

CADTH Health Technology Review

# Peer Support Programs for Youth Mental Health

PROSPERO Registration Number: CRD42022299556

ISSN: 2563-6596

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**Funding:** CADTH receives funding from Canada's federal, provincial, and territorial governments, with the exception of Quebec.

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The authors would like to thank Hajar Seiyad, Sydney Patterson, Mikaela Basile, and Mardi Daley who shared their lived experiences with and knowledge of peer support with the project team and provided feedback on the review protocol and the preliminary findings. Their perspectives and feedback were carefully considered by CADTH in developing this report. The contributors listed here have consented to having their names published.

The authors would like to acknowledge:

Allison Dunning for reviewing drafts of the protocol and final report of the HTA and for assisting with interpretation of the findings.

Pierre Martinelli for providing project management support.

Sarah Jones who identified the topic and guided scoping and prioritization.

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## Definitions

CADTH has adopted the following definitions in this Health Technology Assessment:

**Formal peer support programs** are programs delivered by formal or structured community- or health clinic–based organizations that offer peer support to youth peer service users by trained peer support workers who share lived experience related to mental health. Peer service users are youth (aged 12 to 25 years) seeking support for a primary concern related to their mental health. Peer support can be offered on a one-to-one or group basis, and may be delivered virtually (e.g., video conferencing, mobile applications, web platforms, online chat, or phone) or in person. We have emphasized formal programs with training and supports for peer support workers because training is an important mechanism to ensure the safety of peer support workers and users, provides a degree of standardization in the peer support offered, and addresses considerations of equity by ensuring staff receive training about how to appropriately draw on their lived experience.

Programs out of scope for this project include those with a primary focus on supporting youth around a primary concern of substance use or addictions or those that aim to provide primary prevention to youth to prevent mental health conditions or issues. There are many peer-led and mutual support programs that support recovery from substances through harm reduction or abstinence; these may use different mechanisms and approaches with their own evidence base and are also outside the scope of this review.<sup>1</sup>

**Youth** are defined as individuals between ages 12 and 25 years. This age range is consistent with the typical age ranges of the youth served by youth mental health and wellness hubs that are established across Canadian jurisdictions. Importantly, it covers the period when many mental health issues first appear and the transition out of adolescence into young adulthood.<sup>2</sup>

**Mental health challenge** is any mental health condition or issue either self-identified or formally diagnosed, which includes, but is not limited to, anxiety, depressive symptoms, and eating disorders, but excludes a primary presentation of substance use and addictions.

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## Abbreviations

<b>2SLGBTQ+</b>	2-Spirit, lesbian, gay, bisexual, transgender, queer, and other sexual identities
<b>CES-D</b>	Center for Epidemiologic Studies-Depression
<b>C-PROM</b>	Canadian Personal Recovery Outcome Measure
<b>CYPCO</b>	Children and Young People Community Organizations
<b>ED</b>	emergency department
<b>ES</b>	Environmental Scan
<b>GAD-7</b>	General Anxiety Disorder 7-item
<b>GRADE</b>	Grading of Recommendations Assessment, Development and Evaluation
<b>HOP</b>	Honest, Open, Proud
<b>HOP-C</b>	Honest, Open, Proud–College
<b>HRQoL</b>	health-related quality of life
<b>HTA</b>	Health Technology Assessment
<b>PHQ-9</b>	Patient Health Questionnaire-9
<b>PRISMA</b>	Preferred Reporting Items for Systematic reviews and Meta-Analyses
<b>PSIQI</b>	Peer Support Integrity, Quality and Impact
<b>RCT</b>	randomized controlled trial
<b>RoB 2</b>	Risk of Bias 2
<b>SD</b>	standard deviation
<b>SR</b>	systematic review
<b>SSMIS-SF</b>	Self-Stigma of Mental Illness Scale–Short Form
<b>TAU</b>	treatment as usual
<b>TAY</b>	Transitional Aged Youth

## Key Messages

- We conducted a Health Technology Assessment (HTA) to inform decisions related to the adoption, implementation, and evaluation of peer support programs for youth mental health. This HTA consisted of consultations with youth advisors (peer support users and workers), a systematic review of the available evidence on the clinical effectiveness and safety of peer support interventions for youth with mental health concerns (compared with interventions without peer support), and an Environmental Scan of peer support program evaluations.
- Youth recognize the value of peer support in their mental health recovery and wellness, and they view peer support as an accessible, convenient, and safe mental health resource. They also highlight the importance of representation and involvement of youth with diverse backgrounds and experiences across the design and evaluation of peer support programs to ensure equity, diversity, and inclusion.
- In the Clinical Review, we found that formal peer support programs (i.e., trained peer support workers based at structured community- or health clinic–based organizations provide support to peer support users) might help a young person feel more comfortable to share information about their mental health issue and ask for help. The authors of 2 randomized controlled trials we identified found that compared to no peer support, peer support may improve youth's attitudes toward disclosure of mental illness, distress related to that disclosure, and help-seeking behaviour. However, overall, only a small amount of low-quality evidence (due to risk of bias, inconsistency, indirectness, and imprecision) is available. Therefore, it is very uncertain whether peer support programs are more effective at supporting an individual in their recovery compared to programs without a peer support component. In addition, the safety of peer support programs is currently unknown (no research evidence was found).
- Our Environmental Scan did not identify formal guidelines or best practices for evaluating peer support programs; however, we found some common evaluation approaches among programs. These approaches include focusing on recovery-oriented outcomes, involving youth throughout the evaluation (to ensure relevance), and tailoring the evaluation to reflect the local program context.
- When considering implementation of peer support programs for youth mental health, decision-makers may wish to allocate resources for ongoing program evaluation. Strengthened program evaluations can improve the understanding of the benefits and maximize the effectiveness of peer support programs. In addition, practice-based evidence from the evaluation of peer support programs can be used to further support the design and implementation of appropriate, equitable, and culturally competent programs.

## Summary

### Context and Decision Problems

The mental health of youth living in Canada is a serious public health concern that worsened during the COVID-19 pandemic. Mental health decision-makers are considering adopting and implementing peer support programs as an option for improving access to mental health care for youth. Peer support is based on the recovery model and typically involves a relationship between a peer support worker who shares lived experience of mental health challenges

with a peer support user. Peer support has the potential to increase youth's access to mental health services in the form of youth peer support workers, who can support recovery, connect youth to additional mental health care services, and reduce the stigma around seeking mental health care because they also experienced mental health issues.<sup>3</sup> The role of peer support and peer support workers can vary by program and be tailored to the specific needs of the community. As a result, there is a wide range of applications of peer support for youth mental health. For example, peer support can help youth navigate and access health care or provide tangible coping strategies to youth coping with feelings of depression .

Peer support is an intervention that could increase access to mental health support for youth; therefore, decision-makers want to know the clinical effectiveness and safety of formal peer support programs and their impact on the use of health care resources. Decision-makers have also expressed the need for and importance of considering equity into the design, implementation, and evaluation of peer support programs to ensure that these programs are accessible and relevant to youth who are disadvantaged. Policy and program decision-makers are interested in understanding how to best evaluate peer support programs to ensure that they meet funder and program objectives and the needs of youth.

To support decision-making about formal peer support programs for youth mental health, in this HTA we (referring to the CADTH review team):

- assessed the clinical effectiveness and safety of formal peer support programs for youth mental health
- identified and described existing and recommended methods for the evaluation of peer support programs for youth mental health (including completed evaluations conducted in Canada and internationally) and summarized findings of completed evaluations for formal peer support programs in Canada
- engaged youth peer support workers and youth peer support service users to serve as advisors so the team could consider the research findings with an understanding of the wider experiences of those accessing and providing peer support.

## Peer Support Youth Advisor Engagement

Four youth with lived experience of peer support were involved as peer support youth advisors to help the research team understand the context for the scientific evidence and the experiences of those accessing and providing peer support. The advisors shared their perspectives before the protocol was finalized, when preliminary evidence findings were available, and after the final report was completed. The feedback helped ensure that this HTA was relevant to peer support service users and peer support workers.

The advisors spoke about how recovery-based outcomes are especially important to youth and described recovery as an ongoing journey rather than a finite outcome. They shared that outcomes such as use of health care resources and clinical effectiveness are not as relevant to youth, but these can offer a measurable way to determine whether peer support is effective. The advisors also expressed that youth accessing peer support for mental health are concerned about self-stigma and public and community stigma.

The advisors encouraged diversity, inclusion, and representation in all aspects of peer support programs. To help achieve this, the advisors called for youth with lived experience to be involved in the creation of program evaluation strategies. Youth involvement can inform and

improve programs and ensure that programs align with and reflect the needs and identities of their users.

Peer support youth advisors shared their knowledge and experiences with the CADTH team. From these discussions, the team was able to identify and consider outcomes of interest to youth involved in peer support programs. Moreover, it encouraged further reflection on considerations of equity and program inclusivity.

## Clinical Effectiveness and Safety Evidence

We conducted a systematic review to assess the effectiveness and safety of peer support interventions compared with interventions without peer support among youth aged 12 to 25 years with mental health challenges (substance use was excluded). For the purpose of this review, we considered formal peer support to be support delivered by trained peer support workers with shared lived experience.

We conducted a systematic search of multiple electronic databases and the grey literature. We identified 3 publications, which reported results from 2 randomized controlled trials with a total of 216 participants. The outcomes in the included trials related to personal recovery and clinical symptoms. We did not identify any evidence on the safety of peer support interventions. The findings from these 3 publications suggest that peer support may be favoured over no peer support in some personal recovery outcomes (e.g., attitudes to disclosure, disclosure-related distress, secrecy, help-seeking behaviour), whereas evidence for the other outcomes show there may be little to no difference in the effect of peer support compared with interventions without peer support. However, the evidence for all outcomes was very uncertain because of high risk of bias in the studies, and serious concerns related to inconsistency, indirectness, and imprecision. Overall, the clinical evidence on the benefits of peer support programs compared with no peer support for the management of mental health concerns among youth is very uncertain, meaning it is not a reliable indication of how effective peer support programs are compared with interventions without peer support.

## Environmental Scan of Program Evaluation Methods

An Environmental Scan was conducted to identify and describe program evaluation methods and guidelines in Canada and internationally and the findings of completed program evaluations in Canada. The scan was informed by a limited literature search and targeted stakeholder consultations, which included representatives from 7 organizations across Canada that offered peer support services for youth mental health. The findings showed that there is a lack of standardization and formal guidance for program evaluation of peer support programs which contributes to heterogeneity in evaluation approaches across programs. Yet, heterogeneity in program evaluation can be valuable as it allows to adapt practices to individual and program needs. Despite the lack of formal guidance or standardized methods, programs did share common principles and practices for program evaluations. These include practice-based evidence, a focus on evaluation that adheres to a recovery model of care, employing a co-design approach to evaluation so that youth are involved in the design and conduct of evaluation, and addressing the needs of the youth involved in the program through evaluation. Data collection methods varied across organization and program evaluations, but generally programs relied on the use of survey, interviews, focus groups and case studies to collect data. Program evaluation data were analyzed at various time points depending on the goal and aim of the program evaluation. The identified programs addressed equity in the program evaluations by ensuring youth safety, inclusiveness, and cultural competency

for local communities. Program representatives also discussed challenges that are faced when balancing the needs of the program participants and the funder's expectations for program evaluation.

## Conclusions and Implications for Decision- or Policy-Making

The findings of this HTA highlight opportunities to build an evidence base for peer support programs for youth mental health., peer support is a promising option despite the limited evidence of the clinical effectiveness and safety of formal programs. Peer support is currently positioned to be an informal, flexible, and convenient intervention that can connect youth to additional mental health care, reduce the stigma around seeking care, and provide youth with coping skills and support for their mental health challenges. Formal programs with trained peer support workers who have access to ongoing debriefing and support mentorship may mitigate safety concerns for both peer support users and peer support workers (such as confidentiality and inappropriate boundaries) and ensure that the support offered is likely to aid in individual youth peer support users' recovery. Evaluations of peer support programs can serve to assess the needs of the programs and of the youth engaged in the programs to help with quality improvement efforts and inform future programming. It is necessary to train and recruit youth who are diverse and youth who are disadvantaged for the programs to be inclusive to ensure fair and equitable access to peer support programs. Equity, in the context of peer support was described by the consulted organizations as being inclusive, safe, and prioritizing the needs of the diverse youth whom the program is designed to serve, and needs to be integrated into program design, recruitment, training and evaluation. Opportunities for engaging youth can advance equity, diversity, and inclusion initiatives.

## Introduction

### Introduction and Rationale

The mental health of youth living in Canada is a prominent public health concern. Even before the COVID-19 pandemic, youth aged 15 to 24 years were the least likely of all people living in Canada to report excellent or very good mental health.<sup>4</sup> Compared with other high-income countries, Canada ranked 31 out of 38 countries on measures of well-being (feeling positive and being in good mental health) and 35 out of 38 countries on teen suicide rates, with Indigenous youth having the highest rates.<sup>5</sup> The estimated proportion of youth reporting poor mental health has jumped to more than 60% in 2020 because of the COVID-19 pandemic.<sup>6</sup> Youth who experience marginalization, including members of the 2SLGBTQ+ community, Indigenous youth, racialized youth, youth who are refugees and newcomers, young people with disability, and youth living in rural or remote areas are particularly vulnerable to mental health challenges,<sup>4,6</sup> and have been disproportionately affected by the economic, social, and health consequences of the COVID-19 pandemic.<sup>6</sup>

According to a survey of 14,000 public school students by a research team based at the Centre for Addictions and Mental Health (CAMH) in Toronto, 1 in 3 youth surveyed said there was a time in the past year where they wanted to talk to someone about a mental health problem but did not know where to turn.<sup>7</sup> It is estimated that less than 20% of children and youth who are affected by mental illness will receive appropriate treatment.<sup>8</sup> Barriers to accessing mental health services are both social and structural.<sup>9</sup> The fear of or

experiences of stigma are a significant deterrent to seeking care, particularly for those who already experience marginalization.<sup>9</sup> Mental health services themselves are often complex and difficult to navigate,<sup>2,6</sup> with limited public (either publicly insured or publicly provided) services that typically have lengthy wait lists. Many other services are covered only by private insurance or out-of-pocket expenses.<sup>2</sup> For those services now offered online or virtually due to the COVID-19 pandemic, limited internet or computer or smartphone access and the physical need for privacy are barriers affecting youth seeking virtual or remote care for their mental health.<sup>6</sup> As a result of the limited availability of mental health services, youth have increasingly sought mental health care from emergency departments (EDs) and hospitals. Over a 10-year period between 2008–2009 and 2018–2019, there was a 61% increase in visits to EDs for mental health and a 60% increase in hospitalizations for children and youth in Canada aged 5 to 24 years.<sup>10</sup> Those youth aged 15 to 17 years have the highest rates of visits to the ED and hospitalization for mental health disorders among children and youth.<sup>10</sup> ED visits for mental health care are an established indicator of poor access to mental health services.<sup>10</sup>

As a result, many health care systems across Canada are planning or implementing wide-scale change or making system-level investments in mental health care for youth. These include new models of care (e.g., stepped care, integrated youth care, Youth Wellness Hubs) and an increase in funding to community-based and virtual mental health care to improve timely access to support for those youth seeking care.<sup>11</sup> It is in these conversations around further investments in mental health for youth that decision-makers are considering adopting or implementing peer support programs.

Peer support programs provide a peer service user with support from a peer support worker. The basis of support is the relationship between peers which is founded on and draws from their shared lived experience. In the case of peer support for youth mental health, lived experience typically means the peer worker is a youth who is in a positive state of recovery from or supported someone in recovery from mental health challenges and has the skills and aptitude to provide peer support.<sup>3,12</sup> Participation in peer support programs is usually voluntary and does not require a referral or formal diagnosis to receive care.

Peer support is based on a recovery model of mental health, which means that rather than seeking a cure or reduction of symptoms, the focus is on supporting an individual to recover a quality of life while striving to achieve their full potential.<sup>3</sup> Some aspects of recovery include an individual's ability to connect with their community, forge or maintain personal relationships, and the ability to feel hopeful about their future. A variety of theories underlie the mechanism of peer support in which the peer service user can learn from the information, modelled behaviour, or encouragement and empowerment provided from the peer support worker through their relationship.<sup>13</sup> Peer support is also seen as a means of addressing or reducing stigma around mental health, specifically in youth who are described as being more open to seeking services and support from other youth as opposed to adults.<sup>3</sup>

Many of ethical and social considerations around peer support relate to the relationship between the peer support worker and the peer service user, with concerns about the privacy and confidentiality of the information shared by both peers and the boundaries between the peer service user and peer worker, meaning recognizing a potential or actual power imbalance and the need for professional relationships and the potential harms to the peer support worker or peer service user should inadequate training or supports be available to them.<sup>14</sup> Further, peer support programs can potentially widen existing inequities in access to services and the burden of mental health if they are not inclusive, culturally safe, and provide fair and

equitable access, and do not meet the needs of peer service users and peer workers from communities who experience marginalization or disadvantage.<sup>14</sup>

Peer support programs often explicitly intend to be inclusive and provide support to youth who are disadvantaged. There is broad acknowledgement that ensuring inclusivity requires, among other things, training, hiring, and supporting peer support workers who are themselves members of disadvantaged groups. This is because the peer user and peer worker need to share meaningful lived experience that includes that of being a youth who is socially disadvantaged with mental health challenges.<sup>3</sup> Moreover, inclusive care is enhanced by involving youth who are disadvantaged as peer workers and services users to help inform and influence program and policy development.<sup>15,16</sup> Stigma is a complex phenomenon that can exacerbate and be exacerbated by other forms of systematic discrimination<sup>17</sup>; therefore, peer support programs that are inclusive and support youth who are disadvantaged are necessary to meaningfully address the diverse forms of stigma experienced by youth with mental health challenges.

Peer support programs can range from informal to formal and from programs self-organized by peers to meet their own needs to highly structured programs that include training, paid peer support workers, and case management. Some programs start as self-organized, grassroots programs, but evolve over time into more formal programs delivered as part community non-governmental organizations and health care facilities.<sup>18</sup> Peer support can be a stand-alone program or be integrated into a larger multi-component program and complement existing mental health services.<sup>18</sup> The specific objectives of peer support and the role of the peer support worker can be tailored to meet local program aims and needs of the local youth; for example, it can assist youth to navigate and access health care or provide resources to support improved coping with academic pressures. Peer support programs have the potential to increase youth's access to mental health services through youth peer support workers, who can support recovery and connect youth to additional mental health care services. Despite the interest in peer support programs as a means of providing mental health care for young people, the effectiveness of peer support programs for young people is not well-established.<sup>13</sup> Moreover, there is a recognized need to use available information and evidence to support building programs that are inclusive and meet policy objectives (e.g., support transitions in care) and to design ongoing evaluations. Service and health care organizations face the challenge of making decisions on how to recruit, train, and maintain peer support workers, and ministry and regional funders want to ensure value on their investment into programs. CADTH undertook this HTA to provide evidence to support decision-making around formal peer support programs for youth mental health.

## Context and Decision Problems

### Decision Problems

Policy and program decision-makers across Canada designing and implementing services for youth mental health are considering the potential role of formal peer support programs. To inform potential decisions about the adoption and implementation of peer support programs for youth mental health, decision-makers have expressed the need to understand their clinical effectiveness and safety and the potential impact on the use of health care resources. Additionally, to meet the needs of youth in Canada it is recognized that peer

support programs need to provide care that is inclusive, that is, meets the needs of all youth including those who may experience marginalization or disadvantage. To this end, decision-makers have expressed the importance of including considerations of equity to ensure peer support programs are accessible and relevant to youth who experience marginalization or disadvantage when thinking about the possibility of designing and implementing peer support programs.

To support potential design and implementation, policy and program decision-makers have asked for information on how to evaluate peer support programs. Evaluation is seen as an opportunity to build the evidence base for peer support programs for youth mental health and inform how to design programs to maximize their benefits, minimize their harms, and set standards for program design. Given that peer support programs are a complex intervention with wide variation in their design and with the potential for the influence of local context, decision-makers have expressed a need to understand what evaluations of peer support programs for youth mental health have been conducted and what methods or approaches can be considered for future evaluations.

## Objective

The objective of this HTA was to support decision-making around adopting, implementing, and evaluating formal peer support programs for youth mental health. To do this, CADTH:

- assessed the clinical effectiveness and safety of formal peer support programs for youth mental health
- identified and described existing and recommended methods for the evaluation of formal peer support programs for youth mental health including completed evaluations conducted in Canada and internationally; and summarized findings of completed evaluations in Canada
- engaged youth peer support workers and youth peer support service users as part of CADTH's patient engagement activities.

## Research Questions

This HTA informs the decision problems by answering the following research questions. Details on the specific interventions and outcomes are included in [Table 2](#).

Systematic review of clinical effectiveness and safety:

1. What is the clinical effectiveness of formal peer support programs compared with interventions without peer support for the management of mental health concerns among youth?
2. What is the safety of formal peer support programs compared with interventions without peer support for the management of mental health concerns among youth?

Scan of program evaluation methods:

1. What completed evaluations and evaluation method guidelines for formal peer support programs for youth mental health exist in Canada and internationally?
2. What are the characteristics and components used in the evaluations and method guidelines for formal peer support programs for youth mental health, and how are they measured?

### 3. What are the findings of the completed evaluations in Canada?

## Methods Overview

This HTA was informed by preliminary scoping activities, including scoping searches of the existing published and grey literature around peer support for youth mental health. We wrote an a priori protocol using appropriate reporting guidelines (e.g., the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocols [PRISMA-P], Guidance for Reporting Involvement of Patients and the Public [GRIPP2])<sup>19</sup> to ensure clarity and completeness. We chose to use language from the peer support field to accurately capture our intended meaning to describe the populations in this report.

Informed by the recommendations of the Campbell and Cochrane Equity Methods Group,<sup>20,21</sup> we worked to include considerations of equity throughout the conduct of this review. We selected the Equity Checklist for HTA (ECHTA)<sup>22</sup> as a tool to iteratively guide our consideration of equity in the HTA. Specific groups of youth who are disadvantaged who experience an inequitable burden of mental health challenges and access to inclusive mental health services were identified using PROGRESS-Plus,<sup>23</sup> the available published and grey literature on peer support, discussions with clinical and content experts, and through existing descriptions of peer support programs explicitly designed to target or serve youth who are disadvantaged. These groups of youth include but are not limited to youth members of the 2SLGBTQ+ community, Indigenous youth, Black youth and youth of colour, youth members of newcomer communities, youth experiencing homelessness or street involvement, youth with disabilities, and youth living in rural and remote communities. The prompts provided by the ECHTA were used for discussion and reflection in the development and conduct of each of the individual components and in the writing of the Discussion section in this final report.

A systematic review (SR) of clinical effectiveness and safety was conducted to address decision-makers' need for evidence around the impact of formal peer support programs on patient and health systems outcomes. We considered *effectiveness* a broad term, covering all aspects of benefits and harms of any intervention. In this context of peer support, the term includes recovery, as described in the Introduction and Rationale sections of this report. We included a wide variety of study designs (beyond randomized trials) recognizing that non-randomized studies may be the only sources of evidence available and may provide important insights into the benefits and harms of peer support among populations that are disadvantaged. We also intended to present information regarding effectiveness and safety within relevant population subgroups (informed by PROGRESS-Plus)<sup>23,24</sup>; however, this evidence was not available within the included studies.

We conducted an Environmental Scan (ES) of completed evaluations in Canada and the methods used to evaluate peer support programs for youth mental health in Canada and internationally to address decision-makers' need for information about how to evaluate peer support programs. We collected data through a limited literature search of both the published and grey literature and through consultations with key informants from programs offering peer support for youth mental health. We considered equity by identifying and describing features of evaluation methods that may address or reflect program goals of fair and equitable access and inclusivity. We have reported whether and how youth who are disadvantaged (as service users and support workers) were involved in evaluations when information was available.

We engaged with peer support service users and peer support workers (i.e., peer support youth advisors), which helped to ensure that this HTA is relevant to youth with mental health challenges who participate in peer support programs. Our engagement activities were informed by our reflections on equity and resulted in us involving youth who may be disproportionately affected by decisions made about the design and implementation of peer support programs for mental health and who can help inform the development of inclusive programs. The peer support service users and peer support workers we engaged brought a variety of experiences from underserved communities.

### Opportunities for Stakeholder Feedback

Stakeholders were given the opportunity to provide feedback on the draft list of included studies and the draft report through a process which included an invitation to comment on the CADTH website, and draft documents were provided to targeted stakeholders identified through CADTH's networks.

## Peer Support Youth Advisor Engagement

### Overview

CADTH involves patients, families, and patient groups to improve the quality and relevance of our assessments, ensuring that those affected by the assessments have an opportunity to contribute to them. CADTH has adopted a [framework for patient engagement in HTA](#). The framework includes the Standards for Patient Involvement in Individual HTAs which is used to support and guide our activities involving patients.

For this Health Technology Review, CADTH engaged 4 peer support youth advisors with lived experience of peer support whose first-hand knowledge, understanding, and experiences of peer support programs provided context to the evidence used to refine the protocol and helped reviewers interpret the overall findings of the assessment.

### Methods

#### Invitation to Participate and Consent

Potential participants were identified through CADTH connections with peer support programs and pan-Canadian health organizations. A CADTH patient engagement officer contacted individuals who had expressed interest via teleconference and/or email (depending on individuals' availability and level of comfort). During this initial meeting, the patient engagement officer described CADTH, the purpose and scope of the project, the purpose of the engagement, and the nature of the engagement activities.

To learn from a diversity of experiences and perspectives, CADTH engaged 4 peer support youth advisors with lived experience of receiving or providing peer support. Advisors were located across the country and had varied experience in terms of the types of programs they accessed as peer support users and the training they received as peer support workers. Some self-identified as members of communities who experience marginalization or disadvantage. In their role as advisors, they were able to share their own experiences as well as reflect on and share knowledge they gained through their interactions with other youth. Advisors shared

knowledge of issues of particular importance to youth who are 2SLGBTQ+, youth of colour, youth with disabilities, and youth experiencing homelessness.

The patient engagement officer obtained the individuals' informed consent to share their information and comments with CADTH staff. Advisors are recognized and thanked in the Acknowledgements section of this report. The advisors consented to having their names published in the report. They were also offered an honorarium for their time and effort.

## Engagement Activities

Peer support youth advisors who are peer service users and trained peer support workers were involved at several time points, including:

- before protocol finalization
- during drafting of the initial report
- upon completion of the final report during the feedback period.

The involvement of peer support youth advisors enabled the research team to consider the scientific evidence with an understanding of the wider experiences of those accessing and providing peer support. Considering the perspectives shared during engagement processes helped ensure that this review is relevant to peer support service users and peer support workers who participate in peer support programs. It enabled the research team to consider the outcomes of interest to youth involved in peer support programs and encouraged further reflection on considerations of equity and program inclusivity.

Upon completion of the final report, advisors were invited to provide feedback on the clarity of writing and comment on the relevance of the findings to youth in Canada. They were asked if they felt that their contributions to the project were reflected in the draft final report, and revisions will be made if needed.

## Results

The reporting of this section follows the GRIPP2 Short Form<sup>19</sup> reporting checklist and includes the results, discussion, and reflections and critical perspectives on advisor involvement, to outline the process of engagement and where and how advisors' contributions were used in the review.

# Systematic Review of Clinical Effectiveness and Safety

## Overview

### Research Questions

1. What is the clinical effectiveness of formal peer support programs compared with interventions without peer support for the management of mental health concerns among youth?
2. What is the safety of formal peer support programs compared with interventions without peer support for the management of mental health concerns among youth?

**Table 1: Peer Support Youth Advisor Involvement in CADTH’s Health Technology Review of Peer Support Programs for Youth Mental Health**

Topic	Item	Report section
<b>Aim</b>	Four peer support youth advisors with lived experience of peer support were involved in informing the protocol and commenting on outcomes important to youth accessing and offering peer support for mental health.	Peer Support Youth Advisor Engagement
<b>Methods</b>	<p>After giving informed consent, the advisors discussed their experiences and knowledge of peer support via teleconference with CADTH researchers and in email communication. Four individual teleconference meetings took place at 2 different time points.</p> <p>First, during protocol development, 2 youth with lived experience of peer support were invited as advisors to comment and provide feedback on:</p> <ul style="list-style-type: none"> <li>• research questions</li> <li>• eligibility criteria</li> <li>• equity considerations</li> <li>• outcomes that are important to youth accessing and offering peer support.</li> </ul> <p>Second, once preliminary findings were available, 2 youth with lived experience of peer support were invited as advisors to explore their perceptions of key findings, including if the findings were understandable and if they reflected personal experiences or understandings.</p> <p>An honorarium was offered to advisors for participating in a teleconference and to review a summary of their discussion.</p> <p>All were also invited to provide stakeholder feedback on the draft of the full report.</p>	Peer Support Youth Advisor Engagement Methods
<b>Engagement results</b>	<p>The research team heard how peer support appeals to youth for many reasons, mainly, advisors reported that it offers a convenient, low-barrier, low-commitment service. According to advisors, peer support clients feel safe and comfortable in a peer support environment.</p> <p>The researchers were also made aware of the importance of several clinical effectiveness and safety outcomes. Personal recovery was meaningful to advisors, who emphasized that it is an ongoing process rather than a finite goal that can be achieved: “You’re continuing on your wellness journey, you’re not turning your shoulder to services, you’re not self-sabotaging, you’re making positive movements in your own life.” This goes together with resilience, which an advisor described as the ability to successfully balance work, school, and more, especially during the COVID-19 pandemic. Social outcomes were also said to be valuable; for example, a good support system will work together with peer support to further benefit mental health.</p> <p>Although the relevance of clinical effectiveness of peer support was questioned because it is typically associated with services offered in clinical settings, some advisors conveyed the importance of assessing progress in a measurable way.</p> <p>Advisors were also cautious about how health care resource utilization would be interpreted, explaining that it can be difficult to capture the intent of accessing resources. For example, increased hospitalizations might indicate that someone is proactively reaching out for help or that they are in a crisis.</p> <p>In terms of safety outcomes, stigma was discussed by advisors, who</p>	Key Messages Summary Discussion Conclusion and Implication for Decision- or Policy-Making

Topic	Item	Report section
	<p>expressed that conversations around boundaries and confidentiality are necessary. They acknowledged that being recognized in a peer support setting (e.g., if individuals who attend the same school and support program recognize each other) or having private information unknowingly being overheard by friends or family (e.g., a discussion is accidentally overheard when accessing virtual peer support at home) is a concern for youth.</p> <p>In addition, advisors expressed that youth with lived experience should be involved in the co-creation of peer support program evaluation strategies: “Anything that deals in mental health needs to be informed or co-created with youth with lived experience.” Information collected for evaluation must also serve a clear purpose that is clearly communicated to youth. For example, not everyone feels comfortable answering questions on demographic data and/or sensitive information truthfully because of privacy concerns. Those involved in conducting evaluations must have a baseline of knowledge of what are the right questions to ask and what is not necessary: “Why is it important for us to know your sexual orientation versus your gender? Does that even matter? Why is it important to know if you’re an immigrant? There has to be a rationale to these questions and that’s how you build EDI into it. If that critical lens isn’t put, it’s not resolving anything and it’s creating further dissonance between research and participants.”</p> <p>Finally, conversations with advisors around equity, diversity, and inclusion helped further inform researchers’ discussions in this review. Advisors spoke about the importance of representation in all aspects of peer support programs. One way this can be achieved is by involving youth with lived experience in the co-design of evaluations so that they can inform programs and ensure that they align with and reflect the needs and identities of their users. Moreover, information collected by evaluations must serve a clear purpose that should be clearly communicated to youth, to prevent further dissonance between evaluators and peer support programs and participants.</p> <p>Sharing this knowledge with the research team allowed them to consider the evidence in the context of the wider experiences of youth who access and who offer peer support services.</p>	
<p><b>Discussion and conclusions</b></p>	<p>The successful involvement of youth advisors in this report is related to several factors. First, they were briefed on the objectives of the project and their role in a preliminary meeting. In addition, a discussion guide was shared with them before the teleconference meeting to ensure that they felt comfortable with the topics and questions that would be discussed. Advisors were also supported by a patient engagement officer, who helped facilitate their participation in the project. Importantly, the research team was receptive to their participation and interested in learning from their experiences and insights.</p> <p>Hearing about service users’ and peer support workers’ experiences with peer support programs was helpful for the research team to understand the processes underlying the use of peer support. For the clinical effectiveness and safety review, perspectives shared helped guide discussions about relevance, meaning, and nuances of the outcomes of interest. Similarly, advisors’ experiences completing and/or developing peer support program evaluation tools provided an understanding of the evaluation strategies from the point of view of individuals being asked to participate in and/or co-create evaluation strategies.</p>	<p>Summary Peer Support Youth Advisor Engagement</p>

Topic	Item	Report section
<p><b>Reflections and critical perspective</b></p>	<p>The advisors were highly engaged and candid in their conversations with the researchers. They were able to reflect on the questions being asked in advance of the meetings and felt comfortable articulating their thoughts and sharing their perspectives during the teleconference. CADTH researchers were open and inquisitive, and asked thoughtful questions to add context in their analyses of the review findings.</p> <p>The value in this approach – to engage different individuals at different time points in the project – allowed us to capture multiple perspectives and a diversity of needs rather than a singular perspective.</p> <p>The lack of available clinical evidence on peer support effectiveness and safety, especially in a Canadian context, meant there was less information on which advisors could comment. However, advisors were able to reflect on their experiences and share their knowledge and understandings about how outcomes that are relevant to them have been or might be used to assess program effectiveness and safety.</p> <p>Although we learned from a diversity of experience, only 4 individuals were engaged in this project, which is not representative of all youth who experience an inequitable burden of mental health challenges and access to inclusive mental health services and cannot fully capture the diversity of experience of youth who receive or provide peer support. Similarly, youth advisors needed access to a telephone or internet to take part in a scheduled conversation with CADTH; this might have excluded some voices.</p>	<p>Summary of Clinical Evidence</p>

## Study Design

To inform the design of this Clinical Review, we conducted preliminary scoping searches of existing published literature and produced a CADTH reference list.<sup>25</sup> As the name indicates, a CADTH reference list is a published report which lists some of the relevant evidence regarding a specific health care topic. CADTH published a reference list regarding the clinical effectiveness and safety of structured peer support interventions for the management of mental health concerns among young people (aged 10 to 25 years) in January 2021. We searched for HTAs, SRs, primary studies, and evidence-based guidelines published between 2010 and December 2020 to include on the reference list. Because the CADTH report was produced to inform the scope of subsequent evidence evaluations, it had broad inclusion criteria compared with this report. Young people between the ages of 10 and 25 years and various types of peer support programs were eligible for inclusion and all mental health conditions were considered for the reference list.<sup>25</sup> In the reference list, we identified 2 SRs<sup>26,27</sup> and 1 cross-sectional study<sup>28</sup> comparing the clinical effectiveness of various peer support interventions for the management of mental health concerns in young people.<sup>25</sup> We identified no HTAs or evidence-based guidelines. The Mental Health Commission of Canada has published guidelines for practice and training of peer support which underscore the importance of shared lived experience in peer support workers and that of the recovery-based model of care.<sup>12</sup>

One of the SRs (Rose-Clarke et al. [2019]<sup>26</sup>) identified during scoping considered a wide range of peer-facilitated community-based interventions for several physical and mental health conditions for adolescents in low- and middle-income countries. The authors considered various peer-facilitated strategies, such as peer counselling, peer education, and peer activism. The review included 7 studies and found inconsistent results regarding the effectiveness of peer-facilitated interventions in improving adolescent mental health.

The second SR (Ali et al. [2015]<sup>27</sup>) included online peer-to-peer support using tools such as online chat rooms and collaborative virtual environments for youth with mental health conditions. The overall results across studies were inconsistent, and the SR highlighted the lack of high-quality studies. In both SRs, the peer-facilitated and peer-to-peer support interventions did not fulfill the definition of formal peer support provided by trained youth with lived experience. Lastly, 1 cross-sectional study<sup>28</sup> surveyed lesbian, gay, bisexual, transgender, and queer (LGBTQ) youth who attended Hatch Youth in Texas, USA for various durations. Hatch Youth is a drop-in centre for LGBTQ youth (irrespective of their mental health status) to improve their mental health and to lower behavioural risk outcomes. Each meeting consisted of a social hour, consciousness-raising hour, and a youth-led peer support hour. The peer support session involved group discussions on various topics (e.g., bullying, coming-out, self-awareness) and were facilitated by trained volunteers from the community (shared lived experience unclear). The study found that longer participation in Hatch Youth was associated with a decrease in self-reported depressive symptomatology, increased self-esteem, and improved coping ability.<sup>28</sup> Two other SRs, published in 2021 and 2020, examined the effectiveness of group<sup>1</sup> and one-to-one<sup>29</sup> peer support interventions for adults with mental health concerns, respectively. The SRs highlighted the inconsistencies in the definition of “peer support” used by studies. Heterogeneity in population (spectrum of mental health disorders), intervention (varying definitions of peer support), and outcomes (varied depending on the mental health condition) were notable.

The informal scoping and the reference list<sup>25</sup> show there is no up-to-date syntheses of evidence assessing the effectiveness and/or safety of formal peer support programs among youth. Accordingly, we surmised that an overview of SRs or an update of existing SRs would not be an appropriate nor feasible method to inform the research questions because existing reviews were either not up-to-date or did not match our review focus. Therefore, we conducted a de novo SR of relevant primary studies to synthesize the evidence regarding the clinical effectiveness and safety of formal peer support programs compared with interventions without peer support for the management of mental health concerns among youth.

## Methods

### Review Conduct

For the current SR, we followed a protocol that was written a priori. We prospectively registered the protocol for the Clinical Review in the international repository PROSPERO (registration number: CRD42022299556). We made no protocol amendments during the review. We have reported the Clinical Review in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) 2020 statement.<sup>30</sup>

### Literature Search Strategy

The literature search for clinical studies was performed by an information specialist using a peer-reviewed search strategy according to the PRESS Peer Review of Electronic Search Strategies checklist.<sup>31</sup> The complete search strategy is presented in [Appendix 1](#).

Published literature was identified by searching the following bibliographic databases: MEDLINE All (1946 $\infty$ ) via Ovid, Embase (1974 $\infty$ ) via Ovid, the Cumulative Index to Nursing and Allied Health Literature (CINAHL) via EBSCO, PsycInfo via Ovid, Cochrane Central Register of Controlled Trials via Ovid, and Scopus. All Ovid searches, with the exception of Cochrane Central Register of Controlled Trials, were run simultaneously as a multi-file search.

Duplicates were removed using Ovid deduplication for multi-file searches, followed by manual deduplication in Endnote. The search strategy comprised both controlled vocabulary, such as the National Library of Medicine’s MeSH (Medical Subject Headings), and keywords. The main search concepts were peer support and youth with mental health concerns. Clinical trials registries searched were the US National Institutes of Health’s clinicaltrials.gov, WHO’s International Clinical Trials Registry Platform (ICTRP) search portal, Health Canada’s Clinical Trials Database, and the European Union Clinical Trials Register.

CADTH-developed search filters were applied to limit retrieval to health technology assessments, systematic reviews, meta-analyses, or network meta-analyses, and any types of clinical trials or observational studies. The search was limited to English- and French-language documents published between January 1, 2006, and December 17, 2021. Conference abstracts were excluded from the search results.

Regular alerts updated the database literature searches until the publication of the final report. The clinical trials registries search was updated before the completion of the stakeholder feedback period.

Grey literature (literature that is not commercially published) was identified by searching sources listed in relevant sections of the Grey Matters: A Practical Tool For Searching Health-Related Grey Literature checklist,<sup>32</sup> which includes the websites of regulatory agencies, HTA agencies, clinical guideline repositories, systematic review repositories, patient-related groups, and professional associations. Google was used to search for additional internet-based materials. These searches were supplemented by reviewing bibliographies of key papers (relevant SRs and the included primary studies) and through contacts with experts and industry, as appropriate. The grey literature search was updated before the completion of the stakeholder feedback period. See [Appendix 1](#) for more information on the grey literature search strategy.

## Study Eligibility Criteria

[Table 2](#) shows the study eligibility criteria for the clinical research questions.

## Screening and Selecting Studies for Inclusion

We considered the following criteria when selecting studies for inclusion:

- For this review, youth were defined as individuals aged between 12 and 25 years because this age range overlaps with that of youth mental health hubs (which often include peer support) in several Canadian provinces and the time period when mental health concerns often first appear.<sup>36</sup>
- Youth could be of any gender, sexuality, or ethnicity. Studies in all settings were eligible for inclusion. There were no restrictions placed on setting or severity of symptoms.
- Studies of wider populations (i.e., including children and/or adults) were included if:
  - findings for youth could be isolated (e.g., in subgroup analyses)
  - at least 80% of the sample consisted of youth
  - the mean and mean  $\pm$  1.5 standard deviation (SD) age fell between 12 and 25 years.
- Peer support workers could be of any age.

**Table 2: Selection Criteria for Clinical Research Questions**

Criteria	Inclusion	Exclusion
<b>Population</b>	<p>Youth (aged between 12 and 25 years) with mental health concerns (including but not limited to depression, anxiety, suicidality, eating disorders, posttraumatic stress disorder) either self-identified or formally diagnosed.</p> <p><b>Subgroups of interest:</b></p> <ul style="list-style-type: none"> <li>• age</li> <li>• PROGRESS-Plus factors,<sup>23,33</sup> including but not limited to place of residence; race, ethnicity, culture, or language; gender or sex; and socioeconomic status</li> <li>• mental health condition (e.g., depression, eating disorders)</li> <li>• type of peer support (e.g., 1:1 vs. group, in person vs. virtual).</li> </ul>	<ul style="list-style-type: none"> <li>• Age &lt; 12 years or &gt; 25 years.</li> <li>• Substance use disorders or addictions as the primary concern and reason for delivering or accessing peer support.</li> <li>• Neurodevelopmental disorders such as attention-deficit/hyperactivity disorder, autism, and learning disabilities as the primary concern and reason for delivering and accessing peer support.</li> </ul>
<b>Intervention(s)</b>	Formal peer support programs <sup>a</sup>	<ul style="list-style-type: none"> <li>• Peer support programs that do not fulfill the definition (e.g., do not include formal training, shared lived experience).</li> <li>• Support in the form of peer communication, peer-to-peer support (mutual support), or support helplines.</li> </ul>
<b>Comparator(s)</b>	Interventions without formal peer support (e.g., informal or unstructured peer support interventions, support helplines, self-help group); no intervention (including waitlist); no comparator	Not applicable
<b>Outcomes</b>	<p><b>Question 1</b></p> <p>Any outcomes in the following domains, irrespective of the follow-up duration and outcome ascertainment method:</p> <ul style="list-style-type: none"> <li>• personal recovery (e.g., self-efficacy, reduced stigma, HRQoL, coping strategies, client goal achievement, empowerment)</li> <li>• clinical outcomes (e.g., recovery rates, burden of symptoms)</li> <li>• health care resource utilization (e.g., hospitalizations, ED visits, need for other interventions)</li> <li>• social outcomes (e.g., employment, education, stable housing, social support, social isolation).</li> </ul> <p><b>Question 2</b></p> <p>Any outcomes in the following domains, irrespective of the follow-up duration and ascertainment method:</p> <ul style="list-style-type: none"> <li>• treatment-emergent adverse events (e.g., worsening of symptoms), over-dependence, withdrawal or</li> </ul>	Not applicable

Criteria	Inclusion	Exclusion
	discontinuation from the program, adherence, other harms (e.g., stigmatization, increased shame). <sup>b</sup>	
<b>Study designs</b>	Randomized and non-randomized study designs, including: <ul style="list-style-type: none"> <li>• randomized controlled trials</li> <li>• non-randomized controlled clinical trials</li> <li>• cohort studies (controlled or uncontrolled)</li> <li>• case-control studies</li> <li>• before-and-after studies (controlled or uncontrolled)</li> <li>• interrupted time series studies (controlled or uncontrolled)</li> </ul>	<ul style="list-style-type: none"> <li>• Cross-sectional studies</li> <li>• Case reports</li> <li>• Case series</li> <li>• Qualitative studies and qualitative evidence from mixed-methods studies</li> <li>• Evidence syntheses</li> <li>• Protocols and trial registers</li> <li>• Editorials, letters, and commentaries</li> <li>• Studies of any design published as conference abstracts, presentations, thesis documents, or preprints</li> </ul>
<b>Time frame</b>	2006 to present <sup>c</sup>	Before 2006

ED = emergency department; HRQoL = health-related quality of life.

<sup>a</sup>Formal peer support programs are those delivered by formal community- or health care-based organizations that offer peer support to peer service users by trained peer support workers who share lived experience relating to mental health.

<sup>b</sup>If the included studies report on outcomes assessed in peer support workers, those findings will be extracted and summarized.

<sup>c</sup>Kirby report,<sup>34</sup> the first national report on the mental health system of Canada, was published in 2006. The recovery model, necessary for peer support, proposed by the report was widely accepted and the report led to significant changes in Canadian mental health strategies.<sup>35</sup>

- Peer support could be offered on a one-to-one or on a group basis, be in person or virtual (e.g., video or telephone chat), and synchronous (in real time; e.g., in-person sessions, video chat) or asynchronous (not in real time; e.g., text messaging).
- Mental health concerns could be of any severity.
- Studies that had a larger scope than only youth with mental health concerns (e.g., studies of youth with both mental health concerns and substance use disorders) were included if relevant findings related to peer support primarily for mental health concerns were reported in isolation (e.g., in a subgroup).
- Peer service users could receive concurrent interventions (e.g., psychotherapy, pharmacotherapy).
- For the outcomes, all instruments and all time points were eligible for inclusion.
- Studies not meeting the eligibility criteria outlined in [Table 2](#) or published in a language other than English or French were excluded.

## Study Selection

Two reviewers independently screened titles and abstracts for relevance to the clinical research questions following the liberal accelerated approach (i.e., a single reviewer's decision was required for inclusion, and 2 reviewers' decisions for exclusion).<sup>37,38</sup> We retrieved full-text articles that at least 1 reviewer judged to be potentially relevant and independently assessed these for possible inclusion based on the predetermined selection criteria ([Table 2](#)). We used Distiller SR (Evidence Partners, Ottawa, Canada) to facilitate study selection. One reviewer scanned the reference lists of the included studies and relevant SRs to locate additional studies of potential interest. Two reviewers independently reviewed full text of all selected articles. The 2 reviewers compared their chosen included and excluded studies and discussed disagreements until consensus was reached, involving the opinion of a third reviewer, if

needed (i.e., methodologist, content expert). We presented the study selection process in a flow chart. We had planned to contact study authors if any additional information was needed to determine the relevancy of any studies. However, this ended up not being necessary. We posted a list of studies selected for inclusion in the Clinical Review to the CADTH website for stakeholder review and feedback for 10 business days and planned to review any additional studies identified for potential inclusion. No additional studies were identified. We screened studies identified through search alerts using the aforementioned process and incorporated those meeting the selection criteria of the review into the analysis if they were identified before the end of the stakeholder feedback period for the draft report. We had planned to describe studies identified after the last stakeholder feedback period in the discussion, with a focus on comparing their results with those obtained from the synthesis of earlier reports included in the review. However, no additional studies were identified after stakeholder feedback period.

### Data Extraction

A single reviewer performed data extraction with independent verification for accuracy and completeness by a second reviewer. Reviewers extracted data directly into Microsoft Office Word. Because there were only 2 included studies, we deemed it not possible to truly pilot the form, and instead edited it iteratively as needed. The information extracted included characteristics of the study (i.e., design, setting, funding source), population (i.e., inclusion and exclusion criteria, number of participants, age, sex and/or gender, sexuality, race and/or ethnicity, mental health concerns), intervention (i.e., details of the program, number of sessions, selection and training of peer supporters) and comparators, outcomes and their ascertainment (e.g., instruments used for measurement), length of follow-up and time points of outcome measurement, and results data regarding the outcomes and the subgroups of interest. Because 1 of the included trials was published in 2 reports, we extracted data from the main publication (Conley et al.)<sup>39</sup> and only additional information and any data related to the 2-month follow-up were extracted from Hundert et al.<sup>40</sup>

We extracted all data that were compatible with each relevant outcome domain at any duration of follow-up, including measures of treatment effects (e.g., mean changes in outcome scores from baseline to follow-up), and any results of between-group statistical tests reported on those measures. We made no assumptions about the presence or absence of an outcome if it was not reported in the study. For example, we did not assume that no adverse events occurred only because the authors did not report on any. We did not make any attempts to contact study authors because we did not deem any relevant data to be unclear or missing.

### Risk-of-Bias Appraisal

Two independent reviewers assessed outcome-level risk of bias (or for groups of outcomes believed to be at similar risk of bias, for feasibility reasons) of RCTs from the intention-to-treat perspective using version 2 of the Cochrane risk-of-bias tool for randomized trials (RoB 2).<sup>41</sup> Because there were only 2 included studies, we did not pilot the RoB form. The RoB 2 assessment tool is structured into 5 domains to assist in evaluating biases arising from the randomization process, deviations from intended interventions, missing outcome data, measurement of the outcome, and selection of the reported result.<sup>41</sup> For each domain, we assigned a judgment of low risk of bias, high risk of bias, or some concerns about risk of bias. We then judged the overall risk of bias of each trial as low risk of bias, some concerns about risk of bias, or high risk of bias based on the domain-level determinations. We predicted the

direction of the potential risk of bias when possible and provided a rationale for decisions about the risk of bias for both the domain-level and overall assessments.

Reviewers resolved disagreements in the risk of bias for the domain-level and overall assessments through discussion. We did not exclude studies from the review based on the results of the critical appraisal. However, we incorporated the critical appraisal results into assessments of the certainty in the body of evidence for each outcome comparison.

## Data Analysis and Synthesis

### *Narrative Synthesis*

We considered factors such as clinical heterogeneity (i.e., differences in study setting, populations, and interventions), methodological heterogeneity across the included trials, and the reported outcome measures in our decision on whether to pool findings statistically via a meta-analysis. Because we included only 2 trials in this review and many of the outcomes were reported by a single trial, it did not seem appropriate nor informative to conduct a statistical synthesis. Instead, we conducted a narrative synthesis of the results reported in the trials considering available guidance.<sup>42</sup> The narrative synthesis included the presentation of study characteristics and findings by outcome within summary tables, together with descriptions in the main text. To synthesize study findings, we first grouped trials by outcome domain and time point of interest for the comparisons between peer support interventions and control groups. We then developed a preliminary synthesis by organizing the findings and identifying patterns in the size and direction of reported effects. We evaluated the within and between-study relationships and discussed the findings about the direction and magnitude of any observed effects. We interpreted the findings with consideration for the differences in instruments used across the studies. We chose to synthesize data at the 3 reported time points; namely, post-intervention, post-booster (available in 1 study), and at the longest follow-up. We considered the sample size of the included trials and their risk of bias in determining the relative weight of each study's findings in the overall conclusion. However, the included studies were both similar in sample size (both small,  $N < 120$ ) and had high risk of bias; therefore, their findings were considered to contribute equally to the overall conclusion. Reviewers then came to consensus on having a single overall conclusion across trials for each outcome comparison (i.e., favouring either intervention or comparator, little to no difference).

When findings across the trials were heterogeneous (especially in terms of direction of observed effects), we had planned to explore this heterogeneity using within- and between-study subgroup analyses. No within-study subgroup analyses were reported in the included trials, and the small number of trials representing various subgroups precluded drawing credible conclusions about the potential sources of heterogeneity. Therefore, we drew conclusions based on the main comparison and did not present separate conclusions by subgroups of the population or intervention. Instead, we considered this unexplained heterogeneity in our assessments of the certainty of the evidence.

We had planned to assess the risk of small study bias for meta-analyses containing at least 10 studies of variable size,<sup>43</sup> but because we only included 2 trials and did not perform a meta-analysis, we were unable to complete this assessment.

### *Certainty of the Evidence*

Two independent reviewers rated the certainty of the body of evidence for each outcome comparison using the methods of the Grading of Recommendations Assessment,

Development and Evaluation (GRADE) working group.<sup>44,45</sup> Reviewers discussed discrepancies until consensus was reached. We had planned to contact study authors if any additional information was needed to complete the GRADE assessments; however, this did not end up being necessary.

Following the GRADE approach, the included RCTs started as high certainty evidence.<sup>45,46</sup> We then rated down the certainty in treatment effect estimates for concerns related to risk of bias, inconsistency across studies, indirectness, imprecision of effects, and/or publication bias.<sup>45,46</sup> We considered the possibility of rating up the certainty of evidence, but this was not appropriate for any outcome comparison.<sup>45,46</sup> Ultimately, the GRADE approach resulted in an assessment of the certainty of a body of evidence in 1 of 4 grades: high, moderate, low, or very low.<sup>47</sup> Because the certainty in the evidence decreased, so did our confidence that the estimate of effect from the included study was close to that of the true effect.<sup>47</sup> We employed a non-contextualized approach whereby we rated the certainty that a non-null effect was present.<sup>48</sup>

The results of GRADE assessments are reported in the Summary of Findings tables in [Appendix 2](#), which include notes that justify all decisions to rate down the certainty of the evidence for any given outcome comparison. When providing summaries of the evidence in the text, we used the word “may” for low certainty evidence and “probably” or “likely” for moderate certainty evidence.<sup>49</sup> We describe very low certainty evidence as “very uncertain.”<sup>49</sup>

## Results

### Quantity of Research Available

We identified 5,357 unique citations via the electronic literature search. We excluded 5,168 of these records during title and abstract screening. We retrieved 8 additional records from the grey literature search. After full-text screening of 197 potentially relevant articles, we excluded 194 records and included 3 publications<sup>39,40,50</sup> (reporting results from 2 RCTs). No additional unique studies were identified during the stakeholder review of the included studies nor from subsequent search alerts. A PRISMA flow chart<sup>30</sup> ([Appendix 2, Figure 1](#)) shows the study selection process. We have included a list of excluded studies with the reason for exclusion in [Appendix 3](#).

### Trial and Participant Characteristics

We identified 2 open-label RCTs (reported in 3 publications)<sup>39,40,50</sup> that were included in this Clinical Review. Conley et al. (2020)<sup>39</sup> evaluated a peer support program among students from 3 university campuses in the US. A second publication,<sup>40</sup> about the same trial (Hundert et al. [2021]) reported results from a subset of participants who were followed for a longer period. Mulfinger et al. (2018)<sup>50</sup> assessed the effectiveness of a peer support intervention among adolescent psychiatric patients in Germany. [Table 3](#) shows the overview of characteristics of the included trials. We have included a detailed table of characteristics of the included trials in [Table 8 \(Appendix 2\)](#). Throughout this report, we have used the term “mental health concerns” to denote self-reported or formally diagnosed mental health concerns. However, if the included studies used the term “mental illness” to describe the study population, we retained that terminology.

**Table 3: Overview of Characteristics of Included Clinical Trials**

Author (year), <sup>a</sup> study design, setting, funding source	Participant characteristics	Intervention and comparator	Outcomes (ascertainment method), length of follow-up
<p>Conley et al. (2020)<sup>39</sup>                      Associated: Hundert et al. (2021)<sup>40</sup>                      RCT                      3 university campuses in the US                      Funding not reported</p>	<p>118 university students who self-identified as having a mental health illness or mental health challenge</p> <p>Participants were 82% female; mean age = 21.4 (SD = 6.6) years; primarily White (69%); 67% heterosexual; with clinical depression (59%) and/or anxiety (69%).<sup>b</sup></p>	<p>Honest, Open, Proud–College (HOP-C), which aimed to reduce self-stigma about mental illness and help participants to make decisions about disclosure.</p> <p><b>Format:</b> 3-week peer-led, manualized,<sup>52</sup> in-person group program with weekly 2-hour lessons; 1 booster workshop 2 to 3 weeks later.</p> <p><b>Facilitators:</b> students who identified as living with mental health concerns and completed a 2-day training.</p> <p><b>Comparator:</b> Waitlist</p>	<p>Self-stigma (SSMIS-SF); stress and coping (Stigma Stress Scale); self-efficacy about disclosure (single item); depression symptoms (CES-D-10); anxiety symptoms (GAD-7). No safety outcomes reported.</p> <p>All outcomes assessed at baseline (T0), post-program (T1), post-booster (T2). 2-month follow-up (T3) reported in a population subset (n = 55).<sup>40</sup></p>
<p>Mulfinger et al. (2018)<sup>50</sup>                      RCT                      Inpatient wards and outpatient psychiatry clinics in Germany                      Academic and foundation funding</p>	<p>98 adolescents aged 13 to 18 years with at least 1 self-reported current axis I or axis II mental health concern and a moderate or severe level of disclosure-related distress.</p> <p>Participants were 69% female; mean age = 15.8 (SD = 1.1) years; 95% born in Germany; with clinical depression (59%) and/or anxiety (17%).<sup>b</sup></p>	<p>Honest, Open, Proud (HOP) which aimed to reduce self-stigma about mental illness and help participants to make decisions about disclosure.</p> <p><b>Format:</b> 3-week peer-led, manualized,<sup>52</sup> in-person group program with weekly 2-hour lessons.</p> <p><b>Facilitators:</b> young adults with lived experience of mental illness who had completed training and a young mental health professional.</p> <p><b>Comparator:</b> TAU</p>	<p>Stigma stress (Stigma Stress Scale); HRQoL (KIDSCREEN-10); empowerment (Empowerment Scale); disclosure-related distress (4-item questionnaire); hopelessness (Beck Hopelessness Scale); self-stigma (ISMI-SF and SSMIS-SF); help-seeking (General Help-Seeking Questionnaire), recovery (Self-Identified Stage of Recovery Scale); secrecy and social withdrawal (Link Stigma Coping Orientation Scales); depressive symptoms (CES-D)</p> <p>All outcomes assessed at baseline (T0), post-program (T1), and at 6-months follow-up (T2).</p>

CES-D = Center for Epidemiologic Studies Depression; CES-D-10 = Center for Epidemiologic Studies Depression Scale, 10-item version; GAD = Generalized Anxiety Disorder 7-Item; ISMI-SF = Internalized Stigma of Mental Illness-Short Form; RCT = randomized controlled trial; SD = standard deviation; SSMIS-SF = Self-Stigma of Mental Illness Scale–Short Form; TAU = treatment as usual.

<sup>a</sup>Studies appear in reverse chronological order by date of publication.

<sup>b</sup>Detailed demographic characteristics of the study population is presented in [Table 8](#).

**Population**

In the study by Conley et al.,<sup>39</sup> university students (aged ≥ 18 years) with a self-identified mental health challenge or mental illness were included. The study by Mulfinger et al.<sup>50</sup> included adolescent psychiatric patients aged 13 to 18 years with at least 1 self-reported current axis I or axis II disorder (e.g., psychiatric illnesses such as anxiety, depression; personality disorders), and a moderate (or severe) level of self-reported disclosure-related distress. Across the trials, 216 participants were included (Conley et al.,<sup>39</sup> N = 118; Mulfinger et al.,<sup>50</sup> N = 98). Across the studies, depressive symptoms were reported in 59.1%<sup>50</sup> to

85.5%<sup>39</sup> of participants, while 17.3%<sup>50</sup> to 69.2%<sup>39</sup> reported anxiety symptoms. The authors did not describe other mental health concerns potentially experienced by participants. The population in the trial by Conley et al.<sup>39</sup> was mostly female (82.2%), White (68.6%) and heterosexual (66.9%). In the Mulfinger et al. study,<sup>50</sup> most participants were female (69.3%), born in Germany (94.8%), and with a mean of 22.5 (SD = 32.2) months since their first psychiatric diagnosis.

### *Intervention and Comparators*

The peer support intervention in both of the included trials<sup>39,50</sup> was the Honest, Open, Proud (HOP) program.<sup>51</sup> HOP was a peer-led, in-person group intervention developed to empower participants with disclosing their mental health concerns and to reduce their mental health-related self-stigma. HOP was originally developed for adults but was later adapted for adolescents. This manualized program covered 5 themes in three 2-hour sessions over the course of 3 weeks. These included beliefs and attitudes about having a mental illness, the advantages and disadvantages of disclosing one's mental illness, recognizing the right people and setting for disclosure, personal disclosure and telling one's own story, and about the role of solidarity and peer support. The sessions included vignettes, role plays, exercises on self-reflection, and group discussions. Conley et al.<sup>39</sup> evaluated the college version of HOP (HOP-C), which was adapted for university students. In the HOP-C program, the first session included a discussion on the concepts of identifying as an individual with mental illness and the pros and cons of disclosure. In the second session, different ways of disclosure, including social media disclosure, were discussed; in the third session, participants were asked to craft personal disclosure stories and to practice telling their story. The HOP-C program included an additional booster workshop session given 2 to 3 weeks later.<sup>39</sup> The session manual and a workbook for the participants are available online.<sup>51,52</sup>

The sessions were led by trained individuals who had shared lived experience of mental illness. The peer facilitators were youth or young adults who underwent a 2-day training course. In the Mulfinger et al. study, a young mental health professional was also present for the sessions.<sup>50</sup> Because this study was conducted in Germany, the program was adapted to a German context.

The comparators were treatment as usual (TAU)<sup>50</sup> or a waitlist control.<sup>39,40</sup> In the Mulfinger et al. study, participants in both groups received TAU, which included regular care from the psychiatric clinic.<sup>50</sup> Additional details of usual treatment were unclear from the publication. In the Conley et al. study, HOP-C was compared with a waitlist control group, who were offered the program at a later point in time. In the HOP-C group, 41.3% (n = 26) of participants were reported as receiving therapy or counselling and 57.1% (n = 36) were reported as receiving medications at the time of the study; 45.5% (n = 25) and 54.5% (n = 30) of participants in the waitlist group were reported as receiving therapy or counselling and medications, respectively, at the time of the study.<sup>39,40</sup>

### *Outcomes*

The included trials assessed several self-reported outcomes, mostly related to personal recovery. Among them, self-stigma and stigma stress were reported in both included trials.<sup>39,40,50</sup> Other personal recovery outcomes, such as secrecy and disclosing mental illness (e.g., self-efficacy about disclosing mental illness, attitudes to disclosure), health-related quality of life (HRQoL), self-identified stage of recovery, empowerment, feelings of hopelessness, social withdrawal, and help-seeking, were included only in the Mulfinger et al. trial.<sup>50</sup> Clinical outcomes, such as symptoms of anxiety (Conley et al.)<sup>39,40</sup> and depression

(both trials),<sup>39,40,50</sup> were included. No outcomes related to health care resource utilization or social outcomes were reported. Detailed descriptions of all outcome measures are available in [Table 33](#) in [Appendix 2](#). No relevant studies were identified that reported on harms related to peer support. The authors of the included studies did not report on the safety of peer support workers.

Both trials measured the outcomes at baseline, after the HOP sessions (post-intervention), and at follow-up.<sup>39,50</sup> The follow-up time ranged from 6 weeks after baseline (3 weeks after the sessions) in the Conley et al. trial<sup>39</sup> to around 2 months after the sessions (5 weeks after booster) in the Mulfinger et al. trial.<sup>50</sup> In the Conley et al. trial, the intervention included an additional booster session 3 weeks after completion of the initial program; an additional outcome assessment was conducted after this booster session (post-booster).<sup>39</sup>

### Risk-of-Bias Appraisal

[Table 4](#) shows a summary of the risk-of-bias assessments for the 2 RCTs.<sup>39,40,50</sup> [Table 9](#) in [Appendix 2](#) shows the detailed risk-of-bias assessments. Overall, we assessed the included RCTs to have a high risk of bias.

**Table 4: Risk of Bias Summary – RCTs (RoB 2, Effect of Assignment to the Intervention)<sup>41</sup>**

Study citation	Bias arising from the randomization process	Bias due to deviations from intended interventions	Bias due to missing outcome data	Bias in measurement of the outcome	Bias in selection of the reported result	Overall risk of bias
Conley et al. (2020) <sup>39</sup> ; Hundert et al. (2021) <sup>40</sup>	All outcomes: Some concerns [?]	All outcomes: Low risk	All outcomes: High risk [?]	All outcomes: High risk [+]	All outcomes: Some concerns [ND]	All outcomes: High risk [?]
Mulfinger et al. (2018) <sup>50</sup>	All outcomes: Low risk	All outcomes: Low risk	All outcomes: High risk [?]	All outcomes: High risk [+]	All outcomes: Some concerns [ND]	All outcomes: High risk [?]

RCT = randomized controlled trial; RoB 2 = version 2 of the Cochrane Risk of Bias Tool.<sup>41</sup>

Note: the predicted direction of bias arising from each domain and the overall risk of bias is indicated in square brackets: [+] suggests the bias may favour the intervention; [-] suggests the bias may favour the comparator; [ND] suggests the bias may influence the result toward the null; [?] suggests the predicted direction is unclear.

For the risk of bias arising from the randomization process, we judged the Conley et al. study<sup>39,40</sup> to have some concerns because the randomization method at 1 site may not have been adequate. While 2 universities appeared to have used adequate randomization methodologies, a third used “blindly shuffled pieces of paper”; this methodology may not have been adequate and it is possible that the allocation of participants was revealed before their assignment to treatment groups.<sup>39,40</sup> The magnitude and direction of bias this may have been introduced is not clear. There were no serious concerns about risk of bias due to deviation from the intended interventions. All outcomes reported in both RCTs<sup>39,40,50</sup> were at a high risk of bias due to missing outcome data. In the Conley et al. study, data from up to 33% of participants in the HOP group and 19% of in the control group were missing at the longest follow-up; it is possible that the high and imbalanced losses to follow-up were at least in part related to perceived lack of efficacy in the HOP group. There was also no evidence to indicate that the results were not biased by missing outcome data (e.g., sensitivity analyses). Similarly, in the Mulfinger et al. study, data from 22% of participants were missing in both groups.<sup>50</sup> We also judged both RCTs<sup>39,40,50</sup> to be at a high risk of bias in measurement of

the outcome because all outcomes were self-reported by the study participants who were aware of their treatment allocation, and it was possible that this knowledge influenced the outcome assessment. Although it is possible that response of participants in both groups were influenced by their allocation, it is likely that this risk favoured the intervention (HOP or HOP-C) because it is possible that the participants assigned to the intervention group might have been optimistic of the effects of the intervention. Published protocols were not available for either of the studies; therefore, it was unclear if data for all outcomes were analyzed in accordance with a pre-specified analysis plan that was finalized before unblinding of outcome data. However, the Mulfinger et al. study<sup>50</sup> was registered (NCT02751229) and all reported outcomes were pre-specified. The predicted direction of the risk of potential bias in selection of the reported result is unclear for both trials.

### Data Analysis and Synthesis

[Table 5](#) shows a high-level overview of the findings and certainty of evidence assessments for each outcome comparing the clinical effectiveness of peer support programs versus interventions without peer support (i.e., waitlist or TAU) for the management of mental health concerns among youth. [Appendix 2](#) presents detailed GRADE Summary of Findings tables which include notes that detail the reasons for rating down the certainty of evidence. We identified no relevant studies regarding the safety of peer support programs compared with interventions without peer support.

**Table 5: High-Level Overview of Trial Findings and GRADE Assessments**

Outcome	Time point	Number of participants (trials)	Certainty of the evidence (reasons)	Conclusion
<b>Personal recovery outcomes</b>				
Self-stigma	Post-intervention	191 (2 RCTs <sup>39,40,50</sup> )	<b>Very low</b> (a, b, c, d)	The findings for effect of formal peer support vs. control (waitlist or TAU) on self-stigma are inconsistent, and the evidence is very uncertain.
	Post-booster	97 (1 RCT <sup>39</sup> )	<b>Very low</b> (a, b, c, d)	There may be little to no difference in the effect of formal peer support vs. control (waitlist or TAU) on self-stigma, but the evidence is very uncertain.
	Longest follow-up	117 (2 RCTs <sup>40,50</sup> )	<b>Very low</b> (a, b, c, d)	The findings for effect of formal peer support vs. control (waitlist or TAU) on self-stigma at the longest follow-up are inconsistent, and the evidence is very uncertain.
Stigma stress	Post-intervention	84 (1 RCT <sup>50</sup> )	<b>Very low</b> (a, b, c, d)	Formal peer support may be favoured vs. TAU with respect to stigma stress at post-intervention, but the evidence is very uncertain.
	Longest follow-up	117 (2 RCTs <sup>40,50</sup> )	<b>Very low</b> (a, b, c, d)	The findings for effect of formal peer support vs. control (waitlist or TAU) on stigma stress at the longest follow-up are inconsistent, and the evidence is very uncertain.

Outcome	Time point	Number of participants (trials)	Certainty of the evidence (reasons)	Conclusion
Self-efficacy related to secrecy or disclosing mental illness	Post-intervention	107 (1 RCT <sup>39</sup> )	<b>Very low</b> (a, b, c, d)	There may be little to no difference in the effect of formal peer support vs. waitlist control on self-efficacy about disclosing mental illness post-intervention, but the evidence is very uncertain.
	Post-booster	97 (1 RCT <sup>39</sup> )	<b>Very low</b> (a, b, c, d)	Formal peer support may be favoured vs. waitlist control with respect to self-efficacy about disclosing mental illness at post-booster, but the evidence is very uncertain.
	Longest follow-up	55 (1 RCT <sup>40</sup> )	<b>Very low</b> (a, b, c, d)	There may be little to no difference in the effect of formal peer support vs. waitlist control on self-efficacy about disclosing mental illness at 2 months follow-up, but the evidence is very uncertain.
Attitudes to disclosure	Post-intervention	84 (1 RCT <sup>50</sup> )	<b>Very low</b> (a, b, c, d)	Formal peer support may be favoured vs. TAU with respect to attitudes to disclosure post-intervention, but the evidence is very uncertain.
	Post-booster	No trials were identified	<b>NA</b>	No trials were identified containing data on attitudes to disclosure at post-booster follow-up.
	Longest follow-up	62 (1 RCT <sup>50</sup> )	<b>Very low</b> (a, b, c, d)	Formal peer support may be favoured vs. TAU with respect to attitudes to disclosure at longest follow-up but the evidence is very uncertain.
Disclosure-related distress	Post-intervention	84 (1 RCT <sup>50</sup> )	<b>Very low</b> (a, b, c, d)	Formal peer support may be favoured vs. TAU with respect to disclosure-related distress post-intervention, but the evidence is very uncertain.
	Post-booster	No trials were identified	<b>NA</b>	No trials were identified containing data on disclosure-related distress post-booster follow-up.
	Longest follow-up	62 (1 RCT <sup>50</sup> )	<b>Very low</b> (a, b, c, d)	Formal peer support may be favoured vs. TAU with respect to disclosure-related distress at longest follow-up but the evidence is very uncertain.
Secrecy	Post-intervention	84 (1 RCT <sup>50</sup> )	<b>Very low</b> (a, b, c, d)	Formal peer support may be favoured vs. TAU with respects to reducing secrecy post-intervention but the evidence is very uncertain.
	Post-booster	No trials were identified	<b>NA</b>	No trials were identified containing data on secrecy at post-booster follow-up.

Outcome	Time point	Number of participants (trials)	Certainty of the evidence (reasons)	Conclusion
	Longest follow-up	62 (1 RCT <sup>50</sup> )	<b>Very low</b> (a, b, c, d)	Formal peer support may be favoured vs. TAU with respects to reducing secrecy at longest follow-up, but the evidence is very uncertain.
<b>Other personal recovery outcomes</b>				
HRQoL	Post-intervention	84 (1 RCT <sup>50</sup> )	<b>Very low</b> (a, b, c, d)	There may be little to no difference in the effect of formal peer support vs. TAU on HRQoL post-intervention, but the evidence is very uncertain.
	Post-booster	No trials were identified	<b>NA</b>	No trials were identified containing data on HRQoL at post-booster follow-up.
	Longest follow-up	84 (1 RCT <sup>50</sup> )	<b>Very low</b> (a, b, c, d)	Formal peer support may be favoured vs. TAU with respect to HRQoL at longest follow-up, but the evidence is very uncertain.
Empowerment	Post-intervention	84 (1 RCT <sup>50</sup> )	<b>Very low</b> (a, b, c, d)	There may be little to no difference in the effect of formal peer support vs. TAU on feeling of empowerment post-intervention, but the evidence is very uncertain.
	Post-booster	No trials were identified	<b>NA</b>	No trials were identified containing data on feeling of empowerment at post-booster follow-up.
	Longest follow-up	84 (1 RCT <sup>50</sup> )	<b>Very low</b> (a, b, c, d)	There may be little to no difference in the effect of formal peer support vs. TAU on feeling of empowerment at longest follow-up, but the evidence is very uncertain.
Social withdrawal	Post-intervention	84 (1 RCT <sup>50</sup> )	<b>Very low</b> (a, b, c, d)	Formal peer support may be favoured vs. TAU with respect to social withdrawal at post-intervention but the evidence is very uncertain.
	Post-booster	No trials were identified	<b>NA</b>	No trials were identified containing data on social withdrawal at post-booster follow-up.
	Longest follow-up	84 (1 RCT <sup>50</sup> )	<b>Very low</b> (a, b, c, d)	There may be little to no difference in the effect of formal peer support vs. TAU on social withdrawal at longest follow-up, but the evidence is very uncertain.
Help-seeking	Post-intervention	84 (1 RCT <sup>50</sup> )	<b>Very low</b> (a, b, c, d)	Formal peer support may be favoured vs. TAU with respect to help-seeking at post-intervention, but the evidence is very uncertain.

Outcome	Time point	Number of participants (trials)	Certainty of the evidence (reasons)	Conclusion
	Post-booster	No trials were identified	<b>NA</b>	No trials were identified containing data on help-seeking at post-booster follow-up.
	Longest follow-up	62 (1 RCT <sup>50</sup> )	<b>Very low</b> (a, b, c, d)	Formal peer support may be favoured vs. TAU with respect to help-seeking at 6 weeks follow-up, but the evidence is very uncertain.
Hopelessness	Post-intervention	84 (1 RCT <sup>50</sup> )	<b>Very low</b> (a, b, c, d)	There may be little to no difference in the effect of formal peer support vs. TAU on feelings of hopelessness post-intervention, but the evidence is very uncertain.
	Post-booster	No trials were identified	<b>NA</b>	No trials were identified containing data on feelings of hopelessness at post-booster follow-up.
	Longest follow-up	62 (1 RCT <sup>50</sup> )	<b>Very low</b> (a, b, c, d)	There may be little to no difference in the effect of formal peer support vs. TAU on feelings of hopelessness at longest follow-up, but the evidence is very uncertain.
Stage of recovery	Post-intervention	84 (1 RCT <sup>50</sup> )	<b>Very low</b> (a, b, c, d)	There may be little to no difference in the effect of formal peer support vs. TAU on self-identified stage of recovery at post-treatment but the evidence is very uncertain.
	Post-booster	No trials were identified	<b>NA</b>	No trials were identified containing data on self-identified stage of recovery at post-booster follow-up.
	Longest follow-up	62 (1 RCT <sup>50</sup> )	<b>Very low</b> (a, b, c, d)	Formal peer support may be favoured vs. TAU with respect to self-identified stage of recovery at follow-up, but the evidence is very uncertain.
<b>Clinical outcomes</b>				
Anxiety	Post-intervention	No trials were identified	<b>NA</b>	No trials were identified containing data on self-reported anxiety symptoms at post-booster follow-up.
	Post-booster	97 (1 RCT <sup>39</sup> )	<b>Very low</b> (a, b, c, d)	There may be little to no difference in the effect of formal peer support vs. TAU on self-reported anxiety symptoms post-intervention, but the evidence is very uncertain.
	Longest follow-up	55 (1 RCT <sup>40</sup> )	<b>Very low</b> (a, b, c, d)	There may be little to no difference in the effect of formal peer support vs. waitlist control on self-reported anxiety symptoms at follow-up, but the evidence is very uncertain.

Outcome	Time point	Number of participants (trials)	Certainty of the evidence (reasons)	Conclusion
Depression	Post-intervention	84 (1 RCT <sup>50</sup> )	<b>Very low</b> (a, b, c, d)	There may be little to no difference in the effect of formal peer support vs. TAU on self-reported depressive symptoms at post-intervention, but the evidence is very uncertain.
	Post-booster	97 (1 RCT <sup>39</sup> )	<b>Very low</b> (a, b, c, d)	There may be little to no difference in the effect of formal peer support vs. TAU on self-reported depressive symptoms post-booster, but the evidence is very uncertain.
	Longest follow-up	117 (2 RCTs <sup>40,50</sup> )	<b>Very low</b> (a, b, c, d)	The findings for effect of formal peer support vs. control (waitlist or TAU) on depressive symptoms at the longest follow-up are inconsistent, and the evidence is very uncertain.
<b>Health care resource utilization outcomes</b>				
Health care resource utilization outcomes	All time points	No trials were identified	<b>NA</b>	No trials were identified containing data on health care resource utilization.
<b>Social outcomes</b>				
Social outcomes	All time points	No trials were identified	<b>NA</b>	No trials were identified containing data on social outcomes.
<b>Safety</b>				
Safety	All time points	No trials were identified	<b>NA</b>	No trials were identified containing data on safety of peer support programs.

GRADE = Grading of Recommendations Assessment, Development and Evaluation; HOP = Honest, Open, Proud; HOP-C = Honest, Open, Proud–College; HRQoL = health-related quality of life; NA= not applicable; RCT = randomized controlled trial; TAU = treatment as usual.

Note: a = risk of bias; b = inconsistency; c = indirectness; d = imprecision.

### Question 1: Clinical Effectiveness

In this section, we present the findings for all the outcomes on the clinical effectiveness of peer support interventions from the included trials. Overall, we judged the certainty of the evidence regarding the clinical effectiveness of peer support programs compared with interventions without peer support on all outcomes across all time points to be very uncertain due to serious concerns across all GRADE domains aside from publication bias: risk of bias, inconsistency, indirectness, and imprecision. Therefore, readers should be mindful when interpreting the results that the true effect of formal peer support programs compared with interventions without peer support may be very different than the findings generated from these 2 trials. The trials were judged to be at high risk of bias due to missing outcome data and self-reported subjective outcomes that may have been affected by the open-label nature of the trials. We rated down our certainty in the evidence due to serious concerns about inconsistency because either only 1 trial was available that reported on the outcome (limited evidence of consistency) or because of inconsistent results between the trials (at post-intervention). We judged the results to be indirect because the effect of the single included intervention (HOP or HOP-C) is unlikely to be representative of the wide spectrum

of peer-support interventions that may exist for all youth (including populations that are disadvantaged) across the spectrum of mental health concerns. We also assessed the evidence as imprecise because of the small sample size in each comparison ( $n < 400$ ), which may have resulted in unstable estimates of effect. Although only 2 trials were included, we did not find any persuasive evidence of publication bias; instead, we consider it quite possible that many programs exist but are not formally evaluated and shared in the public domain. Therefore, we did not rate down in that domain for any outcome comparison.

## **Stigma**

### **Self-Stigma**

The authors of the 2 RCTs (in 3 publications)<sup>39,40,50</sup> reported on self-stigma or internalized stigma. The peer support interventions were the HOP<sup>50</sup> and HOP-C<sup>39,40</sup> programs, which were compared with TAU<sup>50</sup> or waitlist controls.<sup>39,40</sup> Outcomes were measured at post-intervention, post-booster, and at follow-up (6 weeks<sup>50</sup> or 2 months<sup>40</sup> after core sessions) using the 4 subscales of the Self-Stigma of Mental Illness Scale–Short Form (SSMIS-SF; range = 5 to 45)<sup>53</sup> or the Internalized Stigma of Mental Illness scale<sup>54</sup> (10-item version, range = 1 to 4). Conley et al.<sup>39,40</sup> reported the mean score from 3 subscales of the SSMIS-S ranging from 1 to 5 for each subscale. For both measures, higher scores indicate more self-stigma.

At post-intervention, the results were heterogenous (2 RCTs,<sup>39,50</sup>  $N = 191$ ) and we consider the findings to be very uncertain. Conley et al.<sup>39</sup> found that in the harm subdomain of the SSMIS-SF scale, HOP-C was favoured compared with waitlist control at follow-up. The mean scores of the harm subdomain in the HOP group were 3.23 (SD = 2.08) at baseline and 2.49 (SD = 1.65) at post-intervention, whereas the scores in the waitlist control were 2.92 (SD = 1.75) at baseline and 3.02 (SD = 2.08) at post-intervention ( $P = 0.019$ ).<sup>39</sup> The authors did not report results for change from baseline for the other domains. In the Mulfinger et al. study, at post-intervention, change from baseline of the overall score of SSMIS showed that HOP was associated with a reduction in self-stigma compared with TAU (mean between-group difference for change from baseline =  $-2.93$ ; 95% CI,  $-5.35$  to  $-0.52$ ). There was no significant difference between groups in the change from baseline of ISMI scores.<sup>50</sup>

At post-booster (1 RCT,<sup>39</sup>  $N = 97$ ), evidence from the study by Conley et al. showed little to no difference in the effect of HOP-C compared to waitlist in reducing self-stigma, as found by between-group t-tests for the agreement, application, and harm subdomains of the SSMIS-SF. However, we consider these findings to be very uncertain, and we could not rule out an effect in either direction because the apparent lack of difference could be related to imprecision resulting from the small sample size.

At the longest follow-up (2 RCTs,  $N = 117$ ; 6 weeks<sup>50</sup> or 2 months<sup>40</sup>), the evidence was heterogenous, and we consider the findings very uncertain. HOP-C was not associated with any significant reduction in any of the subdomain scores of SSMIS compared with waitlist control. Results from the study by Mulfinger et al.<sup>50</sup> found that participants who received HOP reported lower self-stigma scores at 2 months follow-up compared with those who received TAU. The mean between-group difference for change from baseline in ISMI scores was  $-0.35$  (95% CI,  $-0.54$  to  $-0.05$ ); the mean between-group difference for change from baseline in SSMIS scores was  $-5.14$  (95% C,  $-8.22$  to  $-2.05$ ).

### **Stigma Stress**

Both included RCTs<sup>39,40,50</sup> reported on stigma stress. Outcomes were measured at post-intervention and at follow-up (6 weeks<sup>50</sup> to 2 months<sup>40</sup> after core sessions). In the HOP trial

and in the 2-month follow-up of the HOP-C trial, the Stigma Stress Scale (score range, -6 to 6) was used to calculate stigma stress as perceived harm minus perceived resources. Higher scores indicated increased stigma-related stress. At the post-intervention and post-booster follow-ups of the HOP-C trial, stigma stress was not calculated; rather, the results of the subscale scores were reported separately.

At post-intervention, Mulfinger and colleagues<sup>50</sup> (N = 84) reported that peer support may be favoured compared with TAU in lowering the stress related to self-stigma. The mean between-group difference for change from baseline to post-intervention was -2.06 (95% CI, -2.70 to -1.42), but we consider the evidence to be very uncertain.<sup>50</sup>

At the longest follow-up, the evidence was heterogenous (2 RCTs, N = 117<sup>40,50</sup>; 6 weeks<sup>50</sup> or 2 months<sup>40</sup>) and we consider the overall certainty of the evidence to be very low. The Conley et al. trial (reported in Hundert et al.)<sup>40</sup> showed there was little to no difference (potentially related to imprecision) in the effect of peer support intervention (HOP-C) in reducing stigma-related stress, whereas the results from the Mulfinger et al. trial<sup>50</sup> favoured peer support. At 6 weeks follow-up, the mean difference for change in scores from baseline in the HOP group was 2.19 units lower than the TAU group (95% CI, -2.89 to -1.43). At post-intervention and at post-booster, Conley et al.<sup>39</sup> found that there was a significant increase in the scores related to perceived resources to cope with stigma stress in the HOP-C group compared with the control group (P = 0.001). There were no differences in the subscale stigma as a stressor (perceived harm). However, the stigma stress scores were not calculated for post-intervention and post-booster time points.

## **Secrecy and Disclosing Mental Illness**

### **Self-Efficacy Related to Secrecy and Disclosing of Mental Illness**

The HOP-C trial by Conley et al.<sup>39,40</sup> reported on participants' self-reported self-efficacy related to secrecy and to the disclosure of mental illness. The outcome was assessed by 2 questions: "How confident are you in making decisions and handling well all the issues related to disclosing your mental illness? (p.171)"<sup>39</sup> and "How confident are you in making decisions and handling well all the issues related to keeping mental illness a secret?" Answers were rated from 1 (not at all) to 7 (very much).

At post-intervention, there was little to no difference (potentially due to imprecision) in the effect of peer support in efficacy related to keeping the mental illness a secret or to that related to disclosure of mental illness compared with no peer support (n = 107)<sup>39</sup> Following a booster session (n = 97), the trial showed that HOP may be favoured with respect to self-efficacy about disclosure (P = 0.001) but there may be little to no difference in self-efficacy related to keeping mental illness a secret.<sup>39</sup> At the 2 month follow-up assessment (n = 55), the results suggested that there may be little to no difference in the effect of peer support versus no peer support (waitlist) in self-efficacy related to secrecy or to disclosing mental illness.<sup>40</sup> We considered the evidence at all time points to be very uncertain.

### **Attitudes to Disclosure**

Mulfinger et al.<sup>50</sup> reported on participants' attitude to disclosure of mental illness to family and friends and to teachers and employers. The outcome was assessed by 2 questions about how comfortable they are in disclosing mental illness to family and friends, and teachers and employers. Answers were rated from 1 (not at all) to 7 (very much).

The trial showed that peer support may be favoured compared to TAU on improving the attitudes of participants to disclosing their mental illness at post-intervention and at 6 weeks follow-up, but we considered the evidence informing these results to be very uncertain. At post-intervention (n = 84), participants in the HOP group reported significantly higher improvement from baseline in their attitudes to disclosure toward family and friends (mean between-group difference for change from baseline = 1.00; 95% CI, 0.43 to 1.57) and toward teachers and employers (mean between-group difference for change from baseline = 0.66; 95% CI, 0.15 to 1.16) compared with participants in the TAU group. Similarly, at the 6-week follow-up assessment (n = 62), participants in the HOP group reported significantly higher improvement from baseline in their attitudes to disclosure toward family and friends (mean between-group difference for change from baseline = 1.02; 95% CI, 0.43 to 1.61) and toward teachers and employers (mean between-group difference for change from baseline = 0.91; 95% CI, 0.28 to 1.53) compared with participants in the TAU group, but we considered the evidence to be very uncertain.

### **Disclosure-Related Distress**

Mulfinger et al.<sup>50</sup> reported on participants' distress related to disclosure of mental illness. The outcome was assessed by a single question about how distressed or worried participants were about disclosing mental illness. Answers were rated from 1 (not at all) to 7 (very much). This single item was also used as a screening item for study inclusion, with a score of 4 or higher required to be enrolled to the trial.

The results of the trial showed that peer support may be favoured over TAU for lowering participants' disclosure-related distress at post-intervention and at the 6-week follow-up, but we consider this evidence to be very uncertain. At post-intervention (n = 84), the between-group difference for change from baseline was -0.44 (95% CI, -0.79 to -0.08). Similarly, at the 6-week follow-up (n = 62), the distress related to disclosure of mental illness was lower in the HOP group compared with the TAU group (mean between-group difference for change from baseline = -0.78; 95% CI, -1.16 to -0.40).

### **Secrecy**

Mulfinger et al.<sup>50</sup> reported on participants' secrecy related to mental illness. The outcome was assessed by the Stigma Coping and Orientation subscale of the Link Stigma Scale.<sup>55</sup> Higher mean scores (range = 1 to 6) indicate more secrecy.<sup>50</sup>

The results of the trial showed that peer support may be favoured compared with TAU on lowering the participants' secrecy related to mental illness at post-treatment, and at 6 weeks follow-up, but we considered the evidence to be very uncertain. At post-intervention (n = 84) and at 6-week follow-up (n = 62), the mean between-group differences of change from baseline were -0.44 (95% CI, -0.79 to -0.08), and -0.78 (95% CI, -1.16 to -0.40), respectively.

### **Health-Related Quality of Life**

Mulfinger et al.<sup>50</sup> reported on participants' HRQoL. The outcome was assessed by KIDSCREEN-10,<sup>56</sup> a 10-item questionnaire with a total score range from 10 to 50, with higher scores indicating better quality of life.<sup>56,57</sup>

The results from the trial showed that at post-intervention (n = 84) there may be little to no difference in the effect of peer support on HRQoL compared to TAU, but we considered the evidence to be very uncertain, and could not rule out the potential for a difference

between groups due to imprecision. At the 6-week follow-up assessment (n = 62), the results suggested that HOP may be favoured compared to TAU in improving HRQoL, but we considered the evidence to be very uncertain. The mean between-group difference in score for change from baseline to 6-week follow-up was 3.54 (95% CI, 1.14 to 5.93).

### ***Empowerment***

Mulfinger et al.<sup>50</sup> reported on participants' feeling of empowerment. The outcome was assessed by the Self-esteem (9 items) and Optimism (4 items) subscales of the Empowerment Scale.<sup>58</sup> A mean score was calculated from the scores of each of the subscales (range = 1 to 4), with higher scores indicating more empowerment.

In the self-esteem subscale of the Empowerment Scale, the results from the trial showed that at post-intervention (n = 84), participants in the HOP group reported a larger improvement in self-esteem compared with those in the TAU group (mean between-group differences for change from baseline = 0.21; 95% CI, 0.04 to 0.39). At 6-week follow-up (n = 62) there was no significant difference between the groups. In the optimism subscale, the results showed that there was no significant difference between the groups at post-intervention or at 6-week follow-up. Overall, we concluded that there may be little to no difference in the effect of peer support on feeling of empowerment compared to TAU at all time points; however, we considered the evidence to be of very low certainty.

### ***Social Withdrawal***

Mulfinger et al.<sup>50</sup> reported on participants' self-reported assessment of social withdrawal. The outcome was assessed by the Stigma Coping Orientation subscale of the Link Stigma Scale<sup>55</sup> (7 items related to withdrawal). Higher mean scores (range = 1 to 6) indicate more social withdrawal.<sup>50</sup>

The results of the trial suggested that peer support may be favoured compared with TAU on lowering the participants' social withdrawal at post-intervention, but the evidence was very uncertain (mean between-group difference for change from baseline = 0.34; 95% CI, -0.63 to -0.05; n = 84). At 6 weeks post-intervention (n = 62), there was no significant difference between the groups in the change from baseline of mean scores; however, we considered the evidence to be of very low certainty and affected by imprecision.

### ***Help-Seeking***

Mulfinger et al.<sup>50</sup> reported on participants' help-seeking behaviour. The outcome was assessed by the General Help-Seeking Questionnaire.<sup>59</sup> In the RCT, an average of scores from items related to family and friends and to professionals were reported. Higher scores indicate an increased likelihood for seeking help.<sup>50</sup> A mean score was calculated from the scores of the subscales (range = 1 to 4), with higher scores indicating more empowerment.

The results of the trial showed that at post-intervention (n = 84), participants in the HOP group reported increased help-seeking behaviour compared with those in the TAU group (mean between-group difference for change from baseline = 0.77; 95% CI, 0.36 to 1.17). However, at 6-week follow-up (n = 62), there was no significant difference between the groups, but this evidence was affected by imprecision. As for seeking help from professionals, participants in HOP group reported significantly higher improvement compared with those in the TAU group at post-intervention (mean between-group difference for change from baseline = 0.60; 95% CI, 0.15 to 1.05; n = 84) and at 6-week follow-up (mean between-group difference for change from baseline = 0.82; 95% CI, 0.32 to 1.32, n = 62). Overall, we conclude that peer support

may be favoured compared with no peer support in improving help-seeking behaviour among youth, but the evidence supporting this conclusion is very uncertain.

### ***Hopelessness***

Mulfinger and colleagues<sup>50</sup> reported on participants' feeling of hopelessness. The outcome was assessed by the Beck's Hopelessness Scale (brief version),<sup>60</sup> a 4-item questionnaire (range = 4 to 24) with higher scores indicating increased hopelessness.

The trial showed that at post-intervention and at 6-week follow-up, there were no significant differences between the HOP and TAU groups in change from baseline of mean scores. The mean between-group differences for change from baseline were 0.51 (95% CI, -1.88 to 0.85) and 1.22 (95% CI, -2.68 to 0.24) at post-intervention (n = 84) and at 6-week follow-up (n = 62), respectively. Thus, there may be little to no difference in the effect of peer support on feeling of hopelessness compared with TAU; however, we considered the evidence to be of very low certainty and affected by imprecision.

### ***Stage of Recovery***

Mulfinger and colleagues<sup>50</sup> reported on participants' self-reported stage of recovery. The outcome was assessed by Self-Identified Stage of Recovery Scale,<sup>61</sup> in which the total score ranges from 4 to 24, higher scores indicating a better recovery process.

At post-intervention, the trial indicated that there may be little to no difference in the effect of peer support on the stage of recovery compared to TAU, but these findings were very uncertain and affected by imprecision because of the small sample size (n = 84). At the 6-week follow-up (n = 62), the results suggested that peer support may be favoured compared with TAU on the stage of recovery (mean between-group difference for change from baseline = 1.59; 95% CI, 0.10 to 3.07). We assessed the evidence to be of very low certainty and affected by imprecision.

### ***Anxiety***

The HOP-C trial<sup>39,40</sup> reported on participants' self-reported anxiety symptoms. Anxiety symptoms were assessed using Generalized Anxiety Disorder 7-Item scale<sup>62,63</sup> (score range = 0 to 21), with higher scores indicating increased severity of symptoms.<sup>63</sup>

At post-booster (n = 97)<sup>39</sup> and at the 2-month follow-up (n = 55),<sup>40</sup> there was little to no difference in self-reported improvement in anxiety symptoms between the HOP-C and waitlist groups, but we considered the evidence to be of very uncertain. . . In the HOP group, the mean scores were 1.66 (SD = 0.77), 1.66 (SD = 0.75), and 1.57 (SD = 0.88) at baseline, post-booster, and at 2-month follow-up, respectively. In the waitlist control group, the mean scores at those time points were 1.92 (SD = 0.75), 1.69 (SD = 0.90), and 1.77 (SD = 0.85), respectively.

### ***Depression***

Both included RCTs<sup>39,40,50</sup> reported on depression symptoms. Self-reported symptoms of depression were measured at post-intervention, post-booster, and at follow-up (6 weeks<sup>50</sup> to 2 months<sup>40</sup> after core sessions), using the 10-item Center for Epidemiologic Studies Depression (CES-D-10) scale<sup>39</sup> or the Center for Epidemiologic Studies Depression (CES-D) scale<sup>50</sup> scales. CES-D<sup>64</sup> is a 20-item scale to assess symptoms of depression and to identify at-risk individuals for depression; total scores range from 0 to 60.<sup>65</sup> CES-D-10<sup>66,67</sup> is a shorter 10-item version of the CES-D, in which the scores range from 0 to 30. In both measures, higher scores indicate increasing severity of symptoms.

At post-intervention (n = 84), in 1 RCT there was little to no difference in symptom improvement between HOP and TAU groups (mean between-group difference for change from baseline = 1.25; 95% CI, -4.87 to 2.38).<sup>50</sup> At post-booster (n = 97), results from the Conley et al. study<sup>39</sup> showed little to no difference between the HOP-C and waitlist groups in improving symptoms of depression; we found that the findings for both these time points were very uncertain and affected by imprecision. At the longest follow-up (6 weeks<sup>50</sup> to 2 months<sup>40</sup> after core sessions; n = 117), the results were heterogenous. Findings from the study by Mulfinger et al.<sup>50</sup> favoured HOP at 6 weeks after the sessions (mean between-group difference for change from baseline = 7.25; 95% CI, -10.85 to -3.65), whereas Conley et al.<sup>40</sup> found little to no difference between the groups at 2 months after the sessions. In the HOP group, the mean scores were 1.74 (SD = 0.58), and 1.54 (SD = 0.70) at baseline and at 2-month follow-up, respectively. In the waitlist control group, the scores at those time points were 1.65 (SD = 0.59) and 1.39 (SD = 0.77), respectively (P = 0.860); we consider the evidence to be of very uncertain.

### ***Health Care Resource Utilization***

We did not locate any studies that evaluated or reported on health care resource utilization.

### ***Social Outcomes***

We did not locate any studies that evaluated or reported on social outcomes.

## **Question 2: Safety**

We identified no relevant studies that provided outcome data regarding the safety of peer support programs compared with interventions without peer support in the management of mental health concerns among youth.

## **Limitations**

The Clinical Review is not without limitations. The grassroots origin and organization of peer support services were developed to provide an alternate approach to formal mental health care. Therefore, groups involved with peer support may not have had access to conventional RCTs and traditional research. Peer support services are described as value-based, in which the values of peer support are process- and goal-oriented. Conventional evidence synthesis, such as a SR of RCTs, may not be aligned with the values and principles of peer support. Outcomes such as recovery and social connectedness are not delineated by individual variables and are challenging to capture in traditional RCTs. This review is limited to summarizing effectiveness based on published literature with quantifiable outcomes. However, if peer support is to be integrated into the mainstream health care system, systematic evidence from the perspective of decision-makers of the benefits and harms of peer support interventions could be useful. We defined formal peer support programs as structured programs delivered by community- or health clinic-based organizations that offer peer support to youth peer service users by trained peer support workers who share lived experience relating to mental health. Evidence about peer support programs that do not fulfill this definition were not captured in the review but may be relevant to the broader understanding of the effectiveness and safety of peer support in general. We used this definition to ensure that findings from this review can inform potential decisions about the adoption and implementation of formal peer support programs for youth mental health. The main limitation of this review was the sparse evidence base from which definitive conclusions about effectiveness could not be drawn due to numerous limitations related to risk of bias, inconsistency, imprecision (small sample size), and indirectness. We did not

conduct a meta-analysis because many of the outcomes were reported by a single trial. We did not locate any studies that reported on the safety of formal peer support (compared with interventions without peer support), and we located no studies reporting on health care resource utilization or social outcomes despite these being important to decision-makers and youth. Because only a single program was represented in the included trials (i.e., HOP), which included homogeneous populations of youth, we were unable to draw conclusions for our a priori subgroup populations.

## Summary of Clinical Evidence

The purpose of this clinical SR was to assess the clinical effectiveness and safety of peer support programs compared with interventions without peer support for youth mental health. We conducted a systematic search of the literature for primary studies of formal peer support programs (with or without a comparison group who did not have peer support) among youth aged 12 to 25 years with self-identified or formally diagnosed mental health concerns. We identified 2 RCTs<sup>39,40,50</sup> that assessed the clinical effectiveness of peer support programs compared with interventions without peer support (i.e., waitlist or TAU) for the management of mental health concerns among youth. We did not identify any relevant studies evaluating the clinical safety of peer support programs compared with interventions without peer support for the management of mental health concerns among youth.

The findings of the review suggest that peer support may be favoured over no peer support for some outcomes (e.g., attitudes to disclosure, disclosure-related distress, secrecy, help-seeking behaviour), whereas evidence for other outcomes showed there may be little to no difference in the effect of peer support compared with waitlist or TAU without peer support (although findings were affected by imprecision due to small sample size). However, for all outcomes at all time points, we judged the evidence to be very uncertain due to serious concerns for risk of bias, inconsistency, indirectness, and imprecision. The very low certainty of evidence suggests that the findings do not provide a reliable indication of the likely treatment effect and that there is a very high likelihood that the true effect of peer support programs compared with interventions without peer support could be substantially different than what is shown by the 2 included trials.

There are numerous types of peer support programs being studied for young people with mental health concerns. These include informal drop-in spaces for peer support, peer-to-peer communication programs, peer support delivered by volunteers without lived experience of mental health concerns, and peer-moderated online social forums. This variability in the forms and definitions of peer support has been observed in peer support for adult mental health as well.<sup>68</sup> We defined formal peer support programs as formal or structured community- or health clinic-based programs that offer peer support to youth peer service users by trained peer support workers who share lived experience relating to mental health. Peer support can be offered on a one-to-one or group basis, and may be delivered virtually (e.g., video conferencing, mobile applications, web platforms or online chat, phone) or in person. We used this definition because formal programs with trained workers may mitigate safety concerns for both peer workers and peer support program users as well as ensure that the aspects of recovery orientation, empowerment, and trust be highlighted in the relationship between peer support worker and user.<sup>12</sup>

During the literature search and study selection process for this SR, we excluded several studies in which the interventions did not meet our definition of formal peer support. However, it is possible that, although the excluded studies did not focus on structured formal peer

support, the findings could have value for decision-makers when considering adopting or implementing peer support programs. Two studies described programs that used the principles of a moderated online social therapy program for managing young individuals with mental health concerns.<sup>69,70</sup> The studies evaluated the feasibility and effectiveness of the Rebound<sup>70</sup> and Horyzon<sup>69,71</sup> programs, which were multi-component interventions comprising online tailored psychosocial therapy, peer-to-peer online social networking, and expert support and peer moderations. In the Horyzons program, for youth following first-episode psychosis, for example, the online social networking component known as the “Café” was led by trained peer workers who had lived experience of mental illness. The peer workers moderated conversations and discussions in the social forum. In the Rebound program, peer moderators with lived experience of mental illness helped moderate and monitor online engagement of the participants. Thus, in these programs, the role of peer support beyond moderating online platforms seems limited. Because the intervention had multiple components, including tailored therapy, and because of the likely minor role of peer workers, the effectiveness of peer support is challenging to infer. We excluded studies of peer support programs in which the peer support workers did not have a shared lived experience of mental health concerns. It was also not clear whether the findings of those excluded studies could be extrapolated to peer support in general.

When designing and implementing peer support programs, equity considerations are important to ensure peer support programs are accessible and relevant to youth who experience marginalization or disadvantage. We sought to identify specific groups of youth who are disadvantaged who could experience an inequitable burden of mental health challenges and access to inclusive mental health services. For this process, we used PROGRESS-Plus,<sup>23</sup> information from the available published and grey literature on peer support, and discussions with clinical and content experts. These groups of youth include, but are not limited to, youth members of the 2SLGBTQ+ community, Indigenous youth, Black youth and youth of colour, youth members of newcomer communities, youth experiencing homelessness or street involvement, youth with disabilities, and youth living in rural and remote communities. The included trials were conducted among a relatively homogenous population, and no subgroups of interest were identified within the trials. Thus, we identified no evidence regarding the value of considerations of equity in designing and implementing peer support programs for youth mental health, which highlights the evidence gap in this area. Future research focusing on these groups of youth who are likely to experience inequitable barriers to access to care and support are warranted.

## Environmental Scan of Program Evaluation Methods

### Overview

#### Research Questions

1. What completed evaluations and evaluation method guidelines for peer support programs for youth mental health exist in Canada and internationally?
2. What are the characteristics and components used in these evaluations and method guidelines for peer support programs for youth mental health and how are they measured?

3. What are the findings of the completed evaluations of peer support programs for youth mental health in Canada?

## Methods

### Study Design

An ES was conducted to identify and describe program evaluation methods and guidelines in Canada and internationally, program evaluation characteristics and components, and any findings of completed program evaluations in Canada. The findings presented in this ES are based on a limited literature search and information obtained through targeted stakeholder consultations and stakeholder feedback. We used the limited literature search and targeted stakeholder consultations to inform the decision problem related to understanding how youth peer support programs are evaluated to support the design and implementation of these programs.

### Literature Search Methods

The search for literature describing program evaluation aspects was performed by an information specialist using a peer-reviewed search strategy according to the PRESS Peer Review of Electronic Search Strategies checklist.<sup>31</sup> The search strategy is available on request.

Published literature was identified by searching the following bibliographic databases: MEDLINE All (1946) via Ovid, Embase (1974) via Ovid, PsycInfo via Ovid, Cochrane Central Register of Controlled Trials via Ovid, Scopus, and the Cumulative Index to Nursing and Allied Health Literature (CINAHL) via EBSCO. All Ovid searches, with the exception of Cochrane Central Register of Controlled Trials, were run simultaneously as a multi-file search. Duplicates were removed using Ovid deduplication for multi-file searches, followed by manual deduplication in Endnote. The search strategy comprised both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), and keywords. The main search concepts were peer support programs and youth with mental health concerns.

The search was limited to English- and French-language documents published between January 1, 2006, and January 17, 2022. Conference abstracts were excluded from the search results. Regular alerts updated the search until the publication of the final report.

Grey literature (literature that is not commercially published) was identified by searching sources listed in relevant sections of the Grey Matters: A Practical Tool For Searching Health-Related Grey Literature checklist,<sup>32</sup> which includes the websites of regulatory agencies, HTA agencies, clinical guideline repositories, SR repositories, patient-related groups, and professional associations. Google was used to search for additional internet-based materials. These searches were supplemented by reviewing bibliographies of key papers and through contacts with experts and industry, as appropriate. Refer to [Appendix 1](#) for more information on the grey literature search strategy.

### Screening and Selecting Publications for Inclusion

One author independently screened and retrieved citations using management software DistillerSR (Evidence Partners, Ottawa, Canada). In the first level of screening, the author reviewed the titles and abstracts and retrieved and assessed potentially relevant articles for inclusion. The final selection of full-text articles was based on the inclusion criteria presented in [Table 6](#). Articles that were published in a language other than English or French were excluded. All publication types were eligible. We excluded any articles that did not adhere to

the definition of formal peer support programs and did not identify or describe information relevant to program evaluation methodology or outcomes.

**Table 6: Components for Literature Screening and Information Gathering**

Criteria	Description
Population	Youth (aged between 12 and 25 years) support users with mental health concerns (including but not limited to depression, anxiety, suicidality, eating disorders, posttraumatic stress disorder) either self-identified or formally diagnosed; trained peer support workers
Intervention	Formal peer support programs <sup>a</sup>
Settings	Settings of care including health care facilities and community-based care programs in rural, remote, and urban areas in Canada
Types of information	<ul style="list-style-type: none"> <li>• Information on identified completed program evaluations and guidelines used to inform evaluation methodology in Canada and internationally</li> <li>• Information on the description of the components and characteristics of identified program evaluations and method guidelines, including information on evaluation measurements in Canada and internationally</li> <li>• Information on the findings of completed program evaluations in Canada</li> </ul>

<sup>a</sup>Formal peer support programs are those delivered by formal community- or health care–based organizations that offer peer support to peer service users by trained peer support workers who share lived experience relating to mental health.

### Consultation Methods

We conducted targeted consultations with key informants involved in program evaluation for peer support programs for youth mental health to fill gaps in knowledge and to provide organizational perspectives. We adopted a purposive sampling approach to identify representatives from various organizations across Canada that offered peer support for youth mental health that included some component of program evaluation. We identified stakeholders through CADTH’s network of liaison officers situated across Canada, referred through other informants during consultations, and through internet searching. One researcher reached out to stakeholders via email and interviewed those willing or able to participate. The researcher conducted the consultations with each key informant via Zoom using a semi-structured interview format. We developed the interview questions based on the research questions, and included questions related to how program evaluation was conducted within the organization that the informant represented, methods and resources used to inform program evaluation, and outcomes that are captured through evaluation. In addition to understanding the methods of program evaluation, equity considerations related to program evaluation were sought during consultations. When possible, representatives shared additional documents and resources to provide examples of what program evaluation efforts look like within their organization and what informs their program evaluation processes.

Six of the consultations followed the same original semi-structured interview guide. Upon analysis of the initial interviews and new emerging insights, the researcher refined the semi-structured interview guide to explore newly identified and targeted information for the remaining consultation (refer to [Appendix 4](#) for the interview guide). Before each consultation, we obtained key informants’ consent to participate and informed them how we will use the information in the final report. Consultations were recorded, and transcripts of the consultations were generated using Microsoft Word and reviewed by the researcher. Key

informants involved in the consultations and other relevant stakeholders were also asked to provide feedback on the draft report after completion.

### Synthesis Approach

One researcher conducted a descriptive analysis of the literature and consultation transcripts. To do so, the researcher first identified and summarized completed evaluations and methods guidelines identified in the literature, including article characteristics such as author, year of publication, and country in which the evaluation was completed using Microsoft Word. Relevant characteristics are presented in tabular form in [Appendix 6](#) and narratively summarized in the Findings section.

To identify the characteristics and methodology that guide program evaluation, the researcher then examined the identified literature and consultation transcripts to systematically identify and sort information relevant to program evaluation characteristics, methods, outcomes, and equity considerations into relevant categories. The researcher exported the categories to a table in a Microsoft Word document and shared the table with a second and third researcher for discussion. The 3 researchers compared and adjusted the categories in regular meetings. The lead researcher then narratively summarized the categories, formulating a description of program evaluation methods and characteristics in the findings. Information related to program evaluation characteristics, methods, guiding principles and resources, and outcomes measured are presented in [Appendix 8](#).

### Findings

The findings are based on a limited literature search, 7 consultations collected between February 7 and May 20, 2022, and stakeholder feedback. We present the findings by describing identified evaluations and methodological guidance for evaluating peer support programs for youth mental health in Canada and internationally; principles, methods, and outcomes used in evaluations of peer support programs for youth mental health; and findings of completed evaluations of peer support programs for youth mental health in Canada.

A total of 642 citations were identified in the literature. After screening the titles and abstracts, we excluded 627 citations and retrieved 15 potentially relevant reports from the electronic search for full-text review. We retrieved 23 potentially relevant publications from a grey literature search for full-text review. Of these potentially relevant articles from the electronic and grey literature searches, 36 publications were excluded for various reasons and 2 publications met the inclusion criteria and are included in this report. An overview of the included publications is provided in [Appendix 6](#). We retrieved additional program evaluation resources through consultations and stakeholder feedback which included guiding resources and examples of completed program evaluations from different organizations. Relevant information related to the use of these guiding resources or findings from examples of program evaluations conducted in Canada that were shared have also been included in this report. An overview of the examples of program evaluations that were shared and included in this report are provided in [Appendix 7](#).

We contacted 17 stakeholders via email for consultation. Nine stakeholders responded to this call for consultations; 1 respondent refused consultation because they were not able to provide appropriate expertise on the subject and 1 respondent was lost to follow-up after initial consultation contact. We conducted 7 consultations via Zoom with representatives from organizations in British Columbia, Manitoba, Ontario, and New Brunswick. A list of the

organizations represented through stakeholder consultations and a brief description of each peer support program from the organizations is provided in [Appendix 5](#).

### **Identified Evaluations and Methodological Guidance for Evaluating Peer Support Programs for Youth Mental Health in Canada and Internationally**

We identified 2 publications<sup>72,73</sup> from the literature search that outlined program evaluation methods used to evaluate peer support programs for youth mental health. The first publication<sup>72</sup> outlined the approach used to evaluate the peer support services within the Transitional Aged Youth (TAY) program offered through the Leap of Faith Together community services in Ontario. The TAY program offers services to approximately 800 youth between the ages of 14 to 26 years and involved peer support services alongside case management, mental health, and housing support services.<sup>72</sup> The authors of this publication describe the implementation of a hybrid realist and participatory approach used in the evaluation of peer support services for youth with mental health, physical health, and substance use challenges.

The second identified publication<sup>73</sup> was an independent evaluation of the Peer Support for Mental Health and Wellbeing Pilot program offered through the Department for Education in the UK. The aim of the Peer Support for Mental Health and Wellbeing Pilot program evaluation was to gather evidence related to understanding the set up and delivery of peer support for youth mental health and well-being in schools, colleges, and Children and Young People's Community Organizations (CYPCOs).<sup>73</sup> The evaluation was designed to address questions related to the program model, implementation, benefits, and outcomes.

Representatives from 3 organizations involved in the stakeholder consultations shared examples of evaluations of peer support programs for youth mental health completed in Canada. One of the reports was the results of the Peer Support Integrity, Quality and Impact (PSIQI) survey for the Just Be You program offered through the Centre for Innovation in Peer Support at Support House.<sup>74</sup> The Just Be You program is a youth-led group that provides social recreation and peer support for youth aged 15 to 25 years who are experiencing mental health and/or addiction issues. This report was completed in 2019 and was part of a system-wide administration of the PSIQI survey to provide baseline data in the perceived integrity, quality, and impact of peer support services offered through the Just Be You program. The survey included individuals who were, at the time, engaged in peer support or who had recently engaged in peer support within the past 2 months. The survey used in this report was designed to gain information related to peer support services integrity, the perceived quality of peer support being offered, and the perceived impact that peer support had on the individual.<sup>74</sup> It should be noted that the PSIQI survey was designed as part of a larger research process, which included reliability testing and validation, to provide information and measure peer support services. This survey has been used in a wide variety of contexts, including but not limited to the Just Be You program.

Another report that was shared focuses on the evaluation of the Foundry Youth Peer Support Curriculum which was offered both in person and virtually between October 2019 and May 2020 for peer support workers.<sup>75</sup> Participants of the evaluation were invited to complete surveys and participate in focus groups to share feedback on the curriculum. This also served as an opportunity for workers to understand their roles and training objectives. Based on this evaluation, 5 key recommendations were developed related to training content, delivery, workbooks, virtual training, and training format.<sup>75</sup> Note the Foundry Central Office is currently

undergoing a change in their evaluation practices, so information presented in this report may not align with future Foundry Central Office methods of evaluation.

Representatives from EveryMind Mental Health Services (EveryMind) shared an executive summary of the youth peer support pilot project, titled the Legacy Report, which was completed in March 2022.<sup>76</sup> This report outlined the evaluation framework which includes the evaluation approach and objectives, data collection approaches, and analytic approach. The evaluation was conducted using an exploratory approach to assess anticipated and unanticipated program outcomes informed by participants and youth peer support workers.<sup>76</sup>

In addition, 1 program evaluation was shared during the stakeholder feedback phase of this report, titled Peers Supporting Peers: An Evaluation of a Peer Support Centre at a Canadian University, which was completed in August 2019.<sup>77</sup> This report provided results from a program evaluation that was conducted to assess the mental health status and session quality as reported by program participants of an on-campus, student-led peer support service called the Peer Support Centre offered at McGill University.<sup>77</sup> The results of the evaluation were analyzed using quantitative and descriptive statistics from responses to an online survey that was offered to participants after each session.<sup>77</sup>

## **Principles, Methods, and Outcomes Identified in Evaluations of Peer Support Programs for Youth Mental Health**

### ***Program Evaluation Goals***

Generally, informants identified that the purpose of engaging in evaluation is to help inform quality improvement efforts of the program. One informant mentioned that in addition to informing quality improvement efforts for the program, evaluation also offers a way to establish a level of baseline effectiveness that can be used to promote uptake of peer support services across the organization. Another informant stated that the aim of program evaluation was to determine adherence to the program's recovery-based model of care. The goal of program evaluation can also be oriented toward establishing a level of formality and homogeneity when youth peer support services are offered across different sites, which is the case for Foundry Central Office.

The authors of the publication that evaluated the TAY program specified that there is a lack of evaluative strategies that can be applied across youth peer support programs.<sup>72</sup> The goal of this evaluation is to provide guidance for researchers implementing a realist evaluation aimed at describing complex processes to those involved in the evaluation, managing a flexible research approach, and incorporating a system for consideration of context, mechanism, and outcomes.<sup>72</sup> The second publication focused on understanding set up and delivery of youth peer support, but the goal of the evaluation was to gather evidence to produce a range of replicable peer support models for different youth environments and contexts.<sup>73</sup> In addition, evaluation was meant to inform the design and further development of youth peer support programs in schools and CYPCOs.<sup>73</sup> The goal of the completed evaluation of the Peer Support Centre program that was shared through stakeholder feedback was to determine who was accessing the peer support service, how mental health needs may have been met by this service, and to assess the quality of the sessions as reported by those who used the peer support service through the Peer Support Centre.<sup>77</sup> The results of this evaluation were used to inform changes to the program to better service the needs of individuals who accessed peer support services through the Peer Support Centre.<sup>77</sup>

### *Guiding Principles and Practices Used in Program Evaluations*

Informants from 4 organizations identified a recovery-oriented model of care to be the foundation of peer support services. As such, their program evaluation focused on assessing the fidelity of the program in terms of the individual's relationship with recovery. The Mental Health Commission of Canada has developed a guideline to support recovery-oriented practice for mental health support which was referenced by the New Brunswick Department of Health (DoH) and the Centre for Innovation in Peer Support at Support House.<sup>78</sup> The guideline for recovery-oriented practice provides a comprehensive Canadian reference document for understanding recovery and allows for consistent application of recovery principles. The basic principle of recovery-oriented mental health practice is to support people to define personal goals, exercise capabilities, and use their strength to attain their potential through a personalized approach in managing their journey to recovery.<sup>78</sup> In addition, 2 informants outlined the use of the Canadian Personal Recovery Outcome Measure (C-PROM) tool to be used either in conjunction with their evaluation methods or as a guide to inform evaluation methods to help collect recovery-oriented data. The C-PROM tool is a measurement tool that provides information of user health status relative to their quality of life and can be applied to assess mental health recovery.<sup>79</sup> Despite these organizations specifying that a recovery-oriented model of care is used as a guiding principle, the practice of recovery is different across organizations because it is dependent on the user, which leads to heterogeneity in how recovery may be evaluated.

A major discussion point from stakeholders representing the various peer support programs for youth mental health is a general sense of heterogeneity and fragmented practices related to program evaluation across organizations and jurisdictions. This collective sense stems from a lack of standardization either jurisdictionally or nationally for the process of evaluating peer support programs specifically for youth mental health. From an evaluative standpoint, there is a lack of formal guidance that is consistently applied for peer support programs specifically for youth mental health. Three informants emphasized that program evaluation efforts would benefit from having guiding resources that could support the development of program evaluations across organizations. This challenge prompts programs to develop an individual style approach to program evaluation, which may impact the broader landscape of evidence needed to support the uptake of peer support programming for youth mental health. For example, an informant from Foundry Central Office described the challenges of relying on anecdotal-based evaluative measurements to inform the need of programs that offer peer support services. Yet, the informant also described the advantages of recently transitioning to capture more comprehensive program evaluation measurements that better inform the impact of the program. Because of the heterogeneous nature of peer support programming and evaluation, applying consistent methods and measurements across organizations may not be feasible or address the actual needs of the program. Heterogeneity between programs can also be valuable in peer support programming and evaluation because it can allow programs to be more adaptable to individual and program needs.

The different ways peer support is applied in different programs contributes to the overall fragmented landscape of program evaluation for peer support services for youth mental health. One informant highlighted the challenge in understanding how other organizations interpret the definition of peer support services. For example, Foundry Central Office uses a formal definition of peer support programs, which is a program delivered by formal community or health care-based organizations that offer peer support to peer service users by trained peer support workers who share lived experience related to mental health. Yet,

other organizations that Foundry Central Office interacts with may offer selected aspects of peer support (e.g., health systems navigation support). This can lead to challenges in evaluation because formal program evaluation efforts may not be consistently applied across organizations due to the discrepancy in what the programs offer. Despite the lack of standardized evaluation guidelines and practices, program representatives also acknowledge that standardized approaches to evaluation may not be beneficial to the integrity and appeal of peer support as an informal and flexible intervention to facilitate recovery.

However, programs do share commonalities in their approach to evaluation. For example, 2 informants specified that practice-based evidence informs evaluation efforts, which is the process of measuring and tracking real-world practice to inform an evaluation that is tailored to the needs and realities of the program. Another common evaluation practice is the use of co-design, as indicated by 4 informants and outlined by the authors of the TAY program evaluation.<sup>72</sup> Co-design is the process of involving service users and workers to inform the direction and aim of program evaluation. This process allows for a tailored evaluation approach that maximizes the benefit for individuals involved in the use and delivery of the program. First, it allows for greater involvement of youth in the program evaluation strategy. This can be done through the involvement of youth-led committees in the evaluation design, or by gathering information from service users and workers through focus groups or one-on-one feedback operations to share experiences and ideas specifically toward evaluation strategies. Second, representatives from some of the organizations highlighted the benefit of youth engagement through co-design as a method of mental health recovery. For example, 1 informant from EveryMind stated that including youth program users and workers in the program evaluation process can often serve as an additional therapeutic experience because it allows the opportunity for further reflection on the program and within the individual. Finally, informants from 2 organizations and the authors of the TAY program evaluation<sup>72</sup> also indicated what to consider when involving youth in the program evaluation process, specifically to help youth feel safe and valued. This includes the importance of favouring the voice and lived experience from youth lending their perspective over professional or clinical voices. This allows for youth to be more fully engaged and provides a sense of value without the fear of being overridden when it comes to program evaluation development.

Similarly, the authors of the publication that evaluated the TAY program adopted a realist and participatory approach to guide the evaluation of youth mental health peer support services. The authors defined the realist evaluation strategy as an approach that aims to address gaps in the design of youth peer support by answering “what works, for whom, how, why and in what circumstance?”.<sup>72</sup> Although the realist evaluation approach does offer insight to how and why youth peer support may be effective, it is primarily theory-driven and lacks evidence related to lived and living experience from people involved in the program. The authors then integrated a participatory approach in the realist evaluation to actively engage youth in the research process through involvement in identifying the research focus and methods for data collection.<sup>72</sup> The participatory approach allows for the inclusion of program users with lived and living experience to facilitate the design and implementation of program contexts and to assess theoretical assumptions made through the realist approach.<sup>72</sup>

### ***Data Collection and Analysis in Program Evaluations***

Program representatives and authors of the identified publications<sup>72,73</sup> described various methods for data collection and analysis methods used in the program evaluations. Informants from each organization identified surveys as the primary method of collecting evaluation data and feedback. The design and development of the surveys used to collect

data and feedback was applied differently across organizations. Two organizations used other pre-existing tools, such as the C-PROM tool, to guide the design of their surveys, while other organizations primarily based their survey and data collection methods on feedback from those engaged within the program. Informants from 2 organizations described the design of their surveys to be largely based on previous survey and data collection efforts used within the program with minimal change. In addition to the use of surveys to collect data, informants from some organizations and the authors of the identified publications<sup>72,73</sup> described other methods of data collection, which include interviews, focus groups, and case study visits with individuals involved in the peer support program.

Representatives from the Centre for Innovation in Peer Support at Support House described and shared a modified survey tool called the PSIQI survey that was developed to help organizations providing peer support services gain insight into the experience of peer support from the perspective of people receiving peer services.<sup>80</sup> The purpose of this survey is to assess the degree to which peer support services align with the values of peer support, the quality of service, and the degree to which users believe peer support impacts their day-to-day lives.<sup>80</sup> The PSIQI survey includes questions about the users' experience with a peer support worker, their experience before starting peer support, their experiences receiving peer support, changes from experiencing peer support, and demographic information.<sup>80</sup> The example report shared by the Centre for Innovation in Peer Support at Support House shows how the PSIQI survey was applied to evaluate the Just Be You Program. The first portion of the evaluation reported information related to non-identifying demographic information, engagement in the peer support program, and the focus of peer support being received by the user (e.g., mental health purposes, substance use, harm reduction, and/or housing).<sup>74</sup> The second portion of the evaluation reported on service integrity, service quality, and service impact.<sup>74</sup> Service integrity and service impact was assessed using a 5-point Likert scale on a series of relevant statements, while service quality was assessed using 2 closed-ended questions, and respondents described how they felt during their experience with a list of positive and negative emotions to check off.<sup>74</sup> Similarly, the authors of the program evaluation that was shared through stakeholder feedback described the use of an anonymous and confidential online survey that was made available to users after a support session at the Peer Support Centre.<sup>77</sup> The online survey used questions from the Patient Health Questionnaire-9 (PHQ-9),<sup>81</sup> Generalized Anxiety Disorder-7 (GAD-7),<sup>82</sup> and Outcome Rating Scale<sup>83</sup> tools to assess user mental health status.<sup>77</sup> In addition, the online survey assessed user's perception on peer support session quality by using the Session Rating Scale.<sup>77,84</sup>

Data collection efforts were not limited to the experiences of the program user. Informants across each organization described a need to involve both user and worker feedback within the evaluation process. Foundry Central Office described surveys that are used to establish youth experience and satisfaction with peer support and peer support worker experience through collaboration with youth and parent advisory councils. This was shown in the example report that was shared which focused on the evaluation of the curriculum and training for peer support workers. The data collection methods used included survey administration before and after training sessions, focus groups, and key informant interviews.<sup>75</sup> Similarly, the example report shared by EveryMind included feedback from peer support workers who received program training.<sup>76</sup> Data regarding training experience were collected qualitatively by using pre-specified, open-ended questions to create a dialogue among several small groups which were described as a "World Café."

The authors of the publication that evaluated the TAY program outlined data collection methods for the realist and participatory approaches used in the evaluation.<sup>72</sup> Mixed methods

are recommended in the realist approach so that qualitative methods can be used to understand program processes and theory while quantitative data collection can be used to measure outcome patterns. Additionally, the realist evaluation strategy incorporates the use of a context-mechanism-outcome-configuration design to assess how and why a program may be effective.<sup>72</sup> The realist approach included an initial exploration of the formal program theory through a review of the literature, program documents, and interviews with key stakeholders. The participatory approach was conducted through a workshop that included peer staff, non-peer staff, and students involved in the TAY program. The workshop focused on the study purpose and background, evaluation principles, and feedback on the initial program design and issues within peer support.<sup>72</sup> After the realist and participatory evaluation data were collected and analyzed, a second round of data collection was designed based on findings from the realist and participatory data collection. The second round of data collection included peer interviews, client online surveys, peer online survey, and knowledge mobilization to present findings and facilitate discussion for decision-making surrounding the findings.

Finally, the authors of the publication that evaluated the Peer Support for Mental Health and Wellbeing pilot program used a mixed-methods approach to collect quantitative and qualitative data. This approach included a survey of organizational pilot leads, follow-up qualitative telephone interviews with pilot leads, case study visits with a purposive sample of pilot organizations, participatory research tools for youth to understand experience of peer support, and a pre- and post-quantitative survey for youth to measure changes to overall well-being. The evaluation was designed to incorporate a capacity-building element, with the aim of supporting pilot programs to undertake self-evaluation, and to engage young people in the data collection and analysis. An evaluation toolkit was developed for organizations to use, which was rolled out with supporting guidance and a training webinar.<sup>73</sup>

The analysis of the evaluation data that are collected is handled differently across organizations. One informant specified that the Canadian Mental Health Association offers yearly assessments of evaluation data. Similarly, 2 informants identified the use of external services to analyze data that have been collected and share that information back to the organization for interpretation. Some organizations specified that data analysis was done independently in an in-house setting. Different organizations described assessing data at various time points, including using 1 time point or multiple time points to assess change. One informant described using a pre-post analysis approach and results were aggregated across different programs that include peer support services. Other organizations assessed data on a regular basis or at specified time intervals. Three informants described a process for ongoing evaluation as the program was being carried out, meaning that feedback from individuals involved in the delivery and use of the program is gathered in real time as the program is being offered, while another informant specified that data are collected at program intake up to 9 months after program engagement. Similarly, authors of the evaluation of the Peer Support for Mental Health and Wellbeing Pilot program analyzed quantitative data from survey results from baseline to follow-up responses if possible, while qualitative data were analyzed at follow-up based on themes and codes mapped to the key research questions for the evaluation.<sup>73</sup> The authors of the publication that evaluated the Peer Support Centre program analyzed the responses of an optional online survey distributed after a support session from September to December 2018 using descriptive statistics analytical methods.<sup>77</sup>

### ***Outcomes Identified in Program Evaluations***

Each organization described the general outcomes measured through program evaluation. For the purpose of reporting, we categorized these outcomes as recovery-oriented outcomes,

individual outcomes, program outcomes, and system-level outcomes. Informants from 5 organizations reported that recovery-oriented outcomes were measured during program evaluation. Recovery-oriented outcomes consisted of user's perceptions and experiences of community integration; overall fulfillment; change in emotions and emotional regulation; empowerment; relationship to education, employment, and social connections; attitudes toward personal recovery; overall well-being and mental health status; and overall recovery. Individual outcomes shared some overlap with what might be interpreted as recovery-oriented outcomes mainly because recovery shares a relationship with the individual. Informants from 4 organizations outlined individual outcomes that are measured during program evaluations. Individual outcomes identified and measured by these informants consist of user and worker experience, degree to which users felt supported, and various employment related outcomes that were not specified. These individual outcomes may be distinct from recovery-based outcomes because they may not directly impact a person's recovery. Outcomes related to program operations and use were identified by informants from 3 organizations. Program-related outcomes consisted of tracking the number and demographics of program users, duration of user engagement, and assessment of changes implemented within the program. Informants from 3 organizations identified system-level outcomes that were assessed, which consisted of tracking hospitalizations and length of stay from program users and use of external services (e.g., psychiatric, or inpatient services) prompted from the use of peer support. One informant from Foundry Central Office described a shift in outcome measurements from program-level output metrics to understanding the impact of the program itself. This shift in collecting outcome measurements aimed at evaluating the impact of peer support services to better understand the effectiveness of the programs. This process was described as using health measurements and repeat measurements based on an outcome rating scale with composite domains focusing on the relationship to recovery.

The authors of the publication that evaluated the TAY program described outputs that the realist and participatory approach aimed to capture. The realist approach aimed to gather information and contextualize initial contexts, mechanisms, and outcomes identified by key stakeholders to inform refined research questions for additional program evaluation, while the participatory approach collected feedback on initial design and current issues of interest within peer support.<sup>72</sup> The authors of the publication that evaluated the Peer Support for Mental Health and Wellbeing Pilot program assessed outcomes related to social and emotional well-being and resilience, personal development, organizational outcomes and capacity building within the programs.<sup>73</sup> The authors of the publication that evaluated the Peer Support Centre program assessed user mental health status related to depressive and anxious symptoms as outlined by the PHQ-9 and GAD-7 tools, and personal, interpersonal, social, and general well-being as outlined by the Outcome Rating Scale tool.<sup>77</sup> In addition, user's perception of session quality outcomes were informed through an agreement scale from 0 to 10 for 4 questions related to being understood, user's needs, session approach, and overall feeling of session "fit" from the Session Rating Scale tool.<sup>77</sup>

### ***Equity Considerations in Program Evaluations***

Questions within the consultations related to each organization's efforts to consider equity as a component of program evaluations were presented to each representative. Offering youth an experience that is rooted in equity is an important consideration among programs. Multiple representatives from the organizations involved in the consultations were able to speak to the way in which equity is considered both within the program as a whole and specifically within program evaluation. Equity considerations were not identified within the publications included

in this report; therefore, only equity considerations captured through the consultations are presented.

The informants presented multiple examples of showing how equity was considered within the program evaluation process. These considerations included using multiple methods of data collection to minimize barriers to provide feedback, ensuring that all evaluations were anonymous and data collection was confidential to ensure participant safety, providing transparency in the evaluation process to all users by explaining methods and reasoning for data collection, and making efforts to identify potential inequities during participant intake to help address barriers to participation. Additionally, all evaluation and feedback participation was kept optional to alleviate any pressure for those involved in the program; within the program evaluation process, there was an emphasis to shift away from using clinical language to minimize stigmatization. Informants from EveryMind discussed the importance of providing adequate compensation for those involved in the evaluation process as an acknowledgement of the potential effort endured during the evaluation process. Foundry Central Office has also implemented a virtual care program that offers increased access to peer support programming and evaluation by promoting access to care and evaluation capabilities for rural and remote youth.

One overarching sentiment shared from representatives from 4 of the consulted organizations was the idea that evaluation efforts should focus on the needs of, and include the perspectives of, the youth involved in the program. The informant from the New Brunswick DoH stated that within their program evaluation process, a client-led approach was adopted to include user perspectives and may allow for appropriate representation within the evaluation process. Furthermore, informants from EveryMind emphasized that efforts for including diverse perspectives to inform evaluative processes is key to ensuring appropriate representation yet stated that demographic specific data collection or attempts to measure individual identifiers are not used within the evaluation as an additional layer of participant safety.

Evaluation efforts aimed at involving and adhering to the needs of youth engaging with the program have contributed to heighten the awareness of providing appropriate and safe care for youth who experience marginalization, racialization, and who are Indigenous . Informants from the Centre for Innovation in Peer Support at Support House, EveryMind, and Foundry Central Office described fostering a relationship with youth engaged in the peer support programs and who can provide feedback regarding the evaluation process in a way that holds the organization accountable to provide appropriate care in a culturally competent manner. Foundry Central Office outlined the ongoing efforts to incorporate a learning management system that involves the implementation of an Indigenous lens and autism spectrum disorder module for youth peer support training evaluation. Additionally, they described an organizational responsibility to capture Indigenous-focused data collection and evaluate in a culturally competent manner.

Furthermore, Foundry Central Office described the challenges with implementing equitable processes within their program evaluation but understanding that these processes can often take time to ensure that the appropriate path is taken to prioritize youth safety in a culturally sensitive way. This also means developing and maintaining a continual relationship with communities engaged with the organization's peer support services. In some cases, although equity considerations within the evaluation process were not explicitly outlined, organizations highlighted how the evaluations helped identify gaps in program uptake among those using peer support and those living in the community. In addition, some informants

also emphasized that peer support services that are offered currently lack appropriate equity considerations but expressed an intention to incorporate equity considerations as program evaluation becomes consistently applied with greater program uptake.

Finally, representatives from some organizations also shared ways in which youth engage with their individual mental health recovery through program self-selection. As a result, organizations have a responsibility to offer programs that can fit the needs of youth. This is often informed through program evaluation; therefore, efforts must be made to create equitable programs that reflect the user.

### ***Funding Considerations for Program Evaluation***

During the consultations, key informants highlighted that funding considerations can affect how they carry out their program evaluations because program funders have the ability to shape the evaluation process through the criteria to access and hold funding. For example, program funders may request that certain metrics be captured to show that programs have a certain level of uptake and are effective. For other organizations, the availability of external funding specifically for evaluation prompted a shift in the aims of their evaluation. Rather than collecting program output data that can give a brief snapshot of program use, they aim to understand the effects of the programs on peer support users (i.e., demonstrate how peer support may be effective).

One informant highlighted the importance of flexibility when working with the funder's needs to collect data while being mindful of the potential effects on program users or workers. For example, a funder may request information that is sensitive in nature so questions should be asked in a mindful manner with an emphasis on minimizing harmful language that may make the individual uncomfortable or cause further harm.

Finally, program evaluation may also be constricted by resource availability. One informant described the challenges associated with the de-prioritization of program evaluation due to costs. When cost and resourcing are considerations for organizations that are funding peer support programs, program evaluation may be cut to save on program costs or may not be accounted for in funding allocated to the program. The inability or limited resources to conduct evaluations has direct effects on programs' functionality and ability to offer tailored programs to fit the needs of the users.

### **Findings of Evaluations: Peer Support Programs for Youth Mental Health in Canada**

The 1 identified Canadian publication that provided information related to the evaluation of the TAY program reviewed the methodological guiding principles and information related to the characteristics, outcomes, and measures used in the evaluation; however, the findings of the evaluation were not presented in the publication so could not be extracted for the purpose of this ES. Furthermore, the examples of the completed evaluations shared by the Centre for Innovation in Peer Support at Support House and Foundry Central Office during the consultations are not publicly available, and therefore cannot be presented in this ES.

The examples of the completed evaluations provided by EveryMind and through stakeholder feedback are publicly available and report findings from the Youth Peer Support Pilot Project<sup>76</sup> and Peer Support Centre program.<sup>77</sup>

### ***Youth Peer Support Pilot Project: EveryMind***

The objective of the evaluation conducted by EveryMind was to assess peer support worker training and program implementation process-related questions (i.e., how the peer support worker training and program were implemented and if they were implemented as intended) and outcome-related questions (i.e., changes that may have occurred as a result of the training and program).<sup>76</sup> The findings of the evaluation were grouped in peer support worker recruitment and training findings and program implementation findings.<sup>76</sup> The overall findings of this evaluation informed a set of recommendations related to practices for future programming of peer support programs for youth mental health. The evaluators collected and analyzed qualitative and quantitative data to assess process- and outcome-related questions, and qualitative data to capture the experiences of peer support users and workers. Program indicators were collected to capture information related to the process evaluation questions by assessing youth's answers to content-based and demographic questions from the peer support training, and gathering attendance data, information on program access (i.e., training, group sessions, one-to-one sessions), and information on session topics. Peer support worker recruitment and training findings were informed by 31 participants, while 23 participants informed the program implementation findings. Data collection for this evaluation was completed in March 2021.

### **Peer Support Worker Training Recruitment Findings**

The report outlined that the majority of the youth learned about peer support training through friends or peers (29% of respondents), which indicates that a variety of forums and media need to be used to reach youth and to publicize youth peer support training.<sup>76</sup> Youth also likely have competing demands that need to be considered when engaging youth in the recruitment process.<sup>76</sup> For example, the majority of the youth included in the evaluation identified as being full-time students (35% of respondents).<sup>76</sup> In addition, the majority of youth included in the evaluation indicated they had previous experience participating in peer support (73% of respondents).<sup>76</sup> Youth peer support training applicants often have previous experience either through providing or receiving peer support that need to be considered and implemented in the recruitment process, and youth interests can often inform their experience in supporting peers in their recovery journey.<sup>76</sup>

### **Peer Support Worker Training Findings**

Overall, there was positive participant feedback regarding youth peer support training for this pilot project, showing that the training learning objectives were met with rating averages between 82% and 97% for agreement with statements about training benefits.<sup>76</sup> The report outlined that some of the key benefits of youth peer support training included increased knowledge and understanding of youth peer support, personal growth, and a positive learning environment.<sup>76</sup> In addition, it was noted that youth peer support workers may be able to provide insights and mentorship to address stigma, promote outreach, provide support for family dynamics and unique cultural experience, managing life transitions, and stress management.<sup>76</sup>

### **Peer Support Program Implementation Findings**

Implementation findings focused on the experience of the peer support users and workers. It was noted that interest in accessing youth peer support was consistent across participant age (between 14 and 25 years).<sup>76</sup> Peer support users were able to develop strategies to manage difficult situations and experienced a sense of connection, space to share, and personal growth.<sup>76</sup> Peer support users and workers experienced reciprocity, meaning they

were able to learn and benefit from one another.<sup>76</sup> Both group components and one-to-one components of peer support received positive feedback. In addition, it was reported that youth valued being included in all phases of the program, from planning to implementation, and that it is important to provide financial compensation for youth support workers to reflect their contributions.<sup>76</sup>

Finally, evaluators developed recommendations for future programming based on the findings and lessons learned. The recommendations are:

- Youth peer support needs to be offered as part of the core service system throughout the service process, including bridging for adult mental health service and ensuring feedback is integrated as part of the service process.
- Ensure effective co-design as the foundation for youth peer support models by using principles of youth engagement and being responsive to youth feedback throughout the process.
- To develop and implement a youth need-based program, support and buy-in from all levels of involvement (senior leadership, management, staff, and youth) is needed.
- Implementing and sustaining youth peer support services needs careful consideration for the necessary supports and resources, including compensation for youth peer support workers, pay equity, and allotted time per work schedule.
- Youth peer support training should be offered annually to young adults with lived experience. Training can help build resilience, leadership skills, increase formal knowledge of peer support, and build community capacity.
- Strategies to engage youth with lived experience and knowledge of the system need to be developed by system leaders. This should include meaningful professional development and employment opportunities.

### ***Peer Support Centre Program: McGill University***

The aim of the evaluation was to determine who was accessing peer support services, the mental health status and needs of those using peer support services, and the quality of peer support services sessions as reported by those who used these services.<sup>77</sup> The findings of this evaluation were based on the responses to an anonymous and confidential online survey that was offered to users of peer support services through the Peer Support Centre program.<sup>77</sup> Data were collected after each support session from September to December, 2018, and included 120 completed surveys.<sup>77</sup>

The authors of the evaluation reported that 57.5% of users completed demographic-related questions, which may be a limiting factor for understanding who accessed this program.<sup>77</sup> However, it was reported that the primary reasons for accessing peer support services was due to a lack of available mental health professionals and the need for immediate support.<sup>77</sup> User's well-being outcomes assessed by the Outcome Rating Scale found that majority of users reported well-being scores of 25 or lower out of a possible 40.<sup>77</sup> The authors reported results from the GAD-7 tool and found that approximately 24.2% and 23.3% of users reported moderate or moderate to severe anxiety, respectively.<sup>77</sup> Furthermore, the authors reported results from the PHQ-9 tools and found that approximately 22.5% and 14.2% of users reported moderate or moderate to severe depression, respectively.<sup>77</sup>

Users were also asked about their perception of peer support services quality offered through the Peer Support Centre program. Questions were based on the Session Rating Scale and asked:

- Did you feel heard, understood, and respected?
- Did you talk about things you wanted to talk about?
- The supported approach was a good fit for me
- Overall, today's session was right for me.<sup>77</sup>

Approximately 57.4% of respondents reported having a good relationship between support providers and users, 80.8% of respondents reported that they would agree or strongly agree that talking to a support provider helped with their mental and emotional well-being, 69.2% of respondents indicated that their peer support session was good or excellent, 96% of respondents would recommend the Peer Support Centre program to others, and 91% perceived the peer support as being beneficial to other students.<sup>77</sup>

The overall conclusions highlighted by the authors of this evaluation found that university-based peer support services offer potential benefits through improving access to mental health services and addressing the mental health needs that are often present among this demographic.<sup>77</sup>

## Limitations

The findings are based on a literature search and targeted stakeholder consultations. The consultations included representatives from 7 organizations in British Columbia, Manitoba, Ontario, and New Brunswick. Because the stakeholders were identified by CADTH or through referral from others involved in consultations, it is likely not all relevant stakeholders were identified and contacted. While our focus was on evaluation of peer support programs for youth mental health within Canada, future research should aim to include exploring completed evaluations in more detail through consultations from other countries. The results of the consultations were based on a small sample of stakeholders that is not representative of all stakeholders across Canadian jurisdictions. Additionally, despite their expertise in program evaluation and peer support services, stakeholders were only able to speak to the organizations they represented. The responses may not reflect all peer support programs and evaluation processes available in Canada. Program users or workers were not contacted for consultation; therefore, results are only representative of people involved at the organizational level. However, program user and worker insights on peer support programs for youth mental health were explored in the Peer Support Youth Advisors' Experiences component of this HTA, which also highlighted some user and worker perspectives on program evaluation. Information on the clinical evidence supporting peer support programs for youth mental health was not collected as part of this ES. The clinical evidence supporting peer support programs for youth mental health was evaluated in the Clinical Review component of this HTA.

The limited literature search identified 2 reports that outlined evaluations for peer support programs for youth mental health. One of the identified reports was based in Canada; however, it did not provide details regarding the evaluation findings but focused on the methods used for program evaluation. The second identified report did provide findings of the program evaluation, but because this report was based in the UK, these findings were not relevant for this ES.

Considering these limitations, not all peer support program evaluations for youth mental health available in Canada were identified by this ES. As a result, it is likely that the information presented is not comprehensive or representative of all organizations that offer peer support services for youth mental health in Canada. Further research would be required to have a

complete working knowledge of all program evaluation considerations for peer support programs across Canada.

## Summary of Program Evaluation Methods

The findings from the literature and stakeholder consultations outline how evaluation of peer support programs in Canada is heterogeneous mainly due to a lack of formal guidance and diversity stemming from adapting practices that meet the needs of the individuals and program contexts. However, we identified some commonalities across programs in the methods and approaches used to conduct evaluations. These commonalities include the principle of practice-based evidence, a focus on evaluation that adheres to a recovery model of care, involving youth in the design and conduct of the evaluation, and addressing the needs of the youth involved in the program through evaluation.

We found various methods of data collection and analysis in the literature and through consultations. The most common approach for data collection was through surveys, either designed on an individual basis or shaped after other guiding resources. Findings from the literature and some consultations highlighted other methods used for data collection such as one-on-one interviews, focus groups, and follow-up case studies. Some programs from the consultations identified the need for external resourcing for data analysis and interpretation.

We identified and categorized a number of program evaluation outcomes. These included recovery-oriented individual outcomes, program outcomes, and system-level outcomes. There was a large amount of overlap between recovery-oriented outcomes and individual outcomes. A few programs measured outcomes related to the program itself or the system (e.g., health care resource use). These latter outcomes are often measured to address the priorities of program decision-makers or funders, which might not always align with the those of the programs. This divergence highlighted the competing objectives of program evaluation as a tool to address the needs of the youth, the program and organization, and the funders.

Representatives from across organizations were able to share if and/or how equity is considered during program evaluations. It is evident that there is a special interest in providing an experience for youth that is rooted in equity. Representatives shared examples of how equity may be considered, such as providing transparency in the data collection and methods used in program evaluation, ensuring safety of the individuals by removing potential identifiers within the evaluation, ensuring that participation in evaluation is optional, and prioritizing the voice of the youth involved in the program to help guide evaluation. It was also noted that building a process for equitable resourcing in programs and evaluation must be done through a continual relationship with communities, which demands proper time allocation and resourcing.

Finally, we presented findings from 2 completed program evaluations that were shared through consultations. One set of findings were related to the evaluation of recruitment and training of peer support workers and implementation of a youth peer support pilot project, which included recommendations for future programming that were informed by the evaluation.<sup>76</sup> The other set of findings were related to the evaluation of peer support services offered at McGill University and assessed by users' mental health status and perception of session quality.<sup>77</sup> Findings from the limited literature search and other resources shared through consultations cannot be presented because they were either unavailable or out of scope.

## Discussion

Because peer support is based on a recovery-oriented model of mental health,<sup>3,13</sup> we prioritized recovery-oriented outcomes. Recovery is an ongoing process to regain a meaningful life even with persisting symptoms, is unique for each individual, and depends on one's family and community connections, social and economic circumstances, and their individual identity. Outcomes that measure recovery focus on a holistic improvement in an individual's quality of life through increased social connections and emphasize resilience and control over one's own life.<sup>85</sup> Recovery was consistently brought up as the most important outcome or goal of peer support by program representatives and peer support youth advisors. The peer support youth advisors we spoke with all agreed that recovery-oriented outcomes (i.e., peer journey and relationship to recovery, such as community integration, overall fulfillment, emotional regulation, empowerment, education, employment, and social connections) were central to their experiences with peer support. Additionally, the peer support youth advisors explained that recovery is not a finite outcome; rather, it is a subjective or personal journey whereby they continuously make positive movements in their own life. One advisor shared that youth are accepting that they may reach a point where they are not getting better or worse but are maintaining their mental health through peer support. Moreover, because recovery is a process, it points to the benefits of outcomes being measured over time (i.e., not at a single point).

Our SR did not find any information related to the safety of peer support programs for youth peer support users. However, issues related to safety were raised by our peer support youth advisors who had experiences as workers. They spoke of the importance of setting professional boundaries between peer support service users and workers, such as finding a balance between being easily accessible to service users via their professional phone and being able to turn it off. They also spoke about the need for a space where they can connect and have an opportunity to reaffirm that they know what they are doing. "The infrastructure of peer support is often an afterthought about how it will help someone coming into this role – What are their needs going to be? How will this peer have a community of like peers so they're not isolated? How are we building community? Supervision? A processing space? A place for them to ask questions? A place to say, 'I'm not doing well?'" This points to the need for sustained recognition that youth peer support workers are themselves in recovery and may need support themselves. There are potential risks to youth peer support users and workers if appropriate training and supports are not carefully considered, developed, and integrated in advance into the peer support program, including the delivery of safe care. These risks can potentially lead to staff burnout and inadvertently affect the youth who use the service. As a whole, it highlights the benefits of formal, structured peer support programs that involve trained peer support workers and an organization that supports them.

In our review, we found the overall treatment effect of peer support to be uncertain, but our peer support youth advisors described the benefits of peer support programs in terms of providing accessible mental health support. They expressed that peer support can be a first point of contact for a lot of youth, and it can be easier to approach peers and ask where to be referred. Moreover, peer support services are perceived as convenient and accessible, and offer a low-barrier, low-commitment service. Importantly, peer support provides an environment where youth peer support advisors described feeling safe and comfortable.

The peer support advisors shared that it was easier opening up to and speaking with peers about their mental health because of their shared lived experience. For the peer support

youth advisors we spoke with, this meant that they felt the peer support workers had similar experiences to them, which made it easier for them to relate and understand where they were coming from. This ability to relate and normalize lived experiences with mental health challenges reduced stigma. They noted that it was not as easy to open up to clinical therapists. One said that some youth have had bad experiences in the psychiatry sector, so peer support may feel safer for them. Similarly, many program representatives noted that youth are more likely to engage with mental health care through informal practices such as peer support rather than those offered in a clinical setting such as formal psychology. One advisor described how they did not feel comfortable discussing suicidal ideation openly in a clinical setting for fear that it might be alarming to their care provider but felt comfortable doing so with a peer who was candid about their own experiences and who normalized them. Youth peer support advisors we spoke with consistently articulated how much they valued peer support and how it played an important role in their recovery.

Although our review did not evaluate different modalities of delivering peer support, 1 youth peer support advisor explained youth in rural communities seeking in-person support may know people working in centres. As a result, they may not feel comfortable sharing sensitive information about themselves for fear of it getting back to their parents or others in their small community. This may lead them to not use in-person services, and they may prefer to access virtual services that are removed from their community. Some of the peer support advisors spoke about the convenience of virtual services and how it facilitates the sharing of resources electronically. Similarly, it allows some programs to broaden their reach and provide access to youth who live in rural or remote areas. However, it is not without its limitations because individuals without access to the internet cannot access some peer support services. In-person support can help bridge that gap; the peer support youth advisors spoke about peer support workers meeting youth in person (e.g., drop-in, by appointment, or meeting in the community), and the value in being reachable via a cell phone provided by the peer support program.

There may be a role for peer support in reducing inappropriate mental health care, but it may also result in increased access to appropriate mental health care, which in some contexts may include ED visits and hospitalizations. Increased health care resource use may be an indicator that peer support is working (i.e., youth are seeking treatment of underlying mental health conditions due to reduced stigma and increased self-efficacy). Indeed, our stakeholder engagements and consultations with peer support youth advisors similarly highlighted the significance of contextualizing resource utilization outcomes in light of the overarching recovery-oriented aims of peer support. Studies looking at peer support for adult mental health often include reduced ED use or hospitalizations as evidence of the effectiveness of peer support.<sup>29</sup> This is premised on individuals becoming engaged in the process of recovery and improving their ability to cope through peer support, which results in less need to access crisis mental health care (ED visits), or experiencing less severe symptoms leading to fewer inpatient stays (hospitalizations). The ED is typically recognized as an inappropriate setting for mental health care, particularly when used repeatedly.<sup>86,87</sup> However, with the fragmentation of mental health services in many parts of Canada,<sup>88,89</sup> it may be the only accessible point of contact for some youth in crisis. Thus, careful interpretation is required when considering the complicated relationship between peer support programs and health care resource use.

In our scan of methods for and evaluations of peer support programs, several program representatives described how they sought to balance the benefits of formalizing and standardizing peer support programs and their evaluation with the informal and flexible nature of peer support which is central to its integrity as an intervention. Although our

respondents were all representatives of formal peer support programs, they expressed worries that increasing pressures to formalize programs and evaluation could impact the fidelity of the peer support being delivered. However, these risks appear to be outweighed by the positive dimensions of standardizing some aspects of peer support (through program design including training of peer support workers).

The program representatives we spoke with shared a principle guiding evaluations of peer support programs was that they were adhering to a recovery-oriented model of care. This meant that most evaluations included some form of recovery-oriented outcomes and reviewed how a program supported a youth's recovery. Program representatives highlighted that recovery is unique to the individual and occurs in the context of a program's specific set of aims or objectives and can be evaluated in different ways so evaluations can vary across programs. Based on this, it is important for evaluations of peer support programs for youth mental health to select appropriate evaluation aims and outcomes based on their program's specific aims, objectives, and the youth population they serve. Repeating measurements over time (longitudinal measurements) and possibly adjusting the evaluation according to changes in recovery over time could help to understand the effect that programs may have on individual recovery. As a flexible and tailorable intervention, the context matters in assessing its impact, highlighting the need for context-specific evaluations and selecting recovery-oriented outcomes that are consistent with the aims of the program.

Co-design is a process that enables participants to be involved in the design of the program evaluation and is an important principle that can ensure that the data being captured are relevant to the needs of the youth involved and can contribute to the recovery model. Co-designed evaluations can also be used to highlight or capture equity considerations within the program and evaluation process and ensure safety and appropriate cultural competency that fits the needs of the youth involved in the program. Involving youth with lived experience of peer support in the co-design of the program evaluation can inform the needs of the program to better align with and reflect the needs and identities of its users. One youth peer support advisor described the role of youth involved in an evaluation as helping staff bridge to youth by ensuring the research is explained in plain language. The same advisor shared that this involvement was especially important when working with an outside evaluator who did not know how the program functions or the language used by a program.

Unsurprisingly, given the importance of local context, we found that organizations and programs vary in the aims and objectives of their evaluations. Some programs use evaluation as an opportunity to better understand how peer support "works" (i.e., leads to short- and long-term improvements in youth's recovery, contributes to improved access to mental health care, and reduces inappropriate mental health care). But for many programs, evaluation is used to ensure that the program meets the needs of the youth (peer users and peer workers) and as a way of ensuring the integrity or the fidelity of the program. These evaluations often focus on the experience and feedback from those involved in the program for the purpose of quality improvement and are designed for the specific purpose of the program evaluation. At the same time, evaluation is an opportunity to build an evidence base around the use of peer support for youth mental health. Regardless of the specific aim or objective of the evaluation, the youth peer support advisors we spoke with shared that transparency of why the evaluation was being conducted and what was being done with their data were essential for youth buy-in to the evaluation, which highlights the benefits of a co-design approach to evaluation.

In addition to having multiple aims, programs often must balance program needs and the identified needs of youth and sometimes those of the larger organization or funders. Our consultations also highlighted the challenges that may arise when the program needs do not fully align with those of the larger organization or funders. To secure funding, program evaluation may be tailored in a way that highlights the use of program outputs (e.g., number of contacts); however, this may not capture how the programs support the individuals involved (i.e., quality improvement) or for understanding the mechanisms and context in which peer support works. Program representatives spoke about the importance of flexibility and understanding that evaluation should primarily focus on the needs of the individuals engaged in the program. Programs vary in their capacity to design and conduct evaluations of peer support programs for youth, this includes methods support (e.g., data collection, analysis) and funding. Accounting for the resources needed to conduct evaluations in funding agreements is another avenue that can be used to support advancements in evaluating peer support programs.

Equity in peer support programs requires recognizing the existing inequitable distribution of poor mental health among youth who are systematically disadvantaged,<sup>6</sup> and the need for equitable access to inclusive and desirable peer support programs for these youth.<sup>90</sup> In our clinical SR, we aimed to identify specific groups of youth who are disadvantaged who experience an inequitable burden of mental health challenges and access to inclusive mental health services using [PROGRESS-Plus](#),<sup>23</sup> the available published and grey literature on peer support, discussions with clinical and content experts, and through existing descriptions of peer support programs explicitly designed to target or serve youth who are disadvantaged. These groups of youth include but are not limited to youth members of the 2SLGBTQ+ community, Indigenous youth, Black youth and youth of colour, youth members of newcomer communities, youth experiencing homelessness or street involvement, youth with disabilities, and youth living in rural and remote communities. The trials included in the SR of clinical effectiveness were predominantly conducted among White, heterosexual, female youth. We did not identify any information on subgroups based on PROGRESS-Plus factors.

The results of our SR could not contribute to our understanding about the role of equity in peer support in terms of effectiveness and safety, our engagement with youth peer support advisors pointed to some ways equity might affect the effectiveness and safety of peer support programs. One peer support advisor described how a lack of shared lived experience or understanding of racism and discrimination is a barrier to peer support: “They don’t understand anything I’m going through. I need to explain this whole backstory about colourism and racism. If they don’t understand that, it sometimes feels like it’s not even worth the effort to go see them.”

During recruitment and training of youth peer support workers, programs have the opportunity to ensure they can meet the needs of youth and provide culturally competent support to positively influence the experience of the peer support user. One example of this was outlined during consultation with Foundry Central Office, where a process for developing and including a justice, equity, diversity, and inclusion (JEDI) lens across the organization was described.

Equity was a concern in most peer support programs and in their evaluation processes; however, the definitions of equity and approaches used to address equity concerns varied. Youth peer support advisors and program representatives shared that equity ensures all youth are able to access the service. Peer support youth advisors expressed wanting to see peer supporters who are chronically ill or disabled, are part of the 2SLGBTQ+ community, have experienced homelessness, and are from other populations who experience marginalization

or disadvantage. “There are so many intersections that, often, some are missed.” They desired to see representation in all aspects of peer support programs, including involving youth in the design and evaluation of peer support programs.

Because equity is as an integral concept to peer support programs, it also needs to be integral to the evaluation approach and cannot be an add-on at the point of evaluation. Involving youth with lived experience of peer support in the co-design of the program evaluation can inform the needs of the program and to better align with and reflect the needs and identities of its users. Instead of seeking only the perspectives of professionals, using evaluation co-design includes the voice of the youth involved to identify and address gaps in equity. For programs to address equity concerns and be culturally competent, program leaders and staff should aim to prioritize the appropriate resources and time and continuously build ongoing relationships with communities.

### **Conclusions and Implications for Decision- or Policy-Making**

Peer support could be an option for improving access to mental health care for youth despite the limited evidence (both in terms of quantity and quality) of its clinical effectiveness and safety. Formal programs with trained and supported peer support workers may mitigate some safety concerns (for both peer support users and peer support workers). Peer support may improve access to mental health services because it is informal, flexible, and portable, and addresses some of the barriers that typically face youth when trying to access mental health care. For programs to be inclusive, or accessible to and effective in supporting the recovery of youth who are disadvantaged, diverse and youth who are disadvantaged must be trained and recruited. Equity cannot be an ad hoc effort or an add-on to a program service; it is best integrated into peer support programs and requires time and commitment. Opportunities for engaging youth can advance equity, diversity, and inclusion initiatives.

The findings of this review highlight opportunities to build an evidence base around peer support programs for youth mental health. In this process, youth should be engaged by drawing on the principles of co-design. Peer support is context-dependent, and programs often need to balance broader organizational aims with the needs of the local youth they are serving. Further, peer support is often 1 of many services offered by organizations and programs, and needs to be evaluated in light of a multi-component intervention. Evaluation designers need to consider recovery-oriented outcomes that align with the program’s objectives measured over time. Developing an evidence ecosystem around peer support for youth mental health care could be achieved by strategic investments in pilot programs and their evaluations, funding arrangements that incentivize evaluation, and encouraging ongoing collaboration across the sector and with the academic and non-for-profit research community.

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## Appendix 1: Literature Search Strategy

Note that this appendix has not been copy-edited.

### Clinical Literature Search

Overview

**Interface:** Ovid

**Databases:**

- MEDLINE All (1946-present)
- Embase (1974-present)
- PsycInfo (1806-present)
- Note: Subject headings and search fields have been customized for each database. Duplicates between databases were removed in Ovid.

**Date of search:** December 17, 2021

**Alerts:** Biweekly search updates until project completion

**Search filters applied:** Systematic reviews; meta-analyses; network meta-analyses; health technology assessments; overview of reviews; randomized controlled trials; controlled clinical trials; observational studies.

**Limits:**

- Publication date limit: 2006-present
- Language limit: English and French language
- Conference abstracts: excluded

### Table 7: Syntax Guide

Syntax	Description
/	At the end of a phrase, searches the phrase as a subject heading
MeSH	Medical Subject Heading
.fs	Floating subheading
exp	Explode a subject heading
*	Before a word, indicates that the marked subject heading is a primary topic; or, after a word, a truncation symbol (wildcard) to retrieve plurals or varying endings
#	Truncation symbol for 1 character
?	Truncation symbol for 1 or no characters only
adj#	Requires terms to be adjacent to each other within # number of words (in any order)
.ti	Title
.ot	Original title
.ab	Abstract

Syntax	Description
.hw	Heading word; usually includes subject headings and controlled vocabulary
.kf	Keyword heading word
.dq	Candidate term word (Embase)
.pt	Publication type
.mp	Mapped term
.rn	Registry number
.nm	Name of substance word (MEDLINE)
.yr	Publication year
.jw	Journal title word (MEDLINE)
.jx	Journal title word (Embase)
freq=#	Requires terms to occur # number of times in the specified fields
medall	Ovid database code: MEDLINE All, 1946 to present, updated daily
oomezd	Ovid database code; Embase, 1974 to present, updated daily
psyh	Ovid database code; APA PsycInfo, 1806 to present, updated daily

## Multi-Database Strategy

- Peer group/
- ((Peer\* or mentor\*) adj2 (support\* or relationship\* or help\* or intervention\* or network\* or discussion\* or service\* or program\* or club\* or based or coach\* or counsel\* or exchange\* or guide\* or group\* or influence\* or led or deliver\* or education or involve\* or advocate\* or communication\* or center\* or centre\* or lead\* or model\* or worker\* or specialist\* or run or partner\* or provided or role\* or interaction\* or driven or advice or assistance or facilitat\* or consult\*)).ti,kf,dq.
- ((Peer\* or mentor\*) adj1 (support\* or relationship\* or help\* or intervention\* or network\* or discussion\* or service\* or program\* or club\* or based or coach\* or counsel\* or exchange\* or guide\* or group\* or influence\* or led or deliver\* or education or involve\* or advocate\* or communication\* or center\* or centre\* or lead\* or model\* or worker\* or specialist\* or run or partner\* or provided or role\* or interaction\* or driven or advice or assistance or facilitat\* or consult\*)).ab. /freq=2
- Peer\* support\*.ab,dq.
- (peer\* to peer\* or peer mentor\*).ti,ab,kf,dq.
- ((individual\* or peer\* or mentor\*) adj4 lived experience\*).ti,ab,kf,dq.
- or/1-6
- mental health care/ or mental health service/ or mental health/ or mental disease/ or adjustment disorder/ or alexithymia/ or exp anxiety disorder/ or complicated grief/ or exp dissociative disorder/ or exp emotional disorder/ or exp experimental mental disease/ or hikikomori/ or exp mental deficiency/ or mental infantilism/ or mental instability/ or mental overstimulation/ or exp mood disorder/ or exp neurosis/ or organic brain syndrome/ or organic psychosyndrome/ or exp personality disorder/ or psychiatric complication/ or exp psychosexual disorder/ or exp psychosis/ or exp psychosomatic disorder/ or exp psychotrauma/ or exp schizophrenia spectrum disorder/ or stupor/ or exp suicidal behavior/ or exp eating disorder/
- (mental disorder\* or mental health or mental disease\* or mental illness\* or posttraumatic or PTSD or PTD or trauma\* or psychiatric illness\* or psychiatric disease\* or psychiatric disorder\* or psychotic disorder\* or psychiatric diagnos?s or behavio?r disorder\* or mood disorder\* or affective disorder\* or psychological disorder\* or psychological disease\* or psychological illness\* or psychological diagnos?s).ti,ab,kf,dq.

10. (anxiety or depress\* or panic disorder\* or neuroses or neurosis or neurotic or bipolar or schizophreni\* or personality disorder\* or psychosis or anorexia or eating disorder\* or bulimia).ti,ab,kf,dq.
11. (suicid\* or parasuicid\*).ti,ab,kf,dq.
12. (self adj2 (injur\* or mutilat\* or inflict\* or wound\* or harm\* or cut\* or hurt\* or destruct\* or wound\*)).ti,ab,kf,dq.
13. or/8-12
14. Young adult/
15. Juvenile/
16. Adolescent/
17. (child\* or paediatric\* or pediatric\* or girl\* or boy\* or kid\* or teen\* or tween\* or youngster\* or youth\* or preteen\* or adolescen\* or school age\* or preadolescenc\* or juvenile\* or young adult\* or young people\* or young person\* or student\* or early adult\* or emerging adult\* or college\* or universit\* or high school\* or post secondary or postsecondary or classmate\* or class mate\*).ti,ab,kf,dq.
18. young.ti,kf.
19. or/14-18
20. 7 and 13 and 19
21. (Peer\* and mental\*).ti.
22. 20 or 21
23. 22 not (conference abstract or conference review).pt.
24. 23 use oemezd
25. exp Peer group/
26. ((Peer\* or mentor\*) adj2 (support\* or relationship\* or help\* or intervention\* or network\* or discussion\* or service\* or program\* or club\* or based or coach\* or counsel\* or exchange\* or guide\* or group\* or influence\* or led or deliver\* or education or involve\* or advocate\* or communication\* or center\* or centre\* or lead\* or model\* or worker\* or specialist\* or run or partner\* or provided or role\* or interaction\* or driven or advice or assistance or facilitat\* or consult\*)).ti,kf.
27. ((Peer\* or mentor\*) adj1 (support\* or relationship\* or help\* or intervention\* or network\* or discussion\* or service\* or program\* or club\* or based or coach\* or counsel\* or exchange\* or guide\* or group\* or influence\* or led or deliver\* or education or involve\* or advocate\* or communication\* or center\* or centre\* or lead\* or model\* or worker\* or specialist\* or run or partner\* or provided or role\* or interaction\* or driven or advice or assistance or facilitat\* or consult\*)).ab. /freq=2
28. Peer\* support\*.ab.
29. (peer\* to peer\* or peer mentor\*).ti,ab,kf.
30. (((individual\* or peer\* or mentor\*) adj4 lived experience\*).ti,ab,kf.
31. or/25-30
32. Mental health/ or exp Mental health services/ or exp Community Mental Health Centers/ or Mental health recovery/ or Mentally Ill Persons/
33. mental disorders/ or exp anxiety disorders/ or exp "bipolar and related disorders"/ or exp "disruptive, impulse control, and conduct disorders"/ or exp dissociative disorders/ or exp elimination disorders/ or exp "feeding and eating disorders"/ or exp mood disorders/ or motor disorders/ or neurotic disorders/ or exp paraphilic disorders/ or exp personality disorders/ or exp "schizophrenia spectrum and other psychotic disorders"/ or exp sexual dysfunctions, psychological/ or exp sleep wake disorders/ or exp somatoform disorders/ or exp "trauma and stressor related disorders"/ or depression/ or Schizophrenia, Childhood/ or

Anxiety, Separation/ or exp Self-Injurious Behavior/

34. (mental disorder\* or mental health or mental disease\* or mental illness\* or posttraumatic or PTSD or PTD or trauma\* or psychiatric illness\* or psychiatric disease\* or psychiatric disorder\* or psychotic disorder\* or psychiatric diagnos?s or behavior?r disorder\* or mood disorder\* or affective disorder\* or psychological disorder\* or psychological disease\* or psychological illness\* or psychological diagnos?s).ti,ab,kf.
35. (anxiety or depress\* or panic disorder\* or neuroses or neurosis or neurotic or bipolar or schizophreni\* or personality disorder\* or psychosis or anorexia or eating disorder\* or bulimia).ti,ab,kf.
36. (suicid\* or parasuicid\*).ti,ab,kf.
37. (self adj2 (injur\* or mutilat\* or inflict\* or wound\* or harm\* or cut\* or hurt\* or destruct\* or wound\*)).ti,ab,kf.
38. or/32-37
39. Adolescent/ or Young adult/ or Pediatrics/
40. (child\* or paediatric\* or pediatric\* or girl\* or boy\* or kid\* or teen\* or tween\* or youngster\* or youth\* or preteen\* or adolescen\* or school age\* or preadolescenc\* or juvenile\* or young adult\* or young people\* or young person\* or student\* or early adult\* or emerging adult\* or college\* or universit\* or high school\* or post secondary or postsecondary or classmate\* or class mate\*).ti,ab,kf.
41. young.ti,kf.
42. or/39-41
43. 31 and 38 and 42
44. (Peer\* and mental\*).ti.
45. 43 or 44
46. 45 use medall
47. Peers/
48. Peer counseling/
49. Peer relations/
50. ((Peer\* or mentor\*) adj2 (support\* or relationship\* or help\* or intervention\* or network\* or discussion\* or service\* or program\* or club\* or based or coach\* or counsel\* or exchange\* or guide\* or group\* or influence\* or led or deliver\* or education or involve\* or advocate\* or communication\* or center\* or centre\* or lead\* or model\* or worker\* or specialist\* or run or partner\* or provided or role\* or interaction\* or driven or advice or assistance or facilitat\* or consult\*).ti,id.
51. ((Peer\* or mentor\*) adj1 (support\* or relationship\* or help\* or intervention\* or network\* or discussion\* or service\* or program\* or club\* or based or coach\* or counsel\* or exchange\* or guide\* or group\* or influence\* or led or deliver\* or education or involve\* or advocate\* or communication\* or center\* or centre\* or lead\* or model\* or worker\* or specialist\* or run or partner\* or provided or role\* or interaction\* or driven or advice or assistance or facilitat\* or consult\*).ab. /freq=2
52. Peer\* support\*.ab.
53. (peer\* to peer\* or peer mentor\*).ti,ab,id.
54. ((individual\* or peer\* or mentor\*) adj4 lived experience\*).ti,ab,id.
55. or/47-54
56. exp Mental health/
57. exp Mental health services/

58. mental disorders/ or exp affective disorders/ or exp anxiety disorders/ or exp bipolar disorder/ or borderline states/ or exp chronic mental illness/ or exp dissociative disorders/ or exp eating disorders/ or gender dysphoria/ or mental disorders due to general medical conditions/ or exp neurosis/ or exp paraphilias/ or exp personality disorders/ or exp psychosis/ or serious mental illness/ or exp sleep wake disorders/ or exp somatoform disorders/ or exp "stress and trauma related disorders"/ or exp thought disturbances/
59. exp suicide/
60. Suicidal ideation/
61. exp Self-Injurious Behavior/
62. (mental disorder\* or mental health or mental disease\* or mental illness\* or posttraumatic or PTSD or PTD or trauma\* or psychiatric illness\* or psychiatric disease\* or psychiatric disorder\* or psychotic disorder\* or psychiatric diagnos?s or behavior?r disorder\* or mood disorder\* or affective disorder\* or psychological disorder\* or psychological disease\* or psychological illness\* or psychological diagnos?s).ti,ab,id.
63. (anxiety or depress\* or panic disorder\* or neuroses or neurosis or neurotic or bipolar or schizophreni\* or personality disorder\* or psychosis or anorexia or eating disorder\* or bulimia).ti,ab,id.
64. (suicid\* or parasuicid\*).ti,ab,id.
65. (self adj2 (injur\* or mutilat\* or inflict\* or wound\* or harm\* or cut\* or hurt\* or destruct\* or wound\*)).ti,ab,id.
66. or/56-65
67. ("200" or "320").ag.
68. Adolescent Attitudes/ or Adolescent Behavior/ or Adolescent Health/ or Adolescent Development/ or Adolescent Psychology/ or Early Adolescence/ or Adolescent Psychiatry/ or Adolescent Psychotherapy/ or Adolescent psychopathology/ or Emerging adulthood/ or Childhood development/
69. (child\* or paediatric\* or pediatric\* or girl\* or boy\* or kid\* or teen\* or tween\* or youngster\* or youth\* or preteen\* or adolescen\* or school age\* or preadolescenc\* or juvenile\* or young adult\* or young people\* or young person\* or student\* or early adult\* or emerging adult\* or college\* or universit\* or high school\* or post secondary or postsecondary or classmate\* or class mate\*).ti,ab,id.
70. young.ti,id.
71. or/67-70
72. 55 and 66 and 71
73. (Peer\* and mental\*).ti.
74. 72 or 73
75. 74 use psych
76. 24 or 46 or 75
77. (systematic review or meta-analysis).pt.
78. meta-analysis/ or systematic review/ or systematic reviews as topic/ or meta-analysis as topic/ or "meta analysis (topic)" or "systematic review (topic)" or exp technology assessment, biomedical/ or network meta-analysis/
79. ((systematic\* adj3 (review\* or overview\*)) or (methodologic\* adj3 (review\* or overview\*))).ti,ab,kf.
80. ((quantitative adj3 (review\* or overview\* or synthes\*)) or (research adj3 (integrati\* or overview\*))).ti,ab,kf.
81. ((integrative adj3 (review\* or overview\*)) or (collaborative adj3 (review\* or overview\*)) or (pool\* adj3 analy\*)).ti,ab,kf.

82. (data synthes\* or data extraction\* or data abstraction\*).ti,ab,kf.
83. (handsearch\* or hand search\*).ti,ab,kf.
84. (mantel haenszel or peto or der simonian or dersimonian or fixed effect\* or latin square\*).ti,ab,kf.
85. (met analy\* or metanaly\* or technology assessment\* or HTA or HTAs or technology overview\* or technology appraisal\*).ti,ab,kf.
86. (meta regression\* or metaregression\*).ti,ab,kf.
87. (meta-analy\* or metaanaly\* or systematic review\* or biomedical technology assessment\* or bio-medical technology assessment\*).mp,hw.
88. (medline or cochrane or pubmed or medlars or embase or cinahl).ti,ab,hw.
89. (cochrane or (health adj2 technology assessment) or evidence report).jw.
90. (comparative adj3 (efficacy or effectiveness)).ti,ab,kf.
91. (outcomes research or relative effectiveness).ti,ab,kf.
92. ((indirect or indirect treatment or mixed-treatment or bayesian) adj3 comparison\*).ti,ab,kf.
93. (meta-analysis or systematic review).md.
94. (multi\* adj3 treatment adj3 comparison\*).ti,ab,kf.
95. (mixed adj3 treatment adj3 (meta-analy\* or metaanaly\*).ti,ab,kf.
96. umbrella review\*.ti,ab,kf.
97. (multi\* adj2 paramet\* adj2 evidence adj2 synthesis).ti,ab,kf.
98. (multiparamet\* adj2 evidence adj2 synthesis).ti,ab,kf.
99. (multi-paramet\* adj2 evidence adj2 synthesis).ti,ab,kf.
100. or/77-99
101. epidemiologic methods.sh.
102. epidemiologic studies.sh.
103. observational study/
104. observational studies as topic/
105. clinical studies as topic/
106. controlled before-after studies/
107. cross-sectional studies/
108. historically controlled study/
109. interrupted time series analysis/
110. exp seroepidemiologic studies/
111. national longitudinal study of adolescent health/
112. cohort studies/
113. cohort analysis/
114. longitudinal studies/

115. longitudinal study/
116. prospective studies/
117. prospective study/
118. follow-up studies/
119. follow up/
120. followup studies/
121. retrospective studies/
122. retrospective study/
123. case-control studies/
124. exp case control study/
125. cross-sectional study/
126. observational study/
127. quasi experimental methods/
128. quasi experimental study/
129. single-case studies as topic/
130. (observational study or validation studies or clinical study).pt.
131. (observational adj3 (study or studies or design or analysis or analyses)).ti,ab,kf,kw.
132. cohort\*.ti,ab,kf,kw.
133. (prospective adj7 (study or studies or design or analysis or analyses)).ti,ab,kf,kw.
134. ((follow up or followup) adj7 (study or studies or design or analysis or analyses)).ti,ab,kf,kw.
135. ((longitudinal or longterm or (long adj term)) adj7 (study or studies or design or analysis or analyses or data)).ti,ab,kf,kw.
136. (retrospective adj7 (study or studies or design or analysis or analyses or data or review)).ti,ab,kf,kw.
137. ((case adj control) or (case adj comparison) or (case adj controlled)).ti,ab,kf,kw.
138. (case-referent adj3 (study or studies or design or analysis or analyses)).ti,ab,kf,kw.
139. (population adj3 (study or studies or analysis or analyses)).ti,ab,kf,kw.
140. (descriptive adj3 (study or studies or design or analysis or analyses)).ti,ab,kf,kw.
141. ((multidimensional or (multi adj dimensional)) adj3 (study or studies or design or analysis or analyses)).ti,ab,kf,kw.
142. (cross adj sectional adj7 (study or studies or design or research or analysis or analyses or survey or findings)).ti,ab,kf,kw.
143. ((natural adj experiment) or (natural adj experiments)).ti,ab,kf,kw.
144. (quasi adj (experiment or experiments or experimental)).ti,ab,kf,kw.
145. ((non experiment or nonexperiment or non experimental or nonexperimental) adj3 (study or studies or design or analysis or analyses)).ti,ab,kf,kw.
146. (prevalence adj3 (study or studies or analysis or analyses)).ti,ab,kf,kw.
147. or/101-146

148. (Randomized Controlled Trial or Controlled Clinical Trial or Pragmatic Clinical Trial or Clinical Study or Adaptive Clinical Trial or Equivalence Trial).pt.
149. (Clinical Trial or Clinical Trial, Phase I or Clinical Trial, Phase II or Clinical Trial, Phase III or Clinical Trial, Phase IV or Clinical Trial Protocol).pt.
150. Multicenter Study.pt.
151. Clinical Studies as Topic/
152. exp Clinical Trial/ or exp Clinical Trials as Topic/ or Clinical Trial Protocol/ or Clinical Trial Protocols as Topic/ or exp "Clinical Trial (topic)"/
153. Multicenter Study/ or Multicenter Studies as Topic/ or "Multicenter Study (topic)"/
154. Randomization/
155. Random Allocation/
156. Double-Blind Method/
157. Double Blind Procedure/
158. Double-Blind Studies/
159. Single-Blind Method/
160. Single Blind Procedure/
161. Single-Blind Studies/
162. Placebos/
163. Placebo/
164. Control Groups/
165. Control Group/
166. Cross-Over Studies/ or Crossover Procedure/
167. (random\* or sham or placebo\*).ti,ab,hw,kf,kw.
168. ((singl\* or doubl\*) adj (blind\* or dumm\* or mask\*)).ti,ab,hw,kf,kw.
169. ((tripl\* or trebl\*) adj (blind\* or dumm\* or mask\*)).ti,ab,hw,kf,kw.
170. (control\* adj3 (study or studies or trial\* or group\*)).ti,ab,hw,kf,kw.
171. (clinical adj3 (study or studies or trial\*)).ti,ab,hw,kf,kw.
172. (Nonrandom\* or non random\* or non-random\* or quasi-random\* or quasirandom\*).ti,ab,hw,kf,kw.
173. (phase adj3 (study or studies or trial\*)).ti,ab,hw,kf,kw.
174. ((crossover or cross-over) adj3 (study or studies or trial\*)).ti,ab,hw,kf,kw.
175. ((multicent\* or multi-cent\*) adj3 (study or studies or trial\*)).ti,ab,hw,kf,kw.
176. allocated.ti,ab,hw.
177. ((open label or open-label) adj5 (study or studies or trial\*)).ti,ab,hw,kf,kw.
178. ((equivalence or superiority or non-inferiority or noninferiority) adj3 (study or studies or trial\*)).ti,ab,hw,kf,kw.
179. (pragmatic study or pragmatic studies).ti,ab,hw,kf,kw.

180. ((pragmatic or practical) adj3 trial\*).ti,ab,hw,kf,kw.
181. ((quasiexperimental or quasi-experimental) adj3 (study or studies or trial\*)).ti,ab,hw,kf,kw.
182. trial.ti,kf,kw.
183. or/148-182
184. exp animals/
185. exp animal experimentation/
186. exp models animal/
187. exp animal experiment/
188. nonhuman/
189. exp vertebrate/
190. animal.po.
191. or/184-190
192. exp humans/
193. exp human experiment/
194. human.po.
195. or/192-194
196. 191 not 195
197. 183 not 196
198. 100 or 147 or 197
199. 76 and 198
200. limit 199 to (english or french)
201. limit 200 to yr="2006 -Current"
202. limit 201 to yr="2006 -2014"
203. remove duplicates from 202
204. limit 201 to yr="2015 -current"
205. remove duplicates from 204
206. 203 or 205

## Other Databases

### *Cochrane Central Register of Controlled Trials*

Same MeSH, keywords, and limits used as per MEDLINE search, excluding study types and human restrictions. Syntax adjusted for Wiley platform. The search strategy is available on request.

### *CINAHL*

Same MeSH, keywords, and limits used as per MEDLINE search, excluding study types and human restrictions. Syntax adjusted for EBSCO platform, including the addition of CINAHL headings. The search strategy is available on request.

## *Scopus*

Same MeSH, keywords, and limits used as per MEDLINE search, excluding study types and human restrictions. Syntax adjusted for Scopus platform. The search strategy is available on request.

## Grey Literature

**Search dates:** January 12 – January 21, 2022

**Keywords:** Same MeSH, keywords, and limits used as per MEDLINE search

**Limits:** Publication years: 2006-present, language: English and French language

**Updated:** Search updated prior to the completion of stakeholder feedback period

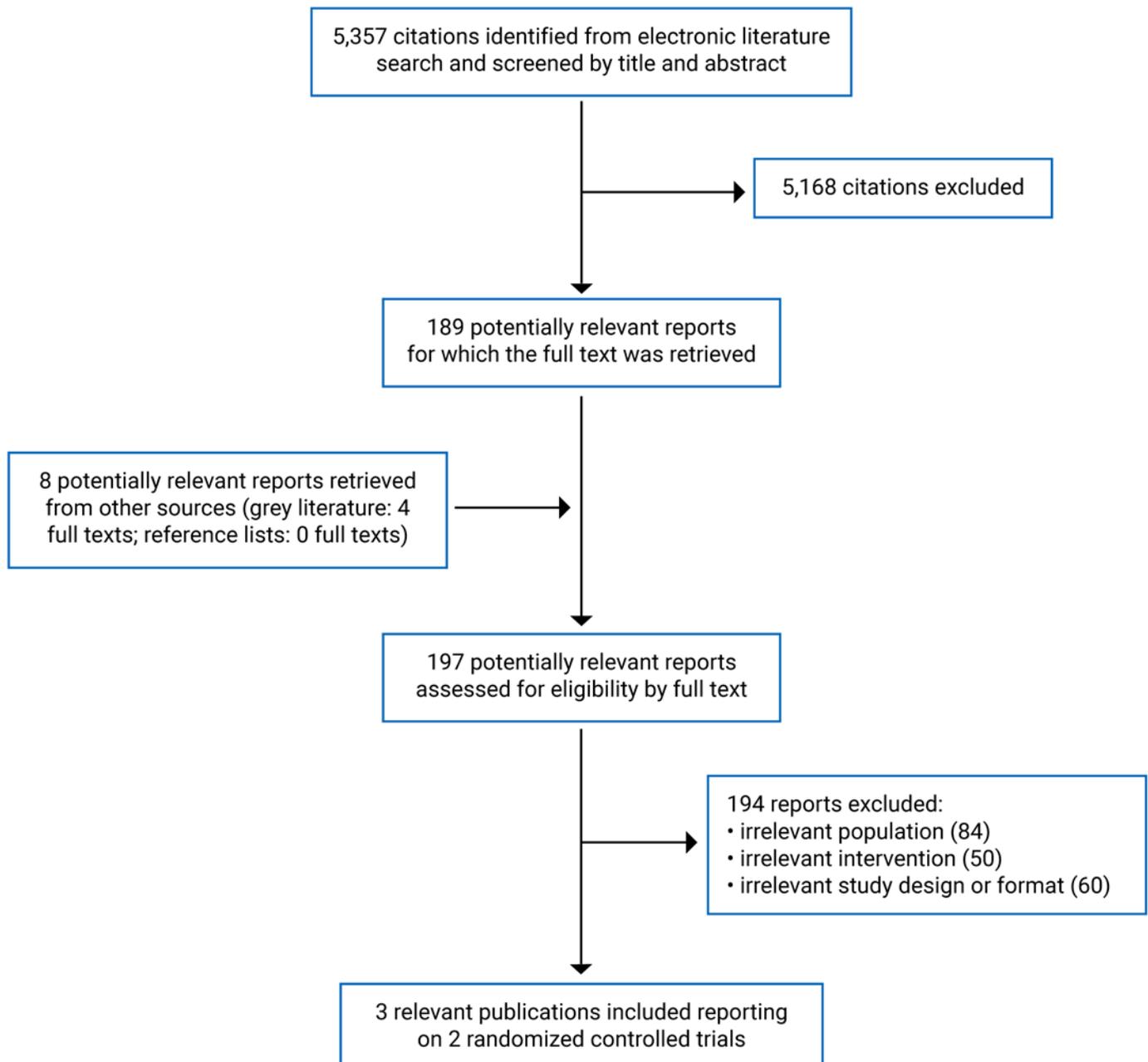
Relevant websites from the following sections of the CADTH grey literature checklist [Grey Matters: A Practical Tool for Searching Health-Related Grey Literature](#) were searched:

- Health Technology Assessment Agencies
- Clinical Practice Guidelines
- Databases (free)
- Clinical Trial Registries
- Internet Search

## Appendix 2: Tables and Figures

Note that this appendix has not been copy-edited.

**Figure 1: PRISMA Flow Chart of Selected Reports – Clinical Review**



**Table 8: Detailed Characteristics of the Included Trials – Clinical Review**

First author (publication year), <sup>a</sup> country, source of funding	Study design and Setting	Participant characteristics	Intervention and comparator	Clinical outcomes, length of follow-up
<p>Conley et al. (2020)<sup>39</sup>                      Associated: Hundert et al. (2021)<sup>40</sup> provided a 2-month follow-up of a subset of participants (n = 55)                      US                      Source of funding: Not reported</p>	<p><b>Study design:</b> Open-label RCT  <b>Setting:</b> Three university campuses. Participants were identified through flyers, emails, social media posts, student services offices, staffed informational displays on campus</p>	<p><b>Inclusion criteria:</b> University students of age ≥ 18 years, who self-identify as having a mental health concern.  <b>Exclusion criteria:</b> None reported  <b>Study participants:</b> Number of participants, N = 118; HOP-C group, n = 63, control group, n = 55.                      % Female: 82.2%, n = 97                      % Male :17.8%, n = 21                      Mean (SD) age:                      HOP-C group = 20.24 (2.87) y                      control group = 21.35 (6.62) y                      % Race, White: 68.6%, Asian American:17.8%, African American 7.6%, Native American and Pacific Islander: &lt;1%.                      % Ethnicity, non-Hispanic 82.2% (other ethnicities NR)                      % Heterosexual: 66.9%, bisexual 18.6%, gay or lesbian: 6.8%, other: 7.6%                      % Clinically elevated depression: 85.5%                      % Clinically elevated anxiety: 69.2%</p>	<p><b>Intervention:</b> Honest, Open, Proud–College (HOP-C), a peer-led in-person group intervention developed to empower participants with self-stigma, disclosing their mental health concerns, and to reduce mental illness–related self-stigma. The intervention comprised 2-hour core sessions weekly for 3 weeks and a booster workshop 2 to 3 weeks later.<sup>51</sup>                      Peer facilitators were trained students who identify as living with mental health concerns. A 2-day training was provided to the peer facilitators. A manual for conducting the sessions were available to the facilitators.<sup>52</sup>  <b>Comparator:</b> Waitlist control</p>	<p>Self-stigma (SSMIS-SF); Stress and coping (Stigma Stress Scale); self-efficacy about disclosure (single item); depression symptoms (CES-D-10); anxiety symptoms (GAD-7); no safety outcomes were reported                      Effectiveness outcomes were assessed at baseline (T0), after core sessions (post-intervention, T1), and after the booster session (post-booster, T2).<sup>39</sup> An additional assessment 5 weeks after the booster session (2 months after core sessions) was conducted in a subset of participants for the follow-up analysis.<sup>40</sup></p>

First author (publication year), <sup>a</sup> country, source of funding	Study design and Setting	Participant characteristics	Intervention and comparator	Clinical outcomes, length of follow-up
<p>Mulfinger et al. (2018)<sup>50</sup>  Germany  Source of funding:  Nachwuchsakademie  Versorgungsforschung Baden-  W€urttemberg and the Otto-  K€assbohrer Foundation</p>	<p><b>Study design:</b> Open-label RCT  <b>Setting:</b> Participants recruited from 4 sites: 3 departments of child and adolescent psychiatry (in patient wards, day clinics and outpatient clinics) and an independent psychiatry outpatient clinic. Recruitment period May 2016 to February 2017.</p>	<p><b>Inclusion criteria:</b> Adolescents aged 13 to 18 years with at least 1 self-reported current axis I or axis II disorder, and a moderate (or severe) level of self-reported disclosure-related distress.  <b>Exclusion criteria:</b> Intellectual disability, diagnosis of substance or alcohol disorder in the absence of a non-substance related psychiatric disorder, organic disorder  <b>Study participants:</b> Number of participants, N = 98; HOP group, n =49; Control group, n =49  % female: 67% (HOP group), 71% (control group)  Mean (SD) age:  HOP group = 15.8 (1.2) y  Control group = 15.7 (1.1) y  % Clinical depression: 59.1%  % Clinical anxiety: 17.3%</p>	<p><b>Intervention:</b> Peer-led Honest, Open, Proud (HOP) program aimed to empower participants with disclosing their mental illness in different settings + treatment as usual. The intervention comprised 2-hour core sessions per week for 3 weeks. Sessions were facilitated by peer supporters and young mental health professionals.  Peer facilitators were young adults with lived experience of a mental illness. Training was provided to the peer and clinical facilitators. A young mental health professional was also present in the sessions. A manual for conducting the sessions was available to the facilitators.<sup>52</sup>  <b>Comparator:</b> Treatment as usual</p>	<p>Stigma stress (Stigma Stress Scale); HRQoL (KIDSCREEN-10 index); empowerment (Empowerment Scale); disclosure-related distress (by a 4-item questionnaire); hopelessness (Beck's Hopelessness Scale); self-stigma (ISMI-SF and SSMIS-SF); help-seeking (General Help-Seeking Questionnaire), recovery (Self-Identified Stage of Recovery Scale); secrecy and social withdrawal (Link's Stigma Coping Orientation Scales); depressive symptoms (CES-D); no safety outcomes were reported  Efficacy outcomes were assessed baseline (T0), after core sessions (post-intervention, T1), and follow-up 6 weeks after baseline (T2).</p>

<sup>a</sup>Publications are organized in reverse chronological order according to date of publication.

CES-D = Center for Epidemiologic Studies Short- Depression Scale; CES-D-10 = Center for Epidemiologic Studies Short- Depression Scale 10; GAD = Generalized Anxiety Disorder 7-Item scale; HOP = Honest, Open, Proud; HOP-C = Honest, Open, Proud-College; ISMI-SF = Internalized Stigma of Mental Illness-Short Form; N = number of participants; RCT = randomized controlled trial; SD = standard deviation; SSMIS-SF = Self-Stigma of Mental Illness Scale-Short Form.

**Table 9: Risk of Bias in the Included Randomized Controlled Trials Assessed Using RoB 2 (Effect of Assignment to the Intervention)**

Study citation	Bias arising from the randomization process	Bias due to deviations from intended interventions	Bias due to missing outcome data	Bias in measurement of the outcome	Bias in selection of the reported result	Overall risk of bias
Conley et al. (2020) <sup>39</sup> ; Hundert et al. (2021) <sup>40</sup>	<p><b>All outcomes: Some concerns [?]</b></p> <p>1.1 (PY). Allocation sequence was random (participants were assigned via simple randomization methods such as coin toss, blindly shuffled pieces of paper, and online random number generator)</p> <p>1.2 (NI). No information about whether the allocation sequence was concealed until participants were enrolled and assigned to interventions.</p> <p>1.3 (N). There were no important differences between the groups at baseline that would suggest major problems in the randomization process.</p>	<p><b>All outcomes: low risk</b></p> <p>2.1 (Y). Participants were aware of their assigned intervention.</p> <p>2.2 (Y). Carers and people delivering the intervention were aware of the participants' assigned intervention during the trial.</p> <p>2.3 (N). There were no reported deviations from the intended intervention.</p> <p>2.6 (Y). Appropriate analyses were used to estimate the effect of assignment to intervention (mITT analysis) All participants with assessment data irrespective of attending the sessions were included in the analysis.</p>	<p><b>All outcomes: High risk [?]</b></p> <p>3.1 (N) Across all outcomes. Data were not available for all randomized participants. Attrition rates were as below: At post-intervention, n (%) HOP: 10 (15%), control: 0 At post-booster, n (%) HOP: 14 (22%), control 5 (9.2%) At long-term follow-up, n (%): HOP: 13 (33%), control: 7 (19%)</p> <p>3.2 (N). There was no evidence (e.g., sensitivity analyses) to indicate that the results were not biased by missing outcome data</p> <p>3.3 (PY) it is possible that missingness in the outcome depended on its true</p>	<p><b>All outcomes: High risk [+]</b></p> <p>4.1 (PN; Y for self-efficacy) Across all outcomes except self-efficacy, the methods of measurement were probably appropriate. Self-efficacy was measured with a single item, whose validity was unclear.</p> <p>4.2 (PN). It is not likely that the measurement or ascertainment of the outcome differed between intervention groups</p> <p>4.3 (Y). Outcome assessors were aware of the intervention received by study participants.</p> <p>4.4 (Y) The assessment of the outcome could have been influenced by knowledge of the intervention received. All outcomes were self-reported.</p> <p>4.5 (PY). Across all outcomes, it is likely that assessment of outcomes was influenced</p>	<p><b>All outcomes: Some concerns [ND]</b></p> <p>5.1 (NI). There was no information available to judge whether the data that produced the results were analyzed in accordance with a pre-specified analysis plan. (i.e., there was no mention of a trial protocol).</p> <p>5.2 (NI). There was no information available to judge if the numerical results being assessed were likely to have been selected based on results from multiple eligible outcome measurements within the outcome domains.</p> <p>5.3 (NI). There was no information available to judge if the numerical results being assessed were likely to have been selected based on the results from multiple eligible analyses of the data.</p>	<p><b>All outcomes: High risk [?]</b></p>

Study citation	Bias arising from the randomization process	Bias due to deviations from intended interventions	Bias due to missing outcome data	Bias in measurement of the outcome	Bias in selection of the reported result	Overall risk of bias
			<p>value</p> <p>3.4 (PY) it is possible that missingness in the outcome depended on its true value. Relatively high losses in the HOP group compared to control group could be due to perceived lack of efficacy.</p>	<p>by knowledge of the intervention received.</p>		
<p>Mulfinger et al. (2018)<sup>50</sup></p>	<p><b>All outcomes: Low risk</b></p> <p>1.1 (PY). Allocation sequence was random (participants were assigned via block randomization at each site)</p> <p>1.2 (PY) Allocation sequence was concealed until participants were enrolled and assigned to intervention. However, it was unclear whether the closed enveloped used were opaque, sequentially numbered, sealed, and opened after assignment.</p> <p>1.3 1.3 (N). There were no important</p>	<p><b>All outcomes: Low risk</b></p> <p>2.1 (Y). Participants were aware of their assigned intervention.</p> <p>2.2 (Y). Carers and people delivering the intervention were aware of the participants' assigned intervention during the trial.</p> <p>2.3 (N). There were no reported deviations from the intended intervention.</p> <p>2.6 (Y). Appropriate analyses were used to estimate the effect of assignment to intervention (an</p>	<p><b>All outcomes: High risk [?]</b></p> <p>3.1 (N)</p> <p>Across all outcomes. Data were not available for all randomized participants. The attrition rates were 22% in both groups.</p> <p>3.2 (N). There was no evidence (e.g., sensitivity analyses) to indicate that the results were not biased by missing outcome data.</p> <p>3.3 (PY) it is possible that missingness in the outcome depended on its true</p>	<p><b>All outcomes: High risk [+]</b></p> <p>4.1 (PN; PY for disclosure-related distress) Across all outcomes except disclosure-related distress, the methods of measurement were probably appropriate. Disclosure-related distress was measured with 4-item questionnaire, whose validity was unclear.</p> <p>4.2 (PN). It is not likely that the measurement or ascertainment of the outcome differed between intervention groups</p> <p>4.3 (Y). Outcome assessors were aware of the intervention received by study participants.</p>	<p><b>All outcomes: Some concerns [ND]</b></p> <p>5.1 (NI). There was no information available to judge whether the data that produced the results were analyzed in accordance with a pre-specified analysis plan. The trial was registered (NCT02751229) and outcomes were pre-specified, However, no published protocol was available.</p> <p>5.2 (NI). There was no information available to judge if the numerical results being assessed were likely to have been</p>	<p><b>All outcomes: High risk [?]</b></p>

Study citation	Bias arising from the randomization process	Bias due to deviations from intended interventions	Bias due to missing outcome data	Bias in measurement of the outcome	Bias in selection of the reported result	Overall risk of bias
	differences between the groups at baseline. There were likely no problems in the randomization process.	intention-to-treat analysis was conducted)	value 3.4 (PY) it is possible that missingness in the outcome depended on its true value.	4.4 (Y) The assessment of the outcome could have been influenced by knowledge of the intervention received. All outcomes were self-reported. 4.5 (PY). Across all outcomes, it is likely that assessment of outcomes was influenced by knowledge of the intervention received.	selected based on results from multiple eligible outcome measurements within the outcome domains. 5.3 (NI). There was no information available to judge if the numerical results being assessed were likely to have been selected based on the results from multiple eligible analyses of the data.	

HOP = Honest, Open, Proud; mITT = modified intention to treat; N = no; NI = no information; PN = probably no; PY = probably yes; RCT = randomized controlled trial; RoB 2 = Version 2 of the Cochrane Risk of Bias Tool; Y = yes  
 Note: the predicted direction of bias arising from each domain and the overall risk of bias is indicated in square brackets. [+] suggests the bias may favour the intervention; [ND] suggests the bias may influence the result toward the null; [?] suggests the predicted direction is unclear.

Table 10: Summary of Detailed Findings for Stigma

Outcome	Study citation	Detailed findings
Self-stigma	Conley et al. (2020) <sup>39</sup> and Hundert et al. (2021) <sup>40</sup> (associated)	<p>Results of all participants (n analyzed = 117 at baseline [T0]), 107 at post-intervention [T1], 97 at post-booster [T2])<sup>39</sup></p> <p>SSMIS-SF Agreement with stereotypes, mean (SD) at T0 vs. T1 vs. T2:</p> <ul style="list-style-type: none"> <li>• HOP-C = 2.71 (1.56) vs. 2.42 (1.43) vs. 2.53 (1.65)</li> <li>• Control = 2.46 (1.03) vs. 2.55 (1.39) vs. 2.84 (1.62)</li> <li>• Group x Time ANOVA for T0-T1-T2, p = 0.160</li> </ul> <p>SSMIS-SF Application of stereotypes to self, mean (SD) at T0 vs. T1 vs. T2:</p> <ul style="list-style-type: none"> <li>• HOP-C = 2.77 (1.74) vs. 2.50 (1.53) vs. 2.44 (1.50)</li> <li>• Control = 2.67 (1.38) vs. 2.54 (1.72) vs. 2.50 (1.60)</li> <li>• Group x Time ANOVA for T0-T1-T2, p = 0.870</li> </ul> <p>SSMIS-SF Harm of stereotypes to self, mean (SD) at T0 vs. T1 vs. T2:</p> <ul style="list-style-type: none"> <li>• HOP-C = 3.23 (2.08) vs. 2.49 (1.65) vs. 2.43 (1.56)</li> <li>• Control = 2.92 (1.75) vs. 3.02 (2.08) vs. 2.72 (2.12)</li> <li>• Group x Time ANOVA for T0-T1-T2, p = 0.047; T0-T1, p = 0.019; T0-T2, p = 0.097</li> </ul> <p>Results of the 2- month follow-up analysis in a population subset from 1 university (n analyzed = 55 at all timepoints; baseline [T0], post-intervention [T1], 2 months follow-up [T4])<sup>40</sup></p> <p>SSMIS-SF Agreement with stereotypes, mean (SD) at T0 vs. T1 vs. T4:</p> <ul style="list-style-type: none"> <li>• HOP-C = 2.01 (0.78) vs. 1.97 (0.92) vs. 1.99 (0.96)</li> <li>• Control = 2.41 (0.88) vs. 2.51 (0.98) vs. 2.59 (1.14)</li> <li>• Group x Time ANOVA for T0-T1-T4, p = 0.690</li> </ul> <p>SSMIS-SF Application of stereotypes to self, mean (SD) at T0 vs. T1 vs. T4:</p> <ul style="list-style-type: none"> <li>• HOP-C = 2.57 (1.41) vs. 2.67 (1.58) vs. 2.71 (1.54)</li> <li>• Control = 2.80 (1.32) vs. 2.88 (1.48) vs. 3.10 (1.68)</li> <li>• Group x Time ANOVA for T0-T1-T4, p = 0.868</li> </ul> <p>SSMIS-SF Harm of stereotypes to self, mean (SD) at T0 vs. T1 vs. T4:</p> <ul style="list-style-type: none"> <li>• HOP-C = 3.08 (1.88) vs. 2.59 (1.78) vs. 2.74 (1.76)</li> <li>• Control = 3.25 (1.83) vs. 3.40 (2.04) vs. 3.61 (2.40)</li> <li>• Group x Time ANOVA for T0-T1-T4, p = 0.306</li> </ul>
	Mulfinger et al. (2018) <sup>50</sup>	<p>Results of all participants (n analyzed = 98 at baseline [T0], 84 at post-intervention [T1], 62 at follow-up [T2])<sup>50</sup> Between-group analyses were conducted using linear MMRM.</p> <p>ISMI, mean (SD) at T0 vs. T1 vs. T2</p> <ul style="list-style-type: none"> <li>• HOP = 2.38 (0.62) vs. 2.18 (0.56) vs. 2.04 (0.48)</li> <li>• Control = 2.30 (0.54) vs. 2.32 (0.48) vs. 2.33 (0.57)</li> <li>• Mean between-group difference (95% CI) for change from T0 to T1 = -0.16 (-0.33 to 0.01), p = 0.058</li> <li>• Mean between-group difference (95% CI) for change from T0 to T2 =</li> </ul>

Outcome	Study citation	Detailed findings
		<p>-0.35 (-0.54 to -0.05), p &lt; 0.001</p> <p>SSMIS, mean (SD) at T0 vs. T1 vs. T2</p> <ul style="list-style-type: none"> <li>• HOP = 21.57 (8.58) vs. 17.09 (7.43) vs. 15.16 (7.37)</li> <li>• Control = 20.63 (7.64) vs. 20.11 (8.75) vs. 20.21 (10.23)</li> <li>• Mean between-group difference (95% CI) for change from T0 to T1 = -2.93 (-5.35 to -0.52, p = 0.018)</li> <li>• Mean between-group difference (95% CI) for change from T0 to T2 = -5.14 (-8.22 to -2.05), p = 0.01</li> </ul>
<p><b>Stigma stress<sup>a</sup></b>  <b>Perceived harm minus perceived resources</b></p>	<p>Conley et al. (2020)<sup>39</sup> and Hundert et al. (2021)<sup>40</sup> (associated)</p>	<p>Results of all participants (n analyzed = 117 at baseline [T0]), 107 at post-intervention [T1], 97 at post-booster [T2])<sup>39</sup></p> <p>Stigma as a stressor (perceived harm), mean (SD) at T0 vs. T1 vs. T3</p> <ul style="list-style-type: none"> <li>• HOP-C = 4.22 (1.52) vs. 3.74 (1.46) vs. 3.63 (1.58)</li> <li>• Control = 4.57 (1.21) vs. 4.16 (1.49) vs. 3.93(1.56)</li> <li>• Group x Time ANOVA for T0-T1-T3, p = 0.922</li> </ul> <p>Perceived resources to cope with stigma stress: ), mean (SD) at T0 vs. T1 vs. T3</p> <ul style="list-style-type: none"> <li>• HOP-C = 4.68 (1.11) vs. 5.41 (0.98) vs. 5.48 (1.15)</li> <li>• Control = 4.83 (1.22) vs. 4.93 (1.21) vs. 4.82 (1.37)</li> <li>• Group x Time ANOVA for T0-T1-T2, p = 0.001; T0-T1, p = 0.001; T0-T2, p = 0.001</li> </ul> <p>Note: A calculated stigma stress score (perceived harm minus perceived resources) were not reported in the study.<sup>39</sup></p> <p>Results of the 2- month follow-up analysis in a population subset from 1 university (n analyzed = 55 at all timepoints; baseline [T0], post-intervention [T1], 2 months follow-up [T4])<sup>40</sup></p> <p>Stigma Stress, mean (SD) at T0 vs. T1 vs. T3</p> <ul style="list-style-type: none"> <li>• HOP-C = -0.31 (2.02) vs. -1.39 (1.56) vs. -1.97 (1.74)</li> <li>• Control = -0.44 (1.89) vs. -0.83 (2.18) vs. -1.27 (1.82)</li> <li>• Group x Time ANOVA for T0-T1-T4, p = 0.285</li> </ul>
	<p>Mulfinger et al. (2018)<sup>50</sup></p>	<p>Results of all participants (n analyzed = 98 at baseline [T0], 84 at post-intervention [T1], 62 at follow-up [T2])<sup>50</sup> Between-group ITT analyses were conducted using linear MMRM.</p> <p>Stigma Stress Scale, mean (SD) at T0 vs. T1 vs. T2</p> <ul style="list-style-type: none"> <li>• HOP = -0.07 (2.37) vs. -2.33 (1.91) vs. -2.56 (1.95)</li> <li>• Control = -0.35 (2.13) vs. -0.29 (2.01) vs. -0.28 (2.09)</li> <li>• Mean between-group difference (95% CI) for change from T0 to T1 = -2.06 (-2.70 to -1.42), p &lt;0.001</li> <li>• Mean between-group difference (95% CI) for change from T0 to T2 = -2.16 (-2.89 to -1.43), p &lt; 0.001</li> </ul>

CI = confidence interval; HOP= Honest, Open, Proud; HOP-C = Honest, Open, Proud-College; ISMI-SF = Internalized Stigma of Mental Illness-Short Form; MMRM = mixed model for repeated measures; RCT = randomized controlled trial; SD = standard deviation; SSMIS-SF = Self-Stigma of Mental Illness Scale-Short Form; TAU = treatment as usual

**Table 11: Summary of Detailed Findings for Self-Efficacy About Secrecy and Disclosing Mental Illness**

Outcome	Study citation	Detailed findings
<p><b>Self-efficacy about disclosing mental illness</b></p>	<p>Conley et al. (2020)<sup>39</sup> and Hundert et al. (2021)<sup>40</sup> (associated)</p>	<p>Results of all participants (n analyzed = 117 at baseline [T0]), 107 at post-intervention [T1], 97 at post-booster [T2])<sup>39</sup></p> <p>Self-efficacy about disclosing mental illness, mean (SD) at T0 vs. T1 vs. T2 (single item score):</p> <ul style="list-style-type: none"> <li>• HOP-C = 4.35 (1.68) vs. 5.22 (1.03) vs. 5.87 (1.11)</li> <li>• Control = 4.33 (1.60) vs. 4.60 (1.55) vs. 4.79 (1.56)</li> <li>• Group x Time ANOVA for T1-T2-T3, p = 0.001; T1-T2, p = 0.078; T1-T3, p = 0.001</li> </ul> <p>Self-efficacy in keeping mental illness a secret, mean (SD) at T0 vs. T1 vs. T2 (single item score):</p> <ul style="list-style-type: none"> <li>• HOP-C = 4.63 (1.58) vs. 5.15 (1.26) vs. 5.41 (1.29)</li> <li>• Control = 4.48 (1.64) vs. 4.65 (1.63) vs. 5.04 (1.44)</li> <li>• Group x Time ANOVA for T1-T2-T3, p = 0.590</li> </ul> <p>Results of the 2-month follow-up analysis in a population subset from 1 university (n analyzed = 55 at all timepoints; baseline [T0], post-intervention [T1], 2 months follow-up [T4])<sup>40</sup></p> <p>Self-efficacy about disclosing mental illness, mean (SD) at T0 vs. T1 vs. T3 (single item score):</p> <ul style="list-style-type: none"> <li>• HOP-C = 4.33 (1.74) vs. 5.42 (1.02) vs. 5.38 (1.35)</li> <li>• Control = 4.71 (1.58) vs. 5.07 (1.49) vs. 5.21 (1.23)</li> <li>• Group x Time ANOVA for T0-T1-T3, p = 0.230</li> </ul> <p>Self-efficacy in keeping mental illness a secret, mean (SD) at T0 vs. T1 vs. T3 (single item score):</p> <ul style="list-style-type: none"> <li>• HOP-C = 4.83 (1.61) vs. 5.33 (1.17) vs. 5.38 (1.35)</li> <li>• Control group = 4.32 (1.68) vs. 4.86 (1.60) vs. 4.93 (1.33)</li> <li>• Group x Time ANOVA for T0-T1-T3, p = 0.926</li> </ul>
<p><b>Attitudes to disclosure (family, friends, and teacher employer)</b></p>	<p>Mulfinger et al. (2018)<sup>50</sup></p>	<p>Results of all participants (n analyzed = 98 at baseline [T0], 84 at post-intervention [T1], 62 at follow-up [T2])<sup>50</sup> Between-group ITT analyses were conducted using linear MMRM.</p> <p>Attitudes to Disclosure (Family/Friends) – single item, mean (SD) at T0 vs. T1 vs. T2:</p> <ul style="list-style-type: none"> <li>• HOP = 3.10 (1.62) vs. 4.21 (1.40) vs. 4.13 (1.44)</li> <li>• Control = 2.83 (1.59) vs. 3.00 (1.61) vs. 2.82 (1.56)</li> <li>• Mean between-group difference (95% CI) for change from T0 to T1 = 1.00 (0.43 to 1.57), p&lt;0.001</li> <li>• Mean between-group difference (95% CI) for change from T0 to T2 = 1.02 (0.43 to 1.61), p = 0.001</li> </ul> <p>Attitudes to Disclosure (Teacher/Employer) – single item, mean (SD) at T0 vs. T1 vs. T2:</p> <ul style="list-style-type: none"> <li>• HOP = 2.00 (1.24) vs. 2.60 (1.33) vs. 2.86 (1.52)</li> <li>• Control = 2.27 (1.58) vs. 2.00 (1.13) vs. 1.95 (1.25)</li> </ul>

Outcome	Study citation	Detailed findings
		<ul style="list-style-type: none"> <li>• Mean between-group difference (95% CI) for change from T0 to T1 = 0.66 (0.15 to 1.16), p = 0.011</li> <li>• Mean between-group difference (95% CI) for change from T0 to T2 = 0.91 (0.28 to 1.53), p = 0.005</li> </ul>
<b>Disclosure-related distress (single item)</b>	Mulfinger et al. (2018) <sup>50</sup>	Results of all participants (n analyzed = 98 at baseline [T0], 84 at post-intervention [T1], 62 at follow-up [T2]) <sup>50</sup> Between-group ITT analyses were conducted using linear MMRM. Disclosure-related distress, mean (SD) at T0 vs. T1 vs. T2 (single item score): <ul style="list-style-type: none"> <li>• HOP = 4.70 (1.65) vs. 3.92 (1.20) vs. 3.43 (1.53)</li> <li>• Control = 4.61 (1.68) vs. 4.78 (1.44) vs. 4.74 (1.41)</li> <li>• Mean between-group difference (95% CI) for change from T0 to T1 = -0.87 (-1.37 to -0.37), p&lt;0.001</li> <li>• Mean between-group difference (95% CI) for change from T0 to T2 = -1.18 (-1.85 to -0.51), p&lt;0.001</li> </ul>
<b>Secrecy</b>	Mulfinger et al. (2018) <sup>50</sup>	Results of all participants (n analyzed = 98 at baseline [T0], 84 at post-intervention [T1], 62 at follow-up [T2]) <sup>50</sup> Between-group ITT analyses were conducted using linear MMRM. Stigma Coping Orientation Scale, mean (SD) at T0 vs. T1 vs. T2: <ul style="list-style-type: none"> <li>• HOP = 3.74 (0.83) vs. 3.31 (0.85) vs. 3.15 (0.96)</li> <li>• Control = 3.78 (1.09) vs. 3.86 (1.12) vs. 4.01 (1.02)</li> <li>• Mean between-group difference (95% CI) for change from T0 to T1 = -0.44(-0.79 to -0.08), p = 0.017</li> </ul> Mean between-group difference (95% CI) for change from T0 to T2 = -0.78 (-1.16 to -0.40), p<0.001

ANOVA = analysis of variance CI = confidence interval; HOP= Honest, Open, Proud; HOP-C = Honest, Open, Proud-College; ITT= intention to treat; MMRM = mixed model for repeated measures; RCT = randomized controlled trial; SD = standard deviation; TAU = treatment as usual

**Table 12: Summary of Detailed Findings for HRQoL**

Outcome	Study citation	Detailed findings
HRQoL	Mulfinger et al. (2018) <sup>50</sup>	<p>Results of all participants (n analyzed = 98 at baseline [T0], 84 at post-intervention [T1], 62 at follow-up [T2])<sup>50</sup> Between-group analyses were conducted using linear MMRM.</p> <p>KIDSCREEN-10 Index, mean (SD) at T0 vs. T1 vs. T2</p> <ul style="list-style-type: none"> <li>• HOP = 28.97 (5.95) vs. 30.32 (7.37) vs. 32.97 (5.92)</li> <li>• Control = 28.92 (5.83) vs. 28.97 (6.92) vs. 28.80 (6.34)</li> <li>• Mean between-group difference (95% CI) for change from T0 to T1 = 0.82 (- 1.34 to 2.98), p = 0.45</li> <li>• Mean between-group difference (95% CI) for change from T0 to T2 = 3.54 (1.14 to 5.93), p = 0.004</li> </ul>

CI = confidence interval; HOP= Honest, Open, Proud; HOP-C = Honest, Open, Proud-College; HRQoL = health-related quality of life; ITT= intention to treat; MMRM = mixed model for repeated measures; RCT = randomized controlled trial; SD = standard deviation; TAU = treatment as usual

**Table 13: Summary of Detailed Findings for Empowerment**

Outcome	Study citation	Detailed findings
Empowerment	Mulfinger et al. (2018) <sup>50</sup>	<p>Results of all participants (n analyzed = 98 at baseline [T0], 84 at post-intervention [T1], 62 at follow-up [T2])<sup>50</sup> Between-group analyses were conducted using linear MMRM.</p> <p>Empowerment Scale - Self-esteem subscale, mean (SD) at T0 vs. T1 vs. T2:</p> <ul style="list-style-type: none"> <li>• HOP = 2.33 (0.78) vs. 2.61 (0.76) vs. 2.69 (0.61)</li> <li>• Control = 2.31 (0.66) vs. 2.33 (0.70) vs. 2.43 (0.70)</li> <li>• Mean between-group difference (95% CI) for change from T0 to T1 = 0.21 (0.04 to 0.39), p = 0.017</li> <li>• Mean between-group difference (95% CI) for change from T0 to T2 = 0.19 (-0.03 to 0.41), p = 0.09</li> </ul> <p>Empowerment Scale – Optimism subscale, mean (SD) at T0 vs. T1 vs. T2:</p> <ul style="list-style-type: none"> <li>• HOP = 2.43 (0.60) vs. 2.65 (0.62) vs. 2.70 (0.62)</li> <li>• Control = 2.49 (0.60) vs. 2.46 (0.69) vs. 2.51 (0.77)</li> <li>• Mean between-group difference (95% CI) for change from T0 to T1 = 0.20 (0 to 0.40), p = 0.055</li> <li>• Mean between-group difference (95% CI) for change from T0 to T2 = 0.21 (-0.03 to 0.46), p = 0.09</li> </ul>

CI = confidence interval; HOP= Honest, Open, Proud; MMRM = mixed model for repeated measures; SD = standard deviation

**Table 14: Summary of Detailed Findings for Social Withdrawal**

Outcome	Study citation	Detailed findings
Social withdrawal	Mulfinger et al. (2018) <sup>50</sup>	<p>Results of all participants (n analyzed = 98 at baseline [T0], 84 at post-intervention [T1], 62 at follow-up [T2]).<sup>50</sup> Between-group analyses were conducted using linear MMRM.</p> <p>Stigma Coping Orientation Scale, mean (SD) at T0 vs. T1 vs. T2:</p> <ul style="list-style-type: none"> <li>• HOP = 4.04 (0.91) vs. 3.71 (0.98) vs. 3.70 (0.94)</li> <li>• Control = 4.04 (1.09) vs. 4.14 (1.03) vs. 4.17 (1.05)</li> <li>• Mean between-group difference (95% CI) for change from T0 to T1 = -0.34 (-0.63 to -0.05), p = 0.023</li> <li>• Mean between-group difference (95% CI) for change from T0 to T2 = -0.29 (-0.66 to 0.08), p = 0.12</li> </ul>

CI = confidence interval; HOP= Honest, Open, Proud; MMRM = mixed model for repeated measures; SD = standard deviation

**Table 15: Summary of Detailed Findings for Help-Seeking**

Outcome	Study citation	Detailed findings
Help-seeking	Mulfinger et al. (2018) <sup>50</sup>	<p>Results of all participants (n analyzed = 98 at baseline [T0], 84 at post-intervention [T1], 62 at follow-up [T2]).<sup>50</sup> Between-group analyses were conducted using linear MMRM.</p> <p>General Help-Seeking Questionnaire (Family/Friends), mean (SD) at T0 vs. T1 vs. T2:</p> <ul style="list-style-type: none"> <li>• HOP = 3.44 (1.36) vs. 4.28 (1.32) vs 4.17 (1.32)</li> <li>• Control = 3.30 (1.45) vs. 3.31 (1.39) vs. 3.35 (1.40)</li> <li>• Mean between-group difference (95% CI) for change from T0 to T1 = 0.77 (0.36 to 1.17), p&lt;0.001</li> <li>• Mean between-group difference (95% CI) for change from T0 to T2 = 0.48 (-0.02 to 0.98), p = 0.57</li> </ul> <p>General Help-Seeking Questionnaire (Professional), mean (SD) at T0 vs. T1 vs. T2:</p> <ul style="list-style-type: none"> <li>• HOP = 3.59 (1.31) vs. 4.37 (1.15) vs 4.61 (1.12)</li> <li>• Control = 3.63 (1.28) vs. 3.65 (1.40) vs. 3.63 (1.41)</li> <li>• Mean between-group difference (95% CI) for change from T0 to T1 = 0.60 (0.15 to 1.05), p = 0.010</li> <li>• Mean between-group difference (95% CI) for change from T0 to T2 = 0.82 (0.32 to 1.32), p = 0.02</li> </ul>

CI = confidence interval; HOP= Honest, Open, Proud; MMRM = mixed model for repeated measures; SD = standard deviation

**Table 16: Summary of Detailed Findings for Hopelessness**

Outcome	Study citation	Detailed findings
Hopelessness	Mulfinger et al. (2018) <sup>50</sup>	<p>Results of all participants (n analyzed = 98 at baseline [T0], 84 at post-intervention [T1], 62 at follow-up [T2])<sup>50</sup> Between-group analyses were conducted using linear MMRM.</p> <p>Beck Hopelessness Scale, Short Version, mean (SD) at T0 vs. T1 vs. T2:</p> <ul style="list-style-type: none"> <li>• HOP = 14.42 (5.32) vs. 13.18 (4.51) vs 11.74 (3.83)</li> <li>• Control = 14.82 (5.11) vs. 14.39 (4.81) vs. 13.95 (4.78)</li> <li>• Mean between-group difference (95% CI) for change from T0 to T1 = -0.51 (-1.88 to 0.85), p = 0.46</li> <li>• Mean between-group difference (95% CI) for change from T0 to T2 = -1.22 (-2.68 to 0.24), p = 0.10</li> </ul>

CI = confidence interval; HOP= Honest, Open, Proud; MMRM = mixed model for repeated measures; SD = standard deviation

**Table 17: Summary of Detailed Findings for Stage of Recovery**

Outcome	Study citation	Detailed findings
Stage of recovery	Mulfinger et al. (2018) <sup>50</sup>	<p>Results of all participants (n analyzed = 98 at baseline [T0], 84 at post-intervention [T1], 62 at follow-up [T2])<sup>50</sup> Between-group analyses were conducted using linear MMRM.</p> <p>Self-identified Stage of Recovery Scale, mean (SD) at T0 vs. T1 vs. T2:</p> <ul style="list-style-type: none"> <li>• HOP = 14.64 (4.80) vs. 15.48 (4.20) vs 16.67 (4.13)</li> <li>• Control = 14.92 (4.35) vs. 15.02 (4.70) vs. 14.73 (4.29)</li> <li>• Mean between-group difference (95% CI) for change from T0 to T1 = 0.15 (-1.34 to 1.64), p = 0.85</li> <li>• Mean between-group difference (95% CI) for change from T0 to T2 = 1.59 (0.10 to 3.07), p = 0.037</li> </ul>

CI = confidence interval; HOP= Honest, Open, Proud; MMRM = mixed model for repeated measures; SD = standard deviation

**Table 18: Summary of Detailed Findings for Clinical Outcomes**

Outcome	Study citation	Detailed findings
Anxiety	Conley et al. (2020) <sup>39</sup> and Hundert et al. (2021) <sup>40</sup> (associated)	<p>Results of all participants (n analyzed = 117 at baseline [T0]), 107 at post-intervention [T1], 97 at post-booster [T2])<sup>39</sup></p> <p>Generalized Anxiety Disorder 7-item Scale, mean (SD) at T0 vs. T1 vs. T2:</p> <ul style="list-style-type: none"> <li>• HOP-C = 1.66 (0.77) vs. 1.73 (0.78) vs 1.66 (0.75)</li> <li>• Control = 1.92 (0.75) vs. 1.79 (0.86) vs. 1.69 (0.90)</li> <li>• Group x Time ANOVA for T0-T1-T2, p = 0.213</li> </ul> <p>Results of the 2- month follow-up analysis in a population subset from 1 university (n analyzed = 55 at all timepoints; baseline [T0], post-intervention [T1], 2 months follow-up [T4])<sup>40</sup></p> <p>Generalized Anxiety Disorder 7-item Scale, mean (SD) at T0 vs. T1 vs. T3:</p> <ul style="list-style-type: none"> <li>• HOP-C = 1.70 (0.73) vs. 1.88 (0.79) vs. 1.57 (0.88)</li> <li>• Control = 1.96 (0.76) vs. 1.87 (0.82) vs. 1.77 (0.85)</li> <li>• Group x Time ANOVA for T0-T1-T3, p = 0.252</li> </ul>

Outcome	Study citation	Detailed findings
Depression	Conley et al. (2020) <sup>39</sup> and Hundert et al. (2021) <sup>40</sup> (associated)	<p>Results of all participants (n analyzed = 117 at baseline [T0]), 107 at post-intervention [T1], 97 at post-booster [T2])<sup>39</sup></p> <p>Center for Epidemiologic Studies Short Depression Scale 10, mean (SD) at T0 vs. T1 vs. T2:</p> <ul style="list-style-type: none"> <li>• HOP-C = 1.66 (0.57) vs. 1.57 (0.67) vs. 1.54 (0.67)</li> <li>• Control = 1.64 (0.61) vs. 1.53 (0.71) vs. 1.44 (0.74)</li> <li>• Group x Time ANOVA for T0-T1-T2, p = 0.743</li> </ul> <p>Results of the 2- month follow-up analysis in a population subset from 1 university (n analyzed = 55 at all timepoints; baseline [T0], post-intervention [T1], 2 months follow-up [T4])<sup>40</sup></p> <p>Center for Epidemiologic Studies Short Depression Scale 10, mean (SD) at T0 vs. T1 vs. T3:</p> <ul style="list-style-type: none"> <li>• HOP-C = 1.74 (0.58) vs. 1.71 (0.63) vs. 1.54 (0.70)</li> <li>• Control = 1.65 (0.59) vs. 1.56 (0.68) vs. 1.39 (0.77)</li> <li>• Group x Time ANOVA for T0-T1-T3, p = 0.860</li> </ul>
	Mulfinger et al. (2018) <sup>50</sup>	<p>Results of all participants (n analyzed = 98 at baseline [T0], 84 at post-intervention [T1], 62 at follow-up [T2])<sup>50</sup> Between-group analyses were conducted using linear MMRM.</p> <p>Center for Epidemiologic Studies Depression Scale, mean (SD) at T0 vs. T1 vs. T2:</p> <ul style="list-style-type: none"> <li>• HOP = 26.22 (10.05) vs. 22.28 (11.34) vs 18.16 (10.27)</li> <li>• Control = 24.92 (10.16) vs. 23.58 (10.94) vs. 24.71 (11.24)</li> <li>• Mean between-group difference (95% CI) for change from T0 to T1 = -1.25 (-4.87 to 2.38), p = 0.50</li> <li>• Mean between-group difference (95% CI) for change from T0 to T2 = -7.25 (-10.85 to -3.65), p &lt; 0.001</li> </ul>

ANOVA = analysis of variance CI = confidence interval; HOP= Honest, Open, Proud; HOP-C = Honest, Open, Proud-College; ITT= intention to treat; MMRM = mixed model for repeated measures; SD = standard deviation

**Table 19: GRADE Summary of Findings for Self-Stigma – Clinical Review**

Outcome, follow-up, no. participants (trials)	Findings	Certainty of the evidence (GRADE)	What happens?
<p><b>Self-stigma</b></p> <p>Post-intervention: 191 (2 RCTs<sup>39,50</sup>)</p> <p>Post-booster: 97 (1 RCT<sup>39</sup>)</p> <p>Longest follow-up: 117 (2 RCTs<sup>40,50</sup>)</p>	<p>Two trials, with high risk of bias (predicted direction unclear), reported on the impact of peer support interventions on self-stigma among youth with mental health concerns. Participants had a mean age of 15<sup>50</sup> to 21<sup>39,40</sup> years, most of them female individuals (69.3% in 1 trial<sup>50</sup> and 82.2% in the other<sup>39,40</sup>). The peer support interventions were HOP<sup>50</sup> and HOP-C<sup>39,40</sup> programs</p> <p>Outcomes were measured at</p>	<p><b>Very low</b></p> <p>due to serious concerns for risk of bias, inconsistency, indirectness, and imprecision.<sup>a,b,c</sup></p>	<p>The findings for effect of HOP vs. control (waitlist/ TAU) on self-stigma at post-intervention are heterogeneous, and the evidence is very uncertain.<sup>a</sup></p> <p>There may be little to no difference in the effect of HOP vs. control (waitlist/ treatment as usual) on self-stigma at post-booster, but the evidence is very uncertain.<sup>b</sup></p> <p>The findings for effect of HOP</p>

Outcome, follow-up, no. participants (trials)	Findings	Certainty of the evidence (GRADE)	What happens?
	<p>post-intervention, post-booster and at follow-up (6 weeks<sup>50</sup> to 2 months<sup>40</sup> after core sessions), using the 4 subscales of the SSMIS-SF (range 5 to 45)<sup>53</sup> or the ISMI<sup>54</sup> (10-item version, range 1 to 4). In both measures, higher scores indicate more self-stigma.</p> <p>At post-treatment, the results were heterogenous (2 RCTs,<sup>39,50</sup> n = 191). Conley et al.<sup>39</sup> found that in the harm subdomain of the SSMIS-SF scale, HOP-C was favoured compared to waitlist control at follow-up ( p = 0.019).<sup>39</sup> Results for change from baseline for the other domains were not reported. In the Mulfinger et al.<sup>50</sup> study, at post-intervention, change from baseline of the overall score of SSMIS showed that HOP was associated with a significant reduction in self-stigma compared to TAU (Mean between-group difference for change from baseline -2.93 [95% CI = -5.35 to -0.52]). There were no significant difference between groups in the change from baseline of ISMI scores.<sup>50</sup></p> <p>At post-booster (1 RCT,<sup>39</sup> n=97) evidence from Conley et al. showed little to no difference in the effect of HOP-C compared to waitlist reducing self-stigma, as found by the between-group t-tests for the agreement, application, and harm subdomains of the SSMIS-SF.</p> <p>At the longest follow-up (2 RCTs; 6 weeks<sup>50</sup> or 2 months<sup>40</sup>) the evidence was heterogenous. HOP-C was not associated with any significant reduction in any of the subdomain scores of SSMIS compared to waitlist control.<sup>39,40</sup> Results from Mulfinger et al.<sup>50</sup> found that participants who received HOP reported significantly lower self-stigma</p>		<p>vs. control (waitlist/ treatment as usual) on self-stigma at the longest follow-up are heterogeneous, and the evidence is very uncertain.<sup>c</sup></p>

Outcome, follow-up, no. participants (trials)	Findings	Certainty of the evidence (GRADE)	What happens?
	scores at 2 months follow-up compared to those who received TAU. Mean between-group difference for change from baseline in ISMI scores -0.35 [95% CI = -0.54 to -0.05]) Mean between-group difference for change from baseline in SSMIS scores -5.14 [95% CI = -8.22 to -2.05])		

HOP= Honest, Open, Proud; HOP-C = Honest, Open, Proud-College; ISMI-SF = Internalized Stigma of Mental Illness-Short Form; RCT = randomized controlled trial; SSMIS-SF = Self-Stigma of Mental Illness Scale-Short Form; TAU = treatment as usual

<sup>a</sup>At post-intervention: rated down once for risk of bias due to serious concerns about the potential for bias arising from missing outcome data and bias in measurement of the outcomes (participant reported subjective outcomes); rated down once due to serious concerns for inconsistency because of inconsistent results between the trials, rated down once due to serious concerns for indirectness because only 1 program (HOP/HOP-C) was identified and the population seemed relatively homogenous, thereby lowering the generalizability of findings to peer support programs in general; rated down once due to serious concerns about imprecision because of the relatively lower sample size in each comparison; publication bias was not detected.

<sup>b</sup>At post-booster: rated down once for risk of bias due to serious concerns about the potential for bias arising from missing outcome data and bias in measurement of the outcomes (participant reported subjective outcomes); rated down once due to serious concerns for inconsistency because of limited of evidence of consistency as only 1 trial was available that reported on the outcome at this time point; rated down once due to serious concerns for indirectness because only 1 program (HOP/HOP-C) was identified and the population seemed relatively homogenous, thereby lowering the generalizability of findings to peer support programs in general; rated down once due to serious concerns about imprecision because of the relatively lower sample size in each comparison; publication bias was not detected.

<sup>c</sup>At longest follow-up: rated down once for risk of bias due to serious concerns about the potential for bias arising from missing outcome data and bias in measurement of the outcomes (participant reported subjective outcomes); rated down once due to serious concerns for inconsistency because of inconsistent results between the trials at longest follow-up; rated down once due to serious concerns for indirectness because only 1 program (HOP/HOP-C) was identified and the population seemed relatively homogenous, thereby lowering the generalizability of findings to peer support programs in general; rated down once due to serious concerns about imprecision because of the relatively lower sample size in each comparison; publication bias was not detected.

**Table 20: GRADE Summary of Findings for Stigma Stress**

Outcome, Follow-up, no. participants (trials)	Findings	Certainty of the evidence (GRADE)	What happens?
<b>Stigma stress</b> <b>Post-intervention: 84 (1 RCT<sup>50</sup>)</b> <b>Longest follow-up: 117 (2 RCTs<sup>40,50</sup>)</b>	Two RCTs, <sup>39,40,50</sup> all with high risk of bias (unclear direction) reported on stigma stress. Participants had a mean age of 15 <sup>50</sup> to 21 <sup>39,40</sup> years, most of them female individuals (69.3% <sup>50</sup> to 82.2% <sup>39,40</sup> ). The reported mental health concerns across the trials were depression (59.1% <sup>50</sup> to 85.5% <sup>39</sup> ) and anxiety (17.3% <sup>50</sup> to 69.2% <sup>39</sup> ). The peer support interventions were HOP <sup>50</sup> and HOP-C <sup>39,40</sup> programs, comparing to treatment as usual <sup>50</sup> or waitlist controls. <sup>39,40</sup> Outcomes were measured at post-intervention, and at follow-up (6 weeks <sup>50</sup> or 2 months <sup>40</sup> after core sessions), using the outcome calculated	<b>Very low</b> due to serious concerns for risk of bias, inconsistency, indirectness, and imprecision. <sup>a,b</sup>	Formal peer support may be favoured vs. TAU with respect to stigma stress at post-intervention, but the evidence is very uncertain.  The findings for effect of formal peer support vs. control (waitlist or TAU) on stigma stress at the longest follow-up are inconsistent, and the evidence is very uncertain.

Outcome, Follow-up, no. participants (trials)	Findings	Certainty of the evidence (GRADE)	What happens?
	<p>as perceived harm minus perceived resources form the Stigma Stress Scale. Higher scores (range -6 to 6) indicate increased stigma-related stress. At the post-intervention and post-booster follow-ups of the HOP-C trial,<sup>39</sup> stigma stress was not calculated, rather the results of the subscale scores were reported separately.</p> <p>At post-intervention, results from 1 RCT (Mulfinger et al.<sup>50</sup>) suggested that peer support may be favoured compared to TAU.in lowering the stress related to self-stigma. Mean between-group difference for change from baseline to post-intervention was -2.06 (95% CI -2.70 to -1.42)<sup>50</sup></p> <p>At the longest follow-up, the evidence was heterogenous (2 RCTs<sup>40,50</sup>;6 weeks<sup>50</sup> or 2 months<sup>40</sup>). The Conley et al. trial (reported in Hundert et al.)<sup>40</sup> found little to no difference in the effect of peer support intervention (HOP-C) in reducing stigma-related stress, whereas the results from the Mulfinger et al. trial<sup>50</sup> favoured peer support. At 6 weeks follow-up, the mean differences for change from baseline in the HOP group was 2.19 units lower than the TAU group (95% CI -2.89 to -1.43).</p>		

HOP= Honest, Open, Proud; HOP-C = Honest, Open, Proud-College; ISMI-SF = Internalized Stigma of Mental Illness-Short Form; RCT = randomized controlled trial; SSMIS-SF = Self-Stigma of Mental Illness Scale-Short Form; TAU = treatment as usual

<sup>a</sup>At post-intervention: rated down once for risk of bias due to serious concerns about the potential for bias arising from missing outcome data and bias in measurement of the outcomes (participant reported subjective outcomes); rated down once due to serious concerns for inconsistency because of inconsistent results between the trials; rated down once due to serious concerns for indirectness because only 1 program (HOP/HOP-C) was identified and the population seemed relatively homogenous, thereby lowering the generalizability of findings to peer support programs in general; rated down once due to serious concerns about imprecision because of the relatively lower sample size in each comparison; publication bias was not detected.

<sup>b</sup>At longest follow-up: rated down once for risk of bias due to serious concerns about the potential for bias arising from missing outcome data and bias in measurement of the outcomes (participant reported subjective outcomes); rated down once due to serious concerns for inconsistency because of inconsistent results between the trials at longest follow-up; rated down once due to serious concerns for indirectness because only 1 program (HOP/HOP-C) was identified and the population seemed relatively homogenous, thereby lowering the generalizability of findings to peer support programs in general; rated down once due to serious concerns about imprecision because of the relatively lower sample size in each comparison; publication bias was not detected.

**Table 21: GRADE Summary of Findings for Self-Efficacy Related to Secrecy and Disclosing of Mental Illness**

Outcome, follow-up, no. participants (trials)	Findings	Certainty of the evidence (GRADE)	What happens?
<p><b>Self-efficacy Related to Secrecy and Disclosing of mental illness</b></p> <p><b>Post-intervention: 107 (1 RCT<sup>39</sup>)</b></p> <p><b>Post booster: 97 (1 RCT<sup>39</sup>)</b></p> <p><b>Longest follow-up: 55 (1 RCT<sup>40</sup>)</b></p>	<p>One RCT<sup>39,40</sup> with high risk of bias (unclear direction) reported on participants’ self- efficacy related to secrecy and disclosure of mental illness. The outcome was assessed by 2 questions - “How confident are you in making decisions and handling well all the issues related to disclosing your mental illness?” (p.171)<sup>39</sup> and “How confident are you in making decisions and handling well all the issues related to keeping mental illness a secret?” Answers were rated from 1 (not at all) to 7 (very much). Conley et al.,<sup>39</sup> compared HOP-C with no peer support among university students with self-identified mental health concerns. The participants (n =117) were mostly female (82.2%), White (68.6%) and heterosexual (66.9%), and reported depressive symptoms (85.5%).</p> <p>The trial<sup>39</sup> showed that at post-intervention there may be little to no difference in the effect of peer support in efficacy related to keeping the mental illness a secret or to that related to disclosure of mental illness compared to no peer support.<sup>39</sup></p> <p>At post-booster, the trial showed that HOP may be favoured with respect to self-efficacy about disclosure (p =0.001) but there may be little to no difference in self-efficacy related to keeping mental illness a secret.<sup>39</sup></p> <p>At the 2 month follow-up assessment, the results suggested that there may be little to no difference in the effect of peer support vs. no peer support (waitlist) in self-efficacy related to secrecy or to disclosing mental illness.<sup>40</sup></p>	<p><b>Very low</b></p> <p>due to serious concerns for risk of bias, inconsistency, indirectness, and imprecision.<sup>a</sup></p>	<p>There may be little to no difference in the effect of HOP vs. waitlist control on self-efficacy about secrecy and disclosing mental illness post-intervention, but the evidence is very uncertain.</p> <p>HOP may be favoured vs. waitlist control with respect to self-efficacy about secrecy and disclosing mental illness post-booster, but the evidence is very uncertain.</p> <p>There may be little to no difference in the effect of HOP vs. waitlist control on self-efficacy about secrecy and disclosing mental illness at 2 months follow-up, but the evidence is very uncertain.</p>

HOP= Honest, Open, Proud; HOP-C = Honest, Open, Proud–College; RCT = randomized controlled trial; TAU = treatment as usual

<sup>a</sup>At post-intervention, post-booster and at follow-up: rated down once for risk of bias due to serious concerns about the potential for bias arising from missing outcome data and bias in measurement of the outcomes (participant reported subjective outcomes); rated down once due to serious concerns for inconsistency because of limited of evidence of consistency as only 1 trial was available that reported on the outcome at all time points; rated down once due to serious concerns for indirectness because only 1 program (HOP/HOP-C) was identified and the population seemed relatively homogenous, thereby lowering the generalizability of findings to peer support programs in general; rated down once due to serious concerns about imprecision because of the relatively lower sample size in each comparison; publication bias was not detected.

**Table 22: GRADE Summary of Findings for Attitudes to Disclosure**

Outcome, follow-up, no. participants (trials)	Findings	Certainty of the evidence (GRADE)	What happens?
<p><b>Attitudes to disclosure</b>  <b>Post-intervention: 84 (1 RCT<sup>50</sup>)</b>  <b>Longest follow-up: 62 (1 RCT<sup>50</sup>)</b></p>	<p>One RCT<sup>50</sup> with high risk of bias (unclear direction) reported on participants' attitude to disclosure of mental illness toward family/friends and teacher/ employer. This RCT compared the effectiveness of HOP program to treatment as usual among adolescent psychiatric patients, who were mostly female (69.3%), born in Germany (94.8%) and were around 22 months since the first psychiatric diagnosis. The outcome was assessed by 2 questions about how comfortable they are in disclosing mental illness to (i) family/ friends and (ii) teacher/employer. Answers were rated from 1 (not at all) to 7 (very much).</p> <p>At post-intervention, participants in the HOP group reported significantly higher improvement from baseline in their attitudes to disclosure toward family/ friends (mean between-group difference for change from baseline 1.00 [95% CI 0.43 to 1.57]) and toward teacher/ employer (mean between-group difference for change from baseline 0.66 [95% CI 0.15 to 1.16]) compared to participants in the TAU group.</p> <p>At 6-week follow-up assessment, participants in the HOP group reported significantly higher improvement from baseline in their attitudes to disclosure toward family/friends (mean between-group difference for change from baseline 1.02 [95% CI 0.43 to 1.61]) and toward teacher/employer (mean between-group difference for change from baseline 0.91 [95% CI 0.28 to 1.53]) compared to participants in the TAU group.</p>	<p><b>Very low</b>  due to serious concerns for risk of bias, concerns for inconsistency, serious concerns for indirectness and imprecision.<sup>a</sup></p>	<p>HOP may be favoured vs. TAU with respects to attitudes to disclosure post-intervention, but the evidence is very uncertain.</p> <p>HOP may be favoured vs. TAU with respects to attitudes to disclosure at longest follow-up but the evidence is very uncertain.</p>

HOP= Honest, Open, Proud; HOP-C = Honest, Open, Proud–College; RCT = randomized controlled trial; TAU = treatment as usual

<sup>a</sup>At post-intervention and at follow-up: rated down once for risk of bias due to serious concerns about the potential for bias arising from missing outcome data and bias in measurement of the outcomes (participant reported subjective outcomes); rated down once due to serious concerns for inconsistency because of limited of evidence of consistency as only 1 trial was available that reported on the outcome at all time points; rated down once due to serious concerns for indirectness because only 1 program (HOP/HOP-C) was identified and the population seemed relatively homogenous, thereby lowering the generalizability of findings to peer support programs in general; rated down once due to serious concerns about imprecision because of the relatively lower sample size in each comparison; publication bias was not detected.

**Table 23: GRADE Summary of Findings for Disclosure-Related Distress**

Outcome, follow-up, no. participants (trials)	Findings	Certainty of the evidence (GRADE)	What happens?
<p><b>Disclosure-related distress</b></p> <p><b>Post-intervention: 84 (1 RCT<sup>50</sup>)</b></p> <p><b>Longest follow-up: 62 (1 RCT<sup>50</sup>)</b></p>	<p>One RCT<sup>50</sup> with high risk of bias (unclear direction) reported on participants' distress related to disclosure of mental illness. The outcome was assessed by a question about how distressed or worried they are about disclosing mental illness. Answers were rated from 1 (not at all) to 7 (very much). This single item was used as a screening item for study inclusion, with a score of 4 or more required to be enrolled to the trial. This RCT compared the effectiveness of HOP program to treatment as usual among adolescent psychiatric patients, who were mostly female (69.3%), born in Germany (94.8%) and were around 22 months since the first psychiatric diagnosis.</p> <p>At post-intervention, the between-group difference for change from baseline was statistically significant, with the mean between-group difference of -0.44 (95% CI [-0.79 to -0.08]).</p> <p>At the 6-week follow-up, the distress related to disclosure of mental illness was significantly lower in HOP group compared to TAU group (mean between-group difference for change from baseline = -0.78 [95% CI -1.16 to -0.40]).</p>	<p><b>Very low</b></p> <p>due to serious concerns for risk of bias, concerns for inconsistency, serious concerns for indirectness and imprecision.<sup>a</sup></p>	<p>HOP may be favoured vs. TAU with respects to attitudes to disclosure post-intervention, but the evidence is very uncertain.</p> <p>HOP may be favoured vs. TAU with respects to attitudes to disclosure at longest follow-up but the evidence is very uncertain.</p>

HOP= Honest, Open, Proud; HOP-C = Honest, Open, Proud-College; RCT = randomized controlled trial; TAU = treatment as usual

<sup>a</sup>At post-intervention and at follow-up: rated down once for risk of bias due to serious concerns about the potential for bias arising from missing outcome data and bias in measurement of the outcomes (participant reported subjective outcomes); rated down once due to serious concerns for inconsistency because of limited of evidence of consistency as only 1 trial was available that reported on the outcome at all time points; rated down once due to serious concerns for indirectness because only 1 program (HOP/HOP-C) was identified and the population seemed relatively homogenous, thereby lowering the generalizability of findings to peer support programs in general.; rated down once due to serious concerns about imprecision because of the relatively lower sample size in each comparison; publication bias was not detected.

**Table 24: GRADE Summary of Findings for Secrecy**

Outcome, follow-up, no. participants (trials)	Findings	Certainty of the evidence (GRADE)	What happens?
<p><b>Secrecy</b></p> <p><b>Post-intervention: 84 (1 RCT<sup>50</sup>)</b></p> <p><b>Longest follow-up: 62 (1 RCT<sup>50</sup>)</b></p>	<p>One RCT<sup>50</sup> with high risk of bias (unclear direction) reported on participants' secrecy related to mental illness. This RCT compared the effectiveness of HOP program to treatment as usual among adolescent psychiatric patients, who were mostly female (69.3%), born in Germany (94.8%) and were around 22 months since the first psychiatric diagnosis.</p> <p>The outcome was assessed by the stigma-coping and orientation subscale of the Link's</p>	<p><b>Very low</b></p> <p>due to serious concerns for risk of bias, concerns for inconsistency, serious concerns for indirectness and imprecision.<sup>a</sup></p>	<p>HOP may be favoured vs. TAU with respects to attitudes to disclosure post-intervention, but the evidence is very uncertain.</p> <p>HOP may be favoured vs. TAU</p>

Outcome, follow-up, no. participants (trials)	Findings	Certainty of the evidence (GRADE)	What happens?
	<p>Stigma Scales.<sup>55</sup> Higher mean scores (range 1 to 6) indicate more secrecy.<sup>50</sup></p> <p>The trial showed that peer support may be favoured compared to treatment as usual on lowering the participants' secrecy related to mental illness at post-treatment, and at 6 weeks follow-up. At post-intervention and at 6-week follow-up, the mean between-group differences of change from baseline were -0.44(95% CI -0.79 to -0.08), and -0.78 (-1.16 to -0.40) respectively.</p>		with respects to attitudes to disclosure at longest follow-up but the evidence is very uncertain.

HOP= Honest, Open, Proud; HOP-C = Honest, Open, Proud-College; RCT = randomized controlled trial; TAU = treatment as usual

\*At post-intervention and at follow-up: rated down once for risk of bias due to serious concerns about the potential for bias arising from missing outcome data and bias in measurement of the outcomes (participant reported subjective outcomes); rated down once due to serious concerns for inconsistency because of limited of evidence of consistency as only 1 trial was available that reported on the outcome at all time points; rated down once due to serious concerns for indirectness because only 1 program (HOP/HOP-C) was identified and the population seemed relatively homogenous, thereby lowering the generalizability of findings to peer support programs in general; rated down once due to serious concerns about imprecision because of the relatively lower sample size in each comparison; publication bias was not detected.

**Table 25: GRADE Summary of Findings for HRQoL**

Outcome, Follow-up, no. participants (trials)	Findings	Certainty of the evidence (GRADE)	What happens?
<p><b>HRQoL</b></p> <p><b>Post-intervention: 84 (1 RCT<sup>50</sup>)</b></p> <p><b>Longest follow-up: 84 (1 RCT<sup>50</sup>)</b></p>	<p>One RCT<sup>50</sup> with high risk of bias (unclear direction) reported on participants' HRQoL. It compared the effectiveness of HOP program to treatment as usual among adolescent psychiatric patients, who were mostly were female (69.3%), born in Germany (94.8%) and were around 22 months since the first psychiatric diagnosis.</p> <p>The outcome was assessed by KIDSCREEN 10<sup>56</sup>, a 10-item questionnaire in which the total score ranges from 10 to 50 with higher scores indicating better quality of life.<sup>56,57</sup></p> <p>At post-intervention, results suggested that there may be little to no difference in the effect of peer support on HRQoL compared to treatment as usual. (Mean between-group difference for change from baseline =0.82 [95% CI -1.34 to 2.98]).</p> <p>At the 6-week follow-up assessment, the results suggested that HOP may be favoured compared to treatment as usual in improving HRQoL. The mean between-group difference for change from baseline to 6 week follow-up was 3.54 (95% CI, 1.14 to 5.93).</p>	<p><b>Very low</b></p> <p>due to serious concerns for risk of bias, concerns for inconsistency, serious concerns for indirectness and imprecision.<sup>a</sup></p>	<p>There may be little to no difference in the effect of HOP vs. TAU on HRQoL post-intervention, but the evidence is very uncertain.</p> <p>HOP may be favoured vs. TAU with respects to attitudes to disclosure at longest follow-up but the evidence is very uncertain.</p>

HOP= Honest, Open, Proud; HOP-C = Honest, Open, Proud-College; HRQoL = health-related quality of life; RCT = randomized controlled trial; TAU = treatment as usual

\*At post-intervention and at follow-up: rated down once for risk of bias due to serious concerns about the potential for bias arising from missing outcome data and bias in measurement of the outcomes (participant reported subjective outcomes); rated down once due to serious concerns for inconsistency because of limited of evidence of consistency as only 1 trial was available that reported on the outcome at all time points; rated down once due to serious concerns for indirectness because only 1 program (HOP/HOP-C) was identified and the population seemed relatively homogenous, thereby lowering the generalizability of findings to peer support programs in general; rated down once due to serious concerns about imprecision because of the relatively lower sample size in each comparison; publication bias was not detected.

**Table 26: GRADE Summary of Findings for Empowerment**

Outcome, follow-up, no. participants (trials)	Findings	Certainty of the evidence (GRADE)	What happens?
<p><b>Empowerment</b></p> <p>Post-intervention: 84 (1 RCT<sup>50</sup>)</p> <p>Longest follow-up: 84 (1 RCT<sup>50</sup>)</p>	<p>One RCT<sup>50</sup> with high risk of bias (unclear direction) reported on participants’ feeling of empowerment. This RCT<sup>50</sup> compared the effectiveness of HOP program to treatment as usual among adolescent psychiatric patients, who were mostly were female (69.3%), born in Germany (94.8%) and were around 22 months since the first psychiatric diagnosis.</p> <p>The outcome was assessed by the Self-esteem (9 items) and the Optimism (4 items) subscales of Empowerment Scale<sup>58</sup>. A mean score was calculated from the scores of the subscales (range 1 to 4), with higher scores indicating more empowerment.</p> <p>In the self-esteem subscale of the Empowerment Scale, the results from the trial showed that at post-intervention, participants in the HOP group reported a significantly larger improvement in self-esteem compared to those in the TAU group (mean between-group differences for change from baseline = 0.21[0.04 to 0.39]). At 6-week follow-up there were no significant difference between the groups.</p> <p>In the optimism subscale, the results showed that there was no significant difference between the groups at post-intervention or at 6 week follow-up. Overall, we concluded that there may be little to no difference in the effect of peer support on feeling of empowerment compared to treatment as usual at all time points.</p>	<p><b>Very low</b></p> <p>due to serious concerns for risk of bias, concerns for inconsistency, serious concerns for indirectness and imprecision.<sup>a</sup></p>	<p>There may be little to no difference in the effect of HOP vs. TAU on HRQoL post-intervention, but the evidence is very uncertain.</p> <p>There may be little to no difference in the effect of HOP vs. TAU on feeling of empowerment at follow-up, but the evidence is very uncertain.</p>

HOP= Honest, Open, Proud; HOP-C = Honest, Open, Proud–College; RCT = randomized controlled trial; TAU = treatment as usual

<sup>a</sup>At post-intervention and at follow-up: rated down once for risk of bias due to serious concerns about the potential for bias arising from missing outcome data and bias in measurement of the outcomes (participant reported subjective outcomes); rated down once due to serious concerns for inconsistency because of limited of evidence of consistency as only 1 trial was available that reported on the outcome at all time points; rated down once due to serious concerns for indirectness because only 1 program (HOP/HOP-C) was identified and the population seemed relatively homogenous, thereby lowering the generalizability of findings to peer support programs in general; rated down once due to serious concerns about imprecision because of the relatively lower sample size in each comparison; publication bias was not detected.

**Table 27: GRADE Summary of Findings for Social Withdrawal**

Outcome, follow-up, no. participants (trials)	Findings	Certainty of the evidence (GRADE)	What happens?
<p><b>Social withdrawal</b></p> <p>Post-intervention: 84 (1 RCT<sup>50</sup>)</p>	<p>One RCT<sup>50</sup> with high risk of bias (unclear direction) reported on participants’ social withdrawal. This RCT<sup>50</sup> compared the</p>	<p><b>Very low</b></p> <p>due to serious concerns for risk of bias, concerns</p>	<p>HOP may be favoured vs. TAU with respects to</p>

Outcome, follow-up, no. participants (trials)	Findings	Certainty of the evidence (GRADE)	What happens?
<p><b>Longest follow-up: 84 (1 RCT<sup>50</sup>)</b></p>	<p>effectiveness of HOP program to treatment as usual among adolescent psychiatric patients, who were mostly were female (69.3%), born in Germany (94.8%) and were around 22 months since the first psychiatric diagnosis.</p> <p>The outcome was assessed by the stigma-coping and orientation subscale of the Link's Stigma Scales<sup>55</sup> (7 items related to withdrawal). Higher mean scores (range 1 to 6) indicate more secrecy.<sup>50</sup></p> <p>The results of the trial suggested that peer support may be favoured compared to treatment as usual on lowering the participants' social withdrawal at post-treatment. However, the effect was small (mean between-group difference for change from baseline = 0.34 [95% CI -0.63 to -0.05]), and the clinical importance is unclear.</p> <p>At 6 weeks post-intervention, there was no significant difference between the groups in the change from baseline of mean scores.</p>	<p>for inconsistency, serious concerns for indirectness and imprecision.<sup>a</sup></p>	<p>social withdrawal at post-intervention, but the evidence is very uncertain.</p> <p>There may be little to no difference in the effect of HOP vs. TAU on feeling of empowerment at follow-up, but the evidence is very uncertain.</p>

HOP= Honest, Open, Proud; HOP-C = Honest, Open, Proud-College; RCT = randomized controlled trial; TAU = treatment as usual

<sup>a</sup>At post-intervention and at follow-up: rated down once for risk of bias due to serious concerns about the potential for bias arising from missing outcome data and bias in measurement of the outcomes (participant reported subjective outcomes); rated down once due to serious concerns for inconsistency because of limited of evidence of consistency as only 1 trial was available that reported on the outcome at all time points; rated down once due to serious concerns for indirectness because only 1 program (HOP/HOP-C) was identified and the population seemed relatively homogenous, thereby lowering the generalizability of findings to peer support programs in general; rated down once due to serious concerns about imprecision because of the relatively lower sample size in each comparison; publication bias was not detected.

**Table 28: GRADE Summary of Findings for Help-Seeking**

Outcome, follow-up, no. participants (trials)	Findings	Certainty of the evidence (GRADE)	What happens?
<p><b>Help-seeking</b></p> <p><b>Post-intervention: 84 (1 RCT<sup>50</sup>)</b></p> <p><b>Longest follow-up: 62 (1 RCT<sup>50</sup>)</b></p>	<p>One RCT<sup>50</sup> with high risk of bias (unclear direction) reported on participants' help-seeking behaviour. This RCT compared the effectiveness of HOP program to treatment as usual among adolescent psychiatric patients, who were mostly were female (69.3%), born in Germany (94.8%) and were around 22 months since the first psychiatric diagnosis.</p> <p>The outcome was assessed by the General Help-Seeking Questionnaire.<sup>59</sup> In the RCT, an average of scores from items related to family/friends and professionals were reported. Higher scores indicate an</p>	<p><b>Very low</b></p> <p>due to serious concerns for risk of bias, concerns for inconsistency, serious concerns for indirectness and imprecision.<sup>a</sup></p>	<p>HOP may be favoured vs. TAU with respects to social withdrawal at post-intervention, but the evidence is very uncertain.</p> <p>HOP may be favoured vs. TAU with respects to help-seeking at 6 weeks follow-up, but the evidence is very uncertain.</p>

Outcome, follow-up, no. participants (trials)	Findings	Certainty of the evidence (GRADE)	What happens?
	<p>increased likelihood for seeking help.<sup>50</sup> A mean score was calculated from the scores of the subscales (range 1 to 4), with higher scores indicating more empowerment.</p> <p>For seeking help from family/friends, at post-intervention, participants in the HOP group reported significantly increased help-seeking behaviour compared to those in the TAU group (mean between-group difference for change from baseline = 0.77 [95% CI 0.36 to 1.17]). At 6-week follow-up, however, there was no significant difference between the groups.</p> <p>As for seeking help from professionals, participants in HOP group reported significantly higher improvement compared to those in the TAU group at post-intervention (mean between-group difference for change from baseline = 0.60 [95% CI 0.15 to 1.05]) and at 6-week follow-up (mean between-group difference for change from baseline = 0.82 [95% CI 0.32 to 1.32]). Overall, we conclude that that peer support may be favoured compared to no peer support in improving help-seeking behaviour among youth.</p>		

HOP= Honest, Open, Proud; HOP-C = Honest, Open, Proud–College; RCT = randomized controlled trial; TAU = treatment as usual

<sup>a</sup>At post-intervention and at follow-up: rated down once for risk of bias due to serious concerns about the potential for bias arising from missing outcome data and bias in measurement of the outcomes (participant reported subjective outcomes); rated down once due to serious concerns for inconsistency because of limited of evidence of consistency as only 1 trial was available that reported on the outcome at all time points; rated down once due to serious concerns for indirectness because only 1 program (HOP/HOP-C) was identified and the population seemed relatively homogenous, thereby lowering the generalizability of findings to peer support programs in general; rated down once due to serious concerns about imprecision because of the relatively lower sample size in each comparison; publication bias was not detected.

**Table 29: GRADE Summary of Findings for Hopelessness**

Outcome, follow-up, no. participants (trials)	Findings	Certainty of the evidence (GRADE)	What happens?
<p><b>Hopelessness</b> Post-intervention: 84 (1 RCT<sup>50</sup>) Longest follow-up: 62 (1 RCT<sup>50</sup>)</p>	<p>One RCT<sup>50</sup> with high risk of bias (unclear direction) reported on participants' feeling of hopelessness. This RCT<sup>50</sup> compared the effectiveness of HOP program to treatment as usual among adolescent psychiatric patients, who were mostly were female (69.3%), born in Germany (94.8%) and were around 22 months since the</p>	<p><b>Very low</b> due to serious concerns for risk of bias, concerns for inconsistency, serious concerns for indirectness and imprecision.<sup>a</sup></p>	<p>There may be little to no difference in the effect of HOP vs. TAU on feeling of hopelessness post-intervention, but the evidence is very uncertain.</p> <p>There may be little to no difference in the effect of HOP vs. TAU on feeling of hopelessness post-intervention, but the evidence is very uncertain.</p>

Outcome, follow-up, no. participants (trials)	Findings	Certainty of the evidence (GRADE)	What happens?
	<p>first psychiatric diagnosis.</p> <p>The outcome was assessed by Beck's Hopelessness Scale (brief version)<sup>60</sup> a 4-item questionnaire, with higher scores indicating increased hopelessness.</p> <p>At post-intervention, there were no significant differences between HOP and TAU groups in change from baseline of mean scores. The mean between-group differences for change from baseline were 0.51 (95% CI -1.88 to 0.85)</p> <p>At 6-week follow-up, there were no significant differences between HOP and TAU groups in change from baseline of mean scores. The mean between-group differences for change from baseline 1.22 (95% CI -2.68 to 0.24)</p> <p>Thus, there may be little to no difference in the effect of peer support on feeling of hopelessness compared to treatment as usual.</p>		

HOP= Honest, Open, Proud; HOP-C = Honest, Open, Proud-College; RCT = randomized controlled trial; TAU = treatment as usual

<sup>a</sup>At post-intervention and at follow-up: rated down once for risk of bias due to serious concerns about the potential for bias arising from missing outcome data and bias in measurement of the outcomes (participant reported subjective outcomes); rated down once due to serious concerns for inconsistency because of limited of evidence of consistency as only 1 trial was available that reported on the outcome at all time points; rated down once due to serious concerns for indirectness because only 1 program (HOP/HOP-C) was identified and the population seemed relatively homogenous, thereby lowering the generalizability of findings to peer support programs in general; rated down once due to serious concerns about imprecision because of the relatively lower sample size in each comparison; publication bias was not detected.

**Table 30: GRADE Summary of Findings for Stage of Recovery**

Outcome, follow-up, no. participants (trials)	Findings	Certainty of the evidence (GRADE)	What happens?
<p><b>Stage of recovery</b></p> <p>Post-intervention: 84 (1 RCT<sup>50</sup>)</p> <p>Longest follow-up: 62 (1 RCT<sup>50</sup>)</p>	<p>One RCT<sup>50</sup> with high risk of bias (unclear direction) reported on participants' self-reported stage of recovery. This RCT<sup>50</sup> compared the effectiveness of HOP program to treatment as usual among adolescent psychiatric patients, who were mostly were female (69.3%), born in Germany (94.8%) and were around 22 months since the first psychiatric diagnosis.</p> <p>The outcome was assessed by Self-</p>	<p><b>Very low</b></p> <p>due to serious concerns for risk of bias, concerns for inconsistency, serious concerns for indirectness and imprecision.<sup>a</sup></p>	<p>There may be little to no difference in the effect of HOP vs. TAU on feeling of hopelessness post-intervention, but the evidence is very uncertain.</p> <p>HOP may be favoured vs. TAU with respects to self-identified stage</p>

Outcome, follow-up, no. participants (trials)	Findings	Certainty of the evidence (GRADE)	What happens?
	<p>Identified Stage of Recovery Scale,<sup>61</sup> in which the total score ranges from 4 to 24, higher scores indicating a better recovery process.</p> <p>At post-intervention, there was no significant difference between the groups in the stage of recovery compared to TAU (Mean between-group difference for change from baseline 0.15 [95% CI -1.34 to 1.64]).</p> <p>At the 6-week follow-up, the results suggested that peer support may be favoured compared to treatment as usual on the stage of recovery. However, the clinical significance of the improvement is unclear (Mean between-group difference for change from baseline 1.59 [95% CI = 0.10 to 3.07]).</p>		of recovery at follow-up, but the evidence is very uncertain.

HOP= Honest, Open, Proud; HOP-C = Honest, Open, Proud–College; RCT = randomized controlled trial; TAU = treatment as usual

<sup>a</sup>At post-intervention and at follow-up: rated down once for risk of bias due to serious concerns about the potential for bias arising from missing outcome data and bias in measurement of the outcomes (participant reported subjective outcomes); rated down once due to serious concerns for inconsistency because of limited of evidence of consistency as only 1 trial was available that reported on the outcome at all time points; rated down once due to serious concerns for indirectness because only 1 program (HOP/HOP-C) was identified and the population seemed relatively homogenous, thereby lowering the generalizability of findings to peer support programs in general; rated down once due to serious concerns about imprecision because of the relatively lower sample size in each comparison; publication bias was not detected.

**Table 31: GRADE Summary of Findings for Symptoms of Anxiety**

Outcome, follow-up, no. participants (trials)	Findings	Certainty of the evidence (GRADE)	What happens?
<p><b>Anxiety</b></p> <p>Post-booster: 97 (1 RCT<sup>39</sup>)</p> <p>Longest follow-up: 55 (1 RCT<sup>40</sup>)</p>	<p>One RCT<sup>39,40</sup> with high risk of bias (unclear direction) reported on participants’ self-reported anxiety symptoms. The trial<sup>39</sup> compared HOP-C with no peer support among university students with self-identified mental health concerns. The participants (n =117) were mostly female (82.2%), White (68.6%) and heterosexual (66.9%), and reported depressive symptoms (85.5%).</p> <p>Anxiety symptoms were assessed using Generalized Anxiety Disorder 7-Item scale<sup>62,63</sup> (score range 0 to 21), with higher scores indicating increased severity of symptoms.<sup>63</sup></p> <p>At post-booster and at the 2-month follow-up, there were no difference in self-reported improvement in anxiety symptoms between HOP-C and waitlist groups (p values 0.213 and 0.252 respectively).</p>	<p><b>Very low</b></p> <p>due to serious concerns for risk of bias, concerns for inconsistency, serious concerns for indirectness and imprecision.<sup>a</sup></p>	<p>There may be little to no difference in the effect of HOP-C vs. TAU on self-reported anxiety symptoms post-booster, but the evidence is very uncertain.</p> <p>There may be little to no difference in the effect of HOP-C vs. waitlist control on self-reported anxiety symptoms at follow-up, but the evidence is very uncertain.</p>

HOP= Honest, Open, Proud; HOP-C = Honest, Open, Proud–College; RCT = randomized controlled trial; TAU = treatment as usual

<sup>a</sup>At post-intervention and at follow-up: rated down once for risk of bias due to serious concerns about the potential for bias arising from missing outcome data and bias in measurement of the outcomes (participant reported subjective outcomes); rated down once due to serious concerns for inconsistency because of limited of evidence of consistency as only 1 trial was available that reported on the outcome at all time points; rated down once due to serious concerns for indirectness because only 1 program (HOP/HOP-C) was identified and the population seemed relatively homogenous, thereby lowering the generalizability of findings to peer support programs in general; rated down once due to serious concerns about imprecision because of the relatively lower sample size in each comparison; publication bias was not detected.

**Table 32: GRADE Summary of Findings for Symptoms of Depression**

Outcome, follow-up, no. participants (trials)	Findings	Certainty of the evidence (GRADE)	What happens?
<p><b>Depression</b>  <b>Post-intervention: 84 (1 RCT<sup>50</sup>)</b>  <b>Post-booster: 97 (1 RCT<sup>39</sup>)</b>  <b>Follow-up: 117 (2 RCTs<sup>40,50</sup>)</b></p>	<p>Two trials<sup>39,40,50</sup> with high risk of bias (predicted direction of bias unclear), reported on the impact of peer support interventions on depression among youth with mental health concerns. Participants had a mean age of 15<sup>50</sup> to 21<sup>39,40</sup> years, most of them female individuals (69.3%<sup>50</sup> to 82.2%<sup>39,40</sup>). The peer support interventions were HOP<sup>50</sup> and HOP-C<sup>39,40</sup> programs. Outcomes were measured at post-intervention, post-booster and at follow-up (6 weeks<sup>50</sup> to 2 months<sup>40</sup> after core sessions). Symptoms of depression was measured using the 15 item CES-D (range 0 to 45) in 1 trial<sup>50</sup> and the 10 item CES-D-10 in the other,<sup>39,40</sup> higher scores indicating more symptoms.</p> <p>The trials showed that there may be little to no difference in self-reported symptoms of depression from baseline to post-treatment (1 RCT<sup>50</sup>) and to post-booster (1 RCT<sup>39</sup>).</p> <p>At longest follow-up, the results were heterogenous (2 RCTs<sup>40,50</sup>). Findings from 1 RCT<sup>50</sup> favoured HOP-C at 6 weeks after the sessions with a mean between-group difference in change from baseline of 7.25 (95% CI -10.85 to -3.65), whereas the second RCT<sup>40</sup> found little to no difference between groups at 2 months after the sessions.</p>	<p><b>Very low</b>  due to serious concerns for risk of bias, inconsistency, indirectness, and imprecision.<sup>a,b,c</sup></p>	<p>There may be little to no difference in the effect of HOP vs. TAU on self-reported depressive symptoms at post-intervention, but the evidence is very uncertain.<sup>a</sup></p> <p>There may be little to no difference in the effect of HOP-C vs. TAU on self-reported depressive symptoms post-booster, but the evidence is very uncertain.<sup>b</sup></p> <p>The findings for effect of HOP vs. control (waitlist/ TAU) on depressive symptoms at the longest follow-up are heterogeneous, and the evidence is very uncertain.<sup>c</sup></p>

HOP= Honest, Open, Proud; HOP-C = Honest, Open, Proud-College; RCT = randomized controlled trial; TAU = treatment as usual

<sup>a</sup>At post-intervention: rated down once for risk of bias due to serious concerns about the potential for bias arising from missing outcome data and bias in measurement of the outcomes (participant reported subjective outcomes); rated down once due to serious concerns for inconsistency because of limited of evidence of consistency as only 1 trial was available that reported on the outcome at this time point, rated down once due to serious concerns for indirectness because only 1 program (HOP/HOP-C) was identified and the population seemed relatively homogenous, thereby lowering the generalizability of findings to peer support programs in general; rated down once due to serious concerns about imprecision because of the relatively lower sample size in each comparison; publication bias was not detected.

<sup>b</sup>At post-booster: rated down once for risk of bias due to serious concerns about the potential for bias arising from missing outcome data and bias in measurement of the outcomes (participant reported subjective outcomes); rated down once due to serious concerns for inconsistency because of limited of evidence of consistency as only 1 trial was available that reported on the outcome at this time point; rated down once due to serious concerns for indirectness because only 1 program (HOP/HOP-C) was identified and the population seemed relatively homogenous, thereby lowering the generalizability of findings to peer support programs in general; rated down once due to serious concerns about imprecision because of the relatively lower sample size in each comparison; publication bias was not detected.

<sup>c</sup>At longest follow-up: rated down once for risk of bias due to serious concerns about the potential for bias arising from missing outcome data and bias in measurement of the outcomes (participant reported subjective outcomes); rated down once due to serious concerns for inconsistency because of inconsistent results between the trials at longest follow-up; rated down once due to serious concerns for indirectness because only 1 program (HOP/HOP-C) was identified and the population seemed relatively homogenous, thereby lowering the generalizability of findings to peer support programs in general; rated down once due to serious concerns about imprecision because of the relatively lower sample size in each comparison; publication bias was not detected.

**Table 33: Detailed Descriptions of Outcome Measurement Tools**

Outcome measure	Description
<b>Beck’s Hopelessness Scale (brief version)<sup>60</sup></b>	A 4-item questionnaire to evaluate hopelessness, with scores ranging from 4 to 24. Higher scores indicate increased hopelessness.
<b>Center for Epidemiologic Studies Short- Depression Scale 10<sup>66,67</sup></b>	CES-D-10 is a 10 item questionnaire, each with Likert type response options, to assess symptoms of depression. It is a shorter version of CES-D It includes questions on somatic symptoms, depressed affect, and positive affect, which are scored from 0 (rarely or none of the time) to 3 (all of the time), over the past week. Total scores range from 0 to 30, with higher scores indicating increased severity of symptoms.
<b>Center for Epidemiologic Studies– Depression Scale<sup>64</sup></b>	CES-D is a 20-item scale to assess symptoms of depression and to identify at-risk individuals for depression. Each item is rated on a 4-point Likert scale ranging from 0 (rarely or none of the time) to 3 (all of the time). Total scores range from 0 to 60, with higher scores indicating increased severity of symptoms. <sup>65</sup>
<b>Empowerment Scale<sup>58</sup></b>	<p>Empowerment scale is a 28-item scale to measure empowerment among consumers of mental health services. It includes domains such as Self-esteem, Power-Powerlessness, Community Activism and Autonomy, Optimism and Control over the Future, and Righteous Anger. Each item is scored on a 4 point Likert scale (strongly agree to strongly disagree). Higher scores indicate stronger empowerment.<sup>91</sup></p> <p>Note: The Self-esteem (9 items) and the Optimism (4 items) subscales of Empowerment scales were used in 1 of the trials<sup>50</sup> included in the Clinical Review to assess the outcome of empowerment. A mean score was calculated ranging from 1 to 4.</p>
<b>Generalized Anxiety Disorder 7-Item scale<sup>62,63</sup></b>	A 7-item scale to assess to symptoms of anxiety. Each item is rated from 0 (not at all) to 3 (nearly every day) on how the participants have felt over the past 2 weeks. The total score ranges from 0 to 21, with higher scores indicating increased severity of symptoms. <sup>63</sup>
<b>General Help-Seeking Questionnaire<sup>59</sup></b>	<p>This questionnaire is used to assess help-seeking behaviour of participants from various sources (e.g., brothers/sisters, doctor, priest/pastor/minister/religious leader, phone helpline) regarding mental health concerns. Each item is rated using a 7-point Likert ranging from “extremely unlikely” to “extremely likely.”<sup>59</sup></p> <p>Note: In 1 included trial<sup>50</sup> an average of scores from items related to family/friends and professionals was reported. Higher scores indicate an increased likelihood for seeking help.<sup>50</sup></p>
<b>Internalized Stigma of Mental Illness<sup>54</sup> (10-item version)</b>	ISMI <sup>92</sup> is a 29-item questionnaire used to assess internalized stigma across domains such as Alienation, Discrimination Experience, Social Withdrawal, Stereotype Endorsement, and Stigma Resistance. A shorter 10-item version of ISMI <sup>54</sup> is a validated outcome measure and covers all the domains in the 29-item ISMI. Each item is rated on a 4-point Likert: strongly disagree (1) to strongly agree (4). Overall score ranges from 1 to 4, with higher scores indicating increase levels of internalized stigma. <sup>54</sup>
<b>KIDSCREEN 10<sup>56</sup></b>	A validated 10-item questionnaire to measure health-related quality of life among children and adolescents. Each item has 9 response options ranging from “not at all” (1) to “always” (9) . Total score ranges from 10 to 50 with higher scores indicating better health-related quality of life. <sup>56,57</sup>
<b>Link’s Stigma Coping Orientation Scales<sup>55</sup></b>	A subscale of Link’s Stigma Scales, the stigma-coping orientation measure domains such as secrecy, withdrawal, challenging, distancing, and educating. Each item scores from 1 (strongly disagree) to 4 (strongly agree). Among these, items related to secrecy (5 items) and withdrawal (7 items) were used in 1 of the included trials. <sup>50</sup> Higher mean scores (range 1 to 6) indicate more secrecy or withdrawal. <sup>50</sup>

Outcome measure	Description
<b>Self-Identified Stage of Recovery Scale<sup>61</sup></b>	This self-reported scale measures stage of recovery across the domains of stage of recovery and the recovery process. Stage of recovery is assessed using 1 statement and the Recovery process is assessed using 4 items, rated on a 6-point scale from 1 (Disagree Strongly) to 6 (Agree Strongly). Higher overall scores (range 4 to 24) indicate a better recovery process. <sup>61</sup>
<b>Self-Stigma of Mental Illness Scale–Short Form<sup>53</sup></b>	A self-reported measure to assess self-stigma, and consists of subscales such as awareness, agreement, application, and harm. Each subscale has 5 items, which is rated from 1 to 9 (9 being strongly agree). The overall score for each subscale ranges from 5 to 45, with higher scores indicating more self-stigma. <sup>53</sup>  Note: In the included trial by Conley et al., <sup>39,40</sup> each subscale scores were reported as ranging from 2 to 5. This is likely the mean score of the 5 items in each of the subscales.
<b>Stigma Stress Scale<sup>93,94</sup></b>	Self-reported 8-item scale in which 4 items are about stigma as a harmful stressor and 4 items about perceived resources to cope with stigma-related harm. Each item is rated from 1 to 7, 7 being more harm or more coping resources. Stigma stress score (range –6 to 6) is calculated by subtracting mean score of perceived resources from mean score of harm, with higher score indicating increased stress related stigma. <sup>93,94</sup>

CES-D = Center for Epidemiologic Studies Depression; CES-D-10 = 10-item Center for Epidemiologic Studies Depression; ISMI = Internalized Stigma of Mental Illness.

## Appendix 3: List of Excluded Publications and Reasons for Exclusion – Review of Clinical Effectiveness and Safety

Note that this appendix has not been copy-edited.

The citations provided in this list are studies that were excluded after full-text review by 2 independent reviewers as part of the Clinical Review (in reverse chronological and alphabetical order).

### Irrelevant Population (n = 84)

- Ali K, Fassnacht DB, Farrer LM, et al. Recruitment, adherence and attrition challenges in internet-based indicated prevention programs for eating disorders: lessons learned from a randomised controlled trial of ProYouth OZ. *Journal of Eating Disorders*. 2022;10(1). [PubMed](#)
- Ali SH, Mohsin FM, Banks A, Lynn P, Lim S. Peer-Led, Remote Intervention to Improve Mental Health Outcomes Using a Holistic, Spirituality-Based Approach: Results from a Pilot Study. *Community mental health journal*. 2021;24. [PubMed](#)
- Johnson BA, Riley JB. Psychosocial impacts on college students providing mental health peer support. *J Am Coll Health*. 2021;69(2):232-236.
- Toombs E, Mushquash CJ, Lund J, et al. Adaption and implementation of the Housing Outreach Program Collaborative (HOP-C) North for Indigenous youth. *Am J Orthopsychiatry*. 2021;91(1):96-108.
- Onyeka O, Richards M, Tyson McCreia K, et al. The role of positive youth development on mental health for youth of color living in high-stress communities: A strengths-based approach. *Psychol Serv*. 2021;04():04.
- Gregory D, Van Puymbroeck M, Crowe B, Garst B, Amylon M. The Influence of a Peer Support Camp on Mitigating Emotional Distress in Siblings of Children With Cancer. *J Pediatr Oncol Nurs*. 2021;():10434542211041929.
- Munson MR, Jaccard J, Scott LD, Jr., et al. Outcomes of a Metaintervention to Improve Treatment Engagement Among Young Adults With Serious Mental Illnesses: Application of a Pilot Randomized Explanatory Design. *J Adolesc Health*. 2021;69(5):790-796. [PubMed](#)
- Sansom-Daly UM, Wakefield CE, Ellis SJ, et al. Online, Group-Based Psychological Support for Adolescent and Young Adult Cancer Survivors: Results from the Recapture Life Randomized Trial. *Cancers (Basel)*. 2021;13(10):18. [PubMed](#)
- Albritton T, Ford KL, Elsbernd K, et al. Implementing a Peer Advocate Mental Health Digital Intervention Program for Ohio Youth: Descriptive Pilot Study. *JMIR mental health*. 2021;8(4):e24605. [PubMed](#)
- Allen JP, Narr RK, Nagel AG, Costello MA, Guskin K. The Connection Project: Changing the peer environment to improve outcomes for marginalized adolescents. *Dev Psychopathol*. 2021;33(2):647-657. [PubMed](#)
- Mohamadi S, Paryab S, Mousavi SA, Keramat A, Motaghi Z, Garkaz O. Comparison of the effect of motivational interview and peer group education on knowledge and performance about puberty and mental health in adolescent girls. *Journal of Nursing & Midwifery Sciences*. 2021;8(3):178-185.
- Fokuo J, Maroney MM, Corrigan P. Pilot of a consumer based anti-stigma mentorship program for nursing students. *J Public Ment Health*. 2020;19(1):51-61.
- Svetlitzky V, Farchi M, Ben Yehuda A, Start AR, Levi O, Adler AB. YaHaLOM training in the military: Assessing knowledge, confidence, and stigma. *Psychol Serv*. 2020;17(2):151-159. [PubMed](#)
- Shankar P, Sievers D, Sharma R. Evaluating the Impact of a School-Based Youth-Led Health Education Program for Adolescent Females in Mumbai, India. *Ann Glob Health*. 2020;86(1):57. [PubMed](#)
- Chinoda S, Mutsinze A, Simms V, et al. Effectiveness of a peer-led adolescent mental health intervention on HIV virological suppression and mental health in Zimbabwe: protocol of a cluster-randomised trial. *Glob Ment Health (Camb)*. 2020;7():e23.
- Kidd SA, Vitopoulos N, Frederick T, et al. Trialing the feasibility of a critical time intervention for youth transitioning out of homelessness. *Am J Orthopsychiatry*. 2020;90(5):535-545. [PubMed](#)
- Vanderkruik R, Gist D, Dimidjian S. Preventing eating disorders in young women: An RCT and mixed-methods evaluation of the peer-delivered Body Project. *J Consult Clin Psychol*. 2020;88(12):1105-1118. [PubMed](#)
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- Maselko J, Sikander S, Turner EL, et al. Effectiveness of a peer-delivered, psychosocial intervention on maternal depression and child development at 3 years postnatal: a cluster randomised trial in Pakistan. *Lancet Psychiatry*. 2020;7(9):775-787. [PubMed](#)
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- Rusch N, Staiger T, Waldmann T, et al. Efficacy of a peer-led group program for unemployed people with mental health problems: Pilot randomized controlled trial. *Int J Soc Psychiatry*. 2019;65(4):333-337. [PubMed](#)
- Fuhr DC, Weobong B, Lazarus A, et al. Delivering the Thinking Healthy Programme for perinatal depression through peers: an individually randomised controlled trial in India. *Lancet Psychiatry*. 2019;6(2):115-127. [PubMed](#)
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- Pfeiffer PN, King C, Ilgen M, et al. Development and pilot study of a suicide prevention intervention delivered by peer support specialists. *Psychol Serv*. 2019;16(3):360-371. [PubMed](#)
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## Appendix 4: Semi-Structured Consultation Interview Guide

Note that this appendix has not been copy-edited.

### Updated Consultation Interview Guide

Introduction: Thank you for your interest and willingness to participate in our stakeholder consultation to help inform our Peer Support for Youth Mental Health project at CADTH. The purpose of this discussion is to help inform the ES component which focused on the program evaluation aspects of peer support program for youth mental health. The objective of the ES is to identify and describe existing and recommended methods for the evaluation of peer support programs for youth mental health including completed evaluation conducted in Canada or internationally and summarize any finding of completed evaluation in Canada. The structure of this consultation will be guided by a series of open-ended questions focused on your role and knowledge of current program evaluation methods specifically for peer support programs for youth mental health. The consultation should last about 60 minutes and will be recorded. You are free to raise concerns or withdraw at any time throughout the consultation process. Do you have any questions or concerns before we begin?

### Discussion

- Can you briefly explain your role(s) within the organization?
- How does your organization define Peer Support and how does program evaluation for Peer Support Programs fit within your organization?
- Can you explain the methods that are used when evaluating Peer Support Programs?
  - For example, how you collect your evaluation data; any specific tools used to help collect data; publicly reporting evaluation results; typical sample size of evaluation; frequency and duration of evaluations.
- Can you identify any guiding resources that are used to inform how program evaluations are done within your organization?
- What are the outcomes that are evaluated, and how are they measured?
  - Outcomes related to individual level, support providers, program/organizational level, health system level?
- Who (within the organization) is involved in conducting the evaluation process?
- Is equity a component of your program evaluations? If so, how do you ensure that equity is incorporated or considered?
- Are there any barriers to incorporating equity within evaluations of peer support? If so, how are these barriers addressed?
- Are peer support workers and/or peer support service users involved in the program evaluation? Does your program serve marginalized, racialized, or Indigenous youth, and if so, do you involve them in your program evaluation?
- Would you be willing to share any examples of completed program evaluations from your peer support program for youth mental health?
- Is there any other important information that you feel I have left out which you would like to tell me?

Conclusion: Thank you again for your participation in this consultation. If you have any additional questions or would like to discuss anything further, please do not hesitate to reach out. I will follow-up with details about the next steps, which will include an opportunity to provide feedback regarding the relevancy and accuracy of the information obtained today.

## Appendix 5: List of Key Informant Organizations and Peer Support Programs

Note that this appendix has not been copy-edited.

**Table 34: List of Key Informant Organizations and Peer Support Programs**

Province or territory	Organization represented by consultation respondents	Aim and background of peer support program
British Columbia	Foundry Central Office	Foundry is a province-wide initiative that supports several local Youth Hubs which integrate health services for youth and offer in-person and virtual peer support services for mental health to youth ages 12-24  Foundry virtual centre also offers virtual peer support with a focus on access for youth living in rural and remote settings
Manitoba	Sara Riel	Provides peer support to youth ages 18-29 to support youth's recovery and living in the community peer support
Ontario	EveryMind	Pilot peer support program that served youth ages 14-25 (Completed 2021)
	Mental Health Innovations	Social enterprise that provides peer support training and program development to businesses and non-profit organizations to support the mental health of their staff  Worked (2022) with the Nova Scotia Health to offer inpatient mental health peer for youth  Is supporting the development and implementation of a peer support program for postsecondary students in Canada
	Stella's Place	Provides peer support services to youth ages 16-29
	Centre for Innovation in Peer Support at Support House	Provides peer support to youth aged 16+ through several locations and virtual platforms  Also, the home of the Centre for Innovation in Peer Support which offers training and implementation support for peer supporters and organizations
New Brunswick	Mental Health and Addictions, Department of Health	Provides recovery-based peer support services to individuals ages 18+ at several locations within New Brunswick

## Appendix 6: Summary of Included Studies

Table 35: Summary of Included Studies From Literature

Author, year, country	Name of program and organization	Program characteristics	Evaluation overview	Data collection method(s)	Evaluation outcome(s) measured
Halsall, 2021 Canada	Transitional Aged Youth, Leap of Faith Together	<p>Peer support services are integrated alongside case management, mental health, and housing support services for youth ages 14-26</p> <p>Youth participants reflected the diversity of the population of downtown Toronto and included youth experience mental health and substance use issues</p> <p>Program objective is to build a sense of autonomy and develop life skills capacity to help achieve goals and maintain personal wellness for program users</p> <p>N = approximately 800</p>	<p>Aim of evaluation was to examine peer support services within the Transitional Ages Youth program using realist and participatory procedures and develop revised research questions based on the initial evaluative findings</p>	<p><b>Realist approach:</b> Includes an exploration of the formal program theory through a literature search, review of program documents and interviews with key stakeholders (peer staff, non-peer staff, and students that work in the program) to identify preliminary context, mechanism, outcome patterns and general successes and challenges</p> <p><b>Participatory approach:</b> Includes a workshop for the study purpose and background, general evaluation principles, and an exploratory discussion to collect feedback on design and current issues within peer support that included peer staff, non-peer staff, and students that worked in the program</p> <p><b>Post-Realist and Participatory Data Collection:</b> Includes peer interviews, client online surveys, peer online surveys, and knowledge mobilization based on the information gathered from the realist and participatory approaches</p>	<p>The realist approach aimed to gather information and contextualize initial contexts, mechanisms, and outcomes identified by key stakeholders to inform refined research questions for additional program evaluation</p> <p>The participatory approach collected feedback on initial design and current issues of interest within peer support</p> <p>The post-realist and participatory data collection was used to help refine the scope of the evaluation</p>

Author, year, country	Name of program and organization	Program characteristics	Evaluation overview	Data collection method(s)	Evaluation outcome(s) measured
Day, 2020 UK	Peer Support for Mental Health and Wellbeing, Department for Education	<p>The Peer Support for Mental Health and Wellbeing were piloted in 2018 with the aim of understanding how schools, colleges and CYPCOs can set up and deliver peer support to improve youth mental health and well-being</p> <p>Participating organizations designed and tailored their model of peer support to fit individual needs and circumstances</p>	<p>Aim of evaluation was to understand the set up and delivery of peer support programs so that replicable models may be produced for different contexts</p> <p>Evaluation efforts aimed to answer questions related to program models, implementation, and benefits and outcomes</p>	<p>A mixed-methods approach was used to quantitative and qualitative data</p> <p>Organization pilot leads completed an online survey to establish baseline measurements</p> <p>Follow-up qualitative telephone interviews were complete with a sample of pilot leads</p> <p>Case study visits were conducted with a purposive sample of pilot leads</p> <p>Participatory research tools were used to provide feedback from youth</p> <p>Pre and post quantitative survey of youth to measure change in individual wellness outcomes</p>	<p>Social and emotional well-being and resilience</p> <p>Personal development</p> <p>Organizational outcomes and capacity building</p>

CYPCO= Children and Young People's Community Organisation.

Note: This table has not been copy-edited.

## Appendix 7: Summary of Program Evaluation Reports From Stakeholders

**Table 36: Summary of Program Evaluation Reports From Stakeholders**

Organization, year	Program evaluated	Aim of evaluation	Evaluation design and/or development	Data collection method(s) and analysis	Evaluation outcome(s) measured
EveryMind, 2022	Youth Peer Support Pilot Project	To account for anticipated and unanticipated program outcomes by using an exploratory approach	<p>Process and evaluation questions were developed for program users and workers</p> <p>Process questions were designed to evaluate how the program was implemented and if implementation was as intended</p> <p>Outcome questions were designed to capture changes that occurred because of the program</p>	<p>Program indicators were informed through content-based and demographic questions, program metrics like attendance and number of times program was used, and session topics</p> <p>Formative feedback was collected through survey-based questionnaires on a weekly basis after each session which included quantitative questions and qualitative questions</p> <p>Summative feedback was collected following the program to inform program experiences and program outcomes through qualitative methods</p> <p>Quantitative data were analyzed using metrics such as frequencies, percentages, or mean scores</p> <p>Qualitative data were analyzed using a thematic analysis approach</p>	<p>Formative feedback outcomes included statements about the quality of the content covered, and open-ended questions to assess user and worker experiences</p> <p>Summative feedback outcomes focused on peer support training experiences and youth participant and worker experiences</p>
Foundry Center Office, 2021	Foundry Youth Peer Support Curriculum	<p>To improve the training experiences of future youth peer support workers</p> <p>To understand the</p>	Participants were invited to complete a survey and participate in focus groups to inform feedback	<p>Surveys were administered before and after training sessions both in person and online</p> <p>Focus groups were conducted with training participant both in person</p>	Outcomes were related to the impact of participants through content, delivery, and experience of training

Organization, year	Program evaluated	Aim of evaluation	Evaluation design and/or development	Data collection method(s) and analysis	Evaluation outcome(s) measured
		<p>impact on participant preparation for youth peer support practice and to better meet training needs</p> <p>To assess the delivery of virtual training</p>	to address quality improvement efforts	<p>and virtually</p> <p>Key informant interviews were held with training facilitators</p> <p>Quantitative and qualitative data were analyzed using statistical and thematic coding software</p>	Trainer experiences outcomes were also assessed
<b>Centre for Innovation in Peer Support at Support House, 2019</b>	Just Be You	To provide baseline data on perceived integrity, quality, and impact of peer support services	The evaluation used the PSIQI survey, which was developed in consultation with peer support experts to be used by people who are currently using peer support or have recently stopped using peer support	Participants use the PSIQI survey to inform questions related to connection with peer support, time of engagement, type and focus of peer support offered, service integrity, service quality, and service impact	Outcomes are related to the participants experience of using peer support, and their perceived judgment on service integrity, quality, and impact
<b>University of McGill, 2019</b>	Peer Support Centre	To determine who accessed peer support services, the mental health needs of students using peer support services, and the perceived quality of peer support reported by students who accessed the service	Participants were invited to complete an anonymous online survey to inform participant experience and program quality improvement	<p>The online survey was made available to participants after their support session to collect information related to mental health status and session quality</p> <p>Mental health status was measured PHQ-9, GAD-7, and the ORS</p> <p>Session quality was measured using the SRS</p> <p>Data processing and analysis was done using descriptive statistics analytical methods (using IBM SPSS version 22)</p>	<p>Mental health status outcomes were related to depressive and anxious symptoms over the past 2 weeks prior to the survey, and personal, interpersonal, social, and general well-being as measured by the PHQ-9, GAD-7, and ORS</p> <p>Session quality outcomes were the perceived quality of the peer support session as reported by the participant measured by the SRS</p>

GAD-7 = Generalized Anxiety Disorder-7; ORS = Outcome Rating Scale; PHQ-9 = Public Health Questionnaire-9; PSIQI = Peer Support Integrity, Quality and Impact; SRS = Session Rating Scale.

Note: This table has not been copy-edited.

## Appendix 8: Summary of Program Evaluation Methods From Stakeholder Consultations

Table 37: Summary of Program Evaluation Methods From Stakeholder Consultations

Organization, jurisdiction	Foundry Central Office, British Columbia	Sara Riel, Winnipeg,	EveryMind, Ontario	Mental Health Innovations, Canada	Stella's Place, Ontario	Centre for Innovation in Peer Support at Support House, Ontario	Mental Health and Addictions, New Brunswick Department of Health, New Brunswick
<b>Peer Support Program Evaluation Goals</b>	<p>To measure who and how many youth seek and receive peer support services from Foundry</p> <p>To demonstrate the impact of peer support on youth, workers, and health system outcomes to support the further scaling up of peer support programs and initiatives</p> <p>To establish consistency across peer support programs including the roles of peer support workers</p>	To enable quality improvement and to track user recovery	<p>To understand the baseline effectiveness and to promote wider organizational uptake of peer support</p> <p>To provide ongoing feedback to understand and ensure that the needs of the program were being met</p> <p>To provide a process of quality improvement</p> <p>To inform peer support training for other programs in the organization</p>	To provide quality improvement that addresses the needs of the organization using the peer support service	To inform quality improvement through ongoing feedback	To inform quality improvement and understand user and worker's relationship with peer support	To ensure the program is adhering to a recovery model as outlined by the MHCC

Organization, jurisdiction	Foundry Central Office, British Columbia	Sara Riel, Winnipeg,	EveryMind, Ontario	Mental Health Innovations, Canada	Stella's Place, Ontario	Centre for Innovation in Peer Support at Support House, Ontario	Mental Health and Addictions, New Brunswick Department of Health, New Brunswick
<b>Peer Support Program Evaluation Guiding Principles and Practices</b>	Evaluation is developed through a process of co-design with youth  Evaluation is informed by practice-based evidence	Evaluation is based on a recovery model	Evaluation is ongoing and developed through a process of co-design with youth  Evaluation is informed by practice-based evidence	Evaluation is developed with the involvement of the business/organization that has requested the services of the peer support program	Evaluation is ongoing and based on a recovery model  Evaluation is developed through a process of co-design involving youth	Evaluation is based on a recovery model and is developed through a process of co-design with youth	Evaluation is ongoing and is based on a recovery model of care
<b>Participants Involved in the Design and/ or Conduct of Peer Support Evaluations</b>	Youth Advisory Councils are involved in all aspects of evaluation design and conduct (including analysis)  Peer support users, workers, and clinicians participate in conducting the evaluation (on a voluntary basis)	Peer support users and workers participate in conducting the evaluation (on a voluntary basis)	A youth engagement committee is involved in the design of the evaluation  Peer support users and workers participate in conducting the evaluation (on a voluntary basis)	Peer support workers and clinicians participate in conducting the evaluation (on a voluntary basis)	A youth and young adult advisory council is involved in the design of the evaluation  Peer support users and workers participate in conducting the evaluation (on a voluntary basis)	Evaluation is done through a co-design process with youth users and workers  Peer support users and workers participate in conducting the evaluation (on a voluntary basis)	Peer support users, workers, and clinicians participate in conducting the evaluation (on a voluntary basis)
<b>Peer Support Program Evaluation Data Collection and Analysis</b>	<b>Evaluation In-development:</b>  Mixed-method longitudinal evaluation with	Data are collected using surveys  Data are collected at	Data are collected using online surveys  Quantitative and qualitative data	Data are typically collected using surveys	Evaluation is done using a pre-post analysis and results are aggregated across different	Evaluations take place after youth participation in peer support programs have concluded and results are typically	Evaluation is guided by a process-oriented logic model  Data are collected using surveys

Organization, jurisdiction	Foundry Central Office, British Columbia	Sara Riel, Winnipeg,	EveryMind, Ontario	Mental Health Innovations, Canada	Stella's Place, Ontario	Centre for Innovation in Peer Support at Support House, Ontario	Mental Health and Addictions, New Brunswick Department of Health, New Brunswick
	<p>a co-design approach</p> <p>Guided by a splash and ripple logic model</p> <p><b>Prior evaluations:</b> Data on program outputs was collected using a youth experience and satisfaction survey and a service worker experience survey</p>	<p>baseline (intake) up to 9 months after program engagement</p> <p>C-PROM is used for recovery-based assessments</p>	<p>are extracted from surveys</p>		<p>programs that include peer support</p> <p>Data are collected using feedback forms</p>	<p>analyzed on a quarterly basis</p> <p>Data are collected using the PSSIQI survey tool and analyzed by an external party and information is consolidated and shared back with the organization for interpretation</p> <p>PSSIQI can be used in conjunction with C-PROM</p>	<p>CMHA offers yearly assessments of completed evaluations</p>
<p><b>Peer Support Program Evaluation Outcomes</b></p>	<p><b>Prior Evaluations</b></p> <p><b>Individual outcomes:</b> user and worker satisfaction</p> <p><b>Program outcomes:</b> program outputs (e.g., attendance records, referrals to program)</p> <p><b>Evaluation In-development</b></p> <p><b>Individual outcomes:</b></p>	<p><b>Recovery-oriented outcomes:</b> user's "path to recovery" including feelings and attitudes of user's personal recovery</p> <p><b>Individual outcomes:</b> employment related outcomes</p> <p><b>Program</b></p>	<p><b>Individual outcomes:</b> user and worker experiences</p>	<p><b>Program outcomes:</b> peer support worker and clinician perceptions of the peer support program</p>	<p><b>Recovery-oriented outcomes:</b> overall recovery, emotional regulation, empowerment, and social connections</p> <p><b>Individual Outcomes:</b> education and employment</p>	<p><b>Recovery-oriented outcomes:</b> change in emotions and feelings before and after peer support</p> <p><b>Individual outcomes:</b> overall experience of the program and how strongly users agree with the set of 17 action statements to assess how users felt supported</p> <p><b>Program outcomes:</b> assessment of</p>	<p><b>Recovery-oriented outcomes:</b> community integration, overall fulfillment</p> <p><b>Individual outcomes:</b> user and worker experiences</p> <p><b>Program outcomes:</b> number of program users</p>

Organization, jurisdiction	Foundry Central Office, British Columbia	Sara Riel, Winnipeg,	EveryMind, Ontario	Mental Health Innovations, Canada	Stella's Place, Ontario	Centre for Innovation in Peer Support at Support House, Ontario	Mental Health and Addictions, New Brunswick Department of Health, New Brunswick
	<p>effectiveness of peer support over time through a repeated health measure based on an outcome rating scale with composite domains focusing on relationships to recovery (called Life Tracker)</p> <p><b>System-level outcomes:</b> connection to other external or internal services through peer support to understand impact to system-level services (e.g., emergency departments)</p>	<p><b>outcomes:</b> attendance, user information, duration of program enrolment</p> <p><b>System-level outcomes:</b> hospitalizations</p>				<p>changes that can be implemented into the program</p> <p>Demographic data are also collected</p>	
<b>Equity considerations in evaluation</b>	JEDI work is being implemented throughout the organization and all aspects of program delivery, including peer support and	Evaluation has highlighted a general gap in the uptake of populations using peer support services and efforts are	There is an emphasis on having diverse perspectives from individuals with different lived experience informing the	Equity may not be on the client's radar, which often means it is not considered  Equity considerations should be	There is an effort to shift away from using clinical language within the evaluation to minimize stigmatization	Multiple methods of data collection are used to help minimize barriers to youth providing feedback	Evaluations use a "client-led" approach which includes user perspectives to help inform future efforts that may impact barriers that prevent an equitable approach to program evaluation

Organization, jurisdiction	Foundry Central Office, British Columbia	Sara Riel, Winnipeg,	EveryMind, Ontario	Mental Health Innovations, Canada	Stella's Place, Ontario	Centre for Innovation in Peer Support at Support House, Ontario	Mental Health and Addictions, New Brunswick Department of Health, New Brunswick
	<p>evaluation</p> <p>Youth advisory councils include Indigenous, racialized, gender-diverse and youth from other marginalized and oppressed who are involved in co-designing evaluations</p> <p>Evaluation of their peer support training program is being done through an Indigenous lens</p> <p>The virtual care program was designed to increase access to programming and evaluation by breaking down barriers to participants for rural and remote</p> <p>There is an organization commitment to collecting</p>	<p>being made to reach a broader population that is more reflective of the communities where peer support services are offered</p>	<p>evaluation to ensure adequate community representation</p> <p>Participants involved in the evaluation are compensated for their involvement</p>	<p>incorporated into evaluations as evaluations become more common and consistent</p>			

Organization, jurisdiction	Foundry Central Office, British Columbia	Sara Riel, Winnipeg,	EveryMind, Ontario	Mental Health Innovations, Canada	Stella's Place, Ontario	Centre for Innovation in Peer Support at Support House, Ontario	Mental Health and Addictions, New Brunswick Department of Health, New Brunswick
	Indigenous-data and stories during evaluation in a culturally responsible manner						

CMHA = Canadian Mental Health Association; C-PROM = Canadian Personal Recovery Outcome Measure; JEDI = justice, equity, diversity, and inclusion; MHCC = Mental Health Commission of Canada; PSSIQI = Peer Support Service Integrity, Quality and Impact Survey

Note: This table has not been copy-edited.