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Scoping review protocol for youth participatory evaluation

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Abstract

Introduction

Youth participatory evaluation is one model put forth for how to monitor global outcomes and assess interventions aimed at improving health equity and well-being of young people, while also embracing principles of participation and empowerment. Little is known about the use of this approach in practise. The aim of this scoping review will be to identify and synthesise descriptions of how youth participatory evaluation is enacted, to what extent it occurs, and to describe the relationship between context and inclusion.

Methods and analysis

Scoping review methods will adhere to those outlined by Arksey and O'Malley. Reporting methods will follow the PRISMA Extension for Scoping Reviews. The review will use publicly available evaluation reports, as opposed to peer-reviewed journal articles, which more closely reflect what happens in practise. This scoping review is limited to Education, one of the domains of the social determinants of health. Selection of evaluation reports will take place in a two-step process by trained coders with clear inclusion and exclusion criteria. Data charting will also be done by trained coders, and facilitated by Covidence and a codebook. Several procedures will be used to uphold rigour and consistency during this process. Data analysis will be done with Dedoose to produce a mixed-method summary of youth participatory evaluation practise.

Ethics and dissemination

Human subjects research approval will not be required. This scoping review will rely on publicly available evaluation reports. No human research participants will be involved in this review.

Registration Details

[Blinded for review]

Strengths and limitations of this study

- Using and following a strong scoping review framework and adhering to established reporting guidelines will generate credible and transparent findings about the state of youth participatory evaluation practise within the Education sector.
- This review will use publicly available evaluation reports, as opposed to peer-reviewed journal articles, which will provide a greater representation of practise.
- This scoping review will not report on the quality of evaluation reports.
- A focus on programs for young people will lead to the exclusion of evaluation studies that focus on youth younger than 10 years old, or programs targeting adults (aged 25 years or older).

Introduction

We know very little about the use of a youth participatory approach in evaluations of interventions developed and implemented to address one or more domains of the social determinants of health. The purpose of this scoping review will be to empirically describe the practise of youth participatory evaluation. This scoping review will be limited to Education – a key domain of the social determinants of health where we would expect young people to be involved.

Background

A quarter of the world's population (1.8 billion) is made up of young people ages 10 to 24 (1). This group is both a dominant force now and has the potential to continue to be one for years to come (2). On the positive side, for example, an educated and ambitious workforce ready to enter a strong labour market is good for economic stability, and employed young people earning a decent living have a higher potential to experience good living and working conditions, and strong health outcomes. On the negative side, lack of an educated or well-prepared workforce entering a weak or non-existent labour market is likely to exert pressure in all kinds of ways, for example, spurring political unrest, forcing mass migration to often unwelcoming environments, impacting marriage and birth rates, and so on. Regardless of whether the positive or negative pathway occurs, all of these conditions are part of the complex social contexts in which young people live. Prior work has consistently shown that social contexts – commonly referred to as social determinants of health – are hugely influential on the lives of young people (3–5). These social determinants of health have a profound impact on health equity and well-being (5).

Within the social determinants of health literature, participation and empowerment of young people is identified as a crucial component of policy action toward health equity and well-being (5). This emphasis on principles of participation and empowerment has reverberated across the complex systems working to address the social determinants of health, including the evaluation of interventions aimed at one or more domains (e.g., education, economic stability, living and working conditions). The U.S. Centers for Disease Control and Prevention, for example, identifies evaluation as one of the six pillars of the agency's work to "reduce disparities and promote health equity" (6). This is because of a recognition that, if we are to make progress on health equity and well-being world-wide, then it requires that we both monitor the current state of these outcomes and assess interventions aimed at mitigating negative consequences. Evaluation helps accomplish both of these.

One model put forth for how to monitor global outcomes and assess interventions aimed at improving health equity and well-being, while also embracing principles of participation and empowerment of young people in studies, is commonly referred to as youth participatory evaluation. Youth participatory evaluation is defined as the process of involving young people in conducting evaluations (7). This model positions evaluation away from being framed as something that is done *to* young people to evaluation *with* or *by* young people (8–10). Meaningful participation moves beyond young people serving only as data sources, respondents to surveys, or interview participants, and instead includes the participation of young people in all phases of the evaluation in decision-making roles. Young people, for example, serve as key stakeholders and engage others, assist with developing a program description, help decide on the purpose of the evaluation, pose key evaluation questions, consider the best methods to use, help to analyse and interpret the data, and determine final conclusions. The purpose of the youth

participatory evaluation is to acknowledge young people's legitimate and unique perspectives by meaningfully engaging and empowering them in evaluation of programs that serve them.

Despite the growth in excitement about engaging young people, youth participatory evaluation practise remains underexplored. There is literature that lays out the theoretical and conceptual grounding for the approach (7–10). Guidance and resource materials have been developed to provide practical strategies for how to use the youth participatory evaluation approach (11–15). Case studies of the approach's use in practise have been published (8,16–19). One systematic review of young people's participation in evaluation has also been published (20). The author reported that across the 209 evaluations included in the review, evaluation practise did not match the theoretical and conceptual grounding or practises articulated in guidance and resource materials.

The prior systematic review of young people's participation in evaluation highlights a key tension in the field. There is vast evaluation literature going back to the 1950's that describes the benefits of a participatory approach to evaluation (21–23), with literature strongly supporting stakeholder inclusion of all ages continuing to the present day (24–26). There have also been empirical studies describing the benefits of participation on evaluation quality and outcomes, with a systematic review on stakeholder involvement in evaluation (27). Thus, stakeholder participation in evaluation is a widely-accepted practise, but as Zeller-Berkman's systematic review highlights, the principle of participation does not appear to extend to young people.

At the same time, while the findings from the prior systematic review on young people's participation in evaluation are important (20), the study is over 10 years old, and systematic review methods were not described in the article. This both raises concerns about transparency of

methods and renders replication impossible. For this reason, we contend that we still know very little about the enactment of youth participatory evaluation.

Objective

The purpose of this scoping review will be to empirically describe the practise of youth participatory evaluation. Scoping reviews offer one way to summarise existing literature to uncover key themes through thorough, transparent, and replicable processes.

This scoping review will be limited to Education for several reasons. One, research on the social determinants of health has shown that access to and participation in high quality educational experiences are among the strongest structural determinants of health equity and well-being for young people (4). Two, many educational interventions are aimed at mitigating aspects that impede health equity and well-being for young people. The United Kingdom's *Free School Meals* (*FSM*) program is one example. The FSM is a government funded meal program that provides nutritious, low-cost or free lunches daily to children who meet eligibility criteria and attend a primary or secondary state school, free school, or academy (28). Another example is Morrocco's *Reading for Success National Program for Reading*. This program was developed in response to research documenting that despite near universal access to education in the country, seven out of 10 first-grade students were not reading at grade level (29). A final example is out-of-school time interventions (e.g., afterschool programs, summer programs, museum programs, library programs, etc.) which exist in many countries. Prior meta-analytic work has shown these interventions to be especially helpful for students who are below country-specific grade-level standards, are from low-income households, or who are immigrants (30–32). Three, Education is also a domain of the social determinants of health where one would expect to see young people as intended beneficiaries of interventions. In the United Kingdom, for example, primary and

secondary education is available for free to everyone ages 5 to 16. Thus, if youth participatory evaluation practises are occurring, one would be more likely to observe it in educational contexts. Future work will explore youth participatory evaluation practise in other domains associated with the social determinants of health.

Two objectives will guide this scoping review:

1. To identify and synthesise descriptions of how youth participatory evaluation is enacted or not (i.e., who is involved, in what ways, to what extent, with what methods, strategies, and actions).
2. To describe the relationship between context and the inclusion of young people in evaluation.

Methods and Analysis

Our study approach will be guided by steps one through five of Arksey and O'Malley's scoping review methodological framework (33). There can be differing goals for scoping studies. Our scoping study goal will be exploratory and broad, but still intended to understand the existing evidence, especially gaps in the evidence. The methods will also conform to the PRISMA Extension for Scoping Reviews (PRISMA-ScR) (34). This study is preregistered on Open Science Framework (Anonymized for review)

Stage 1: Defining the research questions

The theoretical grounding for this study will be the Conceptual Framework for Measuring Outcomes of Adolescent Participation (35). This framework was selected because of its alignment with the idea within the social determinants of health literature that young people are a crucial component of policy action toward health equity and well-being (5). In the same way, in the Conceptual Framework for Measuring Outcomes of Adolescent Participation, young people

are a critical component of evaluations of interventions meant to impact their lives. There is also alignment between the social determinants of health literature and the selected conceptual framework in that both recognise the importance of the social ecology and contexts in which young people live.

The Conceptual Framework for Measuring Outcomes of Adolescent Participation positions the participation of young people, including in evaluation activities, as needing to be authentic and meaningful, and recognizes the influence that the environmental context can have on participation. Its purpose is to provide a conceptual framework for researching important components of participation.

To understand youth participatory evaluation practise, and grounded in the aforementioned conceptual framework, our scoping review will address the following research questions:

1. How and to what extent have young people been included, or not, in the evaluation of programs that serve them?
2. What evaluation methodologies have been used to include young people?
3. What evaluation strategies and preparatory actions have been used to promote successful inclusion?
4. What contextual factors are important for the inclusion of young people?

Stage 2: Identifying relevant literature

Our study will use evaluation reports publicly available on the community repository hosted by the Reimagining Equity and Values in Informal STEM Education (REVISE) Center (36). This Center is funded by the US National Science Foundation (NSF) through the Advancing Informal STEM Learning (AISL) Program. The AISL program funds practise,

research, and evaluation proposals focusing on investigating informal science, technology, engineering, and mathematics (STEM) learning experiences and environments. As such, it supports a variety of organisations, including but not limited to STEM centres and museums, zoos, aquariums, botanical gardens, etc.

The REVISE community repository is a good fit for this study for several reasons (37). One, NSF is a significant funder of evaluation activities; the agency requires that all funded projects be evaluated. Two, evaluators outside of the academy, of which there are many, do not have the same pressures or need to publish as academics based in universities (38–40). The result is that many evaluation reports are not public. The REVISE community repository is unique in this regard in that it collects and makes publicly available evaluation reports (grey literature) for STEM-related programs. Three, because this study is interested in describing actual practise, evaluation reports, as opposed to peer-reviewed journal articles, provide a more accurate picture of practise.

Citations for and PDFs of reports will be downloaded by a member of the research team. These citations and reports will be managed using Zotero and exported to Covidence (41,42). Covidence is a web-based program designed to manage systematic and scoping reviews.

Stage 3: Article selection

Evaluation reports will be screened for inclusion in a two-step process. In step 1, two independent screeners will review the title and abstract for each report against inclusion and exclusion criteria. Inclusion criteria will include: (a) report is for an evaluation study; (b) evaluation has a focus on young people, ages 10-24; (c) evaluation is for a program serving young people, ages 10-24; and (d) evaluation takes place during 2017-2022. Inclusion criteria are intentionally broad so that researchers can describe to what extent the inclusion of young people

in evaluation is occurring or not occurring. Both inclusion and non-inclusion are important to capture for answering the first research question. Evaluation reports falling outside of these inclusion parameters will be excluded, such as programs for children under age 10 or for adults 25 years of age and older. If the title or abstract is unclear and not all inclusion criteria can be fully accessed, the default action will be to include the study so it can be more fully assessed in step 2. Results from step 1 will be tracked by Covidence. In step 2, team members will review the full text of all evaluation reports. The same inclusion and exclusion criteria will be used, and results will also be tracked by Covidence.

The screening team will include the primary investigator and graduate and undergraduate trainees who have completed training on youth participatory evaluation and scoping reviews. Several study procedures will be used to ensure consistency: (a) all articles will be reviewed by trained team members; (b) the study PI, who is an expert in youth participatory evaluation, will serve as a critical reader and resolve conflicts; (c) all team members will review scoping review objectives and inclusion/exclusion criteria prior to screening; and (d) team members will practise applying inclusion/exclusion criteria on a subset of reports to calibrate between team members prior to engaging in the full screening process.

Stage 4: Data charting

Once the final list of studies for inclusion is generated, team members will use Covidence to chart (extract) relevant information from evaluation reports aligned with the objectives of the scoping review. Information to be extracted includes study and author details. These details are evaluation reporting elements identified in the Checklist for Evaluation Specific Standards (43). Team members will also extract information on youth participatory practises, such as, inclusion type, mode of participation, depth of inclusion, ways young people were involved, strategies for

inclusion, outcomes of young people's participation, and environmental and context features enabling meaningful inclusion.

The full list of quantitative and qualitative variables to be extracted will be available in the project codebook on Open Science Framework (Anonymized for review). Additional categories may be identified during the data extraction process. These will be discussed and decided upon by the entire team. Consistent with scoping review convention, the methodological quality of included studies will not be evaluated (33,34).

Rigour and consistency will be maintained through several procedures: (a) all team members will be trained on charting procedures, (b) team members will practise charting data on a subset of reports prior to phase one beginning, (c) team members will bring data charting questions, concerns, and requests for a second opinion to regularly scheduled team meetings involving all team members, with notes from the discussion and decisions documented in a shared google document, and (d) a codebook detailing variable, variable definitions, origins of the variable definition, type of variable, and variable values will be developed, used, and updated (as needed) during the data charting process.

Stage 5: Collating, summarising, and reporting the results

Collating and summarising will be done in Dedoose. Dedoose is a web-based data analysis software program that allows for collaborative analysis of quantitative and qualitative data (44). One team member will download charted data and PDFs from Covidence and import them into Dedoose.

We will use both quantitative and qualitative data analysis methods to answer our research questions. For all research questions, descriptive statistics (i.e., mean, frequencies, cross-tabs) will be generated using charted quantitative data. Thematic analysis will be used to

supplement quantitative findings by providing descriptions and examples of strong youth participatory practice, such as the ways in which young people are included in evaluation studies, what methods, strategies, and actions are used to engage young people in the evaluation process, and the relationship between the context in which evaluations take place and the inclusion of young people in evaluation.

PRISMA-ScR guidelines will be followed in all dissemination efforts (i.e., presentations, manuscripts). The anticipated timeline is included in Table 1.

Table 1. Anticipated timeline

Scoping review stage	Month											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Stage 1: defining the research question (completed)	X											
Stage 2: identifying relevant literature (completed)	X											
Stage 3: article selection		X	X	X	X	X						
Stage 4: data extraction						X	X	X	X	X	X	
Stage 5: collating, summarising, and reporting the results											X	X

Patient and Public Involvement

Because this study aims to describe the state of youth participatory evaluation from publicly available reports, patient and public involvement is not necessary.

Strengths and Limitations of Review Findings

To the best of our knowledge, this will be the first review that will describe youth participatory evaluation as enacted in practise based on the grey literature, and do so upholding principles of transparency with possibility for future replication. This is important given that future work will explore youth participatory evaluation practise as observed in the evaluation of interventions targeting other social determinants of health domains.

Using and thoughtfully integrating scoping review methods, our conceptual framework, the Checklist for Evaluation Specific Standards, and PRISMA-ScR will serve to enhance the rigour, transparency, trustworthiness, and replicability of our study design (33–35,43). We also believe our use of grey literature is a strength because it more accurately reflects what occurs in evaluation practise. We believe this scoping review design has the potential to serve as a model for others interested in advancing scholarship on youth participatory evaluation.

As with any study, there are limitations to consider. Scoping reviews, by design, are not well-suited to examine the effectiveness of youth participatory methods. This focus is better explored in systematic reviews and meta-analyses. This scoping review will also not assess the quality of evaluation designs involving young people. While we will search a publicly available evaluation report database, we are also aware that this database does not cover all studies involving young people or using youth participatory evaluation methods.

This scoping review will provide a much-needed synthesis of the state of the field, including who is involved, to what extent, in what ways, with what methods, strategies, and actions, and the ways in which context is connected to involvement in evaluation. This information will provide empirical evidence on which to base discussions and debates about the merits of and need for greater participation of young people in evaluations of interventions aligned with the social determinants of health.

Ethics and Dissemination

No human subjects will be a part of this study. Obtaining institutional review board approval will not be required. Findings will be shared through several dissemination strategies, such as, peer-reviewed journals, international and national conferences, and social media affiliated with academic institutions and professional associations.

Study Status

Authors are in the beginning stages of the article selection process (stage 3) now. Fall 2024 is the target date for completing this review.

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Competing interests: None declared.

Patient and public involvement: Patients and/or the public were not involved in any part of this research.

Patient consent for publication: Not required.

Provenance and peer review: Externally peer-reviewed.

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Describing youth participatory evaluation of educational interventions as a key domain of the social determinants of health: protocol for a scoping review

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Describing youth participatory evaluation of educational interventions as a key domain of the social determinants of health: protocol for a scoping review

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Abstract

Introduction

Youth participatory evaluation is one model for monitoring global outcomes and assessing interventions to improve young people's health equity and well-being while embracing principles of participation and empowerment. Little is known about the use of this approach in practise. This scoping review will identify and synthesise descriptions of how *youth participatory evaluation* is enacted, to what extent it occurs, and describe the relationship between context and inclusion.

Methods and analysis

Scoping review methods will adhere to those outlined by Arksey and O'Malley. The study will also follow the PRISMA Extension for Scoping Reviews. The review will use publicly available evaluation reports (grey literature) for programs funded by the U.S. National Science Foundation through the Advancing Informal STEM Learning program and whose reports are archived in the repository hosted by the Reimagining Equity and Values in Informal STEM Education (REVISE) Center. This scoping review is limited to Education, one of the domains of the social determinants of health, more precisely STEM education, due to the report publication parameters set by the REVISE Center repository. A research team member will download citations for and PDFs of reports. These citations and reports will be managed using Zotero and exported to Covidence, a web-based program designed to manage systematic and scoping reviews. Evaluation report selection will occur in a two-step process by trained coders with clear criteria. Inclusion criteria will include: (a) report is for an evaluation study; (b) evaluation has a focus on young people, ages 10-24; (c) evaluation is for a program serving young people, ages 10-24; and (d) report written and uploaded to the REVISE Center repository between 2017 and 2022. All

reports hosted on the REVISE Center repository are based in the U.S. and written in English. Data charting will also be done by trained coders and facilitated by Covidence and a codebook. Several procedures will be used to uphold rigour and consistency during this process. Data analysis will be done with Dedoose.

Ethics and dissemination

Human subjects research approval will not be required. This scoping review will rely on publicly available evaluation reports. No human research participants will be involved in this review. Findings will be shared through dissemination strategies, such as peer-reviewed journals, international and national conferences, and social media affiliated with academic institutions and professional associations.

Study registration

This study is preregistered on Open Science Framework (https://osf.io/23jdx/). Registration DOI: https://doi.org/10.17605/OSF.IO/K6J98.

Strengths and limitations of this study

- Using and following a highly cited scoping review framework and adhering to established reporting guidelines will generate credible and transparent findings about the state of *youth participatory evaluation* practice within education, more precisely informal STEM education.
- This review will use publicly available U.S. evaluation reports instead of peer-reviewed journal articles, providing a more realistic representation of practice.
- This scoping review will not report on the quality of evaluation reports.
- The focus on U.S. evaluation reports in informal STEM education will not be generalisable to other contexts (e.g., international evaluations, peer-reviewed literature, non-education programs, etc) and sets the foundation for future comparisons.

INTRODUCTION

We know little about using a youth participatory approach in evaluations of interventions developed and implemented to address one or more domains of the social determinants of health. This scoping review will empirically describe the practice of youth participatory evaluation. It will be limited to Education, a key domain of the social determinants of health, where we would expect young people to be involved.

Background

One model put forth for monitoring global outcomes and assessing interventions aimed at improving health equity and well-being, while also embracing principles of participation and empowerment of young people in studies, is commonly referred to as *youth participatory evaluation*. This youth-focused approach is defined as the process of involving young people in conducting evaluations (1). This model positions evaluation away from being framed as something done *to* young people to evaluation *with* or *by* young people (2–4). Meaningful participation moves beyond young people serving only as data sources, survey respondents, or interview participants; instead, it includes young people's involvement in all evaluation phases and in decision-making roles. Young people, for example, serve as key stakeholders and engage others, assist with developing a program description, help decide on the purpose of the evaluation, pose key evaluation questions, consider the best methods to use, help to analyse and interpret the data and determine conclusions. The purpose of the *youth participatory evaluation* is to acknowledge young people's legitimate and unique perspectives by meaningfully engaging and empowering them in the evaluation of programs that serve them.

Within the social determinants of health literature, young people's participation and empowerment are crucial to policy action toward health equity and well-being (5). This emphasis

on principles of participation and empowerment has reverberated across the complex systems working to address the social determinants of health, including the evaluation of interventions aimed at one or more domains (e.g., education, economic stability, living and working conditions). For example, the U.S. Centers for Disease Control and Prevention identifies evaluation as one of the six pillars of the agency's work to "reduce disparities and promote health equity" (6). This is because of a recognition that if we are to make progress on health equity and well-being worldwide, then it requires that we both monitor the current state of these outcomes and assess interventions aimed at mitigating adverse consequences. Evaluation helps accomplish both of these.

Moreover, prior work has consistently shown that the social determinants of health or social contexts hugely influence young people's lives (5,7,8). These are significant findings because young people ages 10 to 24 make up a quarter of the world's population, estimated to be 1.8 billion (9). This group of young people is a dominant force now and has the potential to continue to be one for years to come (10). On the positive side, for example, an educated and ambitious workforce ready to enter a strong labour market is good for economic stability. Employed young people earning a decent living have a higher potential to experience a good life, working conditions, and strong health outcomes. On the negative side, the lack of an educated or well-prepared workforce entering a weak or non-existent labour market is likely to exert pressure in various ways, for example, spurring political unrest, forcing mass migration to often unwelcoming environments, impacting marriage and birth rates, and so on. Regardless of whether the positive or negative pathway occurs, these conditions are part of the complex social contexts in which young people live. These social determinants of health profoundly impact health equity and well-being (5).

Despite the growth in excitement about engaging young people, *youth participatory evaluation* practise still needs to be explored. There is literature that lays out the theoretical and conceptual grounding for the approach (1–4). Guidance and resource materials have been developed to provide practical strategies for how to use a *youth participatory evaluation* approach (11–15). Case studies of the approach's use in practise have been published (2,13,16–19). One systematic review of young people's participation in evaluation has also been published (20). The author reported that across the 209 evaluations included in the review, evaluation practise did not match the theoretical and conceptual grounding or practises articulated in guidance and resource materials.

This systematic review of young people's participation in evaluation highlights a critical tension in the field. There is vast literature from the 1950s that describes the benefits of a participatory approach to evaluation (21–23), demonstrating strong support for stakeholder inclusion of all ages continuing to the present day (24–26). There have also been empirical studies describing the benefits of participation on evaluation quality and outcomes, including a systematic review of stakeholder involvement in evaluation (27). Thus, stakeholder participation in evaluation is a widely accepted practise, but as the prior systematic review highlights, the principle of participation does not appear to extend to young people.

At the same time, while the findings from the prior systematic review on young people's participation in evaluation are important (20), several limitations curtail their usefulness. One is that the study focused very narrowly on evaluation reports of out-of-school time programs, which occur after school or during the summer. Two, systematic review methods were not adequately described in the article. There are, for example, no research questions or a methods section in the article. Instead, two paragraphs are embedded that note the Harvard Family

Research Project's Out-of-School Time Program research and evaluation database was used, that the database contained 209 evaluation reports, that three searches of the database were done, and that the final sample included six evaluation studies (out of 209). The two paragraphs do not list search terms, inclusion or exclusion criteria, who reviewed the articles, the years covered, how data was extracted, or how data was analysed. One could argue that this systematic review is in name only. Three, the study is almost 15 years old. No follow-up review studies have been done to explore the extent to which findings have held over time or to explore findings beyond those presented, such as whether observed patterns hold across other educational contexts. Complicating potential systematic review efforts, the Harvard Family Research Project's Out-of-School Time Program Research and Evaluation Database was decommissioned in 2017. These collective limitations raise concerns about the transparency and quality of methods for the prior systematic review, rendering replication impossible. We still know little about enacting *youth participatory evaluation* in education for these reasons.

Objective

This scoping review will empirically describe the practise of *youth participatory evaluation*. Scoping reviews offer one way to summarise existing literature and uncover key themes through thorough, transparent, and replicable processes.

This scoping review will be limited to Education for several reasons. Research on the social determinants of health has shown that access to and participation in high-quality educational experiences are among the strongest structural determinants of health equity and well-being for young people (8). Many educational interventions aim to mitigate aspects that impede young people's health equity and well-being. One example is the United Kingdom's Free School Meals (FSM) program. The FSM is a government-funded meal program that provides

nutritious, low-cost or free lunches daily to children who meet eligibility criteria and attend a primary or secondary state school, free school, or academy (28). Many such programs exist across other countries, such as the *National School Lunch Program* in the U.S. Another example is Morrocco's *Reading for Success National Program for Reading*. This program was developed in response to research documenting that despite near-universal access to education in the country, seven out of 10 first-grade students were not reading at grade level (29). A final example is out-of-school time interventions offered in many countries (e.g., after-school programs, summer programs, etc.). Prior meta-analytic work has shown these interventions to be especially helpful for students who are below country-specific grade-level standards, are from low-income households, or who are immigrants (30–32). Education is also a domain of the social determinants of health where one would expect to see young people as intended beneficiaries of interventions. For example, primary and secondary education is free for everyone in the United States, the United Kingdom, and in many other countries. Thus, if *youth participatory evaluation* practises occur, one would be more likely to observe it in educational contexts. Future work will explore *youth participatory evaluation* practise in other domains associated with the social determinants of health.

Two objectives will guide this scoping review:

1. To identify and synthesise descriptions of how *youth participatory evaluation* is enacted or not (i.e., is it done, who is involved, in what ways, to what extent, and with what methods, strategies, and actions) within U.S. STEM education programs.
2. To describe the relationship between context and the inclusion of young people in evaluations of U.S. STEM education programs.

METHODS AND ANALYSIS

Our study approach will be guided by steps one through five of Arksey and O'Malley's scoping review methodological framework (33). There can be differing goals for scoping studies. Our scoping study goal will be exploratory and broad but still intended to understand the existing evidence, especially gaps in the evidence. The reporting will also conform to the PRISMA Extension for Scoping Reviews (PRISMA-ScR) (34). This study is preregistered on Open Science Framework (https://osf.io/23jdx/). Collectively, our study approach and methods aim to overcome and address the limitations of the prior systematic review (20).

Stage 1: Defining the research questions

The theoretical grounding for this study will be the Conceptual Framework for Measuring Outcomes of Adolescent Participation (35). This ecological framework includes several core ideas. One is a recognition that participation exists on a continuum from non-participation to youth-led, with several key distinguishing markers in-between (e.g., consultative, collaborative). Participation must be meaningful. Meaningful in this framework is defined by four key context characteristics: it is safe for youth to express their ideas and views, youth can share their ideas and views using whatever mediums are preferred by them, youth ideas and views are respected by adults, and youth ideas and views are given due consideration during decision making. The framework also describes socio-ecological spheres where participation can occur (e.g., schools, with peers, in community groups, and within government). It also calls attention to the environment that enables involvement (e.g., social norms, skills and capacities, awareness of the right for youth to be involved).

This framework was selected because of its alignment with the idea within the social determinants of health literature that young people are a crucial component of policy action

toward health equity and well-being (5). In the same way, in the Conceptual Framework for Measuring Outcomes of Adolescent Participation, young people are a critical component of evaluations of interventions meant to impact their lives. There is also alignment between the social determinants of health literature and the selected conceptual framework in that both recognise the importance of the social ecology and contexts in which young people live.

The Conceptual Framework for Measuring Outcomes of Adolescent Participation positions young people's involvement, including in evaluation activities, as needing to be authentic and meaningful. It recognises the environmental context's influence on participation and provides a conceptual framework for researching important components of participation.

To understand *youth participatory evaluation* practise grounded in the aforementioned conceptual framework, our scoping review will address the following research questions:

1. How have young people been included in evaluating programs that serve them?
2. What evaluation methodologies have been used to include young people?
3. What evaluation strategies and preparatory actions have been used to promote successful inclusion?
4. What contextual factors are important for the inclusion of young people?

Stage 2: Identifying relevant literature

Our study will use evaluation reports publicly available on the community repository hosted by the Reimagining Equity and Values in Informal STEM Education (REVISE) Center (36). This Center is government-funded by the U.S. National Science Foundation (NSF) through the Advancing Informal STEM Learning (AISL) Program. NSF funds practise, research, and evaluation proposals investigating informal science, technology, engineering, and mathematics (STEM) learning experiences and environments. Informal education is a general term used in the

U.S. for education outside of traditional classroom settings. As such, the NSF AISL program supports various organisations, including but not limited to STEM centres and museums, zoos, aquariums, botanical gardens, etc.

While a few possible repositories were identified in the exploration stage, the REVISE community repository is a good fit for this study for several reasons. One, NSF is a significant funder of evaluation activities in the U.S.; the agency requires that all funded projects be evaluated. Two, NSF total award amounts are publicly available so that we can account for budgets associated with evaluation reports included in the REVISE repository. This is not the case for other repositories. Three, evaluators outside of the academy, of which there are many, do not have the pressure or need to publish. Many evaluation practitioners are not incentivised to publish in journals or make their reports public (37–39). The result is that many evaluation reports are neither public nor submitted for peer review to a journal. The REVISE community repository is unique because it collects and makes publicly available evaluation reports (grey literature) for NSF-funded STEM-related programs. No other evaluation report database, including the aforementioned Harvard Family Research Project's Out-of-School Time Program research and evaluation database or the European OpenGrey literature database, carries this same public publishing mandate. Four, because this study is interested in describing actual practise, evaluation reports, as opposed to peer-reviewed journal articles, provide a more accurate picture of practise. The REVISE community repository provides a more complete picture of evaluation practise within STEM education funded by NSF because it limits bias in two crucial ways. It limits publication bias, or bias resulting from the failure to publish results based on direction or strength because all reports are made publicly available regardless of findings. It also limits another type of bias that is unique to evaluation studies. We call this bias 'evaluation reporting

bias' because it results from the failure to publish results based on whether the evaluation team is incentivised to do so.

Moreover, this study is part of a larger research agenda. For the reasons mentioned above, this first study focuses on U.S. evaluation reports (grey literature). Subsequent work will review grey literature outside of the U.S. and peer-reviewed literature to see the extent to which patterns observed in the grey literature hold.

A research team member (CP) will download citations for and PDFs of reports. These citations and reports will be managed using Zotero and imported into Covidence (AS) (40,41). Zotero is open-source, freely available reference management software. Covidence is a web-based program designed to manage systematic and scoping reviews.

Stage 3: Report selection

Evaluation reports will be screened for inclusion in a two-step process (see Supplemental File 1 for more information). In step 1, two independent screeners (AS, CP) will review the title and abstract for each report against inclusion and exclusion criteria. Inclusion criteria will include: (a) report is for an evaluation study; (b) evaluation has a focus on young people, ages 10-24; (c) evaluation is for a program serving young people, ages 10-24; and (d) evaluation report written and uploaded to the REVISE Center repository between 2017 and 2022. Most programs were likely also delivered within this 2017 to 2022 window. Inclusion criteria are intentionally broad so that researchers can describe to what extent the inclusion of young people in evaluation is occurring or not occurring. Both inclusion and non-inclusion of youth are essential to answer the first research question. Evaluation reports falling outside these inclusion parameters will be excluded, such as programs for children under age 10 or adults 25 years of age and older. If the title or abstract needs to be clarified and all inclusion criteria can be fully accessed, the default

action will be to include the study to be more fully assessed in step 2. Covidence will track results from step 1. In step 2, team members (AS, LP) will review the full text of all evaluation reports. The same inclusion and exclusion criteria will be used, and Covidence will also track results.

The screening team will include the primary investigator (BMM) and graduate (AS) and undergraduate trainees who have completed training on *youth participatory evaluation* and scoping reviews (CP, LP). Several study procedures will be used to ensure consistency: (a) all reports will be reviewed by trained team members (BMM, AS, CP, LP); (b) the study PI, who is an expert in *youth participatory evaluation*, will serve as a critical reader and resolve conflicts (BMM); (c) all team members will review scoping review objectives and inclusion/exclusion criteria before screening (BMM, AS, CP, LP); and (d) team members will practise applying inclusion/exclusion criteria on a subset of reports to calibrate between team members before engaging in the full screening process (BMM, AS, CP, LP).

Stage 4: Data charting

Once the final list of studies for inclusion is generated, team members (LP, AS) will use Covidence to chart or extract relevant information from evaluation reports aligned with the objectives of the scoping review. Information to be extracted includes author details, program information, and evaluation study components. Many of these details are evaluation reporting elements identified in the Checklist for Evaluation Specific Standards (42). Team members (LP, AS) will also extract general information on youth participatory practises.

The complete list of quantitative and qualitative variables to be extracted is available in the project codebook on Open Science Framework (https://osf.io/23jdx/). This codebook describes codes, definitions for codes, the origin of the definition, the type of data to be

extracted, the corresponding Covidence field, and the variable values to be used in the analysis. Additional categories may be identified during the data extraction process. These will be discussed and decided upon by the entire team. Consistent with scoping review convention, the methodological quality of included studies will not be evaluated (33,34).

Rigour and consistency will be maintained through several procedures: (a) all team members will be trained on charting procedures (BMM, AS, LP), (b) team members will practise charting data on a subset of reports before phase one beginning (BMM, LP), (c) team members will bring data charting questions, concerns, and requests for a second opinion to regularly scheduled team meetings involving all team members, with notes from the discussion and decisions documented in a shared google document (LP), and (d) a codebook detailing variable, variable definitions, origins of the variable definition, type of variable, and variable values will be developed, used, and updated (as needed) by the PI (BMM) during the data charting process.

Stage 5: Collating, summarising, and reporting the results

Collating and summarising will be done in Dedoose by the team (AS, LP). Dedoose is a web-based data analysis software program that allows for collaborative analysis of quantitative and qualitative data (43). One team member (AS) will download charted data and PDFs from Covidence and import them into Dedoose. Team members (LP, AS) will further code information on youth participatory practises using Dedoose, such as, inclusion type, mode of participation, depth of inclusion, ways young people were involved, strategies for inclusion, outcomes of young people's involvement, and environmental and context features enabling meaningful inclusion. The complete list of variables to be coded in Dedoose is available in the project codebook on Open Science Framework (https://osf.io/23jdx/)

We will use quantitative and qualitative data analysis methods to answer our research questions. Descriptive statistics (i.e., mean, frequencies, cross-tabs) will be generated for all research questions using charted quantitative data. Thematic analysis will be used to supplement quantitative findings by providing descriptions and examples of strong youth participatory practice, such as how young people are included in evaluation studies, what methods, strategies, and actions are used to engage young people in the evaluation process, and the relationship between the context in which evaluations take place and the inclusion of young people in evaluation.

All dissemination efforts (e.g., presentations and manuscripts) will follow PRISMA-ScR guidelines. Table 1 includes the anticipated timeline.

Table 1. Anticipated timeline

Scoping review stage	Month											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Stage 1: defining the research question (completed)	X											
Stage 2: identifying relevant literature (completed)	X											
Stage 3: report selection		X	X	X	X	X						
Stage 4: data extraction						X	X	X	X	X	X	
Stage 5: collating, summarising, and reporting the results											X	X

Patient and Public Involvement

None.

ETHICS AND DISSEMINATION

This study will not involve human subjects and will not require institutional review board approval. Findings will be shared through several dissemination strategies, such as peer-

reviewed journals, international and national conferences, and social media affiliated with academic institutions and professional associations.

Study status

The authors are nearing completion of the report selection process (stage 3) now. Fall 2024 is the target date for completing this review.

DISCUSSION

To the best of our knowledge, this will be the first review to describe *youth participatory evaluation* as enacted in practice based on the grey literature, upholding principles of transparency and the possibility of future replication. This is important given that future work will explore *youth participatory evaluation* as observed in the evaluation of interventions targeting other social determinants of health domains.

Using and thoughtfully integrating scoping review methods, our conceptual framework, the Checklist for Evaluation Specific Standards, and PRISMA-ScR will serve to enhance the rigour, transparency, trustworthiness, and replicability of our study design (33–35,42). We also believe our use of grey literature is a strength because it more accurately reflects what occurs in evaluation practise. We believe this scoping review design has the potential to serve as a model for others interested in advancing scholarship on *youth participatory evaluation*.

As with any study, there are limitations to consider. Scoping reviews, by design, are not well-suited to examine the effectiveness of evaluation methods, including those that are participatory. This focus is better explored in systematic reviews and meta-analyses. This scoping review will also not assess the quality of evaluation designs involving young people. While we will search a unique publicly available evaluation report database, we know that this

database does not cover all studies involving young people or using *youth participatory evaluation* methods. It only covers evaluation reports (grey literature) for STEM-related programs based in the United States and its territories and funded by NSF AISL. Future work will search other grey literature databases, such as OpenGrey and peer-reviewed papers. This will allow researchers to examine (and potentially quantify) both publication bias and evaluation reporting bias in *youth participatory evaluation*. It will also enable researchers to see the extent to which findings vary across different types of literature, a larger slice of the Education literature (not just STEM), in the evaluation of interventions targeting other social determinants of health domains and in different geographic contexts.

This scoping review will provide a much-needed synthesis of the state of the field, including is *youth participation evaluation* being used in practice, who is involved, to what extent, in what ways, with what methods, strategies, and actions, and how context is connected to involvement in evaluation. This information will provide empirical evidence on which to base discussions and debates about the merits of and need for greater participation of young people in evaluations of interventions aligned with the social determinants of health.

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Supplementary file 1: Justification for the search strategy

Research questions:

1. How have young people been included in evaluating programs that serve them?
2. What evaluation methodologies have been used to include young people?
3. What evaluation strategies and preparatory actions have been used to promote successful inclusion?
4. What contextual factors are important for the inclusion of young people?

Search strategy:

1. Reimagining Equity and Values in Informal STEM Education (REVISE) Center Repository: https://www.informalscience.org/.
2. The repository included only evaluation reports in English.
3. All evaluation report types tagged in the repository (e.g., audience study, formative, front-end, remedial, summative).
4. All evaluation reports were tagged in the repository 5 years before the start of the study (2017-2022).
5. No keywords limited inclusion at this point.
6. Later review had the primary exclusion criteria of programming to include ages 10-24, such that programs for only early childhood or adults were excluded.

Justification:

1. The REVISE repository was chosen because the researchers wanted to include US-based

evaluation reports representing the grey literature. This public repository was recommended many times as the best possible source. It is a STEM-focused repository of programs funded by the U.S. National Science Foundation, which includes programs that target all ages. Other possible U.S.-based report repositories were also discovered, including the U.S. Department of Labor, the National Institutes for Health, and the Harvard Family Research Project Out of School Time Program Evaluation Database (https://archive.globalfrp.org/out-of-school-time). The first two did not seem to include youth-focused programming or a repository of evaluation reports. The latter was once a source of evaluation reports for youth programs, but funding was cut in 2017. Therefore, it was no longer operational by the time of this study.

2. This is an English-only database, which was also ideal because this is the primary language used in the U.S., is the primary language of the research team, and is the context in which the present study was situated.
3. The REVISE repository tags evaluation reports with many possible types (e.g., audience study, formative, front-end, remedial, summative). We included all report types to represent the range of all possible evaluations in which young people may participate.
4. The REVISE repository tags evaluation reports by year the evaluations were published. Reports from the 5 years before the start of the study were included from 2017 to 2022. This allowed for a wide range of evaluation practices to be represented without making the present study infeasible for the research team, especially considering there are few other exclusion criteria.
5. No keywords were used to limit what report types were included because the research study seeks to quantify and qualify how many evaluation studies use any youth

participatory evaluation practice, and among those who do, how youth participatory evaluation practice manifests. Therefore, at this stage, all reports were included related to youth programming, whether participatory or not.

6. The age range of programs and evaluations that serve ages 10-24 was the age range used for the present study based on UNICEF definitions. It was impossible to ascertain if reports fell out of this age range from the repository by keyword search or tags. Therefore, primary exclusion criteria based on this age range were developed and used for stage 3 (report selection).

References

Lansdown, G., Diers, J., Haj-Ahmad, J., Rusinov, T., Sakurai, Y., & Friscia, F. (2018). *Conceptual framework for measuring outcomes of adolescent participation.* UNICEF. https://www.unicef.org/media/59006/file

REVISE Center. (n.d.). *Reimagining equity and values in informal STEM education community repository.* https://informalscience.org/repository/

Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	1
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	2-3
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	5-8
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	8-9
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	2, 10, 14, 15
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	13-14, supplementary file
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	11-14, supplementary file
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	11-14, supplementary file
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	13-14, supplementary file
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	14-15

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	codebook on Open Science Framework (https://osf.io/23jdx/)
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	n/a for this scoping review
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	15-16
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	n/a, scoping review not yet finalised
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	n/a, scoping review not yet finalised
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	n/a for this scoping review
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	n/a, scoping review not yet finalised
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	n/a, scoping review not yet finalised
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	n/a, scoping review not yet finalised
Limitations	20	Discuss the limitations of the scoping review process.	17-18
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	n/a, scoping review not yet finalised
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	n/a, scoping review not grant funded

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.

† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).

‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.
§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

From: Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMAScR): Checklist and Explanation. Ann Intern Med. 2018;169:467–473. doi: 10.7326/M18-0850.