2022; Jørgensen, 2019), some differences can be stated related to age groups: Younger age groups compared to older ones (above 14 years old) require specific child-friendly consent forms as well as parental consent. Moreover, another review stated that direct payments to age groups younger than 14 years are often not possible (Jørgensen, 2019), illustrating that age influences co-researcher remunerations. In terms of co-research methodologies, one systematic literature review (Bakhtiar et al., 2023) found that children need specific methods, such as storytelling, to teach ethics. Additionally, ongoing training is specifically relevant when working with younger age groups. In Bakhtiar et al.'s systematic literature review, it was also mentioned that children prefer visual-based methods (Bakhtiar et al., 2023). Interestingly, one narrative review about participatory photovoice studies (Coad, 2007) found that both younger and older age groups liked visual-based methods. Differences related to age were more about the collected data's subjects. For example, younger age groups were more family-oriented in their photography, while older age groups also included friends.

In addition to these considerations, the review by Bovarnick et al. (Bovarnick et al., 2019) and four primary studies (Cullen et al., 2023; Gardner et al., 2019; Lee et al., 2012; Madrigal et al., 2016) found that issues of self-esteem can have a significant impact on young co-researchers' active participation. The ability to commit and focus as a young co-researcher on a co-research project may be hampered by external factors, such as the pressures of school, family

responsibilities, and broader social, emotional, or financial challenges (Mayring, 2014). One young co-researcher seemed surprised that they could bring value to the research project, elucidated by the following quote: "I was at that meeting, but I didn't realize we said anything this important" (Powers & Tiffany, 2006, p. 83).

In the scoping review by Bovarnick et al. (Mayring, 2014), adult co-researchers emphasized the importance of adapting tasks and methods to the young co-researchers' individual preferences, interests, and time availability, noting that the phases of involvement may vary depending on individual circumstances.

Young co-researchers' previous negative experiences with research or authorities can have a negative impact on their commitment and trust (Forshaw & Woods, 2022). The reviews by Forshaw et al. and Woods et al. (Bovarnick et al., 2019; Forshaw & Woods, 2022) acknowledged that the experiences of young co-researchers within democratic structures can positively influence co-research projects because the young co-researchers in such settings may already be familiar with expressing free opinions, practicing participation, and assuming responsibility.

Several studies have suggested that gender considerations in research activities must be recognized, as they can address and influence potential power imbalances within research teams (Coad, 2007; Montreuil et al., 2021). The authors of a systematic review (Freire et al., 2022) reported that "greater interactions between co-researchers are observed when they work in single-gender groups." Depending on the context and country, gender and related social norms may affect girls' ability to participate fully (Lee et al., 2020). The adult co-researchers of another primary study (Budin-Ljosne et al., 2022) discussed the difficulty of achieving a gender balance in their project. Another primary study mentioned that girls were more interested in creative methods (Lee et al., 2020).

Challenges and Facilitators in the Core Co-Research Process

To identify challenges and facilitators in the co-research process, we wanted to scrutinize the phases of the research process in which these arose. For this purpose, we identified eight phases of the core co-research process (see Figure 2), namely: preparation phase; recruitment of young co-researchers; training and team building; developing the research question and design; data collection; analysis and interpretation; dissemination; transfer and implementing changes. Maintaining consistent reflection and feedback loops throughout all co-research phases is important. Each phase presents its set of challenges and facilitators, as described further in Table 2.

Target-Group-Oriented Methods and Methodological Considerations

Based on the analyzed included studies, we broadly categorized the identified target-group-oriented methods into (a) creative methods and (b) traditional qualitative and quantitative methods. In addition, the results showed specific target-oriented techniques and activities that can be incorporated into research methods to make them more accessible and attractive for children and youths. All methods described in the sampled studies are summarized in Table 3.

Most studies use a diverse mix of participatory methods (Coad, 2007; Flicker et al., 2008; Fountain et al., 2021) to conduct co-research with children and adolescents, as well as with participants (i.e., peers) in the data collection phase (Bakhtiar et al., 2023; Freire et al., 2022; Sandoval & Messiou, 2020). Overall, it is a prerequisite for a successful co-research approach to introduce the young co-researchers to a few methods from which they might choose or to stipulate the methods achievable within the given timeframe and resources (Bakhtiar et al., 2023; Gibbs et al., 2020).

The methodological considerations reported in the sampled studies were very thin. Only some general considerations were stated: Studies showed that methods and activities might vary based on gender, literacy skills, and personal interests (Bovarnick et al., 2019; Bradbury-Jones et al., 2018), and different methods can be tailored to the purpose or phase (e.g., group discussion for analysis) (Montreuil et al., 2021). The children's and adolescents' ages and developmental stages are another aspect to consider when choosing and adapting methods (Bovarnick et al., 2019; Bradbury-Jones et al., 2018). However, age should not be the one and only focus, as Tilley et al. (Tilley & Taylor, 2018, p. 2190) mentioned: "Researchers need to be careful not to underestimate the capabilities of youth participants and, as a result, limit the richness of data collected by focusing too heavily on participants' age rather than their capabilities." The type of task is another aspect that must be considered (Bovarnick et al., 2019; Tilley & Taylor, 2018). Physical and practical tasks make research more accessible for children and adolescents. The factor of time plays a role for young co-researchers, as they sometimes prefer to choose a method modification that does not take too much time (Maglajlic, 2010; Montreuil et al., 2021). In general, inclusive methodologies that are adapted to specific needs provide benefits to marginalized groups as well as to all other co-researchers (Forshaw & Woods, 2022; Jørgensen, 2019).

Discussion

This qualitative evidence synthesis provides a framework for the factors that should be considered when conducting co-research with children and adolescents. It lists challenges and facilitators of the eight steps in the core co-research process, and maps possible, target-group-oriented co-research methodologies for children and adolescents.

The synthesized framework consists of six layers that influence the co-research process and, therefore, should be considered when aiming to do meaningful co-research with children and adolescents: the sociocultural factors, ethics,

Table 2. Challenges and Facilitators in the Core Co-Research Process.

Category or phase of the co-research process with references	Challenges	Facilitators	References
Preparation phase	• Unplanned costs needed for yCR ideas that exceed the budget • Recruitment and trust-building that require lots of time because relationships develop slowly (between yCR and aCR, as well as with community partners) • Decisions about appropriate remuneration/ incentives for yCR (issues to address include envy from peers if yCR earns money)	• Flexible funding mechanism to guarantee that yCR ideas can be put into practice • Time buffers for unexpected delays • Alternative non-monetary benefits for yCR, e.g., monetary benefits on the group level or vouchers that children/adolescents can choose themselves	Bakhtiar et al. (2022); Gibbs et al. (2020); Flicker et al. (2008); Smith et al. (2022); McCabe et al. (2023); Jørgensen (2019); Forshaw & Woods (2022); Bovarnick et al. (2019); Fountain et al. (2021); Cullen et al. (2023); Loveridge et al. (2023); Powers & Tiffany (2006); Spriggs & Gilliam (2017); Madrigal et al. (2016); Bradbury-Jones et al. (2018)
Recruitment of yCR	• Expectations of yCR that cannot be fulfilled (e.g., immediate research impact expectation) • Selection bias (e.g., through teacher nomination) • Misrepresentation of specific groups • Peer nomination of participants/yCRs that might lead to counterproductive dynamics • Broad classification of the group of children/ adolescents, which may lead to simplification ("the vulnerable") and stigmatization • Exclusion of vulnerable children for protection reasons, which can lead to invisibility/ discrimination	• Clear communication about extent of participation, role expectation, responsibilities, benefits, and aims, also in written form • Brainstorming of ideas for recruitment methods with children and adolescents (e.g., as teen ambassadors, recruitment by children in youth advisory board, use of existing groups of children/adolescents) • Engagement of gatekeepers (e.g., teacher, social worker, community worker) and community partnerships with a personal link to potential yCR • Engage potential yCR in settings where they are already present (e.g., class room, youth center) • Informal pre-meetings or events that enable camaraderie from the start • Plain language communication on different and combined target-group-specific information channels (e.g., social media accounts, flyers, word of mouth)	Madrigal et al. (2016); Fløtten et al. (2021); O'Brien & Moules (2007); Loveridge et al. (2023); Vyas et al. (2022); Cullen et al. (2023); Forshaw & Woods (2022); Bovarnick et al. (2019); Sandoval & Messiou (2020); Fountain et al. (2021); Holliday et al. (2020); Tilley & Taylor (2018); Montrieul et al. (2021); Jørgensen (2019); Forshaw & Woods (2022); Bradbury-Jones et al. (2018); Bakhtiar et al. (2022)

(continued)

Table 2. (continued)

Category or phase of the co-research process with references	Challenges	Facilitators	References
Training and team building	• Frontal lectures can be boring and lead to short attention span among yCR • Standardized training for everyone does not always work • Required time for analysis training can be unrealistic for children because of limited time resources • Differences in age, genders, and cultural backgrounds of yCR within a research team may invoke power imbalances	• Clear communication of aims and benefits • Joint reflection about expectations of yCR and aCR • Flexible scheduling of training sessions • Recognition of diverse learning styles and adaptation to them • Relationship-building activities (e.g., co-development of collaboration guidelines and coping strategies for stressful time periods; establishment of clear role expectations and responsibilities) • Interactive activities to enhance confidence that yCR can perform co-research tasks (e.g., peer-to-peer teaching sessions, role-playing, test runs, youth-led training workshops)	Loveridge et al. (2023); Malorni et al. (2022); Vyas et al. (2022); Sandoval & Messiou (2022); Fountain (2021); Gibbs et al. (2020); Holliday et al. (2020); Tilley & Taylor (2018); Maglajlic (2010); Flicker et al. (2008); O'Brien & Moules (2007); Powers & Tiffany (2006); Spriggs & Gilliam (2017); Madrigal et al. (2016); Smith et al. (2020); Fountain et al. (2021); Lee et al. (2012); Montrieul et al. (2021); Budin-Ljøsne et al. (2022); Lee et al. (2020); Jørgensen (2019); Fløtten et al. (2021); Bakhtiar et al. (2023) ; Gardner et al. (2019); Bovarnick et al. (2019); Bradbury-Jones et al. (2018)
Develop research question and design	• Note: No challenges were identified in the literature, although this is more likely because there was often very low participation of yCR in the phase of developing research questions and designing studies	• Arrangement of development meetings to decide on methods and research questions • Provision of familiar media and technologies that enhance motivation and ensure that research is fun • Co-development of research methods	Bovarnick et al. (2019); Fløtten et al. (2021); Montreuil et al. (2021); McCabe et al. (2023); Cullen et al. (2023)
Data collection	• Fear among young researchers that they will share too much information about themselves or their peers • Certain methods (e.g., drawing) may cause anxiety/ shame	• Scheduling of data collection activities adapted to daily routines of the research participants • Embedment of data collection during events that children and adolescents attend • Adaptation of activities based on developmental factors and cultural context	Sandoval & Messiou (2022); Fountain et al. (2021); Gibbs et al. (2020); O'Brien & Moules (2007); Smith et al. (2002); Fløtten et al. (2021); Gardner et al. (2019); Bovarnick et al. (2019)

(continued)

Table 2. (continued)

Category or phase of the co-research process with references	Challenges	Facilitators	References
Analysis and interpretation	Challenges for aCR • Adult-centered analysis • Trade-off between conformity to methodological rigor and encouragement of creativity and insight • Threat of misinterpretation of youth voices Challenges for yCR • Fear of lack of anonymity among yCR due to shared analysis • Statistical analysis or sophisticated coding techniques can be burdensome for yCR • Threat of misinterpretation of youth voices	• Collaborative analysis between yCR and aCR • Use of different methods for analysis, alone and in combination (e.g., group discussion/reflection, individual analysis tasks to ensure anonymization)	Loveridge et al. (2023); Sandoval & Messiou (2022); Fountain et al. (2021); Gibbs et al. (2020); Tilley & Taylor (2018); Maglajlic (2010); Smith et al. (2002); Fløtten et al. (2021); Bakhtiar et al. (2022); Gardner et al. (2019); Bovarnick et al. (2019)
Dissemination	• Anonymity versus taking credit for work/ ownership • Sharing results can evoke uncomfortable feelings	• Tangible dissemination results (e.g., information brochures, videos, etc.) • Co-writing of publications • Co-designing of posters/presentations • Participation of yCR in planning a launch event for dissemination among peers/parents/ community or decision-makers (e.g., school community) • Social media presence and results-sharing • Provision of safe spaces when yCR speaks to policy makers about the results	Forshaw & Woods (2022); Madrigal et al. (2016); Loveridge et al. (2023); Sandoval & Messiou (2022); Fountain et al. (2021); O'Brien & Moules (2007); Smith et al. (2002); Fløtten et al. (2021)
Transfer and implementing changes	• Anonymity versus taking credit for work/ ownership • End of a project can lead to mixed feelings as yCR lose the social structure of the project	• Use of participation structures that have been developed within the co-research project in the context of other projects • Integration of yCR into existing decision-making structures (e.g., in a school committee; municipal project budgeting) • Provision of additional participation opportunities for yCR in other projects or training opportunities when they are interested in the topic or research in general • Overall: Support of a democratic culture in the addressed/involved settings	Sandoval & Messiou (2022); Maglajlic (2010); Madrigal et al. (2016); O'Brien & Moules (2007); Bovarnick et al. (2019); Forshaw & Woods (2022); Powers & Tiffany (2006)

(continued)

Table 2. (continued)

Category or phase of the co-research process with references	Challenges	Facilitators	References
Consistent reflection and feedback loops	• Participation may vary based on individual time resources, skillset, and group dynamics • Avoid tokenistic participation	• Provision of a mechanism for yCR to anonymously evaluate the relationship with adult researchers • Use of different feedback methods (e.g., satisfaction surveys, written reflections, one-on-one feedback sessions) • Recognition of the right to voice criticisms and the importance of honest feedback • Use of iterative reflection cycles of participation levels in all stages • Use of the ladder of participation as a reflection tool, but not for evaluation	Loveridge et al. (2023); Vyas et al. (2022); Gibbs et al. (2020); Flicker et al. (2008); Powers & Tiffany (2006); Smith et al. (2002); Lee et al. (2020); Freire et al. (2022)

yCR = young co-researcher; aCR = adult co-researcher.

Table 3. Co-Research Methods: What are Possible Target-Group Oriented Co-Research Methods for Children and Adolescents?

Category	Methods	References
Creative methods	• Visual methods: PhotoVoice, video voice, drawing, creating their own artifacts (e.g., self-portraits) • Ethnographic approaches: Maps of linguistic landscapes in the school and home, collages, and identity texts; field notes; researcher journals, artifact collection (such as photos and videos), community mapping, diaries, mobile/spatial methods (e.g., guided walks in the neighbourhood)	Bakhtiar et al. (2022); Bovarnick et al. (2019); Bradbury-Jones et al. (2018); Coad et al. (2007); Flicker et al. (2008); Fountain et al. (2021); Freire et al. (2022); Jørgensen et al. (2019); Lee et al. (2012); Loveridge et al. (2023); Malorni et al. (2022); Montreuil et al. (2021); O'Brien & Moules (2007); Tilley & Taylor (2018)
Traditional qualitative and qualitative methods	• Peer-to-peer methods: Peer interviews, co-facilitated or youth-led focus groups/interviews/ gathering of observational data from peers, peer observations (e.g., classroom observations), and peer surveys • Group setting: Focus group meetings using participatory techniques, group discussions, workshops (e.g., design workshops), peer-led focus groups, system mapping workshops, youth alliances, and dialogue forums • Others: Expert review panel of teens • Surveys	Bakhtiar et al., 2023; Bovarnick et al., 2019; Bradbury-Jones et al., 2018; Coad, 2007; Cullen et al., 2023; McCabe et al. (2023); Fløtten et al. (2021); Fountain et al. (2021); Freire et al. (2022); Gardner et al. (2019); Holliday et al. (2020); Jørgensen et al. (2019); Lee et al. (2012); Ljøsne et al. (2022); Loveridge et al. (2023); Maglajlic (2010); Malorni et al. (2022); Montreuil et al. (2021); O'Brien & Moules (2007); Powers & Tiffany (2006); Sandoval & Messiou (2020); Smith et al. (2002); Spriggs and Gillam (2019); Tilley & Taylor (2018)
Activities and techniques to enable target-group-oriented Co-research	• Art-based activities: Photography/mapping, photo portraits, videography, writing, storytelling, songwriting, role-play, drawing, creating posters or collages, posing and acting, mural painting, interactive theatre, skits, graffiti wall • For (focus) group or single-interview settings: Prototypes, thinking out loud, creating personas, brainstorming, completing sentences, voting, ranking, sorting, "tree of life" activity, problem trees, Johari's window; power maps; vignettes, nominal group technique, group model building; photo elicitation, note booking; visual elicitation methods (combining moving and still images); participatory rural appraisal techniques • Events: Fun days, comment box, and a diary room (data collection during an event) • Digital technology in general (e.g., online group meetings, quizzes, prioritizing/selecting themes, brainstorming via an online tool)	Bakhtiar et al. (2022); Bovarnick et al. (2019); Coad et al. (2007); McCabe et al. (2023); Flicker et al. (2008); Fløtten et al. (2021); Freire et al. (2022); Gibbs et al. (2020); Jørgensen et al. (2019); Lee et al. (2020); Ljøsne et al. (2022); Maglajlic (2010); Malorni et al. (2022); Montreuil et al. (2021); O'Brien & Moules (2007); Sandoval & Messiou (2020); Tilley & Taylor (2018)

setting factors, project management, interpersonal factors, and individual factors of the young co-researchers. The framework centers the young co-researcher; yet, it is necessary to state that the adult co-researcher, who is influenced by different factors, plays a crucial role in the co-research process, as both parts are needed (Wong et al., 2010). Ethical considerations are discussed as guiding principles as well as a means to ensure co-research, where power is shared between young and adult co-researchers. Overall, the power imbalance issue is reflected on the level of sociocultural, setting, and interpersonal factors. Co-research is embedded in a sociocultural context and is, therefore, influenced by different factors that may be varied based on the aim, issue, and setting of the co-research, as well as by the various co-researchers. These findings are reflected in the framework wherein the results of the evidence synthesis are presented.

This evidence synthesis also provides a comprehensive list of the challenges and corresponding facilitators likely to be encountered in co-research projects with children and adolescents. The overview is categorized along the eight phases of a typical co-research process: preparation; recruitment of young co-researchers; training and team building; developing research questions and design; data collection; analysis and interpretation; dissemination; and transfer and implementing changes. It also emphasizes the importance of consistent reflection of the co-research process and providing space for feedback loops. To fully account for youths' opinions and needs, among the most important issues to be considered in all phases of the co-research process are the flexibility to

accommodate for unplanned changes and differing time availabilities, trust-building and meeting differing expectations, clear communication, and communication as equals between adult and young co-researchers. Formal issues regarding data protection and informed consent must also be considered upfront. Our results complement a recent umbrella review that provides an overview of the challenges to meaningful adolescent involvement in health research (Warraitch, Lee et al., 2024) regarding different themes (e.g., organizational challenges, researcher preparedness, methodology, adolescent-specific issues, and ethical involvement), whereas our findings provide a practical overview with complemented facilitators in each phase of the co-research process that is useful for all organizations and researchers that seek to employ co-research methods with children and adolescents.

Our review further provides an overview of possible target-group-oriented co-research methods for use with children and adolescents. Studies showed that methods and activities might vary based on gender, literacy skills, and personal interests as well as age and developmental stage (Bovarnick et al., 2019; Bradbury-Jones et al., 2018), and different methods can be tailored to the purpose or phase (e.g., group discussion for analysis) (Montreuil et al., 2021). Creative and interactive methodologies and modifications based on interests and needs are the key to facilitating co-research with children and adolescents (Tilley & Taylor, 2018).

Reflections on Vulnerability, Gender, and Age in Co-Research With Children and Adolescents

In half of the sampled studies, groups of co-researchers defined as vulnerable were engaged. Spencer et al. (Spencer et al., 2020) stated that the preference for certain voices (and the potential for marginalizing and pathologizing others) in the processes of interpretation and reporting can mirror preferred adult ways of understanding. Ethical issues in the context of vulnerability are discussed specifically in the recruitment and data collection phases. Overall, the authors of the analyzed studies criticized that marginalized or vulnerable groups are often still underrepresented in co-research, and recruiting diverse groups is challenging. Yet at the same time, co-research is a means of engaging groups in marginalized living situations (Jørgensen, 2019). For recruitment, it is essential to reach out to communities wherein co-researchers with specific backgrounds live. Within the context of target-group-oriented methods, it is important to develop the method design together with the co-researchers, as they know best what they and their peers need (Bradbury-Jones et al., 2018). To prevent stigmatization and the reproduction of vulnerabilities, it is necessary to reflect on what questions are asked about individual and community characteristics. For instance, asking about socioeconomic status can be stigmatizing for some groups.

Gender was only discussed marginally in the analyzed studies. Coad et al. (Coad, 2007) and Montreuil et al. (Montreuil et al., 2021) state that age, gender, ethnicity, culture, and social background must be discussed in terms of power relationships. In terms of power balance, it is important that adults as well as children and adolescents are defined as co-researchers (academic researchers) (Cullen et al., 2023).

In terms of age, the majority of the sampled studies included adolescents older than 14; therefore, the significance of our synthesized findings for younger children is limited. Furthermore, the definition of *children* varied significantly across the sampled studies. Some studies defined children as those between the ages of 10 and 18, while others considered children to be between six and eleven years old. Still, based on the few studies that analyzed or commented on age in the co-research process, we can say that formal and technical issues must be adjusted for younger children (i.e., special child-friendly consent forms and alternate forms of remuneration as direct payments may not be possible). The methods used must also be adapted to the age. Conversely, two sampled studies (Freire et al., 2022; Tilley & Taylor, 2018) criticized that focusing on age is misleading and, rather, the young co-researchers' developmental stage should be considered.

Implications for Research and Practice

The developed framework provides an important guide, especially for planning co-research approaches with children and adolescents. It shows the breadth of interpersonal and personal characteristics that influence such co-research processes and that must be considered and adjusted for in any given project. However, as highlighted by this review, conducting the envisioned participatory research in partnership with children and adolescents is notoriously difficult and requires thoughtful consideration and resources. In particular, the young co-researchers' individual factors must be centered in the investigations and accounted for in all phases of the process. Our evidence synthesis shows that future studies should not only focus on the participating young co-researchers' age, but should rather concentrate on their developmental stages, as a large variability exists within these age groups (Lundy et al., 2011). Nevertheless, the research regarding the specific age or developmental needs of young co-researchers is still limited, and their impact on co-research methodologies should be studied in future research. Yet, in the context of co-research methodologies, it is not so much the young co-researchers' age that matters but their specific needs and personal interests (Tilley & Taylor, 2018).

The majority of the sampled studies mentioned the ethical dimensions of co-research, which we clustered into the themes of power dynamics, diversity, vulnerability, anonymity, confidentiality, and informed consent. It is particularly important when conducting research with young age groups to create an environment that fosters trust, collaboration, and inclusion, enabling their active participation while safeguarding their

well-being and autonomy. Wong et al. (Wong et al., 2010) underlines the importance that adult co-researchers ensure ethically correct co-research, which enables shared decision-making and prevents harmful consequences of the co-research process.

Co-research studies with children and adolescents also must critically evaluate in which phases of the co-research process children and adolescents will be involved. While their involvement should be in line with the available resources and individual interests on both ends, it is important to recognize that while it is certainly possible to involve them in all stages of the research process, this may not always be necessary, feasible, or even desired by all young co-researchers. Participation should be thoughtfully considered to ensure that it is both meaningful and feasible, consistent with the project goals and the capacities of all involved. Not every young co-researcher can be treated the same way, meaning that flexible solutions should be pursued depending on individual needs and preferences. However, tokenistic participation that uses young people only for collecting data should be avoided in genuine co-research projects, as this would be framed as "citizen science," where it should be clear upfront that they are only involved in the data collection phase.

Our evidence synthesis also provides a list of possible challenges and facilitators for each phase in the co-research process that could act as a helpful checklist during the development stage of a co-research design. Furthermore, the description of target-group-oriented methods can help in planning and giving an overview of possible methods to be used.

Strengths and Limitations

This qualitative evidence synthesis combined recent qualitative literature detailing insights and reflections from past co-research endeavors with children and adolescents. We included the literature involving co-research with children or adolescents from the last 20 years plus and only included studies where the experiences, lessons learned, barriers or facilitators, and co-research process challenges were studied from the perspective of the young, the adult, or both age groups of co-researchers. Studies in which children and adolescents were not actively involved in the research process or were only involved in one stage of the research (e.g., as data collectors), were not eligible for our review. Furthermore, in terms of the phases of involvement, we only included studies where young co-researchers were at least consulted (i.e., youths provided feedback on research) or where there was a true partnership or even youth-led research. We included reviews as well as primary studies to capture a broad range of findings. We sampled only studies including the richest data and used a sound qualitative data analysis approach to provide the comprehensive framework of factors that must be considered when conducting co-research with children and adolescents.

Our study has some methodological limitations. We limited our eligibility criteria to studies published in English and German and might have missed studies published in other languages. We applied a rapid approach and focused primarily on systematic and other reviews, as they incorporated a broad array of studies, and it enabled us to incorporate a greater number of views and experiences in our evidence synthesis. However, we cannot rule out that we may have missed relevant studies or findings. Conversely, qualitative evidence synthesis aims for variations in concept rather than an exhaustive sample. Therefore, we are confident that we have gathered the most insightful reviews and studies contributing to the topic.

In terms of the views captured in our evidence synthesis, while some of the included studies also quoted the young co-researchers, they always also included the adult researchers' perspectives because only less than half of the sampled studies focused on the young co-researchers' perspectives.

As highlighted above, the included studies discussed gender considerations primarily in the context of preferences for methods or activities rather than in terms of power dynamics or the differential experiences of boys and girls in co-research projects. While age was acknowledged as an important factor, the nuanced differences between co-research practices with younger children versus adolescents were not extensively examined in the included studies; therefore, our results and conclusions are also limited, and the results cannot be generalized for all child and adolescent age groups, as the majority of the sampled studies included adolescents older than 14.

Most of the studies sampled were conducted in settings such as schools, NGOs, after-school programs, and health care settings, with the majority focusing on schools. The available data did not allow for a thorough comparison between these settings, and while we were able to analyze schools in more detail, the literature lacked sufficient comparisons between other contexts.

Conclusions

This qualitative evidence synthesis comprehensively examined the experiences, facilitators, barriers, lessons learned, and methodological aspects of co-research studies involving children and adolescents. It provides a robust framework with factors to consider for conducting meaningful co-research with children and adolescents, offering valuable insights for individuals and stakeholders embarking on such projects. It further sheds light on the multifaceted nature of co-research endeavors, highlighting the potential challenges and corresponding facilitators for each phase in a co-research process, which can be used as a checklist when planning co-research with

children and adolescents. The description of target-group-oriented methods complements the synthesized findings of our qualitative review.

It is imperative for future research to address key gaps identified in our synthesis. This includes delving deeper into gender dynamics and age/developmental differences within co-research methodologies and fostering to capture the voices of participating co-researchers, thus ensuring a more comprehensive understanding of these factors, especially from young people's perspective.

By addressing these gaps and building upon the insights provided by this synthesis, researchers and practitioners can further refine co-research methodologies, ultimately fostering more inclusive, ethical, and impactful research practices with children and adolescents.

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Ethical Statement

This rapid review is based on the analysis of previously published literature. Therefore, no ethical approval or informed consent was required for this study. However, we respect the anonymity and confidentiality of original research participants and uphold ethical standards by accurately representing the studies reviewed and acknowledging the researchers involved.

Author Contributions

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The authors declared no potential conflicts of interest with respect to the research, authorship, and publication of this article.

Data Availability Statement

This rapid review relies on data from previously published studies and publicly available literature. All data analyzed during this review are included in the original publications referenced. No new data were generated or analyzed in this study.

Supplemental Material

Supplemental material for this article is available online.

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