

Université de Montréal

Le transfert et la mobilisation des connaissances pour optimiser l'adoption de l'approche de réduction des méfaits liés à l'usage du cannabis par les intervenant.e.s œuvrant auprès des adolescent.e.s et des jeunes adultes en difficulté au Québec

*Par*

Roula Haddad

Département de psychologie, Faculté des arts et des sciences

Thèse présentée en vue de l'obtention du grade de Philosophiae Doctor (Ph.D.) – Doctorat  
en Psychologie, option recherche

Juin 2025

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Université de Montréal

Unité académique : Département de psychologie, Faculté des arts et des sciences

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*Cette thèse intitulée*

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*Présentée par*

**Roula Haddad**

*A été évaluée par un jury composé des personnes suivantes*

**Audrey-Ann Deneault**

Présidente-rapporteur

**Christian Dagenais**

Directeur de recherche

**Jean-Sébastien Fallu**

Codirecteur

**Saliha Ziam**

Membre du jury

**Perrine Roux**

Examinatrice externe

## Résumé

Cette thèse de doctorat a pour objectif principal de concevoir une démarche de transfert et de mobilisation des connaissances (TMC) afin d'optimiser l'adoption de l'approche de réduction des méfaits liés à l'usage du cannabis (RDM-C) par les intervenant.e.s de la santé et des services sociaux œuvrant auprès des adolescent.e.s et des jeunes adultes en difficulté au Québec. Pour ce, trois objectifs spécifiques ont été définis, chacun faisant l'objet d'une étude distincte et aboutissant à quatre articles scientifiques: 1) Identifier, à l'aide d'une étude de portée, les facilitateurs et les obstacles des intervenant.e.s de la santé et des services sociaux face à l'adoption de l'approche de RDM-C ; 2) Identifier les attitudes des intervenant.e.s de la santé et des services sociaux œuvrant auprès des adolescent.e.s et des jeunes adultes en difficulté au Québec envers l'adoption de l'approche de RDM-C et développer un plan de TMC visant à optimiser son adoption auprès de cette population ; 3) Décrire le déroulement de la mise en œuvre du plan de TMC et évaluer ses effets immédiats et ses retombées à court-moyen terme.

La première étude, soit l'étude de portée, s'est appuyée sur le modèle d'Arksey et O'Malley (2005), qui a ensuite été mis à jour par Levac et al. (2010) et puis affiné par les membres de *Joanna Briggs Institute* en 2020. La stratégie de recherche a été exécutée dans les bases de données du domaine de la santé et dans la littérature grise. Deux réviseuses ont mené de façon indépendante le processus de sélection des documents, aboutissant à l'inclusion de 35 études. Les données, extraites dans des fiches de synthèse, ont fait l'objet d'une analyse numérique et d'une analyse qualitative thématique. Les résultats ont été regroupés en quatre catégories, chacune englobant des facilitateurs et des obstacles face à l'adoption de l'approche de RDM-C : 1) Caractéristiques des professionnel.le.s de la santé et des services sociaux (p. ex., niveau d'éducation, années d'expérience) ; 2) Caractéristiques de la clientèle (p. ex., sévérité du trouble lié à l'usage du cannabis, comorbidités) ; 3) Facteurs liés à l'approche de RDM-C (p. ex., principes et efficacité de l'approche de RDM-C, conceptions erronées liées à l'approche de RDM-C) ; 4) Facteurs liés au milieu de travail (p. ex., soutien de l'organisation, type du milieu de travail).

Dans le cadre de la deuxième étude, le *Knowledge-to-Action Model* et le *Consolidated Framework for Implementation Research* ont guidé l'élaboration du plan de TMC. Des intervenant.e.s et des gestionnaires œuvrant auprès d'adolescent.e.s et de jeunes adultes en difficulté dans quatre centres d'hébergement au Québec ont été recrutés. Une démarche mixte a été mise en place : des consultations ont été organisées auprès des participant.e.s ( $N = 14$ ) et un questionnaire leur a été administré ( $N = 167$ ). L'analyse thématique des consultations a permis d'analyser les besoins des publics cibles (i.e., écart entre la situation réelle et désirée, intérêt face aux nouvelles connaissances, habiletés à adopter l'approche de RDM-C, préférences quant aux canaux de communication) ainsi que leur contexte (i.e., facteurs liés aux publics cibles, à leur clientèle et à l'organisation qui pourraient faciliter ou entraver l'adoption de l'approche de RDM-C). Les données quantitatives, analysées par le biais de statistiques descriptives et inférentielles, ont révélé la présence d'attitudes positives envers l'approche de RDM-C, négatives envers l'approche d'abstinence des substances et une perception positive de leur niveau de formation en RDM-C. La triangulation des données qualitatives, quantitatives et ceux de l'étude de portée a abouti à l'élaboration du plan de TMC et à la formulation de neuf actions que les intervenant.e.s et les gestionnaires pourraient mettre en place pour optimiser l'adoption de l'approche de RDM-C dans leurs milieux. Deux stratégies de TMC adaptées à chaque public cible ont été conçues, soit des notes de politique et des ateliers délibératifs.

Dans le cadre de la dernière étude, le cadre d'évaluation de Ziam et al. (2024) a servi pour décrire la mise en œuvre du plan de TMC auprès des 19 intervenant.e.s et gestionnaires recruté.e.s, ainsi que pour évaluer ses effets. Lors de l'atelier délibératif, les publics cibles ont contribué à la formulation des actions finales à entreprendre pour optimiser l'adoption de l'approche de RDM-C, celles-ci étant liées à la RDM-C, aux jeunes et à l'organisation. Une évaluation par méthodes mixtes a ensuite été menée, combinant un questionnaire et des entrevues semi-structurées. Les résultats ont mis en évidence l'appréciation de la démarche de TMC, l'intention d'utiliser les connaissances transférées ou même leur intégration dans les pratiques auprès des jeunes.

Pour conclure, un processus systématique et multidirectionnel de TMC a été mis en place afin d'optimiser l'adoption de l'approche de RDM-C auprès des jeunes au Québec, constituant ainsi

un modèle pour les recherches futures et contribuant à la formulation d'actions concrètes pour optimiser sa mise en œuvre.

**Mots-clés** : Transfert des connaissances, mobilisation des connaissances, science de la mise en œuvre, réduction des méfaits, cannabis, santé publique, services sociaux, adolescents, jeunes, pratiques.

## Abstract

The primary objective of this doctoral thesis is to design a knowledge transfer and mobilization (KTM) process to optimize the adoption of harm reduction in cannabis use (HR-c) among health and social services (HSS) practitioners working with adolescents and young adults in difficulty in Quebec. To achieve this, three specific objectives were defined, each corresponding to a distinct study and culminating in four scientific articles: 1) Identify, through a scoping review, the facilitators of and obstacles to HSS practitioners' adoption of HR-c; 2) Identify the attitudes toward HR-c of HSS practitioners working among youth in Quebec and develop a KTM plan to enhance its adoption among this population; 3) Describe the implementation of the KTM plan and evaluate its immediate and short-to-medium-term effects.

The first study was based on Arksey and O'Malley's (2005) model for scoping reviews, which was later refined by Levac et al. (2010) and then revised by members of the Joanna Briggs Institute in 2020. The search strategy was executed on health databases and in the grey literature. Two independent reviewers carried out the study selection process, ultimately including 35 studies. Data from these studies were extracted in summary sheets for qualitative and numerical analysis. The results were categorized into four themes, each highlighting facilitators and obstacles to HR-c adoption: stakeholders' characteristics (e.g., education level, practice experience); clients' characteristics (e.g., severity of cannabis use disorder, comorbidities); factors related to HR-c (e.g., HR-c principles, effectiveness, and misconceptions); factors related to the workplace (e.g., organizational support, type of workplace).

To develop the KTM plan, the second study was guided by the *Knowledge-to-Action Model* and the *Consolidated Framework for Implementation Research*. HSS practitioners and managers working with adolescents and young adults in difficulty in four residential centers in Quebec were recruited. A mixed-methods approach was employed: consultations were conducted with 14 participants, and 167 individuals completed a questionnaire. Thematic analysis of the consultations helped identify the needs of target audiences (i.e., gap between the current and desired situation, interest in new knowledge, skills to adopt HR-c, communication channel

preferences) and analyze their context (i.e., factors related to the target audience, their clients, and the organization that could facilitate or hinder HR-c adoption). Quantitative data, analyzed using descriptive and inferential statistics, revealed positive attitudes toward HR-c, negative attitudes toward abstinence-based approaches, and a positive perceived level of training in HR-c. The triangulation of qualitative, quantitative, and scoping review data led to the development of a KTM plan and the formulation of nine actions that HSS practitioners and managers could implement to optimize HR-c adoption in their workplace. Two KTM strategies tailored to each target audience were designed: policy briefs and deliberative dialogues.

The third study used the evaluation framework of Ziam et al. (2024) to describe the implementation of the KTM plan among 19 recruited HSS practitioners and managers, and to assess its effects. During the deliberative dialogues, target audiences contributed to the formulation of final actions to optimize HR-c adoption, these being related to HR-c, youth, and the organization. A mixed-methods evaluation followed, combining a questionnaire and semi-structured interviews. The results highlighted strong appreciation for the KTM process, an intention to use transferred knowledge, and even its integration into professional practices with youth.

In conclusion, a systematic and multidirectional KTM process was implemented to optimize HR-c adoption among HSS practitioners working with youth in Quebec, serving as a model for future studies and contributing to the formulation of concrete actions to optimize HR-c adoption.

**Keywords:** Knowledge transfer, knowledge mobilization, implementation science, harm reduction, cannabis, public health, social services, adolescents, youth, practices.

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## Liste des sigles et abréviations

CBD : Cannabidiol

CFIR : *Consolidated Framework for Implementation Research*

CLSC : Centre local de services communautaires

CMO : Capacité, motivation et opportunité

CRD : Centre de réadaptation en dépendance

CRJDA : Centre de réadaptation pour les jeunes en difficulté d'adaptation

CRSH : Conseil de recherches en sciences humaines

HR-c : *Harm reduction in cannabis use*

HSS : *Health and social services*

INSPQ : Institut national de santé publique du Québec

IUD : Institut universitaire sur les dépendances

KTA : *Knowledge-to-Action*

KTM : *Knowledge transfer and mobilization*

MSSS : Ministère de la Santé et des Services sociaux

OCDE : Organisation de coopération et de développement économiques

ONU : Organisation des Nations Unies

PCC : Population–Concept–Contexte

PUDS : Programme sur l'usage et les dépendances aux substances

RACQ : Regroupement des Auberges du cœur du Québec

RDM : Réduction des méfaits

RDM-C : Réduction des méfaits liés à l'usage du cannabis

SCA : Stratégie canadienne antidrogue

SCIDUA : *Integrated School- and Community-based Demonstration Intervention Addressing Drug Use among Adolescents*

SHAHRP : School Health and Alcohol Harm Reduction Project

SQDC : Société québécoise du cannabis

TC : Transfert des connaissances

THC : Tétrahydrocannabinol

TMC : Transfert et mobilisation des connaissances

TUC : Trouble d'utilisation du cannabis

TUS : Trouble lié à l'usage de substances

VIH : Virus de l'immunodéficience humaine

*À ma Téta,*

*Tu as tant rêvé de me voir achever mon doctorat, et me voilà.*

*Tu le vois maintenant, d'où tu es, des plus hauts.*

*C'est pour toi.*

## Remerciements

À Christian, mon directeur de recherche, les mots ne suffiront jamais pour exprimer toute ma gratitude et pour te dire à quel point je suis reconnaissante d'avoir eu la chance d'être ton étudiante. Merci d'avoir été un mentor exceptionnel et de m'avoir accompagnée avec bienveillance et rigueur tout au long de ce parcours. Merci d'avoir toujours cru en moi et vu mon potentiel, même avant mon doctorat. Merci de m'avoir poussée à toujours aller plus loin et viser plus haut. Merci de m'avoir ouvert des opportunités inestimables pour mon développement personnel et professionnel. Merci de m'avoir guidée dans les bonnes directions, même lorsque celles-ci ne m'étaient pas claires.

À Jean-Sébastien, mon codirecteur, travailler avec toi a été une véritable richesse. Merci d'avoir constamment alimenté mes réflexions, élargi mes horizons et nourri mon esprit critique. Merci de m'avoir montré l'exemple d'un chercheur engagé, dont ses travaux visent avant tout à améliorer le bien-être social et dont son domaine d'expertise lui tient précieusement à cœur. Ta passion et ton engagement m'ont non seulement inspirée, mais m'ont aussi appris à naviguer dans le monde de la recherche avec une vision plus humaniste et axée sur l'impact social.

À Aurélie, merci pour tes encouragements constants, tes conseils précieux et, surtout, ta présence chaleureuse et bienveillante. Merci d'avoir toujours éclairé les moments de doute. Ton soutien a non seulement facilité mon cheminement, mais a aussi créé un environnement dans lequel il était possible d'évoluer sereinement.

À Christophe, Yuan, Laurence et Mathieu-Joël, merci d'avoir formé cette formidable équipe avec laquelle j'ai eu un réel plaisir de travailler. Votre expertise et vos contributions enrichissantes ont été essentielles à la progression et la concrétisation de ce projet.

Merci à ma famille et mes amis, pour la base solide sur laquelle je peux toujours compter indépendamment des distances. Merci pour votre amour inconditionnel et votre soutien continu. Pap, merci d'avoir été mon premier modèle de professeur universitaire et de m'avoir montré l'exemple que j'aspire à devenir. Merci de m'avoir transmis la passion pour le milieu académique

et de m'avoir montré l'importance de travailler non seulement avec ma « tête », mais aussi, avec mon cœur.

À Licha, merci pour tout ce que tu es. Merci d'avoir toujours été à mes côtés tout au long de cette aventure pleine de défis. Merci d'avoir partagé avec moi aussi bien les hauts que les bas. Ton amour, ton soutien et ta présence constante m'ont donné la force d'avancer. Ce parcours aurait été bien plus difficile sans toi, et je suis infiniment reconnaissante de partager ma vie et mes rêves avec toi.

# Introduction

## Mise en contexte et positionnement de la thèse

Entre les années 1908 et 1923, le Canada a criminalisé pour la première fois la production, la vente et l'usage de l'opium, de la cocaïne et puis du cannabis (Hathaway et Erickson, 2003). En 1987, la *Stratégie canadienne antidrogue* (SCA), adoptée sous le gouvernement Mulroney, prétendait équilibrer entre la prévention et la répression, mais restait toutefois principalement centrée sur l'abstinence, la prohibition et l'élimination des substances psychoactives (Fallu et Brisson, 2013; Hathaway et Erickson, 2003). Cependant, la criminalisation du cannabis favorise la stigmatisation des personnes qui en consomment et est un déterminant de la santé qui présente des conséquences néfastes au niveau individuel et sociétal, d'où les appels à des réformes juridiques (Boyd et al., 2016; Hathaway et Erickson, 2003; Scher et al., 2023).

En 2018, l'approbation de la *Loi sur le cannabis* au Canada a règlementé l'usage, la possession et l'achat du cannabis non médical pour les individus âgés de 18 ans et plus (Gouvernement du Canada, 2022). Au Québec, l'âge d'accès légal a été fixé à 21 ans et la distribution a été restreinte à la Société québécoise du cannabis (SQDC) (Gouvernement du Québec, 2024). Malgré l'interdiction de l'accès au cannabis légal pour les jeunes de moins de 21 ans, la prévalence de consommation de cannabis demeure élevée pour ce groupe d'âge (Gouvernement du Québec, 2024). Pour faire face à cette réalité, des mesures préventives et des traitements efficaces devaient être appliqués auprès de clientèles prioritaires, telles que les adolescent.e.s (14-17 ans) et les jeunes adultes en difficulté (18-21 ans) (Ministère de la Santé et des Services sociaux, 2018). Le terme « jeunes en difficulté » désigne les jeunes présentant des problèmes développementaux ou comportementaux, des difficultés d'adaptation scolaire (p. ex., délinquance, violence, etc.), et/ou qui ont besoin d'une aide appropriée pour assurer leur développement et leur sécurité (p. ex., vécu d'abus, de négligence, etc.) (Ministère de la Santé et des Services sociaux, 2007). Une grande majorité de ces jeunes présente également des traumatismes complexes, des difficultés d'attachement, des symptômes anxio-dépressifs, des idéations suicidaires et des troubles de

comportements sévères, d'où leur considération en tant que clientèle prioritaire (Fallu et al., 2022; Ministère de la Santé et des Services sociaux, 2018).

En ce qui a trait aux interventions, les modèles fondés sur l'approche d'abstinence des substances et donc, sur l'élimination totale de l'usage de substances, ont été largement adoptés auprès des jeunes au Canada et dans le monde, et continuent à être privilégiés par certain.e.s (Jenkins et al., 2017). Cependant, plusieurs facteurs limitent l'efficacité de ces programmes, notamment le manque d'engagement des jeunes et la divergence entre leurs objectifs et ceux du programme (Bagot et Kaminer, 2018; Passetti et al., 2016). Cela souligne la nécessité de mettre en place des interventions plus efficaces, flexibles et qui répondent aux besoins des jeunes, tels que l'approche de réduction des méfaits liés à l'usage du cannabis (RDM-C) (Bagot et Kaminer, 2018). Cette approche cherche à minimiser les conséquences néfastes de la consommation de substances au niveau individuel, psychologique, juridique et social sans toutefois imposer l'abstinence totale (Mancini et al., 2008; Winer et al., 2022).

Le problème qui se pose est, qu'en dépit de son efficacité avérée et de sa concordance avec les besoins cliniques et développementaux des jeunes, l'adoption de la RDM-C reste limitée en raison des résistances des professionnel.le.s, des gestionnaires et des organisations de la santé et des services sociaux face à son adoption auprès des adolescent.e.s et des jeunes adultes (Chatham, 2021; Jenkins et al., 2017; Mancini et Wyrick-Waugh, 2013; Marlatt et al., 2011). De plus, les efforts de transfert de connaissances (TC) visant à promouvoir et à favoriser l'adoption de l'approche de RDM-C restent insuffisants et peu étudiés. Dans ce contexte, et pour améliorer les pratiques auprès des jeunes, les objectifs du « *Plan d'action interministériel en dépendance 2018-2028 : Prévenir, réduire et traiter les conséquences associées à la consommation de substances psychoactives [...]* » visent, entre autres, à 1) « soutenir les personnes qui travaillent dans les milieux ciblés » à travers la diffusion des pratiques reconnues en matière de RDM, 2) réaliser des « activités de transfert des connaissances en impliquant des acteurs travaillant au sein de réseaux concernés par les thématiques ciblées » et 3) « poursuivre le développement des compétences des intervenants » (Ministère de la Santé et des Services sociaux, 2018, pp. 36-53-55).

La présente thèse vient répondre au défi qui se pose en lien avec l'adoption de l'approche de RDM-C et s'aligne avec les objectifs du « *Plan d'action interministériel en dépendance 2018-2028 [...]* » (Ministère de la Santé et des Services sociaux, 2018). En outre, elle s'inscrit dans le cadre d'un projet plus global financé conjointement par le Ministère de la Santé et des Services sociaux (MSSS) et le Fonds de recherche du Québec (Secteurs Santé, et Société et Culture) à la suite du lancement du « Programme de recherche sur l'usage du cannabis à des fins non médicales : prévention et réduction des méfaits », d'où sa focalisation sur le cannabis en particulier (Fonds de recherche du Québec, 2022). Les fonds alloués proviennent du fonds de prévention prévu dans la loi encadrant le cannabis, lequel est alimenté par les profits générés par la SQDC (Gouvernement du Québec, 2021).

Le projet de recherche global comprend cinq études, dont trois font partie de cette thèse de doctorat. Les deux études non incluses dans cette thèse visent à 1) identifier, à l'aide d'une étude de portée, les stratégies de RDM-C applicables auprès des jeunes (Song, 2024) et 2) évaluer l'acceptabilité et les facteurs qui influencent l'adoption de l'approche de RDM-C de la part des intervenant.e.s œuvrant auprès des jeunes en difficulté au Québec (Fallu et al., en préparation).

## **Objectifs de la thèse**

L'objectif général de la présente thèse de doctorat est de concevoir une démarche de transfert et de mobilisation des connaissances (TMC) afin d'optimiser l'adoption de l'approche de RDM-C par les intervenant.e.s de la santé et des services sociaux œuvrant auprès des adolescent.e.s et des jeunes adultes en difficulté au Québec. Pour atteindre cet objectif, trois objectifs spécifiques ont été déterminés, chacun faisant l'objet d'une étude distincte et dont l'ensemble a abouti à quatre articles scientifiques.

La première étude vise à mener une étude de portée pour identifier les facilitateurs et les obstacles des intervenant.e.s de la santé et des services sociaux face à l'adoption de l'approche de RDM-C. Le protocole de recherche détaillé et l'étude de portée ont été respectivement publiés

dans les revues *BMJ Open* et *Harm Reduction Journal* (Haddad, Dagenais, Fallu, et al., 2024; Haddad, Dagenais, Huynh, et al., 2024).

La seconde étude poursuit deux objectifs interreliés. Elle vise à 1) identifier les attitudes des intervenant.e.s de la santé et des services sociaux œuvrant auprès des adolescent.e.s et des jeunes adultes en difficulté (14-21 ans) au Québec envers l'adoption de l'approche de RDM-C. Cet objectif a été ciblé pour identifier des facteurs pouvant potentiellement influencer la mise en œuvre du plan de TMC (p. ex., conceptions erronées liées à l'approche de RDM-C, perception de son utilité, etc.). Les résultats ont permis d'aborder le second objectif, soit de 2) développer un plan de TMC visant à optimiser leur adoption de l'approche de RDM-C auprès des jeunes. L'article résultant de cette étude a été publié dans la revue *Scientific Reports*, faisant partie de *Nature Portfolio* (Haddad et al., 2025).

La troisième étude, dont le manuscrit est en révision dans le journal *Health Research Policy and Systems*, vise à 1) décrire le déroulement de la mise en œuvre du plan de TMC auprès des intervenant.e.s de la santé et des services sociaux et 2) évaluer sa mise en œuvre, ses effets immédiats, ainsi que ses retombées à court-moyen terme (Haddad et al., en révision).

# Chapitre 1 – Revue de la littérature

## Consommation de cannabis et approches d'intervention

### Consommation de cannabis : Méthodes, motifs et types de consommation

Les substances psychoactives (p. ex., cannabis, alcool, nicotine, cocaïne) représentent des substances dont la consommation affecte les processus mentaux aigus (p. ex., perception, cognition, émotions et humeur) et les comportements sans nécessairement mener à une dépendance (World Health Organization, 2022; Peng et al., 2020). Le terme cannabis désigne un type de plantes appartenant à la famille des *Cannabaceae*, notamment composé de tétrahydrocannabinol (THC) et de cannabidiol (CBD) (Hong et al., 2024). Il existe plusieurs méthodes de consommation du cannabis, telles que fumer, ingérer, vaporiser et/ou vapoter (Adinoff et Cooper, 2019; Conus et al., 2019; Knapp et al., 2019; Ministère de la Santé et des Services sociaux, 2018; Zuckermann et al., 2021).

Le cannabis peut être prescrit à des fins médicales ou consommé à des fins non médicales, avec ou sans prescription (Fallu et Brisson, 2013; Lau et al., 2015b). L'utilisation prescrite du cannabis fait référence à son utilisation médicale supervisée pour traiter ou améliorer les symptômes associés à une maladie ou à un trouble (Gouvernement du Canada, 2022). Cependant, son utilisation non prescrite peut s'expliquer par différents motifs, tels que la recherche du plaisir, la gestion de situations difficiles, l'automédication et la réduction de l'appétit (Bertrand et al., 2020; Gouvernement du Canada, 2022).

Les types de consommation de cannabis à des fins non médicales se situent sur un spectre, allant d'une consommation non problématique aboutissant parfois à un usage problématique (Fallu et Brisson, 2013; Ghvanidze et al., 2024). Son usage non problématique réfère à une utilisation qui génère peu ou pas de conséquences néfastes sur le plan social ou de la santé en raison d'une fréquence et d'un taux de consommation souvent limités (Hathaway et Erickson, 2003; Swift, 2000). Néanmoins, une consommation accrue de cannabis pourrait générer des conséquences néfastes pour la santé et le bien-être, telles que des problèmes respiratoires, une détérioration

de la santé mentale, une baisse du rendement scolaire, et par conséquent, altérer le fonctionnement quotidien de l'individu et contribuer, dans certains cas, au développement d'un trouble d'utilisation du cannabis (TUC) (Bagot et Kaminer, 2018; Sherman et al., 2022; Simpson et al., 2021; Walukevich-Dienst et al., 2025; Webb et Webb, 2014). Leung et al. (2020) ont trouvé que parmi les personnes qui consomment du cannabis, quatre sur cinq ne développeront pas un TUC : celui-ci se caractérise par un mode d'utilisation problématique entraînant des conséquences négatives et une altération significative du fonctionnement quotidien (American Psychiatric Association, 2013).

### **Consommation de cannabis chez les adolescent.e.s et les jeunes adultes**

Après le tabac et l'alcool, le cannabis à des fins non médicales représente la troisième substance psychoactive la plus consommée au niveau mondial par les adultes et les jeunes, notamment au Canada et au Québec (Adinoff et Cooper, 2019; Campeny et al., 2020; Gouvernement du Canada, 2024; Connor et al., 2021; Jiloha, 2017; Robinson et Adinoff, 2016). L'initiation à la consommation de cannabis est très fréquente à l'adolescence et au début de l'âge adulte en raison de causes multifactorielles influençant la régulation des émotions et favorisant la prise de risque, l'expérimentation et l'exploration (Bataineh et al., 2024; Fallu et al., 2022; Green et al., 2024; Walukevich-Dienst et al., 2025; Winer et al., 2022). En effet, l'adolescence est, entre autres, marquée par une plus grande vulnérabilité aux impulsions et des difficultés à gérer ses émotions (Lamichhane et al., 2025). Lorsque ces difficultés sont combinées à d'autres facteurs environnementaux (p. ex., changements neurodéveloppementaux, cognitifs et de l'identité de soi, pression des pairs, difficultés psychosociales ou familiales, présence de troubles concomitants), la consommation de cannabis peut représenter une stratégie d'apaisement, de gestion des émotions et de régulation émotionnelle aux jeunes (Bagot et Kaminer, 2018; Jenkins et al., 2017; Jiloha, 2017; Ministère de la Santé et des Services sociaux, 2018; Lamichhane et al., 2025).

Parmi les pays de l'Organisation de coopération et de développement économique (OCDE), le Canada présente l'un des taux de consommation de cannabis les plus élevés chez les

adolescent.e.s de 15 à 17 ans et les jeunes adultes (18 à 24 ans) (Adinoff et Cooper, 2019; Ministère de la Santé et des Services sociaux, 2018; Zuckermann et al., 2021). L'Enquête canadienne sur le cannabis de 2024 a révélé que 41 % des jeunes âgés de 16 à 19 ans ont déclaré avoir consommé du cannabis au moins une fois au cours des 12 mois précédents, avec des sources d'approvisionnement principalement sociales plutôt que légales (Gouvernement du Canada, 2024). De plus, en 2024, 26 % des jeunes âgés de 16 ans et plus au Canada ont signalé avoir consommé du cannabis au moins une fois au cours des 12 derniers mois (comparativement à 11,5 % en Australie en 2023), indiquant une hausse par rapport à 2018 (22 %) et à la suite de sa légalisation (Gouvernement du Canada, 2024; World Population Review, 2025). Toutefois, l'une des explications qui pourrait expliquer cette augmentation serait une plus grande aisance à révéler sa consommation de cannabis, sachant que la stigmatisation peut empêcher le dévoilement (King et al., 2024).

En 2024, 35,2 % des jeunes âgés de 16 à 19 ans et 44,3% des jeunes âgés de 20 à 24 ans au Québec ont déclaré avoir consommé du cannabis, comparativement à 41,7 % et 46,9 % en Ontario pour les mêmes tranches d'âge (Gouvernement du Canada, 2024). Une étude menée en 2008 auprès de jeunes en difficulté hébergés dans des centres jeunesse pour jeunes en difficulté au Québec montre que 78% d'entre eux ont déjà consommé du cannabis, dont près de la moitié présente une consommation problématique (Laventure et al., 2008). En 2015, le taux de consommation problématique de substances psychoactives chez les jeunes de 14 à 17 ans présents en centres jeunesse s'élevait à 60 % (Lambert et al., 2015).

Compte tenu des potentielles conséquences négatives de l'usage du cannabis et des taux de prévalence chez les jeunes, la mise en place d'interventions efficaces s'avère essentielle (Sherman et al., 2022; Ministère de la Santé et des Services sociaux, 2018). Plusieurs approches existent à cet égard, telles que l'approche motivationnelle, l'approche d'abstinence de substances et l'approche de réduction des méfaits liés à l'usage du cannabis (RDM-C) (Connor et al., 2021; Coronado-Montoya et al., 2024; Fallu et al., 2022; Winer et al., 2022).

## **Approche d'abstinence des substances**

Vers la fin des années 1900, l'Organisation des Nations Unies (ONU) a publié trois conventions visant à criminaliser la possession, l'utilisation et la production de drogues illicites : la Convention unique sur les stupéfiants (1961), la Convention sur les substances psychotropes (1971) et la Convention contre le trafic illicite des stupéfiants et des substances psychotropes (1988) (Bewley-Taylor, 2003; Wood et al., 2009). Ces conventions ont influencé le lancement du mouvement de la *Guerre contre les drogues (War on Drugs)* aux États-Unis sous la présidence de Richard Nixon en 1971 (Buchanan et Young, 2000; Schultz, 2018; Wood et al., 2009).

C'est dans ce contexte que les modèles fondés sur l'abstinence des substances sont devenus largement adoptés pour prévenir la consommation de cannabis ou traiter l'usage fréquent ou à risque (Hathaway et Erickson, 2003; Jenkins et al., 2017; Stockings et al., 2016). L'approche d'abstinence des substances met l'accent sur l'arrêt complet de la consommation comme une condition préalable à l'entrée et au maintien dans le programme, ou comme le seul objectif de l'intervention (Bagot et Kaminer, 2018; Jenkins et al., 2017; Mancini et al., 2008). Elle a été appliquée auprès de populations vulnérables, à risque ou marginalisées, telles que les jeunes présents dans des centres d'hébergement (Jenkins et al., 2017).

Bien que l'approche d'abstinence des substances puisse contribuer à diminuer la fréquence ou la quantité d'usage de substances, elle a été critiquée pour différentes raisons (Jenkins et al., 2017). D'abord, elle n'offre pas aux jeunes les compétences nécessaires pour identifier et atténuer les méfaits de leur consommation (Bagot et Kaminer, 2018; Fallu et Brisson, 2013). L'approche d'abstinence repose principalement sur des messages interdictifs ou moralisateurs (p. ex., « ne consomme pas »), sans offrir aux jeunes les outils nécessaires pour réduire les risques de leur consommation (Bagot et Kaminer, 2018; Fallu et Brisson, 2013; Jenkins et al., 2017; Mancini et al., 2008). Ensuite, l'accent est mis sur les conséquences négatives de la consommation par le biais de stratégies évoquant la peur, en écartant les effets positifs susceptibles d'en découler, la pression des pairs et le contexte social (Bagot et Kaminer, 2018; Fallu et Brisson, 2013; Jenkins et al., 2017; Mancini et al., 2008).

Les risques de rechute et d'abandon des adolescent.e.s et des jeunes des programmes fondés sur l'abstinence s'avèrent élevés : uniquement un tiers de cette population parvient à éliminer toute sorte de consommation de substances psychoactives au cours de son traitement, ce qui laisse un nombre significatif de jeunes pour lesquels cet objectif reste inatteignable (Bagot et Kaminer, 2018; Lynam et al., 2009; Mancini et al., 2008). Divers facteurs les poussent à développer des stratégies pour contourner les exigences de cette approche et entravent leur engagement, tels que la divergence entre leurs objectifs et ceux des programmes, la polyconsommation de substances et la présence de troubles concomitants (p. ex., trouble psychotique) (Bagot et Kaminer, 2018; Mancini et al., 2008).

Une comparaison pertinente peut être établie entre l'approche d'abstinence des substances et celle de l'abstinence sexuelle chez les jeunes. En effet, tout comme les stratégies d'abstinence visant à prévenir ou éliminer la consommation de substances, les programmes d'abstinence sexuelle font partie des programmes d'éducation sexuelle destinés aux jeunes et reposent sur le principe de l'abstinence de tout comportement sexuel pour éviter de potentielles conséquences négatives (p. ex., grossesse non désirée, infections sexuellement transmissibles) (Kohler et al., 2008; Rodríguez-García et al., 2025). Contrairement aux programmes d'éducation sexuelle intégrée (*Comprehensive sex education*), les programmes d'abstinence sexuelle ont montré des limites notables, notamment en termes de renforcement de la stigmatisation, d'incapacité à préparer les jeunes à prendre des décisions éclairées, de culpabilisation, de l'inefficacité à réduire les comportements sexuels à risque et du manque de promotion des comportements sécuritaires (p. ex., utilisation de méthodes de contraception) (Bradley, 2024; Holt et al., 2025; Kohler et al., 2008; L'Amoreaux, 2024; Mollen et al., 2024; Singh et al., 2025). De plus, les jeunes trouvent ces programmes restrictifs et biaisés, ce qui les pousse à chercher des sources d'information sur la santé sexuelle ailleurs (Bhochhibhoya et al., 2024).

Les difficultés d'implication dans des programmes visant l'abstinence des substances et leur efficacité limitée rendent impératif la mise en œuvre de modèles d'intervention alternatifs, efficaces et plus flexibles auprès des personnes qui consomment des substances, tels que l'approche de réduction des méfaits (RDM) (Jenkins et al., 2017; Kanof, 2003; Karoll, 2010; Mancini et al., 2008).

## **Approche de réduction des méfaits liés à l'usage de substances**

Dans cette section, nous explorerons l'approche de RDM de manière générale sans se limiter au cannabis, car elle se fonde sur des principes applicables pour l'ensemble des substances. Ce cadre élargi enrichit notre compréhension et permet d'établir des parallèles intéressants. Toutefois, nous ferons une distinction spécifique au sujet du cannabis lorsque cela s'avèrera pertinent.

### Définition de l'approche de RDM et aperçu historique

Que ce soit dans une logique de prévention ou de traitement, l'approche de réduction des méfaits (RDM) vise à minimiser les conséquences négatives susceptibles de découler de la consommation de substances sans imposer l'abstinence totale (Avra et al., 2025; Fallu et Brisson, 2013; Lau et al., 2015a). Autrement dit, elle cherche à accompagner les personnes qui consomment des substances psychoactives, peu importe où elles se situent sur le spectre de l'usage, et indépendamment de la nature et de l'ampleur des conséquences associées à leur usage, qu'elles soient positives ou négatives (Lau et al., 2015a; Marlatt et al., 2011). De plus, pour définir l'approche de RDM, il est essentiel de distinguer entre la réduction des méfaits et la réduction de l'usage, deux concepts souvent confondus. La réduction des méfaits repose sur la modification des pratiques de consommation, telles que les contextes et les mélanges, pour atténuer les potentielles conséquences néfastes alors que la réduction de l'usage consiste à diminuer la fréquence et la quantité consommée (D'Arcy et Fallu, 2023; Fallu et Brisson, 2013).

L'approche de RDM a vu le jour dans les années 1990 aux Pays-Bas dans le but de freiner la hausse des cas d'hépatite et du virus de l'immunodéficience humaine (VIH) parmi les personnes qui utilisaient des drogues injectables (Adinoff et Cooper, 2019; Bagot et Kaminer, 2018). La propagation du VIH par ces personnes vers les non-utilisateurs était considérée comme plus dangereuse que l'usage lui-même (Hathaway et Erickson, 2003). L'application de l'approche de RDM consistait à fournir du matériel aux utilisateurs de drogues injectables, tel que des aiguilles propres, des kits de blanchiment, des brochures éducatives sur les pratiques sexuelles et la consommation de substances sans risque, ainsi que la possibilité de s'engager dans des traitements qui n'exigent pas l'abstinence des substances (Mancini et al., 2008).

L'efficacité de ces tentatives pour diminuer la prévalence des cas d'hépatite et de VIH a contribué à disséminer l'approche de RDM au Royaume-Uni, en Australie, en Espagne, en Suisse et au Canada afin de limiter les méfaits associés à la consommation de différentes substances psychoactives (Bagot et Kaminer, 2018; Mancini et al., 2008; Ritter et Cameron, 2006). Parmi les pratiques de RDM mises en place au Canada auprès de la population, on retrouve les services d'injection supervisée, les services de vérification des drogues sur le site ou hors site et les programmes de substitution (Avra et al., 2025; Jiloha, 2017; Karoll, 2010).

Cependant, une distinction importante mérite d'être faite concernant l'origine de la mise en œuvre de l'approche de RDM dans différents pays. En effet, aux Pays-Bas, l'approche de RDM a émergé de manière horizontale et autonome, portée par les personnes qui consommaient des substances psychoactives, alors que dans d'autres pays, tel que le Canada, elle s'est instaurée de manière verticale, imposée par les autorités de santé publique (Dias, 2023; Hyshka et al., 2019; Marlatt, 1996; Michaud et al., 2023). Cette différence soulève des questions importantes sur l'institutionnalisation de l'approche de RDM qui nécessitent d'être prises en compte en abordant ce sujet. En effet, l'approche de RDM institutionnelle n'est pas un modèle qui évolue nécessairement en fonction des besoins des personnes qui consomment des substances et donc, n'est pas axée sur la justice sociale ; elle repose plutôt sur un modèle vertical de santé publique visant à réduire les risques sanitaires (p. ex., propagation du VIH), tout en mettant à l'écart les inégalités sociales ainsi que les risques psychosociaux et juridiques engendrés par la prohibition de l'usage de substances (Chappard et Pourchon, 2025; Gehring et al., 2022; Michaud et al., 2023).

### Principes de l'approche de RDM

Les principes sous-jacents à l'approche de RDM visent, entre autres, à combler les lacunes des programmes de prévention et de traitements traditionnels axés sur l'abstinence (Jenkins et al., 2017; Melamede, 2005).

Premièrement, l'approche de RDM, fondée sur des valeurs de pragmatisme et d'humanisme, ne perçoit pas la consommation de substances sous un angle moral, mais comme un fait sociétal et

humain incontournable (Fallu et Brisson, 2013; Hathaway et Erickson, 2003; Karoll, 2010; Lushin et Anastas, 2011; Melamede, 2005; Ritter et Cameron, 2006). Dans cette optique, et dans le cadre des traitements, l'approche de RDM recadre le concept de « prévention des rechutes » en utilisant celui de « gestion des rechutes », de « trajectoires », ou de « fluctuations » pour favoriser le réengagement des individus dans des comportements plus positifs (p. ex., limiter la fréquence et l'intensité des épisodes de consommation) (Karoll, 2010; Lin et al., 2024 ; Marlatt et al., 2011). Des techniques motivationnelles et éducationnelles sont alors mises en place pour favoriser la prise de décision éclairée (Jenkins et al., 2017; Karoll, 2010; Mancini et al., 2008). Par exemple, l'approche de RDM clarifie la notion d'usage sécuritaire des substances qui est déterminée par l'interaction entre trois composantes : individu (p. ex., taille, poids, sexe, état de santé), produit (p. ex., quantité, fréquence de consommation, tolérance au produit, combinaison avec d'autres produits, qualité) et contexte (p. ex., lieu, moment de la journée, lois) (Ataiants et al., 2020; Bagot et Kaminer, 2018; Lau et al., 2015a).

Deuxièmement, toujours dans le cadre d'un traitement, l'abstinence peut être un objectif compatible avec les interventions basées sur l'approche de RDM, sans représenter un objectif obligatoire ou un critère d'admission (Fallu et Brisson, 2013). De ce fait, l'intervention s'opère dans une atmosphère flexible, moins exigeante et où les objectifs fixés correspondent aux besoins de la personne (Jenkins et al., 2017; Karoll, 2010; Mancini et al., 2008). Que ce soit pour les adultes ou les adolescent.e.s, l'approche de RDM reconnaît l'autonomie des individus à prendre des décisions informées et responsables pour réduire les méfaits liés à leur consommation de substances (Denning et Little, 2024; Karoll, 2010; Mancini et al., 2008; Tsemberis et al., 2004). Cela est particulièrement bénéfique pour les personnes dont l'abstinence représente un objectif irréaliste ou non-réalisable (p. ex., en cas de double diagnostic : trouble de santé mentale et trouble lié à l'usage de substances [TUS]) (Denning et Little, 2024; Lau et al., 2015b; Tsemberis et al., 2004).

Troisièmement, l'approche de RDM ne s'appuie pas sur des stratégies misant sur la peur ou la stigmatisation, mais plutôt sur l'apprentissage de moyens menant à minimiser les effets dommageables associés aux substances psychoactives au niveau individuel, psychologique, juridique et social (p. ex., surdoses, propagation de maladies infectieuses, violence) (Bagot et

Kaminer, 2018; Hathaway et Erickson, 2003; Mancini et al., 2008; Ritter et Cameron, 2006; Swift, 2000). Ceci dit, l'approche ne se limite pas à la réduction des méfaits liés à l'usage de substances, mais englobe également la réduction des dommages occasionnés par les politiques publiques en vigueur, telles que la criminalisation et la stigmatisation des personnes qui consomment des substances (Des Jarlais et al., 2005; Fallu et Brisson, 2013).

Enfin, auprès des jeunes, l'approche de RDM aborde leur potentielle ambivalence liée à l'arrêt de la consommation, notamment lorsqu'ils essaient de la diminuer ou de la modifier, mais constatent une augmentation involontaire ou un retour à des habitudes antérieures (Bagot et Kaminer, 2018; Simpson et al., 2021). De plus, la RDM prend en compte le processus de prise de décision et de fixation d'objectifs, l'engagement dans le suivi et les caractéristiques personnelles des jeunes (p. ex., compétences sociales, régulation émotionnelle, impulsivité, recherche de sensations) (Bagot et Kaminer, 2018; Simpson et al., 2021; Tsemberis et al., 2004). Cela est particulièrement utile pour favoriser leur implication surtout parce qu'ils sont souvent teintés par les perspectives de leurs parents, l'école ou le système de justice juvénile (Kaminer et al., 2017; Tsemberis et al., 2004).

### Stratégies de RDM

Les principes de RDM se concrétisent au niveau individuel par des stratégies qui peuvent être mises en place pour limiter les méfaits de sa consommation (Lundeen et Kern Popejoy, 2025). Bien que les principes fondamentaux de l'approche de RDM soient applicables à toutes les substances, les stratégies spécifiques de RDM peuvent varier d'une substance à une autre. Par exemple, l'approche de RDM liés à l'usage du cannabis (RDM-C) pourrait se concentrer sur l'utilisation d'un vaporisateur pour limiter l'inhalation de fumée, tandis que l'approche de RDM des opioïdes pourrait inclure la distribution de naloxone et la mise en place de sites de consommation supervisée (Knaak et al., 2019; López-Ramírez et al., 2023; Song, 2024). En raison de cette divergence et vu que notre projet porte plus spécifiquement sur le cannabis, nous présenterons dans cette sous-section les stratégies de réduction des méfaits liés à l'usage de cannabis (RDM-C).

Fischer et al. (2022) ont tenté d'identifier les facteurs de risque associés à la consommation de cannabis afin de formuler des *Recommandations pour l'usage du cannabis à moindre risque (Lower Risk Cannabis Use Guidelines for Canada)*. Celles-ci incluent la consommation de produits de cannabis à faible concentration en THC, l'évitement des inhalations profondes, l'utilisation de cannabis légal et contrôlé, etc. (Fischer et al., 2022). Cependant, les recommandations de Fischer et al. (2022) ne se limitent pas aux jeunes et ont été critiquées pour leur manque d'exhaustivité. Cela a conduit Song (2024) à mener une étude de portée visant à dresser un portrait des stratégies de RDM-C applicables par les jeunes. Ses résultats, complémentaires à ceux de Fischer et al. (2022), montrent que ces stratégies peuvent se répartir en fonction de la temporalité de la consommation : 1) *Planification de la consommation* : stratégies liées à l'approvisionnement (p. ex., achat du cannabis d'une source fiable), au contexte et à l'environnement social (p. ex., consommation en présence de gens de confiance), au moment et au motif de consommation (p. ex., éviter de consommer pour faire face à des émotions négatives), et à la fréquence et la quantité consommée (p. ex., limiter la quantité de cannabis consommée en une seule séance) ; 2) *Avant la consommation* : stratégies liées au contenu du produit (p. ex., éviter le mélange du cannabis avec d'autres substances) ; 3) *Pendant la consommation* : stratégies liées aux méthodes de consommation (p. ex., déterminer préalablement le nombre de bouffées) ; 4) *Après la consommation* : stratégies liées à la conduite motorisée (p. ex., ne pas amener sa voiture au lieu de consommation) et aux moments post-consommation (p. ex., ne pas continuer à consommer lorsque les effets ne se font pas encore ressentir) (Song, 2024). D'autres classifications mettant davantage en lumière les stratégies d'auto-régulation et de maximisation des bénéfices peuvent être également mobilisées (Bear et al., 2025). Par exemple, « consommer en présence de gens de confiance » est une stratégie liée au contexte et à mettre en place au moment de la planification d'un épisode de consommation, mais aussi, une stratégie de maximisation des bénéfices.

#### Efficacité des interventions de RDM

Au niveau des substances non injectables, les interventions fondées sur l'approche de RDM ont été le plus largement étudiées auprès des adultes et leurs résultats sont prometteurs quant à la diminution des méfaits associés à la consommation de substances (Bagot et Kaminer, 2018;

Jenkins et al., 2017; Mancini et al., 2008). Cependant, auprès des adolescent.e.s et des jeunes adultes, l'attention est plutôt portée sur l'intérêt de mettre en œuvre des programmes scolaires préventifs ou d'interventions précoces (Jiloha, 2017; Poulin et Elliott, 1997). À titre d'exemple, SHAHRP (*School Health and Alcohol Harm Reduction Project*) en Australie et SCIDUA (*Integrated School- and Community-based Demonstration Intervention Addressing Drug Use among Adolescents*) au Canada, sont des programmes scolaires de RDM, dont l'efficacité a été démontrée dans la diminution des conséquences négatives liées à la consommation et le développement d'attitudes plus sécuritaires à l'égard de l'usage de substances (Jenkins et al., 2017; McBride et al., 2004; Poulin et Nicholson, 2005). De plus, l'approche de RDM-C s'est avérée efficace dans l'incitation des personnes qui consomment du cannabis à adopter des comportements protecteurs liés à la consommation (p. ex., utiliser des produits légaux, s'abstenir de conduire après avoir consommé du cannabis, etc.) (Bagot et Kaminer, 2018; D'Arcy et Fallu, 2023; Fischer et al., 2022; González-Ponce et al., 2022; Jenkins et al., 2017; Sherman et al., 2022; Winer et al., 2022).

Enfin, les résultats du projet « IP-Jeunes » mené par l'Institut universitaire sur les dépendances (IUD) au Québec montrent que « les interventions précoces efficaces ciblant les jeunes dans les collèges et universités ayant une consommation à risque de cannabis » sont celles qui permettent de réduire les méfaits associés à la consommation de cette substance (p. ex., « *Brief Cannabis Intervention* », « *eCHECKUP TO GO-marijuana* ») (Bertrand et al., 2020; Fischer et al., 2012; Grossbard et al., 2010; Palfai et al., 2014). De ce fait, il a été recommandé d'intégrer les principes de l'approche de RDM dans les interventions conçues pour les adolescent.e.s et les jeunes adultes (Bertrand et al., 2020).

#### Acceptabilité de l'approche de RDM

En dépit de son efficacité, l'acceptabilité de l'approche de RDM par les intervenant.e.s demeure controversée et différents facteurs entrent en jeu (Fallu et Brisson, 2013; Fallu et al., 2022; Mancini et Wyrick-Waugh, 2013; Sharp et al., 2020).

Premièrement, il existe des ambiguïtés et des variations au niveau de sa conceptualisation, ce qui montre la nécessité de sensibiliser, de former et de superviser les intervenant.e.s désirant l'adopter (Mancini et al., 2008). Par exemple, des conceptions erronées sont associées à l'approche de RDM, telles que la communication du « mauvais message » aux personnes qui consomment des substances, la tolérance face à n'importe quel usage de substances, le détournement de la réintégration de la personne dans la société (Fallu et Brisson, 2013; Mancini et al., 2008; Mancini et Wyrick-Waugh, 2013). De plus, l'abstinence totale de l'usage des substances n'est également pas perçue comme un objectif légitime qui pourrait être poursuivi par l'approche de RDM, car ces deux approches ont été souvent mises en opposition (Koutroulis, 2000).

Deuxièmement, des dilemmes et des enjeux éthiques liés aux valeurs personnelles et collectives des intervenant.e.s, aux règles déontologiques et au modèle thérapeutique de l'abstinence peuvent entraver l'adoption de l'approche de RDM (Fallu et Brisson, 2013; Lundeen et Kern Popejoy, 2025). À titre d'exemple, les travaux précurseurs de MacCoun (1998) ont montré que, parmi les intervenant.e.s qui n'adhèrent pas à l'approche de RDM, certain.e.s ne l'adopteraient pas pour des raisons morales, peu importe son efficacité. En outre, l'approche de RDM va à l'encontre des interventions traditionnelles en tolérant les comportements à risque et en acceptant que la réduction des méfaits liés à l'usage de substances constitue un résultat légitime (Fallu et Brisson, 2013; Mancini et Wyrick-Waugh, 2013).

Enfin, il existe des obstacles contextuels qui limitent son adoption, tels que le manque de financement, la stigmatisation qui nuit à la demande de soins, la résistance d'instances locales et le manque de services et de personnel qualifié, notamment en santé mentale (Avra et al., 2025; Sharp et al., 2020). Les intervenant.e.s peuvent également craindre des problèmes juridiques, sociaux et de santé chez leurs client.e.s puisque l'usage de substances est souvent considéré sous un angle moral et juridique, et non pas comme une question de santé (Mancini et al., 2008).

Par ailleurs, plusieurs facteurs perçus comme des avantages de l'approche de RDM facilitent son adoption par les intervenant.e.s de la santé et des services sociaux. Cela inclut l'élargissement du spectre des objectifs jugés acceptables, l'amélioration du processus de prise de décision des

client.e.s et la création de liens positifs et de qualités (Mancini et al., 2008). Une étude menée par Sharp et al. (2020) montre que la clarification des impacts positifs de l'approche de RDM au niveau communautaire (p. ex., sécurité), la disponibilité des ressources, les perceptions positives de l'approche de RDM par d'autres intervenant.e.s pourraient faciliter son adoption (Sharp et al., 2020).

La prise en compte des facteurs qui facilitent et limitent l'adoption de l'approche de RDM dans le cadre d'un processus de transfert et de mobilisation des connaissances (TMC) pourrait potentiellement contribuer à optimiser son adoption.

## **Transfert et mobilisation des connaissances**

### **Définition et présentation**

L'écart persistant entre les connaissances disponibles dans les domaines de la santé, des sciences sociales et de l'éducation, et leur utilisation par les parties concernées, montre la nécessité de favoriser le recours aux données probantes pour améliorer les pratiques (Bornbaum et al., 2015; Dadich et al., 2024; Dagenais et al., 2015; Gervais et al., 2016; Lemire et al., 2009; Thomas et Bussièrès, 2021; Ward et al., 2009). Pour tenter de réduire cet écart, le concept de « connaissances vers l'action » (*Knowledge-to-Action*; KTA) a connu une popularité depuis les années 1990, notamment dans le secteur de la santé (Dadich et al., 2024; Dagenais et al., 2013; Davies et al., 2008; King et al., 2024). Certains travaux conceptualisent le concept KTA en tant que processus, alors que d'autres le définissent sous forme d'activité, d'approche ou d'intervention, d'où la multitude des terminologies qui le désigne : transfert des connaissances, mobilisation des connaissances, partage de connaissances, dissémination des connaissances, etc. (Gervais et al., 2016; Graham et al., 2006).

Le terme « transfert de connaissances » (TC) reste le plus fréquemment adopté dans le domaine de la santé et des sciences sociales (Dagenais et al., 2013; Gervais et al., 2016; Graham et al., 2006), mais dernièrement, le Conseil des recherches en sciences humaines (CRSH) du Canada et les Fonds de Recherche du Québec, ont opté pour le terme « mobilisation des connaissances »

(Conseil de recherches en sciences humaines, 2019; Fonds de recherche du Québec, 2021). C'est pourquoi l'expression « transfert et mobilisation des connaissances » (TMC) sera retenue dans le cadre ce travail. Selon l'Institut national de santé publique du Québec (INSPQ), le TMC est un processus dynamique et continu qui englobe toutes les étapes liées au concept KTA, de la production des connaissances jusqu'à la mise en place d'activités et de mécanismes « d'interaction favorisant la diffusion, l'adoption et l'appropriation des connaissances [...] en vue de leur utilisation » par les milieux de pratique, de prise de décision ou par le grand public (Lemire et al., 2009, p. 7).

### **Modèles théoriques du TMC**

Les connaissances liées au concept de TMC dérivent d'approches rationnelles et linéaires sur l'usage de la recherche et impliquent la présence de deux entités : producteur.rice.s et utilisateur.rice.s des connaissances (Davies et al., 2008). Dans cette optique, une démarche de TMC pourrait découler d'un de ces modèles: Modèle expert (*Knowledge Push*), modèle de résolution de problème (*Knowledge Pull*) et modèle interactif (*Linkage and Exchange*) (Dagenais, 2010; Davies et al., 2008; Lemire et al., 2009; Reardon et al., 2006).

Le modèle expert se caractérise par une relation linéaire et unidirectionnelle entre les utilisateur.rice.s des connaissances et leurs producteur.rices ; ces dernier.ère.s sont considéré.e.s comme détenant les compétences nécessaires pour communiquer efficacement les résultats de la recherche (Dagenais, 2010; Lemire et al., 2009). Par contre, le modèle de résolution de problème cherche à répondre aux besoins, aux attentes et aux intérêts des publics cibles pour favoriser l'utilisation des connaissances et résoudre leurs problèmes (Dagenais, 2010; Lemire et al., 2009; Reardon et al., 2006). Enfin, le modèle interactif repose sur la régularisation des interactions entre ces deux entités pour que les publics cibles deviennent « coproducteur.rice.s des connaissances » (Lemire et al., 2009; Nutley et al., 2009; Reardon et al., 2006). Cela pourrait limiter l'inefficacité de la communication entre les deux entités et faciliter l'utilisation des connaissances (Dagenais et al., 2013; Davies et al., 2008; Montesanti et al., 2015; Murunga et al., 2020; Prihodova et al., 2019; Wehn et Montalvo, 2018).

Outre les modèles théoriques du TMC, une « revue des revues » reprend les résultats de 23 revues systématiques et identifie six mécanismes qui favorisent l'utilisation de la recherche (Breckon et Dodson, 2016; Langer et al., 2016). Ceux-ci visent à : 1) sensibiliser les utilisateur.rice.s à l'utilité de la recherche, 2) développer une compréhension commune entre chercheur.euse.s et utilisateur.rice.s des questions d'intérêt auxquelles la recherche devrait répondre, 3) améliorer l'accès et communiquer les résultats de recherche, 4) favoriser les interactions entre les chercheur.euse.s et les décideur.euse.s, 5) développer les compétences des publics cibles pour accéder aux recherches et les comprendre et 6) influencer les structures organisationnelles et les processus de prise de décision (Breckon et Dodson, 2016). Ces travaux concluent aussi qu'une démarche efficace de TMC doit cibler la capacité, la motivation des publics cibles et l'opportunité (CMO) de s'appuyer sur la recherche pour prendre des décisions (Langer et al., 2016).

### **Cadres conceptuels du TMC**

Parmi les multitudes de cadres conceptuels développés pour clarifier les composantes d'une démarche de TMC, le modèle « *Knowledge-to-Action* » (KTA) de Graham et al. (2006) reste le plus largement utilisé, testé et évalué (Moore et al., 2022; Powell et al., 2017; Ward et al., 2009). Il s'aligne avec la définition du TMC proposée par l'INSPQ et suppose la présence de deux entités : producteur.rice.s et utilisateur.rice.s des connaissances (Graham et al., 2006; Lemire et al., 2009; Moore et al., 2022). Le modèle de Graham et al. (2006) se divise en deux étapes : 1) l'étape de « production ou coproduction des connaissances » consiste à créer, mobiliser ou sélectionner les connaissances qui pourraient être utilisées ; 2) l'étape subséquente de « mise en action » débute par l'adaptation des données probantes en fonction des besoins et du contexte des utilisateur.rice.s (Graham et al., 2006). Le déploiement d'efforts de diffusion des connaissances permettra de favoriser la réception, l'adoption, l'appropriation et l'utilisation des connaissances par les publics cibles ainsi que leur pérennisation (Graham et al., 2006).

## **Planification et évaluation d'une démarche de TMC**

La complexité et la diversité des étapes d'une démarche de TMC montrent l'utilité d'élaborer un plan de TMC pour planifier le processus et évaluer sa mise en œuvre (Barwick, 2016; Tchameni Ngamo et al., 2016; Young et Waterhouse, 2015). En restant cohérentes avec le modèle KTA, sept étapes ont été proposées par l'INSPQ pour faire l'objet de tout plan de TMC et celles-ci permettront d'identifier les ressources nécessaires à sa mise en œuvre : 1) analyse de la situation, 2) objectif général, 3) contenu à transférer, 4) publics cibles et objectifs spécifiques, 5) acteur.rice.s à impliquer, 6) stratégies de TMC et 7) évaluation (Graham et al., 2006; Lemire et al., 2009; Reardon et al., 2006; Tchameni Ngamo et al., 2016).

### **Étape 1 : Analyse de la situation**

L'analyse de la situation repose sur la consultation des publics cibles pour analyser leurs besoins et leur contexte (Lemire et al., 2009). Cela permettrait non seulement de repérer leurs besoins au début du processus et en cours de démarche, mais aussi, d'identifier leurs perceptions du problème, leurs préférences quant aux canaux de communication, leur intérêt face aux nouvelles connaissances et leurs habiletés à les utiliser (Dagenais, 2010; Lemire et al., 2009; Tchameni Ngamo et al., 2016). De plus, cette étape ferait émerger les facteurs contextuels susceptibles d'influencer la démarche de TMC (Lemire et al., 2009). Ceux-ci peuvent être liés aux connaissances transférées (p. ex., accessibilité et applicabilité des connaissances), aux acteur.rice.s impliqué.e.s (p. ex., crédibilité des producteur.rice.s des connaissances), aux contextes organisationnels (p. ex., culture organisationnelle qui décourage la recherche, disponibilité des ressources) et/ou sociopolitiques (p. ex., situation économique et politique) (Cambon et al., 2017; Dagenais, 2010; Lemire et al., 2009; Ward et al., 2009).

## Étape 2 : Objectif général

La formulation de l'objectif général du plan de TMC de manière claire, opérationnelle, pertinente avec le mandat et cohérente avec les retombées attendues représente une étape indispensable qui influence l'ensemble du processus (Lemire et al., 2009; Tchameni Ngamo et al., 2016).

## Étape 3 : Contenu à transférer

Tout en restant clair, compréhensible et orienté vers l'action, le contenu à transférer devrait être adapté, au niveau du fond et de la forme, aux éléments identifiés dans l'analyse de la situation (Gervais et al., 2016; Lemire et al., 2009; Reardon et al., 2006). L'implication des publics cibles à cette étape les mettra en position de « coproducteur.rice.s » des connaissances et favorisera l'adaptabilité, l'appropriation et l'utilisation du contenu (Lemire et al., 2009). Les connaissances transférées peuvent être variées et issues de la recherche (p. ex., articles scientifiques, rapports de recherche), des savoirs tacites (i.e., du savoir-faire et des expériences pratiques des publics cibles) ou des données analysées (p. ex., données administratives ou populationnelles) (Lemire et al., 2009; Tchameni Ngamo et al., 2016).

## Étape 4 : Publics cibles et objectifs spécifiques

Plusieurs publics cibles peuvent être ciblés par le biais d'une démarche de TMC (p. ex., responsables de politiques publiques, grand public, intervenant.e.s) (Lemire et al., 2009; Tchameni Ngamo et al., 2016). Chaque public cible pourrait être rejoint à des degrés différents et pour atteindre un objectif spécifique (Lemire et al., 2009). En effet, selon Gervais et al. (2016), les objectifs spécifiques susceptibles d'être poursuivis dans une démarche de TMC sont : 1) informer, 2) favoriser un changement d'attitude, 3) influencer la prise de décision et 4) améliorer les pratiques professionnelles et organisationnelles. Suite à l'identification des publics cibles et des objectifs spécifiques, le contenu à transférer pourrait être bonifié, tout en restant cohérent avec les éléments identifiés à l'étape d'analyse de la situation (Lemire et al., 2009).

## Étape 5 : Acteur.rice.s à impliquer

Pour favoriser l'utilisation des connaissances par les publics cibles, l'implication d'acteur.rice.s crédibles, influent.e.s et qui reconnaissent les connaissances comme valables s'avère utile (Lemire et al., 2009; Tchameni Ngamo et al., 2016). Ces personnes peuvent être des représentant.e.s des publics cibles (p. ex., gestionnaires) ou d'instances clés (p. ex., ordres professionnels), des partenaires du projet ou des professionnel.le.s de soutien (p. ex., courtier.ère.s de connaissances) (Bornbaum et al., 2015; Lemire et al., 2009).

## Étape 6 : Stratégies de TMC

La précision des stratégies de TMC (outils et activités) constitue une étape essentielle du plan de TMC (Lemire et al., 2009; Reardon et al., 2006; Tchameni Ngamo et al., 2016). Celles-ci se divisent en deux types d'activités et d'outils structurés visant à favoriser l'utilisation des connaissances : 1) les stratégies de diffusion (p. ex., publication d'articles scientifiques, distribution de notes de politique) atteignent un nombre important de personnes, mais requièrent peu ou pas d'interactions avec les publics cibles et donc restent insuffisantes pour mener à une utilisation des connaissances ; 2) les stratégies d'appropriation (p. ex., ateliers délibératifs, activités de courtage de connaissances) exigent plus d'interactions entre les producteur.rice.s et les utilisateur.rice.s des connaissances, des ressources financières et humaines plus importantes, et peuvent être combinées avec des stratégies de diffusion (Cambon et al., 2017; Dagenais et al., 2013; Gervais et al., 2016; Graham et al., 2006; Lemire et al., 2009).

Parmi les diverses stratégies de TMC disponibles, les notes politiques et les ateliers délibératifs restent couramment utilisés. Une note de politique est définie comme un document succinct combinant des graphiques et du texte pour résumer les principaux résultats de la recherche, offrant une explication concise d'une question ou d'un problème politique, ainsi que des options pratiques et des recommandations spécifiques pour les traiter (Arnautu et Dagenais, 2021). Un atelier délibératif est un processus de groupe conçu pour intégrer et interpréter les données scientifiques et contextuelles afin d'éclairer le développement des politiques (Lavis et al., 2014). Des études ont montré que la diffusion d'une note de politique quelques semaines avant la tenue

d'un atelier délibératif représente un moyen efficace pour familiariser les publics cibles avec les sujets qui seront abordés (Arnautu et Dagenais, 2021; Mc Sween-Cadieux et al., 2018).

### Étape 7 : Évaluation

Bien que peu pratiquée en raison du manque de consensus scientifique sur sa poursuite, l'évaluation de la mise en œuvre d'un plan de TMC reste essentielle pour évaluer ses effets, ses impacts et ses retombées sur l'utilisation des connaissances (Gervais et al., 2016; Lemire et al., 2009; Mc Sween-Cadieux et al., 2018; Tchameni Ngamo et al., 2016; Ziam et al., 2024). La précision d'objectifs d'évaluation permettrait de l'opérationnaliser et de choisir les outils appropriés pour l'entamer (Gervais et al., 2016; Lemire et al., 2009).

Premièrement, la diversité croissante des théories, modèles et cadres conceptuels qui orientent les efforts d'évaluation a conduit Ziam et al. (2024) à réaliser une revue de portée visant à regrouper leurs caractéristiques dans un inventaire préliminaire ou une « boîte à outils » comprenant quatre dimensions générales : contexte, processus, effets et impact. Chaque dimension inclut des sous-dimensions et des composantes clés à considérer lors de l'évaluation d'un processus de TMC (Ziam et al., 2024). Par exemple, la dimension « contexte » permet d'évaluer les facteurs contextuels internes et externes avant la mise en œuvre du plan, tandis que la dimension « processus » aide à décrire le déroulement de sa mise en œuvre (Ziam et al., 2024). Les deux dernières dimensions peuvent être utilisées pour évaluer les « effets » du plan de TMC (i.e., les résultats immédiats, les effets à court et long terme) ainsi que ses « impacts » (p. ex., sur les organisations, les professionnel.le.s, etc.) (Ziam et al., 2024).

Deuxièmement, cette étape requiert de distinguer entre les quatre principaux types d'utilisation des connaissances susceptibles d'émerger à la suite de la mise en œuvre du plan de TMC (Gervais et al., 2016; Lemire et al., 2009; Mc Sween-Cadieux et al., 2018). *L'utilisation conceptuelle* des connaissances revient à la clarification et la compréhension d'une problématique (Cambon et al., 2017; Mc Sween-Cadieux et al., 2018). *L'utilisation instrumentale* a été la plus documentée dans la littérature et implique l'usage concret des connaissances dans l'élaboration d'une politique, dans la prise de décision ou dans un changement de pratique (Dagenais et al., 2013; Davies et al.,

2008). Cependant, l'usage des données probantes dans le but de construire un argumentaire et de légitimer des décisions déjà prises fait référence à une *utilisation symbolique* des connaissances alors que *l'utilisation processuelle* désigne l'impact du processus de la recherche sur le public cible (Davies et al., 2008; Lemire et al., 2009).

Enfin, pour ce qui a trait à l'évaluation des stratégies de TMC déployées, il existe des outils quantitatifs pour évaluer uniquement les notes de politique et les ateliers délibératifs, ce qui reflète un manque à ce niveau (Dagenais et al., 2011; Gervais et al., 2016; Lavis et al., 2009). Gervais et al. (2016) avancent que la conception d'outils d'évaluation des stratégies de TMC nécessite de définir clairement les concepts évalués, de les adapter aux répondant.e.s, de planifier leur temps d'administration, de tenir compte de l'influence des facteurs contextuels et de les développer par le biais d'un processus collaboratif entre les évaluateur.rice.s et les responsables de leur mise en œuvre.

### **Mise en œuvre d'une démarche de TMC**

Les théories et les cadres conceptuels en TMC ne détaillent pas nécessairement « comment » mettre en œuvre un plan de TMC (Khalil, 2016). La science de la mise en œuvre (*Implementation Science*), un domaine connexe, aborde cet aspect (Khalil, 2016; King et al., 2024; Nilsen, 2015; Thomas et Bussièrès, 2021). Eccles et al. (2006) définissent la science de la mise en œuvre comme l'étude scientifique des méthodes visant à favoriser l'adoption systématique des résultats de la recherche dans la pratique, et ainsi, à réduire les soins inappropriés. Plusieurs théories, modèles et cadres ont émergé pour favoriser une mise en œuvre efficace (Damschroder et al., 2022; Ridde et al., 2020; Schmitt et al., 2024). Par exemple, le *Consolidated Framework for Implementation Research* (CFIR), largement utilisé, propose un cadre structuré composé de cinq domaines influençant le processus : l'innovation (i.e., l'intervention), le contexte externe, le contexte interne, les individus et le processus de mise en œuvre (Damschroder et al., 2022; Skolarus et al., 2017; Tchameni Ngamo et al., 2016). Chaque domaine regroupe plusieurs construits ; leur prise en compte pourrait aider les chercheur.euse.s à identifier les facteurs susceptibles de faciliter ou de limiter la mise en œuvre de leur plan de TMC (Damschroder et al., 2022; Skolarus et al., 2017).

## Structure de la thèse

Les parties subséquentes porteront sur chacun des quatre articles rédigés dans le cadre de cette thèse de doctorat qui vise à optimiser l'adoption de l'approche de RDM-C par le biais d'une démarche de TMC. Les articles répondent aux objectifs de la thèse (voir Objectifs de la thèse à la page 27) et seront suivis d'une discussion générale et d'une conclusion globale du projet de recherche. Une présentation de leurs titres est fournie ci-dessous :

- **Article 1** : Facilitators of and barriers to healthcare providers' adoption of harm reduction in cannabis use: a scoping review protocol (Haddad, Dagenais, Huynh, et al., 2024)
- **Article 2** : Facilitators of and obstacles to practitioners' adoption of harm reduction in cannabis use: a scoping review (Haddad, Dagenais, Fallu, et al., 2024)
- **Article 3** : Mixed-methods study on professionals' attitudes toward harm reduction in cannabis use and the development of a knowledge translation plan (Haddad et al., 2025)
- **Article 4** : Implementation and evaluation of a knowledge translation process to optimize the adoption of harm reduction in cannabis use by practitioners working with youth in Quebec: a mixed-methods study (Haddad et al., en révision)

# Chapitre 3 – Article I : Facilitators of and barriers to healthcare providers’ adoption of harm reduction in cannabis use: a scoping review protocol

Roula Haddad<sup>1</sup>, Christian Dagenais<sup>1</sup>, Christophe Huynh<sup>2,3</sup>, Jean-Sébastien Fallu<sup>2,4,5</sup>

**To cite:** Haddad, R., Dagenais, C., Huynh, C., & Fallu, J. S. (2024). Facilitators of and barriers to healthcare providers’ adoption of harm reduction in cannabis use: a scoping review protocol. *BMJ Open*, 14(4), e078427. <https://doi.org/10.1136/bmjopen-2023-078427>

<sup>1</sup> Department of Psychology, Université de Montréal

<sup>2</sup> University Institute on Addictions, Centre intégré universitaire de santé et de services sociaux du Centre-Sud-de-l’Île-de-Montréal

<sup>3</sup> Department of Psychiatry and Addictology, Université de Montréal

<sup>4</sup> School of Psychoeducation, Université de Montréal

<sup>5</sup> Centre de recherche en santé publique (CReSP), Centre intégré universitaire de santé et de services sociaux du Centre-Sud-de-l’Île-de-Montréal

Correspondence to Roula Haddad; [roula.haddad@umontreal.ca](mailto:roula.haddad@umontreal.ca)

## **ABSTRACT**

**Introduction.** The high prevalence of cannabis use and the potential for negative effects indicate the need for effective prevention strategies and treatment of people who use cannabis (PWUC). Studies show that harm reduction (HR) in cannabis use is effective in minimizing the harmful consequences of the substance. However, health professionals often misunderstand it and resist its adoption due to various obstacles. To our knowledge, there has been no review of the scientific literature on the factors that facilitate or hinder practitioners' adoption of HR in cannabis use. To fill this gap, we aim to identify, through a scoping review, facilitators and barriers to healthcare providers' adoption of HR in cannabis use in Organisation for Economic Cooperation and Development (OECD) countries.

**Methods and analysis.** Our methodology will be guided by the six-step model initially proposed by Arksey and O'Malley (2005). The search strategy will be executed on different databases (Medline, PsycINFO, CINAHL, Web of Science, Embase, Sociological Abstracts, Érudit, BASE, Google Web, and Google Scholar) and will cover articles published between 1990 and October 2022. Empirical studies published in French or English in an OECD country and identifying factors that facilitate or hinder healthcare providers' adoption of HR in cannabis use, will be included. Reference lists of the selected articles as well as relevant systematic reviews will be scanned to identify any missed publications by the electronic searches.

**Ethics and dissemination.** Ethics approval is not required. The results will be disseminated through various activities (e.g., publication in peer-reviewed journals, conferences, webinars, and knowledge translation activities). The results will also allow us to conduct a future study aiming to develop and implement a knowledge translation process among healthcare practitioners working with youth in Quebec in order to enhance their adoption of HR in cannabis use.

### **Strengths and limitations of this study**

- The search strategy was co-developed by two information management specialists in the addiction and knowledge translation fields.

- The search strategy will aim to retrieve published articles on several health databases and unpublished studies found in the grey literature.
- Two reviewers will independently select the studies to be included in the scoping review throughout the entire study selection stage.
- The included studies will be limited to those published in French or English.
- The included studies will be limited to those published in OECD countries.

**Key words:** harm reduction; cannabis; knowledge translation; healthcare

## Introduction

### Cannabis use

Psychoactive substances (e.g., cannabis, alcohol, nicotine) are defined as substances whose use affects mental processes (e.g., perception, cognition, emotions, mood) and behaviors without necessarily leading to addiction (1). After tobacco and alcohol, cannabis represents the third most consumed psychoactive substance globally among adults and youth (2-5). Canada remains among the developed countries with the highest rates of cannabis use among young people and adults, with high prevalence in Quebec and multiple patterns of use (e.g., smoking, eating, vaporizing, vaping) (2, 5-9). In 2023, 26% of those 16 years of age and older reported using cannabis in the 12 months prior to the study, with a higher prevalence among those aged between 20 to 24 years old (10).

The lifetime cumulative probability of transitioning from use to dependence was found to be the lowest for people who use cannabis (PWUC) (8.9%) compared to other substances such as nicotine (67.5%), alcohol (22.7%), and cocaine (20.9%); this can be due to several factors such as infrequency in use, consumption of cannabis with low rates of  $\delta$ -9-tetrahydrocannabinol (THC), availability, legality, and social acceptability (9, 11-15). Even with long-term exposure to cannabis, PWUC do not necessarily develop severe problems or a cannabis-dependence (5, 15, 16).

However, PWUC intensively or at-risk populations (i.e., pregnant persons, people presenting respiratory problems, a mental health comorbidity, having an early onset of continued tobacco use or concurrently smoking tobacco and cannabis) may develop a cannabis use disorder or experience harm at several levels (5, 12, 16-19). These harms may include a decreased academic or professional performance, a cognitive impairment, a deterioration of mental health (e.g., development of psychosis or depression), an increased occurrence of risky behaviors (e.g., cannabis-impaired driving), etc. (3-5, 12, 14, 18, 20-22). It is important to specify that a severe cannabis-induced mental health condition (e.g., psychosis) might occur among only 2% of PWUC (5). Despite the minimal probability of leading to potentially serious adverse consequences, the high prevalence of cannabis use as well as the potential harms that might be experienced, make it essential to implement effective intervention programs among PWUC (7, 12, 15, 17).

## **Abstinence approach**

To address this reality, prevention and treatment programs based on the abstinence approach (i.e., total elimination of cannabis use), have been widely implemented (11, 13). The emergence of these programs has been also influenced by policies such as the “War on Drugs” (23). The abstinence-based model forms the basis of many programs developed to prevent or treat problematic cannabis use and has been applied with at-risk or marginalized populations (e.g., youth in the foster care system) (21, 24). Despite its potential to decrease the frequency or amount of substance use, the abstinence approach presents limited evidence to support its effectiveness and has been criticized for various reasons (21, 24-26). First, it does not provide PWUC with the necessary skills to identify and mitigate the harms associated with their use (21, 27). Second, the abstinence approach tends to focus more on the negative consequences of use through strategies that evoke fear, without necessarily taking into consideration the social context of cannabis use (20, 21). Third, the risks of relapse and dropout in these programs are also found to be high, leaving a significant number of PWUC for whom this goal remains unattainable (20, 28). Given these limitations of abstinence-oriented programs, other alternative and more flexible treatments, such as harm reduction (HR), are essential to reduce and mitigate cannabis-related harms (14, 21, 28, 29).

## **Harm reduction (HR)**

### **Description**

HR in cannabis use aims to minimize the harmful consequences of the substance at the individual, psychological, legal, and social levels among PWUC (19, 20, 28, 29). It offers a public health framework based on values of pragmatism and humanism, as it does not view substance use through a moral lens, but as an inevitable societal fact of long-standing (4, 11, 30, 31). Whether among adults or adolescents, elimination of substance use is unrealistic at the population level and should be the individual’s choice without being imposed, as it represents an unwanted and impractical goal for some (e.g., in case of recreational or occasional use, in case of dual diagnosis combining psychiatric and substance use disorders) (27-29, 32, 33). HR in cannabis use also seeks

to equip PWUC to make responsible and rational decisions and learn ways to reduce the negative consequences associated with their consumption (11, 12, 20, 27, 29, 31). To this end, HR clarifies the notion of safe substance use that is determined by the interaction of three components: the individual (height, weight, gender, physical and mental health status, state of mind, etc.); the drug (quantity, frequency of use, tolerance to the product, combination with other products, quality, etc.); and the setting (location, time of day, interpersonal relationships, conflicts, laws, etc.) (4, 20, 27). In addition, HR takes into account the personal characteristics of PWUC (impulsivity, sensation-seeking, etc.) and addresses their potential ambivalence about stopping substance use, their feelings of failure upon relapse, their engagement in treatment, their social skills, their emotional regulation, etc. (20). In the “Lower Risk Cannabis Use Guidelines”, Fischer (5) updated the initial recommendations to reduce the harms of cannabis use. These recommendations include delaying the initiation of cannabis use until late adolescence or the completion of puberty, consuming low-potency cannabis products, avoiding deep inhalation, using legal and quality-controlled cannabis products, etc. (5).

#### HR effectiveness

Interventions based on HR for non-injected drugs have been studied across various populations (e.g., youth, adults, people in housing programs presenting mental health conditions) and have shown promising results in decreasing the negative consequences associated with substance use (20, 28).

Several studies showed the effectiveness of HR strategies and current school-based HR programs (e.g., SHAHRP in the United Kingdom and SCIDUA in Canada) in developing safer attitudes toward substance use and in reducing negative consequences related to use (21, 22, 34, 35). The effectiveness of HR among youth who use cannabis has led the University Institute on Addictions (*Institut universitaire sur les dépendances*) in Quebec to recommend it as an intervention modality among this clientele (36). In addition, effective early interventions targeting college and university students with at-risk cannabis use are those that reduce the harms associated with cannabis use (17, 36-38). Moreover, Palfai et al. (38) found that students participating in a web-based HR

intervention (Marijuana eCHECKUP TO GO) showed statistically significant lower results in peer cannabis use after six months ( $f^2 = .11$ ,  $[B = 7.45 (3.34), p < .05]$ ).

HR in cannabis use was also found effective among adults (17, 39). After delivering a brief HR intervention for PWUC, Fischer (17) found significant reductions in risk outcome indicators only among the experimental group. At the 12th month follow-up, a change was maintained for “deep inhalation/breath-holding” (experimental group:  $Q = 13.1; p < .05$ ; control group:  $Q = 4.8; p > .05$ ), and “driving after cannabis use” (experimental group:  $Q = 9.3; p < .05$ ; control group:  $Q = 0.9; p > .05$ ) (17). Furthermore, without completely abstaining from the substance, a functional improvement can be reached by treatment-seeking adults presenting a cannabis use disorder when they reduce the frequency and/or quantity of cannabis use (39). Reduction in the frequency of cannabis use was associated with a decrease in depression ( $F = 2.76, p = .04, \eta_p^2 = .04$ ), anxiety ( $F = 3.70, p = .01, \eta_p^2 = .05$ ), and cannabis-related problems ( $F = 8.95, p < .001, \eta_p^2 = .12$ ) (39). In addition, a decrease in the quantity of cannabis consumption was associated with a decrease in anxiety ( $F = 3.02, p = .03, \eta_p^2 = .04$ ) and cannabis-related problems ( $F = 3.24, p = .02, \eta_p^2 = .05$ ) (39). A systematic review also highlighted that the adoption of HR strategies by PWUC acts as a protective factor for people with poor mental health, low self-regulation, high impulsivity, and high negative urgency (22).

#### Acceptability of harm reduction

Despite its proven effectiveness, the acceptability and applicability of HR by health and social services practitioners remain limited, and various factors facilitate or hinder its adoption (21, 40-42). MacCoun (43) showed that, among practitioners who did not adopt HR, some had based their decision on moral grounds, regardless of its effectiveness. Various barriers limit its use by practitioners. First, ambiguities in its conceptualization play an influential role; for example, some practitioners perceive HR as sending the wrong message, i.e., one of tolerating or even encouraging substance use (27, 28, 30, 44). Some do not perceive total cessation of substance use as a legitimate goal that could be achieved through HR (45). Also, there is often confusion between reducing use (frequency, quantity, etc.) and reducing harm (modifying consumption

practices, such as contexts and mixtures, to reduce consequences) (30). These misconceptions point to the need for awareness-raising, training, and supervision of practitioners interested in this approach (28). Second, the adoption of HR can be hindered by ethical dilemmas, as well as by issues related to the personal and collective values of healthcare workers and the therapeutic model of abstinence (30). Indeed, it runs counter to traditional treatments by tolerating risky behaviors and accepting that HR in drug use is a legitimate outcome (30, 44). Practitioners may also fear the emergence of legal, social, and health problems among their clients (28). Third, its adoption may be limited by contextual barriers, such as lack of funding, stigma that undermines demand for care, resistance from local jurisdictions, and lack of services and trained personnel, particularly in the mental health sector (41). Healthcare providers' resistance to applying HR in cannabis use leads to limited knowledge and utilization of effective HR techniques and guidelines among PWUC (5, 25). Among the study's participants (i.e., PWUC), Kruger (25) found that less than half of the participants believed that the listed HR techniques were effective and reported applying them.

However, several factors seen as HR benefits have been found to facilitate its implementation by healthcare providers, such as: broadening the spectrum of acceptable goals, improving clients' decision-making skills, creating positive and quality relationships, and managing relapses (28). A study by Sharp (41) showed that clarifying the positive impacts of HR at the community level (e.g., safety) and ensuring the availability of resources could increase the likelihood of its adoption.

## **Purpose**

Despite its proven effectiveness, several reasons might hinder HR adoption by health professionals among PWUC (30, 41). However, to date, there has been no review of the scientific literature that identifies the factors that facilitate or limit the adoption of HR in cannabis use. To fill this gap, we aim to identify, through a scoping review, facilitators and barriers to healthcare providers' adoption of HR in cannabis use.

## Methods and Analysis

This study will follow the methodological steps of scoping reviews (46). This type of review has become more prevalent in recent years and is a type of knowledge synthesis review (46, 47). There is no universal definition for scoping reviews; however, a variety of factors distinguish them from other types of knowledge synthesis (48). First, scoping reviews address broad research questions and include studies with different designs and multiple sources of evidence to provide an overview of the available knowledge around a concept (49). On the contrary, a systematic review following Cochrane standards explores more specific research questions based on detailed inclusion and exclusion criteria (50-52). Second, while assessment of the methodological quality of included studies is recommended for scoping reviews, it is not mandatory, whereas assessment of the risk of bias of included studies is required for Cochrane-type systematic reviews (50, 52). Researchers undertake scoping reviews for a variety of reasons: 1) to review research activity in a given area; 2) to determine the feasibility and appropriateness of conducting a systematic review based on Cochrane standards; 3) to summarize and disseminate the results of existing research on a topic; and/or 4) to identify a gap in the literature and draw conclusions regarding a topic (49). Our methodological choice is underpinned by three of these reasons: once the research activity around the topic has been consulted, the findings will be summarized and used to support a second study aimed at disseminating knowledge to practitioners through a knowledge translation process. This will also allow us to identify gaps in the literature and draw conclusions related to the topic.

Arksey and O'Malley (49) were the first to propose a six-step model for conducting scoping reviews. Our methodology will be guided by this model, which was later refined by Levac (48) and revised by members of the Joanna Briggs Institute (50). The six stages we will follow are:

- Stage 1: Determining the research question and the objective
- Stage 2: Identifying relevant studies
- Stage 3: Selecting studies
- Stage 4: Charting the data
- Stage 5: Collating, summarizing, and reporting the results

- Stage 6: Conducting a consultation exercise

The research protocol will be reported using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) grid (47). This grid is an extension of the PRISMA grid originally developed for Cochrane-type systematic reviews and helps to ensure the transparency and reproducibility of the study (47, 50).

### **Stage 1: Determining the research question and the objective**

Arksey and O'Malley's (49) model suggests that scoping reviews should begin not only with identifying research questions but also with clarifying the resulting objectives (48, 50). Our scoping review is exploratory and aims to identify facilitators and barriers to healthcare providers' adoption of HR in cannabis use in OECD countries. Based on the Population–Concept–Context (PCC) model, which allows the broad scope of the study to be respected without specifying restrictive inclusion criteria (50), we formulated the research question: What factors influence providers (population) in the healthcare field (context) to adopt HR in cannabis use (concept)? Specific research questions associated with the components of the PCC model were also identified.

- Question 1, related to the concept and context components: What are the facilitators and barriers to healthcare providers' adoption of HR in cannabis use?
- Question 2, related to the population component: Who is the clientele of the providers identified in the studies?
- Question 3, related to the concept component: What is the definition of HR in cannabis use?

## Stage 2: Identifying relevant studies

### Search strategy

The search strategy was developed through an iterative process. A senior librarian at the Quebec Addiction Library (*Bibliothèque québécoise sur les dépendances*) first developed three search strategies with different concepts and ran them on the Medline database. The first 50 results of each strategy were consulted, which led us to opt the one that grouped key terms related to the following concepts: harm reduction, clinicians, and cannabis (see Supplemental Appendix). The search strategy was then reviewed by a second information professional working in the RENARD Team for Knowledge Translation who, in turn, adapted it to the selected databases. The final search strategy executed on all the databases was then validated by the RENARD Team information specialist. The Peer Review of Electronic Search Strategies (PRESS) tool served as a guide for the librarians in this process (53). The search strategy executed on each database is presented in Supplemental Appendix. All search strategies were executed on October 10th, 2022.

### Information sources

To identify relevant published and unpublished studies for inclusion in the study, various sources of information will be reviewed (46, 49, 50). With the guidance of the two librarians, the search strategy will be executed on the leading health and intervention databases: Medline, PsycINFO, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Web of Science, Embase, and Sociological Abstracts. To explore the grey literature (e.g., theses, research reports, etc.), the search strategy will be adapted to the Google Web and Google Scholar search engines, as well as the Érudit (French database) and BASE databases. All documents identified will be entered into Zotero software for the research team members to access. To identify any missed publication by the electronic searches, reference lists of selected articles will be manually searched and relevant systematic reviews will be scanned to identify their included studies.

### **Stage 3: Study selection**

After running the search strategy on the selected databases and completing the second stage, all identified duplicates will be removed. The remaining documents will then be entered into Covidence software. Two reviewers will independently select relevant documents for inclusion by reading the titles and abstracts of the identified studies. Their decisions will be based on the specified inclusion and exclusion criteria. The inter-rater agreement between the reviewers will first be calculated and then they will meet regularly to resolve selection conflicts and refine the eligibility criteria as needed. After this first step, the documents selected and deemed potentially relevant will then be the subject of the second step, the full-text reading. Again, the two reviewers will independently record their choices on Covidence. The inter-rater agreement for this step will be calculated and the reviewers will then resolve any new conflicts. A third reviewer will be called upon as needed for any conflict resolution. This will complete the document selection stage, whose steps will be presented in a PRISMA diagram (54).

#### **Inclusion and exclusion criteria**

Inclusion and exclusion criteria have been specified and will be fine-tuned as needed to select relevant studies (Table 1). Using this process, empirical studies of quantitative, qualitative, or mixed designs, identifying factors that facilitate or hinder healthcare providers' adoption of HR in cannabis use, will be selected. To facilitate comparison and generalization of the results to the Quebec context, the review will be limited to studies conducted in any of the 38 OECD countries. Articles published between 1990 and October 2022 will be included, as it was early in the 1990s that HR gained international prominence and its scope of application began to expand. Papers not meeting these inclusion criteria will be excluded. Systematic reviews will be excluded to avoid duplication and ensure equal representation of the selected papers; the executed search strategy might have already captured studies included in a potentially relevant systematic review. However, systematic reviews' reference lists will be examined to identify additional relevant studies that might be selected.

Table 1. - Inclusion and exclusion criteria

Criteria	Inclusion criteria	Exclusion criteria
<b>Type of study</b>	- Empirical study: quantitative, qualitative, or mixed	- Study that does not present empirical results (e.g., theoretical study, conceptual framework, etc.) or knowledge review (e.g., systematic or literature review) - Interviews
<b>Type of documents</b>	- Peer-reviewed scientific articles, research reports, dissertations, theses	- Books and practice guides
<b>Conceptual framework</b>	- Harm reduction (HR) in cannabis use - Cannabis risk reduction - Non-abstinence in cannabis use	- Another conceptual framework
<b>Objective</b>	- Identification of factors <sup>1</sup> facilitating or hindering practitioners' adoption of HR <sup>2</sup> in cannabis use	- Evaluation of the effectiveness of interventions based on HR OR - Stakeholder perceptions of the use of cannabis as an HR strategy to circumvent the effects of other drugs OR - Attitudes toward decriminalization of cannabis
<b>Psychoactive substance being studied</b>	- Marijuana, hashish, or cannabis for non-medical purposes - "Drug" if cannabis is part of its conceptualization in the study	- Any substance other than marijuana, hashish, or non-medical cannabis (e.g., tobacco, alcohol, medical cannabis, MDMA, Ecstasy) - Study that focuses on "performance and image enhancing drugs" or "crack" or "new psychoactive substances"
<b>Target population</b>	- Practitioners <sup>3</sup> working in the health field - Practitioners in training	- PWUC <sup>4</sup>
<b>Country of study</b>	- OECD countries	- Other countries
<b>Publication date</b>	- From 1990 onwards	- Before 1990
<b>Language</b>	- French and/or English	- Languages other than French or English or text not available

<sup>1</sup> "Factors" include perceptions, beliefs, facilitators, obstacles, oppositions, attitudes, opinions, barriers, biases, motivations, preferences, determinants, incentives, influences, and perspectives on the adoption of HR in cannabis use, as well as its acceptability and receptivity.

<sup>2</sup> “Approach” refers to strategies, interventions, practices, services, methods, techniques, treatments, programs, or guides for the HR approach in cannabis use.

<sup>3</sup> “Practitioners” include healthcare personnel, professionals, or practitioners, allied healthcare personnel, professionals, or practitioners, social workers, counselors, psychoeducators, educators, nurses, criminologists, psychologists, clinicians, caregivers, therapists, psychotherapists, and physicians.

<sup>4</sup> Studies addressing the views of people who use cannabis (PWUC) regarding HR or its adoption by practitioners will be excluded.

### Stage 4: Charting the data

To analyze the selected studies on a common basis, specific variables of interest will be identified based on the research questions (49). These will form the components of summary sheets that will be developed in Microsoft Excel and used to extract results (0). This method is an analytical descriptive recording of the data (49, 50, 55). The first author (RH) will extract the data from the included studies and create the summary sheets. The research supervisor (CD) will validate the summary sheets throughout the process and ensure their alignment with the research questions (50).

Table 2. - Summary sheets

General variables	Specific variables
<b>General characteristics of the study</b>	Study title Author(s) Language of publication Date of publication Period of publication Journal Type of article Full reference Country of study Psychoactive substance under study The legal status of cannabis in the country of study
<b>Introduction</b>	Main concepts Definition of the main concept: HR in cannabis use Research question(s)

	Objective(s) Hypothesis
<b>Methodology</b>	Study design Target population Place of work of the target population Inclusion criteria of participants Recruitment method Sample size Country of origin of participants The clientele of the population recruited Data collection method Analysis steps
<b>Results</b>	Sample presentation Key findings: 1) facilitators and 2) barriers to practitioners' adoption of HR in cannabis use Secondary outcomes or other results
<b>Conclusion</b>	Study strengths Study limitations Gaps in the literature and future research needs

### **Stage 5: Collating, summarizing, and reporting the results**

Based on the eligibility criteria, studies deemed relevant will be collected, summarized, and reported. They will be subjected to 1) a numerical analysis, and 2) a narrative organization encompassing a descriptive qualitative analysis (47, 49, 50). A numerical analysis of the scope, nature, and distribution of the included studies will be performed to various characteristics: date of publication, country of origin of the studies, and type of document. Subsequently, a narrative organization of the results will be produced to identify the relationships between the data and the research questions. The summary sheets will be combined, tabulated, and synthesized, and will then be subjected to a descriptive qualitative analysis (Table 3).

Table 3. - Narrative organization of the included studies

Data	Study 1	Study 2	Study ...
Type of publication			
Date of publication			
Country of study			
Legal status of cannabis in the country of the study			
Definition of HR to cannabis use			
Design of the study			
Target population			
Place of work of the target population			
The clientele of the target population			
Data collection method			
Key findings: <ul style="list-style-type: none"> <li>- Facilitators or enabling conditions</li> <li>- Barriers or adverse conditions</li> </ul>			
Secondary outcomes			

### Stage 6: Consultation exercise

Expert consultation is an optional step that promotes methodological rigor in scoping reviews (49). In this study, the project’s supervisor and co-researchers will be solicited as consultants. Members of the RENARD team and researchers involved in the field of substance use and harm reduction will be consulted to help clarify findings and validate the resulting recommendations (49). Consultations will be conducted: 1) after preliminary results have been obtained, and 2) after analyses of the results have been completed.

### Patient and public involvement

None.

## **Ethics and dissemination**

To our knowledge, this is the first scoping review on factors that facilitate or hinder healthcare providers' adoption of HR in cannabis use. Other reviews have studied HR interventions in general among practitioners working with a specific population. This study will provide a clear picture of the factors at play when adopting HR, and the results could potentially be generalizable to OECD countries. The present study is exempt from ethics approval because it involves no patient or personal data collection. The results are expected to be ready by March 2024. They will be disseminated, alongside the scoping review protocol, through various activities (e.g., publication in peer-reviewed journals, conferences, webinars, posters, *Three Minute Thesis* competition).

After completing the scoping review, we will be able to conduct a future study aiming to implement a knowledge translation plan among practitioners working with youth in Quebec to enhance and expand their adoption of HR in cannabis use.

## **Acknowledgments**

We wish to thank Karine Bélanger, senior librarian at the *Bibliothèque québécoise sur les dépendances* in Quebec for developing the initial search strategy used in this scoping review. We also wish to thank Julie Desnoyers, the information specialist affiliated with the RENARD Team for Knowledge Translation at Université de Montréal, for validating the search strategy and adapting it to the selected databases. Finally, we want to thank Donna Riley for editing the manuscript.

## **Contributors**

RH, CD, CH, and JSF conceptualized the study. RH drafted the protocol. CD, CH, and JSF critically revised the manuscript. RH wrote the final draft manuscript and all the authors approved it.

## **Funding**

This work was supported by the *Ministère de la Santé et des Services sociaux* (MSSS), *Fonds de recherche du Québec – Santé* (FRQS), and *Fonds de recherche du Québec – Société et culture* (FRQSC) (Grant number: 2023-OPTR-322652). A grant obtained by the *Centre de recherche en santé publique* (CReSP) helped in partially covering the revision and publication fees of this scoping review protocol.

## **Competing interests**

None declared.

## **Patient and public involvement**

Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

## **Patient consent for publication**

Not applicable.

## **Provenance and peer review**

Not commissioned; externally peer reviewed.

## **Supplemental material**

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ORCID iD Roula Haddad <http://orcid.org/0000-0002-0414-7144>

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## Supplemental Appendix: Search strategies executed on all databases

### Appendix 1: Medline Search Strategy

#	Concept	Equations	Results	
1	Harm reduction	Harm Reduction/	3898	
2		Risk Reduction Behavior/	14132	
3		(protective adj2 strateg*).ab,kf,ti.	2818	
4		((reduc* or minimi*) adj5 (harm? or harmful or risk?)).ab,kf,ti.	239459	
5		1 or 2 or 3 or 4	251821	
6		exp Health Personnel/	588634	
7		Social Workers/	971	
8		Counselors/	541	
9		exp Health Occupations/	1819039	
10		exp Allied Health Occupations/	52626	
11		exp Allied Health Personnel/	53169	
12	Clinicians	(worker? or psychoeducator? or psycho-educator? or educator? or nurse? or criminologist? or psychologist? or clinician? or practitioner? or physician? or professional? or provider? or co?nselor or co?nselors or caregiver? or giver? or therapist? or psychotherapist? or staff? or personnel? or employee? or doctor?).ab,kf,ti.	2002544	
13	Cannabis	6 or 7 or 8 or 9 or 10 or 11 or 12	3625104	
14		Cannabis/	12307	
15		"Marijuana Use"/	1689	
16		Marijuana Abuse/	6905	
17		Marijuana Smoking/	5425	
18		(mari?uana or cannabis or hashish or Pot or weed or tetrahydrocannabinol or THC or CDB or cannabidiol or cannabinoid?).ab,kf,ti.	100005	
19		14 or 15 or 16 or 17 or 18	102988	
20		Strategies	("strateg*" or "approach*" or intervention? or prevent* or practice? or service? or "method*" or technique? or tactic? or co?nseling or treatment? or program? or "guide*").ab,kf,ti.	15074452
21		Combination of 3 concepts	5 and 13 and 19	272
22		Limit date	limit 21 to yr="1990 -Current"	272
23		Limit language	limit 22 to (english or french)	263
24	Filter OECD			
25	TOTAL	23 not 24	249	
22	Combination of 4 concepts	5 and 13 and 19 and 20	251	

## Appendix 2: PsycINFO

(((((title: (reduc\*)) OR (title: (minimi\*))) NEAR/5 (((title: (harm))) OR (title: (harms))) OR (title: (harmful))) OR (title: (risk))) OR (title: (risks)))) OR (((abstract: (reduc\*)) OR (abstract: (minimi\*))) NEAR/5 (((abstract: (harm))) OR (abstract: (harms))) OR (abstract: (harmful))) OR (abstract: (risk))) OR (abstract: (risks)))) OR (((Keywords: (reduc\*)) OR (Keywords: (minimi\*))) NEAR/5 (((Keywords: (harm))) OR (Keywords: (harms))) OR (Keywords: (harmful))) OR (Keywords: (risk))) OR (Keywords: (risks)))) OR (((title: (protective NEAR/2 strateg\*))) OR (abstract: (protective NEAR/2 strateg\*))) OR (((Keywords: (protective NEAR/2 strateg\*))) OR (((MeSH: (Risk Reduction Behavior)))) OR (((MeSH: (Harm Reduction)))) AND (((MeSH: (Health Personnel)))) OR (((MeSH: (Social Workers)))) OR (((MeSH: (Counselors)))) OR (((MeSH: (Health Occupations)))) OR (((MeSH: (Allied Health Occupations)))) OR (((MeSH: (Allied Health Personnel)))) OR (((Keywords: (worker\*))) OR (Keywords: (psychoeducator\*))) OR (Keywords: (psycho-educator\*))) OR (Keywords: (educator\*))) OR (Keywords: (nurse\*)) OR (Keywords: (criminologist\*)) OR (Keywords: (psychologist\*)) OR (Keywords: (clinician\*)) OR (Keywords: (practitioner\*)) OR (Keywords: (physician\*)) OR (Keywords: (professional\*)) OR (Keywords: (provider\*)) OR (Keywords: (conselor)) OR (Keywords: (conselors)) OR (Keywords: (counselor)) OR (Keywords: (counselers)) OR (Keywords: (caregiver\*)) OR (Keywords: (giver\*)) OR (Keywords: (therapist\*)) OR (Keywords: (psychotherapist\*)) OR (Keywords: (staff\*)) OR (Keywords: (personnel\*)) OR (Keywords: (employee\*)) OR (Keywords: (doctor\*))) OR (abstract: (worker\*)) OR (abstract: (psychoeducator\*)) OR (abstract: (psycho-educator\*)) OR (abstract: (educator\*)) OR (abstract: (nurse\*)) OR (abstract: (criminologist\*)) OR (abstract: (psychologist\*)) OR (abstract: (clinician\*)) OR (abstract: (practitioner\*)) OR (abstract: (physician\*)) OR (abstract: (professional\*)) OR (abstract: (provider\*)) OR (abstract: (conselor)) OR (abstract: (conselors)) OR (abstract: (counselor)) OR (abstract: (counselers)) OR (abstract: (caregiver\*)) OR (abstract: (giver\*)) OR (abstract: (therapist\*)) OR (abstract: (psychotherapist\*)) OR (abstract: (staff\*)) OR (abstract: (personnel\*)) OR (abstract: (employee\*)) OR (abstract: (doctor\*)))) AND (((Keywords: (marijuana)) OR (Keywords: (marihuana)) OR (Keywords: (cannabis)) OR (Keywords: (hashish)) OR (Keywords: (Pot)) OR (Keywords: (weed)) OR (Keywords: (tetrahydrocannabinol)) OR (Keywords: (THC)) OR (Keywords: (CDB)) OR (Keywords: (cannabidiol)) OR (Keywords: (cannabinoid)) OR (Keywords: (cannabinoids)))) OR (abstract: (marijuana)) OR (abstract: (marihuana)) OR (abstract: (cannabis)) OR (abstract: (hashish)) OR (abstract: (Pot)) OR (abstract: (weed)) OR (abstract: (tetrahydrocannabinol)) OR (abstract: (THC)) OR (abstract: (CDB)) OR (abstract: (cannabidiol)) OR (abstract: (cannabinoid)) OR (abstract: (cannabinoids)))) OR (((MeSH: (Marijuana Smoking)))) OR (((MeSH: (Marijuana Abuse)))) OR (((MeSH: ("Marijuana Use")))) OR (((MeSH: (Cannabis)))) AND ((Year: [1990 TO 9999])) NOT (((Keywords: (afghanistan/)) OR (Keywords: (africa/)) OR (Keywords: (africa, northern/)) OR (Keywords: (africa, central/)) OR (Keywords: (africa, eastern/)) OR (Keywords: ("africa south of the sahara" /)) OR (Keywords: (africa, southern/)) OR (Keywords: (africa, western/)) OR (Keywords: (albania/)) OR (Keywords: (algeria/)) OR (Keywords: (andorra/)) OR (Keywords: (angola/)) OR (Keywords: ("antigua and barbuda" /)) OR (Keywords: (argentina/)) OR (Keywords: (armenia/)) OR (Keywords: (azerbaijan/)) OR (Keywords: (bahamas/)) OR (Keywords: (bahrain/)) OR (Keywords: (bangladesh/)) OR (Keywords: (barbados/)) OR (Keywords: (belize/))

OR (Keywords: (benin/)) OR (Keywords: (bhutan/)) OR (Keywords: (bolivia/)) OR (Keywords: (borneo/)) OR (Keywords: ("bosnia and herzegovina" /)) OR (Keywords: (botswana/)) OR (Keywords: (brazil/)) OR (Keywords: (brunei/)) OR (Keywords: (bulgaria/)) OR (Keywords: (burkina faso/)) OR (Keywords: (burundi/)) OR (Keywords: (cabo verde/)) OR (Keywords: (cambodia/)) OR (Keywords: (cameroon/)) OR (Keywords: (central african republic/)) OR (Keywords: (chad/)) OR (Keywords: (exp china/)) OR (Keywords: (comoros/)) OR (Keywords: (congo/)) OR (Keywords: (cote d'ivoire/)) OR (Keywords: (croatia/)) OR (Keywords: (cuba/)) OR (Keywords: ("democratic republic of the congo" /)) OR (Keywords: (cyprus/)) OR (Keywords: (djibouti/)) OR (Keywords: (dominica/)) OR (Keywords: (dominican republic/)) OR (Keywords: (ecuador/)) OR (Keywords: (egypt/)) OR (Keywords: (el salvador/)) OR (Keywords: (equatorial guinea/)) OR (Keywords: (eritrea/)) OR (Keywords: (eswatini/)) OR (Keywords: (ethiopia/)) OR (Keywords: (fiji/)) OR (Keywords: (gabon/)) OR (Keywords: (gambia/)) OR (Keywords: ("georgia (republic)" /)) OR (Keywords: (ghana/)) OR (Keywords: (grenada/)) OR (Keywords: (guatemala/)) OR (Keywords: (guinea/)) OR (Keywords: (guinea-bissau/)) OR (Keywords: (guyana/)) OR (Keywords: (haiti/)) OR (Keywords: (honduras/)) OR (Keywords: (independent state of samoa/)) OR (Keywords: (exp india/)) OR (Keywords: (indian ocean islands/)) OR (Keywords: (indochina/)) OR (Keywords: (indonesia/)) OR (Keywords: (iran/)) OR (Keywords: (iraq/)) OR (Keywords: (jamaica/)) OR (Keywords: (jordan/)) OR (Keywords: (kazakhstan/)) OR (Keywords: (kenya/)) OR (Keywords: (kosovo/)) OR (Keywords: (kuwait/)) OR (Keywords: (kyrgyzstan/)) OR (Keywords: (laos/)) OR (Keywords: (lebanon/)) OR (Keywords: (liechtenstein/)) OR (Keywords: (lesotho/)) OR (Keywords: (liberia/)) OR (Keywords: (libya/)) OR (Keywords: (madagascar/)) OR (Keywords: (malaysia/)) OR (Keywords: (malawi/)) OR (Keywords: (mali/)) OR (Keywords: (malta/)) OR (Keywords: (mauritania/)) OR (Keywords: (mauritius/)) OR (Keywords: (mekong valley/)) OR (Keywords: (melanesia/)) OR (Keywords: (micronesia/)) OR (Keywords: (monaco/)) OR (Keywords: (mongolia/)) OR (Keywords: (montenegro/)) OR (Keywords: (morocco/)) OR (Keywords: (mozambique/)) OR (Keywords: (myanmar/)) OR (Keywords: (namibia/)) OR (Keywords: (nepal/)) OR (Keywords: (nicaragua/)) OR (Keywords: (niger/)) OR (Keywords: (nigeria/)) OR (Keywords: (oman/)) OR (Keywords: (pakistan/)) OR (Keywords: (palau/)) OR (Keywords: (exp panama/)) OR (Keywords: (papua new guinea/)) OR (Keywords: (paraguay/)) OR (Keywords: (peru/)) OR (Keywords: (philippines/)) OR (Keywords: (qatar/)) OR (Keywords: ("republic of belarus" /)) OR (Keywords: ("republic of north macedonia" /)) OR (Keywords: (romania/)) OR (Keywords: (exp russia/)) OR (Keywords: (rwanda/)) OR (Keywords: ("saint kitts and nevis" /)) OR (Keywords: (saint lucia/)) OR (Keywords: ("saint vincent and the grenadines" /)) OR (Keywords: ("sao tome and principe" /)) OR (Keywords: (saudi arabia/)) OR (Keywords: (serbia/)) OR (Keywords: (sierra leone/)) OR (Keywords: (senegal/)) OR (Keywords: (seychelles/)) OR (Keywords: (singapore/)) OR (Keywords: (somalia/)) OR (Keywords: (south africa/)) OR (Keywords: (south sudan/)) OR (Keywords: (sri lanka/)) OR (Keywords: (sudan/)) OR (Keywords: (suriname/)) OR (Keywords: (syria/)) OR (Keywords: (taiwan/)) OR (Keywords: (tajikistan/)) OR (Keywords: (tanzania/)) OR (Keywords: (thailand/)) OR (Keywords: (timor-leste/)) OR (Keywords: (togo/)) OR (Keywords: (tonga/)) OR (Keywords: ("trinidad and tobago" /)) OR (Keywords: (tunisia/)) OR (Keywords: (turkmenistan/)) OR (Keywords: (uganda/)) OR (Keywords: (ukraine/)) OR (Keywords: (united arab emirates/)) OR (Keywords: (uruguay/)) OR (Keywords: (uzbekistan/)) OR (Keywords: (vanuatu/)) OR (Keywords: (venezuela/)) OR (Keywords: (vietnam/)) OR (Keywords: (west indies/)) OR (Keywords: (yemen/)) OR (Keywords: (zambia/)) OR (Keywords: (zimbabwe/))) AND Any Field: -

((((Keywords: (australasia/)) OR (Keywords: (exp australia/)) OR (Keywords: (austria/)) OR (Keywords: (baltic states/)) OR (Keywords: (belgium/)) OR (Keywords: (exp canada/)) OR (Keywords: (chile/)) OR (Keywords: (colombia/)) OR (Keywords: (costa rica/)) OR (Keywords: (czech republic/)) OR (Keywords: (exp denmark/)) OR (Keywords: (estonia/)) OR (Keywords: (europe/)) OR (Keywords: (finland/)) OR (Keywords: (exp france/)) OR (Keywords: (exp germany/)) OR (Keywords: (greece/)) OR (Keywords: (hungary/)) OR (Keywords: (iceland/)) OR (Keywords: (ireland/)) OR (Keywords: (israel/)) OR (Keywords: (exp italy/)) OR (Keywords: (exp japan/)) OR (Keywords: (korea/)) OR (Keywords: (latvia/)) OR (Keywords: (lithuania/)) OR (Keywords: (luxembourg/)) OR (Keywords: (mexico/)) OR (Keywords: (netherlands/)) OR (Keywords: (new zealand/)) OR (Keywords: (north america/)) OR (Keywords: (exp norway/)) OR (Keywords: (poland/)) OR (Keywords: (portugal/)) OR (Keywords: (exp "republic of korea" /)) OR (Keywords: ("scandinavian and nordic countries" /)) OR (Keywords: (slovakia/)) OR (Keywords: (slovenia/)) OR (Keywords: (spain/)) OR (Keywords: (sweden/)) OR (Keywords: (switzerland/)) OR (Keywords: (turkey/)) OR (Keywords: (exp united kingdom/)) OR (Keywords: (exp united states/)) OR (Keywords: (European Union/)) OR (Keywords: (Developed Countries/))))))

### Appendix 3: CINAHL

#	Question	Results
S1	MW "harm# reduction#"	4,889
S2	MW "risk# reduction#"	0
S3	TI protective N2 strateg* OR AB protective N2 strateg* OR SU protective N2 strateg*	1,167
S4	SU ( (reduc* or minimi*) N5 (harm# or harmful or risk#) ) OR TI ( (reduc* or minimi*) N5 (harm# or harmful or risk#) ) OR AB ( (reduc* or minimi*) N5 (harm# or harmful or risk#) )	96,037
S5	S1 OR S2 OR S3 OR S4	97,005
S6	MW "Health Personnel#"	112,080
S7	MW "Social Worker#"	11,786
S8	MW Counselors	4,471
S9	MW "Health Occupation#"	5,719
S10	MW "Allied Health Occupation#"	0
S11	MW "Allied Health Personnel#"	4,781
S12	TI ( worker or psychoeducator or psycho-educator or educator or nurse or criminologist or psychologist or clinician or practitioner or physician or professional or provider or counse#lor or counse#lors or caregiver or giver or therapist or psychotherapist or staff or personnel or employee or doctor ) OR AB ( worker or psychoeducator or psycho-educator or educator or nurse or criminologist or psychologist or clinician or practitioner or physician or professional or provider or counse#lor or counse#lors or caregiver or giver or therapist or psychotherapist or staff or personnel or employee or doctor ) OR SU ( worker or psychoeducator or psycho-educator or educator or nurse or criminologist or psychologist or clinician or practitioner or physician or professional or provider or counse#lor or counse#lors or caregiver or giver or therapist or psychotherapist or staff or personnel or employee or doctor )	1,762,879
S13	S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12	1,765,867
S14	MW Cannabis	11,138
S15	MW Marijuana	2,219

S16	TI ( mari#uana or cannabis or hashish or Pot or weed or tetrahydrocannabinol or THC or CDB or cannabidiol or cannabinoid# ) OR AB ( mari#uana or cannabis or hashish or Pot or weed or tetrahydrocannabinol or THC or CDB or cannabidiol or cannabinoid# ) OR SU ( mari#uana or cannabis or hashish or Pot or weed or tetrahydrocannabinol or THC or CDB or cannabidiol or cannabinoid# )	26,526
S17	S14 OR S15 OR S16	26,526
S18	S5 AND S13 AND S17	147
S19	S5 AND S13 AND S17	147
S20	S5 AND S13 AND S17	147
S21	S5 AND S13 AND S17	72
S22	SU afghanistan/ or africa/ or africa, northern/ or africa, central/ or africa, eastern/ or "africa south of the sahara"/ or africa, southern/ or africa, western/ or albania/ or algeria/ or andorra/ or angola/ or "antigua and barbuda"/ or argentina/ or armenia/ or azerbaijan/ or bahamas/ or bahrain/ or bangladesh/ or barbados/ or belize/ or benin/ or bhutan/ or bolivia/ or borneo/ or "bosnia and herzegovina"/ or botswana/ or brazil/ or brunei/ or bulgaria/ or burkina faso/ or burundi/ or cabo verde/ or cambodia/ or cameroon/ or central african republic/ or chad/ or exp china/ or comoros/ or congo/ or cote d'ivoire/ or croatia/ or cuba/ or "democratic republic of the congo"/ or cyprus/ or djibouti/ or dominica/ or dominican republic/ or ecuador/ or egypt/ or el salvador/ or equatorial guinea/ or eritrea/ or eswatini/ or ethiopia/ or fiji/ or gabon/ or gambia/ or "georgia (republic)"/ or ghana/ or grenada/ or guatemala/ or guinea/ or guinea-bissau/ or guyana/ or haiti/ or honduras/ or independent state of samoa/ or exp india/ or indian ocean islands/ or indochina/ or indonesia/ or iran/ or iraq/ or jamaica/ or jordan/ or kazakhstan/ or kenya/ or kosovo/ or kuwait/ or kyrgyzstan/ or laos/ or lebanon/ or liechtenstein/ or lesotho/ or liberia/ or libya/ or madagascar/ or malaysia/ or malawi/ or mali/ or malta/ or mauritania/ or mauritius/ or mekong valley/ or melanesia/ or micronesia/ or monaco/ or mongolia/ or montenegro/ or morocco/ or mozambique/ or myanmar/ or namibia/ or nepal/ or nicaragua/ or niger/ or nigeria/ or oman/ or pakistan/ or palau/ or exp panama/ or papua new guinea/ or paraguay/ or peru/ or philippines/ or qatar/ or "republic of belarus"/ or "republic of north macedonia"/ or romania/ or exp russia/ or rwanda/ or "saint kitts and nevis"/ or saint lucia/ or "saint vincent and the grenadines"/ or "sao tome and principe"/ or saudi arabia/ or serbia/ or sierra leone/ or senegal/ or seychelles/ or	159,916

	singapore/ or somalia/ or south africa/ or south sudan/ or sri lanka/ or sudan/ or suriname/ or syria/ or taiwan/ or tajikistan/ or tanzania/ or thailand/ or timor-leste/ or togo/ or tonga/ or "trinidad and tobago"/ or tunisia/ or turkmenistan/ or uganda/ or ukraine/ or united arab emirates/ or uruguay/ or uzbekistan/ or vanuatu/ or venezuela/ or vietnam/ or west indies/ or yemen/ or zambia/ or zimbabwe/	
S23	SU australasia/ or exp australia/ or austria/ or baltic states/ or belgium/ or exp canada/ or chile/ or colombia/ or costa rica/ or czech republic/ or exp denmark/ or estonia/ or europe/ or finland/ or exp france/ or exp germany/ or greece/ or hungary/ or iceland/ or ireland/ or israel/ or exp italy/ or exp japan/ or korea/ or latvia/ or lithuania/ or luxembourg/ or mexico/ or netherlands/ or new zealand/ or north america/ or exp norway/ or poland/ or portugal/ or exp "republic of korea"/ or "scandinavian and nordic countries"/ or slovakia/ or slovenia/ or spain/ or sweden/ or switzerland/ or turkey/ or exp united kingdom/ or exp united states/ OR European Union/ OR Developed Countries/	158,684
S24	S22 NOT S23	154,938
S25	S21 NOT S24	66

## Appendix 4: Web of Science

#	Question	Results
#1	TS=(harm reduction OR risk reduction behavior OR (protective NEAR/2 strateg*) OR ((reduc* OR minimi*) NEAR/5 (harm OR harms OR harmful OR risk OR risks)))	329,523
#2	TS=(cannabis OR marijuana OR mari\$uana OR hashish OR pot OR weed OR tetrahydrocannabinol OR THC OR CDB OR cannabidiol OR cannabinoid\$)	305,377
#3	TS=(health personnel OR social worker\$ OR counselor\$ OR health occupation\$ OR worker\$ OR psychoeducator\$ OR psycho-educator\$ OR nurse\$ OR criminologist\$ OR psychologist\$ OR clinician\$ OR practitioner\$ OR physician\$ OR professional\$ OR provider\$ OR co\$nselor OR co\$nselors OR caregiver\$ OR giver\$ OR therapist\$ OR psychotherapist\$ OR staff\$ OR personnel\$ OR employee\$ OR doctor\$)	2,593,408
#4	#1 AND #2 AND #3	331
#5	#4 and English or French (Languages)	324
#6	#5 and [Countries/Regions filter: pays de l'OCDE]	300

## Appendix 5: Embase

1	Harm Reduction/	8189
2	Risk Reduction Behavior/	115695
3	(protective adj2 strateg*).ab,kf,ti.	3987
4	((reduc* or minimi*) adj5 (harm? or harmful or risk?)).ab,kf,ti.	345174
5	1 or 2 or 3 or 4	414447
6	exp Health Personnel/	1843814
7	Social Workers/	12409
8	Counselors/	3692
9	exp Health Occupations/	24456
10	exp Allied Health Occupations/	392205
11	exp Allied Health Personnel/	567029
12	(worker? or (psychoeducator? or psycho-educator?) or educator? or nurse? or criminologist? or psychologist? or clinician? or practitioner? or physician? or professional? or provider? or co?nselor or co?nselors or caregiver? or giver? or therapist? or psychotherapist? or staff? or personnel? or employee? or doctor?).ab,kf,ti.	2640146
13	6 or 7 or 8 or 9 or 10 or 11 or 12	3761559
14	Cannabis/	40937
15	"Marijuana Use"/	12636
16	Marijuana Abuse/	6445
17	Marijuana Smoking/	4026
18	(mari?uana or cannabis or has?hish or Pot or weed or tetrahydrocannabinol or THC or CDB or cannabidiol or cannabinoid?).ab,kf,ti.	129932
19	14 or 15 or 16 or 17 or 18	142957
20	5 and 13 and 19	569
21	limit 32 to yr="1990 -Current"	569

22	limit 21 to (english or french)	560
23	Filtre OCDE	520

## Appendix 6: Sociological Abstracts

((ti(health personnel OR social worker OR social workers OR counselor OR counselors OR conselor OR conselors OR health occupation OR health occupations OR worker\* OR psychoeducator\* OR psycho-educator\* OR educator\* OR nurse\* OR criminologist\* OR psychologist\* OR clinician\* OR professional\* OR provider\* OR caregiver\* OR giver\* OR therapist\* OR psychotherapist\* OR staff\* OR personnel\* OR employee\* OR doctor\*) OR ab(health personnel OR social worker OR social workers OR counselor OR counselors OR conselor OR conselors OR health occupation OR health occupations OR worker\* OR psychoeducator\* OR psycho-educator\* OR educator\* OR nurse\* OR criminologist\* OR psychologist\* OR clinician\* OR professional\* OR provider\* OR caregiver\* OR giver\* OR therapist\* OR psychotherapist\* OR staff\* OR personnel\* OR employee\* OR doctor\*)) OR su(health personnel OR social worker OR social workers OR counselor OR counselors OR conselor OR conselors OR health occupation OR health occupations OR worker\* OR psychoeducator\* OR psycho-educator\* OR educator\* OR nurse\* OR criminologist\* OR psychologist\* OR clinician\* OR professional\* OR provider\* OR caregiver\* OR giver\* OR therapist\* OR psychotherapist\* OR staff\* OR personnel\* OR employee\* OR doctor\*)) AND (ti(cannabis OR marijuana OR mari\*uana OR hashish OR pot OR weed OR tetrahydrocannabinol OR THC OR CDB OR cannabidiol OR cannabinoid\*) OR ab(cannabis OR marijuana OR mari\*uana OR hashish OR pot OR weed OR tetrahydrocannabinol OR THC OR CDB OR cannabidiol OR cannabinoid\*) OR su(cannabis OR marijuana OR mari\*uana OR hashish OR pot OR weed OR tetrahydrocannabinol OR THC OR CDB OR cannabidiol OR cannabinoid\*)) AND ((ti(((reduc\* OR minimi\*) NEAR/5 (harm OR harms OR harmful OR risk OR risks)) OR ab(((reduc\* OR minimi\*) NEAR/5 (harm OR harms OR harmful OR risk OR risks)) OR su(((reduc\* OR minimi\*) NEAR/5 (harm OR harms OR harmful OR risk OR risks)))) OR (ti(protective NEAR/2 strateg\*) OR ab(protective NEAR/2 strateg\*) OR su(protective NEAR/2 strateg\*)))) AND la.exact("ENG")) AND yr(1990-2029)

## Appendix 7: Google Scholar

cannabis intitle:nurse OR intitle:clinician OR intitle:practitioner OR intitle:physician OR intitle:caregiver OR intitle:giver OR intitle:doctor "harm reduction" = 105

cannabis intitle:nurses OR intitle:clinicians OR intitle:practitioners OR intitle:physicians OR intitle:caregivers OR intitle:givers OR intitle:doctors "harm reduction" = 242

cannabis intitle:psychoeducator OR intitle:educator OR intitle:therapist OR intitle:psychotherapist OR intitle:criminologist OR intitle:psychologist "harm reduction" = 19

cannabis intitle:psychoeducators OR intitle:educators OR intitle:therapists OR intitle:psychotherapists OR intitle:criminologists OR intitle:psychologists "harm reduction" = 53

cannabis intitle:worker OR intitle:staff OR intitle:personnel OR intitle:employee OR intitle:professional OR intitle:provider OR intitle:counselor OR intitle:conselor "harm reduction" = 136

cannabis intitle: workers OR intitle:staffs OR intitle:personnels OR intitle:employees OR intitle:professionals OR intitle:providers OR intitle:counselors OR intitle:conselors "harm reduction" = 5

cannabis intitle:infirmier OR intitle:médecin OR intitle:clinicien OR intitle:psychoéducateur OR intitle:éducateur OR intitle:thérapeute OR intitle:psychothérapeute OR intitle:criminologue OR intitle:psychologue "reduction des méfaits" = 1

cannabis intitle:travailleur OR intitle:personnel OR intitle:employé OR intitle:professionnel OR intitle:conseiller OR intitle:intervenant "reduction des méfaits" = 5

cannabis intitle:infirmiers OR intitle:médecins OR intitle:cliniciens OR intitle:psychoéducateurs OR intitle:éducateurs OR intitle:thérapeutes OR intitle:psychothérapeutes OR intitle:criminologues OR intitle:psychologues "reduction des méfaits" = 3

cannabis intitle:travailleurs OR intitle:personnels OR intitle:employés OR intitle:professionnels OR intitle:conseillers OR intitle:intervenants "reduction des méfaits" = 12

cannabis intitle:infirmière OR intitle:clinicienne OR intitle:psychoéducatrice OR intitle:éducatrice OR intitle:criminologue OR intitle:psychologue "reduction des méfaits" = 2

cannabis intitle:travailleuse OR intitle:employée OR intitle:professionnelle OR intitle:conseillère OR intitle:intervenante "reduction des méfaits" = 1

cannabis intitle:infirmières OR intitle:cliniciennes OR intitle:psychoéducatrices OR intitle:éducatrices OR intitle:criminologues OR intitle:psychologues "reduction des méfaits" = 2

cannabis intitle:travailleuses OR intitle:employées OR intitle:professionnelles OR intitle:conseillères OR intitle:intervenantes "reduction des méfaits" = 2

marijuana intitle:nurse OR intitle:clinician OR intitle:practitioner OR intitle:physician OR intitle:caregiver OR intitle:giver OR intitle:doctor "harm reduction" = 139

marijuana intitle:nurses OR intitle:clinicians OR intitle:practitioners OR intitle:physicians OR intitle:caregivers OR intitle:givers OR intitle:doctors "harm reduction" = 238

marijuana intitle:psychoeducator OR intitle:educator OR intitle:therapist OR intitle:psychotherapist OR intitle:criminologist OR intitle:psychologist "harm reduction" = 19

marijuana intitle:psychoeducators OR intitle:educators OR intitle:therapists OR intitle:psychotherapists OR intitle:criminologists OR intitle:psychologists "harm reduction" = 48

marijuana intitle:worker OR intitle:staff OR intitle:personnel OR intitle:employee OR intitle:professional OR intitle:provider OR intitle:counselor OR intitle:conselor "harm reduction" = 140

marijuana intitle:workers OR intitle:staffs OR intitle:personnels OR intitle:employees OR intitle:professionals OR intitle:providers OR intitle:counselors OR intitle:conselors "harm reduction" = 573

marijuana intitle:infirmier OR intitle:médecin OR intitle:clinicien OR intitle:psychoéducateur OR intitle:éducateur OR intitle:thérapeute OR intitle:psychothérapeute OR intitle:criminologue OR intitle:psychologue "reduction des méfaits" = 1

marijuana intitle:travailleur OR intitle:personnel OR intitle:employé OR intitle:professionnel OR intitle:conseiller OR intitle:intervenant "reduction des méfaits" = 5

marijuana intitle:infirmiers OR intitle:médecins OR intitle:cliniciens OR intitle:psychoéducateurs OR intitle:éducateurs OR intitle:thérapeutes OR intitle:psychothérapeutes OR intitle:criminologues OR intitle:psychologues "reduction des méfaits" = 3

marijuana intitle:travailleurs OR intitle:personnels OR intitle:employés OR intitle:professionnels OR intitle:conseillers OR intitle:intervenants "reduction des méfaits" = 12

marijuana intitle:infirmière OR intitle:clinicienne OR intitle:psychoéducatrice OR intitle:éducatrice OR intitle:criminologue OR intitle:psychologue "reduction des méfaits" = 2

marijuana intitle:travailleuse OR intitle:employée OR intitle:professionnelle OR intitle:conseillère OR intitle:intervenante "reduction des méfaits" = 1

marijuana intitle:infirmières OR intitle:cliniciennes OR intitle:psychoéducatrices OR intitle:éducatrices OR intitle:criminologues OR intitle:psychologues "reduction des méfaits" = 2

marijuana intitle:travailleuses OR intitle:employées OR intitle:professionnelles OR intitle:conseillères OR intitle:intervenantes "reduction des méfaits" = 2

## Appendix 8: Google Web

cannabis intitle:nurse OR intitle:clinician OR intitle:practitioner OR intitle:physician OR intitle:caregiver OR intitle:giver OR intitle:doctor "harm reduction" filetype:pdf =

cannabis intitle:nurses OR intitle:clinicians OR intitle:practitioners OR intitle:physicians OR intitle:caregivers OR intitle:givers OR intitle:doctors "harm reduction" filetype:pdf =

cannabis intitle:psychoeducator OR intitle:educator OR intitle:therapist OR intitle:psychotherapist OR intitle:criminologist OR intitle:psychologist "harm reduction" filetype:pdf =

cannabis intitle:psychoeducators OR intitle:educators OR intitle:therapists OR intitle:psychotherapists OR intitle:criminologists OR intitle:psychologists "harm reduction" filetype:pdf =

cannabis intitle:worker OR intitle:staff OR intitle:personnel OR intitle:employee OR intitle:professional OR intitle:provider OR intitle:counselor OR intitle:conselor "harm reduction" filetype:pdf =

cannabis intitle: workers OR intitle:staffs OR intitle:personnels OR intitle:employees OR intitle:professionals OR intitle:providers OR intitle:counselors OR intitle:conselors "harm reduction" filetype:pdf =

cannabis intitle:infirmier OR intitle:médecin OR intitle:clinicien OR intitle:psychoéducateur OR intitle:éducateur OR intitle:thérapeute OR intitle:psychothérapeute OR intitle:criminologue OR intitle:psychologue "reduction des méfaits" filetype:pdf =

cannabis intitle:travailleur OR intitle:personnel OR intitle:employé OR intitle:professionnel OR intitle:conseiller OR intitle:intervenant "reduction des méfaits" filetype:pdf =

cannabis intitle:infirmiers OR intitle:médecins OR intitle:cliniciens OR intitle:psychoéducateurs OR intitle:éducateurs OR intitle:thérapeutes OR intitle:psychothérapeutes OR intitle:criminologues OR intitle:psychologues "reduction des méfaits" filetype:pdf =

cannabis intitle:travailleurs OR intitle:personnels OR intitle:employés OR intitle:professionnels OR intitle:conseillers OR intitle:intervenants "reduction des méfaits" filetype:pdf =

cannabis intitle:infirmière OR intitle:clinicienne OR intitle:psychoéducatrice OR intitle:éducatrice OR intitle:criminologue OR intitle:psychologue "reduction des méfaits" filetype:pdf =

cannabis intitle:travailleuse OR intitle:employée OR intitle:professionnelle OR intitle:conseillère OR intitle:intervenante "reduction des méfaits" filetype:pdf =

cannabis intitle:infirmières OR intitle:cliniciennes OR intitle:psychoéducatrices OR intitle:éducatrices OR intitle:criminologues OR intitle:psychologues "reduction des méfaits" filetype:pdf =

cannabis intitle:travailleuses OR intitle:employées OR intitle:professionnelles OR intitle:conseillères OR intitle:intervenantes "reduction des méfaits" filetype:pdf =

marijuana intitle:nurse OR intitle:clinician OR intitle:practitioner OR intitle:physician OR intitle:caregiver OR intitle:giver OR intitle:doctor "harm reduction" filetype:pdf =

marijuana intitle:nurses OR intitle:clinicians OR intitle:practitioners OR intitle:physicians OR intitle:caregivers OR intitle:givers OR intitle:doctors "harm reduction" filetype:pdf =

marijuana intitle:psychoeducator OR intitle:educator OR intitle:therapist OR intitle:psychotherapist OR intitle:criminologist OR intitle:psychologist "harm reduction" filetype:pdf =

marijuana intitle:psychoeducators OR intitle:educators OR intitle:therapists OR intitle:psychotherapists OR intitle:criminologists OR intitle:psychologists "harm reduction" filetype:pdf =

marijuana intitle:worker OR intitle:staff OR intitle:personnel OR intitle:employee OR intitle:professional OR intitle:provider OR intitle:counselor OR intitle:conselor "harm reduction" filetype:pdf =

marijuana intitle:workers OR intitle:staffs OR intitle:personnels OR intitle:employees OR intitle:professionals OR intitle:providers OR intitle:counselors OR intitle:conselors "harm reduction" filetype:pdf =

marijuana intitle:infirmier OR intitle:médecin OR intitle:clinicien OR intitle:psychoéducateur OR intitle:éducateur OR intitle:thérapeute OR intitle:psychothérapeute OR intitle:criminologue OR intitle:psychologue "reduction des méfaits" filetype:pdf =

marijuana intitle:travailleur OR intitle:personnel OR intitle:employé OR intitle:professionnel OR intitle:conseiller OR intitle:intervenant "reduction des méfaits" filetype:pdf =

marijuana intitle:infirmiers OR intitle:médecins OR intitle:cliniciens OR intitle:psychoéducateurs OR intitle:éducateurs OR intitle:thérapeutes OR intitle:psychothérapeutes OR intitle:criminologues OR intitle:psychologues "reduction des méfaits" filetype:pdf =

marijuana intitle:travailleurs OR intitle:personnels OR intitle:employés OR intitle:professionnels OR intitle:conseillers OR intitle:intervenants "reduction des méfaits" filetype:pdf =

marijuana intitle:infirmière OR intitle:clinicienne OR intitle:psychoéducatrice OR  
intitle:éducatrice OR intitle:criminologue OR intitle:psychologue “reduction des méfaits”  
filetype:pdf =

marijuana intitle:travailleuse OR intitle:employée OR intitle:professionnelle OR intitle:conseillère  
OR intitle:intervenante “reduction des méfaits” filetype:pdf =

marijuana intitle:infirmières OR intitle:cliniciennes OR intitle:psychoéducatrices OR  
intitle:éducatrices OR intitle:criminologues OR intitle:psychologues “reduction des méfaits”  
filetype:pdf =

marijuana intitle:travailleuses OR intitle:employées OR intitle:professionnelles OR  
intitle:conseillères OR intitle:intervenantes “reduction des méfaits” filetype:pdf =

## Appendix 9: BASE

tit:(nurse\* clinician\* practitioner\* physician\* caregiver\* giver\* doctor\* psychoeducator\* educator\* therapist\* psychotherapist\* criminologist\* psychologist\* worker\* staff\* personnel\* employee\* professional\* provider\* counselor\*) subj:(cannabis marijuana) subj:"harm reduction"  
= 4

tit:(infirmier\* OU médecin\* OU clinicien\* OU psychoéducat\* OU éducat\* OU criminologue\* OU psychologue\* OU travailleur\* OU employé\* OU professionnel\* OU conseil\* OU intervenant\*)  
subj:cannabis subj:marijuana subj:"réduction des méfaits" = 0

## **Appendix 10: Érudit**

(Titre, résumé, mots-clés : harm reduction OU harm minimisation OU risk reduction OU risks reduction OU risk minimisation OU réduction des méfaits OU réduction des risques) ET (Titre, résumé, mots-clés : cannabis OU marijuana) ET (Titre, résumé, mots-clés : nurse\* OU clinician\* OU practitioner\* OU physician\* OU caregiver\* OU giver\* OU doctor\* OU psychoeducator\* OU educator\* OU therapist\* OU psychotherapist\* OU criminologist\* OU psychologist\* OU worker\* OU staff\* OU personnel\* OU employee\* OU professional\* OU provider\* OU counselor\* OU infirmier\* OU médecin\* OU clinicien\* OU psychoéducat\* OU éducat\* OU criminologue\* OU psychologue\* OU travailleur\* OU employé\* OU professionnel\* OU conseil\* OU intervenant\*) = 27

# Chapitre 4 – Article II : Facilitators of and obstacles to practitioners’ adoption of harm reduction in cannabis use: a scoping review

Roula Haddad<sup>1</sup>, Christian Dagenais<sup>1</sup>, Jean-Sébastien Fallu<sup>2,3,4</sup>, Christophe Huynh<sup>3,5</sup>, Laurence D’Arcy<sup>3</sup>, Aurélie Hot<sup>1</sup>

**To cite:** Haddad, R., Dagenais, C., Fallu, J. S., Huynh, C., D’Arcy, L., & Hot, A. (2024). Facilitators of and obstacles to practitioners’ adoption of harm reduction in cannabis use: a scoping review. *Harm Reduction Journal*, 21(1), 178. <https://doi.org/10.1186/s12954-024-01093-9>

<sup>1</sup> Department of Psychology, Université de Montréal

<sup>2</sup> School of Psychoeducation, Université de Montréal

<sup>3</sup> University Institute on Addictions, Centre intégré universitaire de santé et de services sociaux du Centre-Sud-de-l’Île-de-Montréal

<sup>4</sup> Centre de recherche en santé publique (CReSP), Centre intégré universitaire de santé et de services sociaux du Centre-Sud-de-l’Île-de-Montréal

<sup>5</sup> Department of Psychiatry and Addictology, Université de Montréal

Correspondence to Roula Haddad; [roula.haddad@umontreal.ca](mailto:roula.haddad@umontreal.ca)

## Abstract

**Background.** Cannabis use can generate potential avoidable harms, hence the need for effective preventive measures and treatment. Studies show the efficacy of harm reduction (HR) in minimizing undesirable consequences associated with this use. Despite its proven efficacy, HR in cannabis use remains poorly applied by many health and social services (HSS) practitioners, especially with young people. However, knowledge regarding the underlying reasons for this is limited. To fill this gap, we aimed to identify facilitators of and obstacles to HSS practitioners' adoption of HR in cannabis use across OECD countries.

**Methods.** We conducted a scoping review, guided by Arksey and O'Malley's model. The search strategy, executed on health databases and in the grey literature, captured 1,804 studies, of which 35 were retained. Data from these studies were extracted in summary sheets for qualitative and numerical analysis.

**Results.** Facilitators and obstacles were grouped into four themes: stakeholders' characteristics (e.g., education, practice experience); clients' characteristics (e.g., personal, medical); factors related to HR (e.g., perceived efficacy, misconceptions); factors related to the workplace (e.g., type of workplace). Data were also extracted to describe the populations recruited in the selected studies: type of population, clientele, workplace.

**Conclusion.** Several factors might facilitate or hinder HSS practitioners' adoption of HR in cannabis use. Taking these into consideration when translating knowledge about HR can improve its acceptability and applicability. Future research and action should focus on this when addressing practitioners' adoption of HR.

**Keywords:** Harm reduction; Cannabis; Health; Practitioners; Factors; Facilitators; Obstacles; Practice

## Background

### Cannabis use

Psychoactive substances (e.g., cannabis, alcohol, nicotine, cocaine, heroin) are defined as substances whose use affects mental processes (e.g., perception, cognition, emotions, and mood) and behaviors without necessarily leading to an addiction or a substance use disorder (SUD) (1, 2). Among these substances, cannabis ranks as the third most consumed psychoactive substance globally among both adults and youth, after tobacco and alcohol (3-5). Canada presents one of the highest rates of cannabis use among adolescents (15 to 17 years old) and young adults (18 to 24 years old) in the Organisation for Economic Co-operation and Development (OECD) countries (3, 6, 7). In 2023, 26% of Canadians aged 15 and older reported using cannabis in the past year, up from 22% in 2018, indicating an increase in cannabis use following its legalization (8). However, these rates might be based on increased ease around revealing cannabis use, as people who experience stigmatization in the healthcare system might be more reluctant to disclose their cannabis use history (9). In a 2008 study among youth facing psychosocial adjustment difficulties and living in Quebec's residential treatment facilities, a substantial 78% had already used cannabis, with almost half presenting a problematic use (10). It is worth noting that our team intend to rely on the results of this study to conduct a future one among health and social services (HSS) practitioners and stakeholders working with youth facing adjustment difficulties in Quebec.

Cannabis use encompasses various methods, including smoking, ingesting, vaporizing, and vaping (3, 6, 7, 11, 12). Individuals might use non-prescribed cannabis for several purposes, such as pleasure-seeking, coping with difficult situations, self-medicating, curbing the appetite, etc. (13, 14). Prescribed cannabis use refers to its supervised medical use to treat or improve symptoms associated with a disease or a disorder (14).

Recreational cannabis use does not necessarily lead to a cannabis use disorder (CUD), in that most people use it infrequently with minimal repercussions at lower usage rates (15, 16). Leung et al. (17) found that, among people who use cannabis, 4 out of 5 will not develop a CUD. Moreover, cannabis is considered to have less severe consequences on an individual and populational level compared to some other substances, such as alcohol and tobacco (18, 19). Nevertheless,

increased cannabis consumption could lead to harmful consequences for health and well-being (e.g., respiratory problems, deterioration of mental well-being, reduced academic performance, unemployment, CUD) (4, 5, 20-24). CUD is characterized by an ongoing problematic usage pattern generating negative consequences (25). Given these potential adverse outcomes, it is becoming crucial to establish prevention and intervention programs targeting adults or youth who use cannabis (7, 22).

### **Cannabis use reduction and abstinence-based models**

In the late 1900s, the United Nations (UN) published three conventions to criminalize the possession, use, and manufacture of illegal drugs: the Single Convention on Narcotic Drugs (1961), the Convention on Psychotropic Substances (1971), and the Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances (1988) (26, 27). These conventions influenced many countries, especially the United States of America, which launched the “War on Drugs” under President Nixon in 1971 (26, 28, 29). This led to the widespread adoption of abstinence-based models to prevent and address substance use (15, 30). These models, which focus on complete cessation of substance use, have been foundational in many prevention and intervention programs, including those targeting vulnerable populations such as youth in foster care centers (21). Despite its potential to reduce the frequency or quantity of substance intake, abstinence-based models for youth have encountered criticism on several fronts (21). They often fail to equip individuals with skills to manage potential harms, rely on fear-based tactics, do not address pivotal influencers of usage like peer pressure, and show high rates of relapse and dropout (20, 21, 31, 32). Several studies have shown the limited efficacy of abstinence-based models, especially among youth (33, 34). For instance, programs like Project DARE (Drug Abuse Resistance Education) and Project ALERT have demonstrated limited short-term effects and sometimes harmful long-term effects, such as lower self-esteem and no significant impact on substance use (33-36). Moreover, practitioners working with youth in foster care centers face challenges when implementing abstinence-based programs, as these young people find such programs unrealistic and have developed strategies to circumvent their application (13). Considering the limitations

associated with abstinence-oriented programs, it is becoming imperative to implement alternative and more adaptable treatments that are effective for people who use substances, such as harm reduction (HR) (21, 32, 37).

## **Harm reduction in cannabis use**

### **Description**

Harm reduction (HR) in cannabis use aims to minimize the harmful outcomes associated with the substance, spanning the individual, psychological, legal, and social spheres (20, 32, 37). This model offers a comprehensive public health framework guided by values of pragmatism and humanism, approaching substance use as a long-standing societal reality without moral judgment (5, 15, 31, 38). Whether for adults or adolescents, HR acknowledges the individual's autonomy in making choices rather than imposing mandatory cessation, which is particularly beneficial for those who find cessation from substances undesirable or unfeasible (32, 37, 39, 40). HR in cannabis use also aims to help individuals make informed and responsible decisions to minimize the adverse individual outcomes linked to their usage (15, 37, 38). While abstinence can be a desirable end goal in HR interventions, it is distinct from HR when it becomes a mandated objective or admission criterion (31).

HR clarifies the concept of safer substance use that is influenced by three interconnected factors, as presented in the “drug, set, and setting” framework: the drug (quantity, frequency of use, tolerance to the substance, combinations with other substances, etc.), the set (e.g., the individual's physical and mental health status), and the setting (location, time of day, legal regulations, etc.) (5, 41, 42). For young people, who are often referred to treatment by external sources like parents or schools, HR addresses their ambivalence about discontinuing substance use and considers their personal characteristics (e.g., impulsivity, sensation-seeking), relapse experiences, engagement in treatment, emotional regulation, etc. (23, 40).

### Effectiveness

Among adults, HR interventions for non-injected drugs have been extensively researched and have shown promising outcomes in diminishing the adverse harms associated with substance use (20, 21, 32). For adolescents and young adults, the emphasis shifts more toward school-centered initiatives that combine prevention and early interventions strategies (4, 11). Most studies have tackled alcohol use, with limited attention directed toward cannabis or the implementation and effectiveness of HR-based interventions among youth (4, 11, 20). Indeed, current school-based HR programs, such as SHAHRP (School Health and Alcohol Harm Reduction Project) in the United Kingdom and SCIDUA (Integrated School- and Community-based Demonstration Intervention Addressing Drug Use among Adolescents) in Canada, have demonstrated effectiveness in fostering safer attitudes toward cannabis or substance use and diminishing adverse outcomes (21, 43, 44). Consequently, researchers have advocated for integrating HR principles into interventions tailored for adolescents and young adults (13).

### HR acceptability

Despite its proven effectiveness, HR acceptability remains controversial among HSS practitioners (45, 46). Our aim in this section is to explore the general acceptability of HR, independently of the substance or the population (i.e., not limited to cannabis). In fact, valuable parallels can be drawn from its acceptability across various substances. This broader scope enriches our understanding and highlights how practitioners' acceptability of HR is based on its principles rather than the substance involved.

A study conducted by MacCoun (47) confirmed that, among practitioners who did not support HR in substance use, some grounded their choice in moral considerations, regardless of its efficacy (47). Numerous obstacles constrain its application by healthcare professionals such as the ambiguities in its conceptualization; for instance, some practitioners perceive HR as conveying the wrong message by suggesting a level of tolerance or even endorsement of substance use (31, 32, 48). MacCoun replied to this critique by suggesting that, if HR service providers wished to convey a message, it might be along the lines of: "[...] if you will not quit using drugs, we can help

you to use them less harmfully” (MacCoun, 1998, p. 1202). Moreover, not all professionals perceive complete abstinence from substance use as an objective attainable through HR (49). Confusion also arises between reducing usage (i.e., frequency and amount) and minimizing harm (i.e., altering consumption practices such as contexts and mixtures to mitigate harmful consequences) (31). These misconceptions show the necessity for raising awareness, providing training, and offering supervision to practitioners interested in adopting HR (32). Ethical dilemmas and issues arising from healthcare practitioners’ personal, collective, and professional values and the therapeutic model of abstinence can also impede HR adoption (31). HR diverges from traditional treatments by permitting risky behaviors and acknowledging HR in drug use as a legitimate outcome (31, 48). Practitioners may also have concerns regarding potential legal, societal, and health-related problems among their clients (13, 32). Furthermore, HR adoption must contend with other challenges, including insufficient funding, stigma that undermines demand for care, opposition from local authorities, and lack of services and trained personnel (45).

However, several factors perceived as benefits have been identified as facilitators of HR adoption by healthcare providers. These include a broadening of the range of acceptable objectives, enhancement of clients’ decision-making capabilities, the cultivation of positive and good-quality relationships, and effective management of relapses (32). A study by Sharp et al. (45) indicated that clarifying the positive impacts of HR (such as safety) at the community level and ensuring the availability of resources could increase the likelihood of its adoption.

### **Purpose of this scoping review**

Even though the effectiveness of HR has been established, its implementation faces several limitations, such as HSS practitioners’ reluctance to apply it (31, 45). To our knowledge, there has been no comprehensive examination of the scientific literature that systematically pinpoints the factors enabling or hindering the adoption of HR in the context of cannabis use. To fill this gap, we aimed to identify, through a scoping review, facilitators of and obstacles to HSS practitioners’ adoption of HR in cannabis use.

## Methods

The detailed research protocol for this study has been published (50). The study follows the methodological steps of scoping reviews (51, 52). This type of review has gained prominence in recent times and is categorized among knowledge synthesis reviews (51, 53). Although there is no universal definition for scoping reviews, several factors set them apart from other types of knowledge syntheses (54). For instance, scoping reviews tackle broad research questions, encompassing studies with diverse designs and multiple sources of evidence, thereby providing an overarching view of the available literature around a concept (55, 56). Furthermore, in a scoping review, evaluating the methodological quality of the studies included is suggested but optional (57, 58). We decided to conduct this type of knowledge synthesis to review research activity in a given area, to summarize and disseminate existing research findings in a subsequent study to practitioners through a knowledge translation process, and to identify literature gaps (55).

The foundational model for conducting scoping reviews was introduced by Arksey and O'Malley (55) and encompasses six stages. Our methodology is guided by this model, which was later refined by Levac et al. (56) and revised by members of the Joanna Briggs Institute (JBI) (59). The six sequential stages we adhered to are: 1) determining the research question and the objective; 2) identifying relevant studies; 3) selecting studies; 4) charting the data; 5) collating, summarizing, and reporting the results; and 6) conducting a consultation exercise (optional).

The research protocol has been documented following the framework of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) grid (53). This grid serves as an extension of the original PRISMA grid tailored for Cochrane-type systematic reviews and is crucial in upholding the study's transparency and replicability (53, 58).

### **Stage 1: Determining the research question and the objective**

Initiating a scoping review involves not only delineating the research questions but also clarifying objectives (54, 55, 58). Our scoping review is fundamentally exploratory, aimed at identifying

facilitators of and obstacles to HSS practitioners' adoption of HR in cannabis use. We drew upon the Population-Concept-Context (PCC) model (58) to formulate the research question: What factors influence practitioners (population) in the health and social services fields (context) to adopt HR in cannabis use (concept)? We also identified specific research questions associated with the components of the PCC model:

- Question 1, related to concept and context: What are the facilitators of and obstacles to HSS practitioners' adoption of HR in cannabis use?
- Question 2, related to population: Who are the clientele of the HSS practitioners identified in the studies (e.g., adolescents and young adults, pregnant persons, individuals with psychotic disorders, etc.)?
- Question 3, related to concept: What is the definition of HR in cannabis use?

## **Stage 2: Identifying relevant studies**

### Search strategy

The development of the search strategy followed an iterative approach. Initially, a senior librarian at the Quebec Library on Addictions (*Bibliothèque québécoise sur les dépendances*) crafted three distinct search strategies, each centered around different concepts, which were then tested on the Medline database. The first 50 results from each strategy were assessed, and the strategy was chosen that effectively grouped terms related to concepts of harm reduction, clinicians, and cannabis. The chosen search strategy was then reviewed by a second information professional from the RENARD Research Team on Knowledge Translation, who further adapted and tailored it to align with the designated databases. The Peer Review of Electronic Search Strategies (PRESS) tool was employed by the librarians as a reference during this process (60). The search strategy, initially executed on Medline and later adapted for other selected databases, is presented in Additional file 1.

### Information sources

To identify relevant published and unpublished studies, a variety of information sources were explored (51, 55, 58). With the guidance of the two librarians, the search strategy was executed on October 10, 2022, across prominent health and intervention databases, including Medline, PsycINFO, CINAHL, Web of Science, Embase, and Sociological Abstracts. To explore the grey literature, the search strategy was tailored to suit the Google Web and Google Scholar search engines, along with the Érudit (French database) and BASE databases. It should be noted that several search strategies were developed for the Google Web engine. When these were executed, the results on the first page were consulted, and when these appeared relevant, the following pages were screened until no further relevant results appeared. All identified documents across all databases were organized within Zotero software for convenient access by the research team members. Additional sources of information were also searched to identify any publications overlooked by the electronic searches: after completing the third stage, the reference lists of the selected studies were manually searched, as were the included studies in the identified knowledge synthesis.

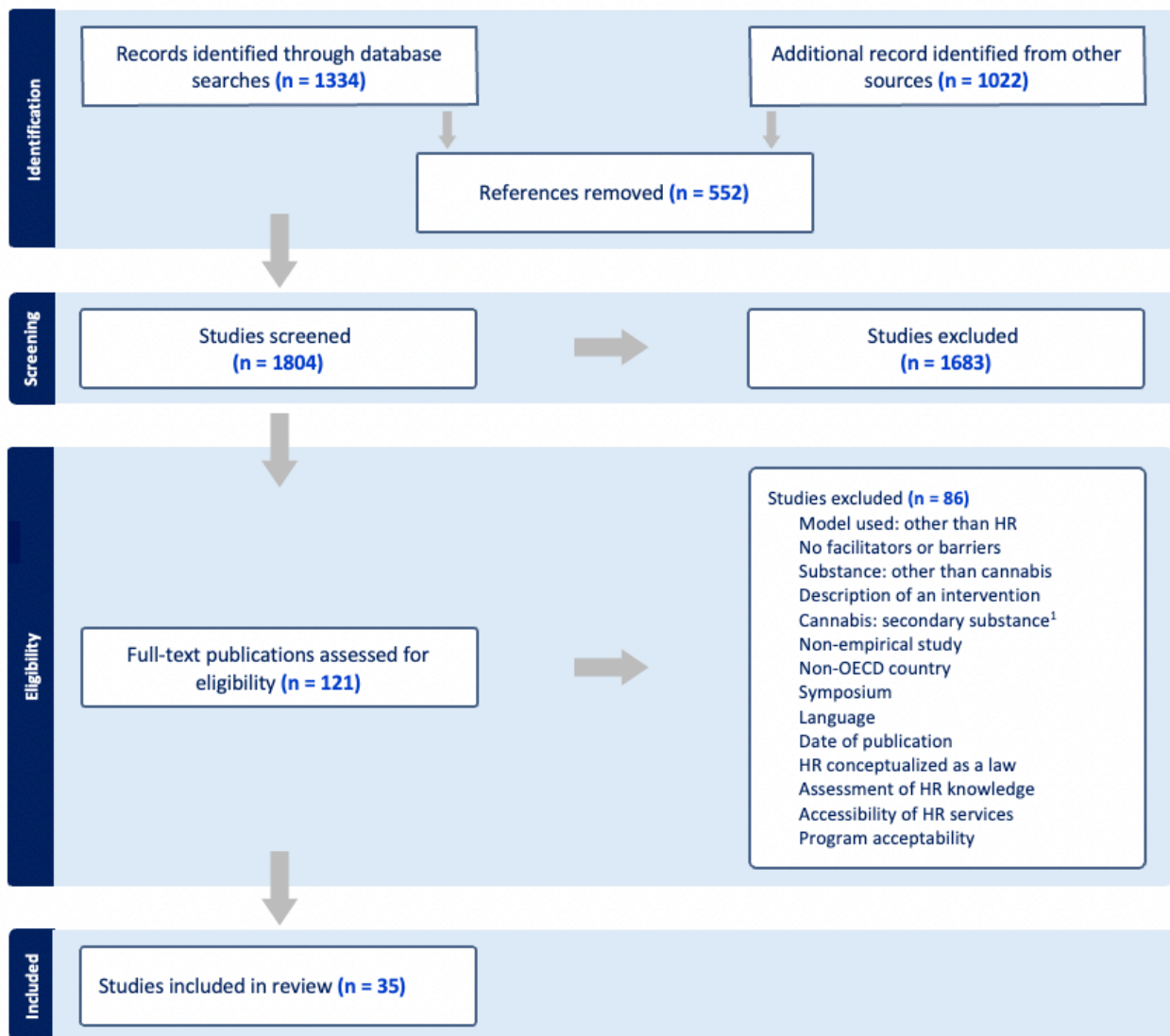
### **Stage 3: Selecting studies**

After completing and the second stage, identified duplicates were eliminated. The remaining 1,804 documents were imported into Covidence software. Subsequently, two reviewers (RH, YS) independently read the titles and abstracts of all the identified studies to assess their potential relevance for inclusion based on predefined inclusion and exclusion criteria (Table 1). The two reviewers met regularly to reconcile any discrepancies in the selection process and to adjust the eligibility criteria if necessary. When needed, other reviewers (CD, JSF, CH) were consulted to mediate in the resolution of any conflict. Studies were excluded when they met at least one exclusion criteria. Following this initial phase of screening, the inter-rater agreement between the reviewers was 0.94.

The 121 documents selected based on potential relevancy were the subject of the next stage, full-text reading. Again, the two reviewers recorded their choices in the Covidence platform, and any

new conflicts were addressed in the same way as in the first stage (i.e., titles and abstracts reading). Inter-rater agreement for this step was 0.78, and upon its completion 35 studies were retained for inclusion. The steps in the third stage (i.e., study selection) are represented visually in the following PRISMA diagram (Figure 1).

**Figure 1** Flow chart detailing identification and selection of studies for inclusion



### Inclusion and exclusion criteria

Explicit inclusion and exclusion criteria were defined and adjusted throughout the study selection stage (Table 1). Empirical studies of quantitative, qualitative, or mixed designs, including those published in the grey literature, were selected. Included studies focused on identifying factors that facilitate or hinder HSS practitioners' adoption of HR in cannabis use<sup>1</sup>. The studies included in our review did not differentiate between CBD and THC products, and thus the review addresses cannabis use in a more generalized manner. To facilitate comparability and extend the applicability of findings to the specific context of Quebec, the review encompassed studies conducted within any of the 38 countries affiliated with the OECD. Articles published from 1990 onwards were included, as that decade (1990s) marked the international emergence of HR and its subsequent expansion. Papers not aligned with these specified inclusion criteria were excluded from consideration. As stated, although systematic reviews were omitted to prevent duplication and ensure equitable representation of the selected papers, their reference lists were scanned to identify potential additional references.

Table 1. - Inclusion and exclusion criteria

Criteria	Inclusion criteria	Exclusion criteria
<b>Type of study</b>	- Empirical study: quantitative, qualitative, or mixed	- Study that does not present empirical results (e.g., theoretical study, conceptual framework, etc.) or knowledge review (e.g., systematic or literature review) - Interviews conducted outside of an empirical research framework, such as those with journalists
<b>Type of document</b>	- Peer-reviewed scientific article, research report, dissertation, thesis	- Book, practice guide
<b>Conceptual framework</b>	- HR in cannabis use - Cannabis risk reduction - Non-abstinence in cannabis use	- Another conceptual framework

<sup>1</sup> We excluded studies where cannabis was used as a harm reduction strategy to mitigate the harms of other substances. We focused instead on studies that addressed harm reduction directly related to cannabis use itself.

<b>Objective</b>	<ul style="list-style-type: none"> <li>- Identification of factors<sup>1</sup> facilitating or hindering practitioners' adoption of the HR approach<sup>2</sup> in cannabis use</li> </ul>	<ul style="list-style-type: none"> <li>- Evaluation of the efficacy of interventions based on HR</li> <li>OR</li> <li>- Stakeholder perceptions of the use of cannabis as an HR strategy to circumvent the effects of other drugs</li> <li>OR</li> <li>- Attitudes toward decriminalization of cannabis</li> </ul>
<b>Psychoactive substance being studied</b>	<ul style="list-style-type: none"> <li>- Marijuana, hashish, or cannabis for non-medical purposes</li> <li>- "Drug" if cannabis is part of its conceptualization in the study</li> </ul>	<ul style="list-style-type: none"> <li>- Any substance other than marijuana, hashish, or non-medical cannabis (e.g., tobacco, alcohol, medical cannabis, MDMA, Ecstasy)</li> <li>- Study that focuses on "performance and image enhancing drugs" or "crack" or "new psychoactive substances"</li> </ul>
<b>Target population</b>	<ul style="list-style-type: none"> <li>- Practitioners<sup>3</sup> working in the health and social fields<sup>4</sup></li> <li>- Practitioners in training</li> </ul>	<ul style="list-style-type: none"> <li>- People who use cannabis<sup>5</sup></li> </ul>
<b>Country of study</b>	<ul style="list-style-type: none"> <li>- OECD country</li> </ul>	<ul style="list-style-type: none"> <li>- Non-OECD country</li> </ul>
<b>Publication date</b>	<ul style="list-style-type: none"> <li>- From 1990 onwards</li> </ul>	<ul style="list-style-type: none"> <li>- Before 1990</li> </ul>
<b>Language</b>	<ul style="list-style-type: none"> <li>- French and/or English</li> </ul>	<ul style="list-style-type: none"> <li>- Languages other than French or English or text not available</li> </ul>

<sup>1</sup> "Factors" include perceptions, beliefs, facilitators, obstacles, oppositions, attitudes, opinions, barriers, biases, motivations, preferences, determinants, incentives, influences, and perspectives on the adoption of HR in cannabis use, as well as its acceptability and receptibility.

<sup>2</sup> "Approach" refers to strategies, interventions, practices, services, methods, techniques, treatments, programs, or guides for the HR approach in cannabis use.

<sup>3</sup> "Practitioners" includes healthcare and psychosocial services personnel, professionals, or practitioners, allied healthcare personnel, professionals, or practitioners, social workers, counsellors, psychoeducators, educators, nurses, criminologists, psychologists, clinicians, caregivers, therapists, psychotherapists, and physicians.

<sup>4</sup> Although health practitioners and social services practitioners are trained in different disciplines, their interdisciplinary collaboration and network-based work can blur the distinctions between their settings. This is why our search strategy included both disciplines, ensuring that we did not omit any relevant studies.

<sup>5</sup> Studies addressing the views of people who use cannabis regarding HR or its adoption by practitioners were excluded.

### Stage 4: Charting the data

To ensure a consistent analytical approach across the chosen studies, specific variables of interest were determined in accordance with the research questions (55). These variables were used to generate summary sheets in Microsoft Excel to extract findings (Table 2). This method is an analytical descriptive recording of the data (55, 58, 61). The primary author (RH) extracted data from the selected studies and created summary sheets. Throughout this process, the research supervisor (CD) validated their accuracy and coherence, and verified their alignment with the original research questions (58).

Table 2. - Summary sheets

General variables	Specific variables
<b>General characteristics of the study</b>	Study title
	Author(s)
	Language of publication
	Date of publication
	Period of publication
	Journal
	Type of article
	Full reference
	Country of study
	Psychoactive substance under study
Legal status of cannabis in country of study	
<b>Introduction</b>	Main concepts
	Definition of the main concept: HR in cannabis use
	Research question(s)
	Objective(s)

	Hypothesis
<b>Methodology</b>	Study design Target population Place of work of the target population Inclusion criteria for participants Recruitment method Sample size Country of origin of participants Clientele of the population recruited Data collection method Analysis steps
<b>Results</b>	Sample presentation Key findings: 1) facilitators and 2) obstacles to practitioners' adoption of HR in cannabis use Secondary outcomes or other results
<b>Conclusion</b>	Study strengths Study limitations Future research needs and courses of action

### **Stage 5: Collating, summarizing, and reporting results**

Applying the eligibility criteria, selected studies were collected, summarized, and analyzed. To do this, the summary sheets for each selected study were compiled in a table and synthesized (see Additional file 2). This merged table was subject to both a numerical analysis and a narrative organization encompassing a thematic qualitative analysis (52, 53, 55). The numerical analysis explored the scope, nature, and distribution of the included studies, with a focus on various attributes, such as publication date, country of origin, and document type. Subsequently, RH conducted a thematic analysis, which was then validated by the coauthors (CD, JSF, CH). The analysis involved grouping all findings into themes (e.g., stakeholders' characteristics, clients' characteristics), sub-themes, and categories (62). The objective was to present the data clearly, concisely, and comprehensively, as well as to uncover connections between the collected data and the research questions (62).

## **Stage 6: Conducting a consultation exercise**

Consulting experts is optional, but it enhances the methodological rigor of scoping reviews (55). For the present study, this step was partially executed; the co-authors (CD, JSF, and/or CH) were invited to serve as consultants to elucidate findings and corroborate the ensuing recommendations. These consultation sessions were held following the acquisition of preliminary results and again upon the conclusion of results analysis.

## **Results**

In the following section, we will present the general characteristics of the included studies, the facilitators of and obstacles to HR adoption, the stakeholders' clienteles, and HR definitions. It is important to note that the studies included were conducted among HSS practitioners. However, some studies also recruited other populations (e.g., managers, higher education administrators, etc.). For this reason, when presenting the results, we opted for the term "stakeholders", which includes HSS practitioners, managers, and any other identified population in the studies. When we specifically refer to "practitioners", we are focusing exclusively on HSS practitioners and not including other groups, such as managers.

### **General characteristics of the studies**

Table 3 summarizes the general characteristics of the 35 included studies. Among them, 21 were published between 2011 and 2020, 20 were conducted in the United States, and 30 targeted drugs in general, including cannabis. The studies selected were mainly quantitative ( $n = 16$ ) scientific articles ( $n = 21$ ) published in English ( $n = 32$ ). Cannabis was an illegal substance in 17 studies; its legal status was not mentioned in 11 studies (Table 3).

Table 3. - General characteristics of the studies (N = 35)

<b>Period of publication (N = 35)</b>	<b>N =</b>
From 1990 to 2000	1
From 2001 to 2010	7
From 2011 to 2020	21
After 2020	6
<b>Country of publication (N = 35)</b>	
United States of America	20
Canada	9
United Kingdom	2
United Kingdom and Sweden	1
Australia	1
Ireland	1
Netherlands	1
<b>Language (N = 35)</b>	
English	32
French	3
<b>Type of study (N = 35)</b>	
Scientific article	21
Doctoral thesis	8
Master's thesis	5
Bachelor's research project	1
<b>Study design (N = 35)</b>	
Quantitative studies	16
Qualitative studies	14
Mixed studies	4
Randomized controlled trials	1
<b>Psychoactive substance under study (N = 35)</b>	
Drugs, including cannabis	30
Cannabis	4
Alcohol and cannabis only	1
<b>Legal status of cannabis in studies (N = 35)</b>	
Not mentioned	11
Illegal	17
Legal	7

## Facilitators and obstacles to HR adoption

The extensive list of factors that facilitate or hinder the adoption of HR is available in Additional file 3.

### Facilitators of HR adoption

#### *Theme 1: Stakeholders' characteristics*

In relation to theme 1, the facilitators that appeared most to encourage adoption of HR in cannabis use were linked to stakeholders' level of education: having attended training in SUD or HR ( $n = 5$ ) and holding a high-level degree (Master's or PhD) ( $n = 3$ ) (Table 4). Other facilitators were weakly identified in the studies, such as having attended conferences and/or courses in HR ( $n = 2$ ), number of years of experience in the substance use field ( $n = 3$ ), and sociodemographic characteristics (e.g., young age of the stakeholder) ( $n = 2$ ). In addition, the ability to apply HR ( $n = 1$ ), stakeholders' personal characteristics (e.g., being close to a person presenting a SUD) ( $n = 1$ ), as well as their beliefs and perceptions on this topic (e.g., considering that the zero-tolerance approach may have a reverse effect) ( $n = 2$ ), may have contributed to the acceptability of HR in cannabis use. Lastly, eight studies indicated that their recruited populations (practitioners in training, managers, counselors, social workers, and mental health professionals) were open to the idea of adopting HR for cannabis use in their practice, and those studies were conducted in Canada, the United States of America, Australia, and Ireland (32, 63-69).

#### *Theme 2: Clients' characteristics*

Stakeholders appeared more inclined to adopt HR in cannabis use when clients presented moderate SUDs ( $n = 7$ ) and when HR was used as an intermediate treatment goal ( $n = 6$ ) (Table 4). The client's psychiatric status (e.g., comorbidity with a psychiatric disorder) ( $n = 2$ ) and personal characteristics (e.g., pregnancy period, young age) ( $n = 2$ ) sometimes favored the acceptability of HR. Other facilitators related to substance use (e.g., presence of non-use days) ( $n$

= 1) and therapy considerations (e.g., high motivation for change) ( $n = 1$ ) were weakly identified in the studies included.

### *Theme 3: Factors related to HR*

The facilitators related to theme 3 fall into three categories: 1) HR principles; 2) HR efficacy; and 3) external and other factors.

#### HR principles

The principles that appeared most to promote the acceptability of HR in cannabis use were the ability to focus on clients' needs and objectives ( $n = 6$ ) and on the present ( $n = 3$ ), and to create a non-judgmental framework ( $n = 4$ ) (Table 4). Other HR principles also appeared to encourage its adoption by stakeholders. HR was perceived as a flexible ( $n = 3$ ), non-punitive ( $n = 3$ ), non-stigmatizing ( $n = 3$ ), preventive ( $n = 3$ ), and motivational intervention or prevention model ( $n = 2$ ). It was opposed to cannabis criminalization ( $n = 2$ ) and valued clients ( $n = 2$ ). In addition, achieving minimal goals was perceived as success, and desired behaviors were rewarded ( $n = 2$ ). Finally, HR was perceived as educating young people about substance use through prevention activities, which enhanced its adoption by professionals ( $n = 4$ ).

#### HR efficacy

The perceived efficacy of HR in cannabis use and its benefits ( $n = 4$ ), especially when abstinence was unattainable ( $n = 2$ ), favored its adoption by stakeholders. Moreover, HR was seen as useful in fostering clients' engagement ( $n = 8$ ), especially among young people ( $n = 1$ ), as it put them in control of their lives ( $n = 1$ ) (Table 4). Other aspects linked to the HR efficacy in cannabis use made professionals more open to its adoption. For example, HR was seen as an intervention that promotes the therapeutic alliance ( $n = 3$ ), quality of life ( $n = 2$ ), reflection and safe decision-making ( $n = 3$ ), as well as a sense of responsibility and autonomy ( $n = 3$ ). Finally, stakeholders perceived that HR in cannabis use contributed to the reduction and/or control of use ( $n = 4$ ) and

minimized symptom severity ( $n = 2$ ). They also considered that HR was aimed at reducing guilt and shame ( $n = 2$ ) as well as harm to the individual ( $n = 2$ ) or to the pregnant person and the fetus ( $n = 3$ ).

#### External and other factors

External factors played a role and appeared to encourage the acceptability of HR in cannabis use, such as the presence of laws that favored its adoption ( $n = 3$ ) and the ineffectiveness of the War on Drugs ( $n = 1$ ) (Table 4). Finally, Moore and Mattaini argued that using a “Consequence Analysis” (CA) instrument made stakeholders more inclined to adopt HR in cannabis use (70). When asking professionals to respond to a survey on their openness toward HR, the CA method consists of also requesting that they predict each item’s effect (i.e., helpfulness or harmfulness; large or small) on a client; this reflection appeared to generate more openness among professionals toward adopting HR in their practice (70).

#### *Theme 4: Factors related to the workplace*

Management leadership and support were the most cited facilitators related to theme 4 ( $n = 4$ ) (Table 4). In fact, studies revealed that when managers were in favor of HR, gave HSS practitioners the freedom to apply it in their practice, and supported them regularly in its implementation, practitioners felt more at ease and encouraged to adopt it (66, 71). Working in specific settings (e.g., universities, homeless services, private practice) also appeared to foster HR adoption. In the case of stakeholders undergoing HR training, the qualities of the trainer (e.g., negotiation skills) also sometimes favored its adoption ( $n = 1$ ).

## Obstacles to HR adoption

### *Theme 1: Stakeholders' characteristics*

Stakeholders' lack of training in SUD or HR was the obstacle most frequently cited in the included studies ( $n = 10$ ) (Table 4). In addition, stakeholders with a lower level of education (certificate or bachelor's degree) appeared more reluctant to adopt HR ( $n = 2$ ). The selected studies also pointed out certain sociodemographic characteristics of stakeholders that might limit HR adoption, such as their living environment (e.g., rural or semi-urban) ( $n = 1$ ) and age (e.g., older age) ( $n = 2$ ). In addition, stakeholders' beliefs and perceptions (e.g., stigmatizing drug use) ( $n = 2$ ), practice experiences (e.g., lack of skills in applying HR) ( $n = 1$ ), and personal characteristics (e.g., personal history of substance use) ( $n = 1$ ) sometimes also hindered HR acceptability for them. Finally, three studies indicated that their recruited populations were not open to adopting HR and those studies were conducted in the United States of America (72, 73, 92). These practitioners worked with young people involved in the criminal justice system, pregnant persons, new parents, and/or young adults.

### *Theme 2: Clients' characteristics*

Stakeholders appeared less open to adopting HR in cannabis use when clients presented a severe SUD ( $n = 8$ ) and when HR was used as the final treatment goal ( $n = 6$ ) (Table 4). Clients' personal characteristics (e.g., age between 18 and 30 years) ( $n = 3$ ) and medical ( $n = 2$ ) or psychiatric status (e.g., presence of a comorbidity) ( $n = 3$ ) could also hinder the adoption of HR in cannabis use. Finally, factors related to substance use (e.g., polysubstance use), as well as relational (e.g., relationship status), familial (e.g., family support responsibilities), occupational (e.g., employment status), psychological (e.g., emotional stability status), and social (e.g., size of social network) characteristics were weakly raised in the studies as obstacles.

### *Theme 3: Factors related to HR*

#### Efficacy of HR and misconceptions

Uncertainties about the efficacy and/or safety of HR ( $n = 6$ ) and misconceptions around HR practices (e.g., lack of knowledge about treatment application) ( $n = 6$ ) were the most frequently cited obstacles related to theme 3 (Table 4). Other misconceptions also limited its adoption, such as the idea that HR conveyed the wrong messages to people who use substances ( $n = 4$ ) or promoted substance use ( $n = 4$ ).

#### External and other factors

Other external obstacles were also cited, such as lack of funding ( $n = 5$ ), lack of research on HR ( $n = 3$ ), and the illegality of cannabis for certain clientele ( $n = 3$ ) (Table 4). In the case of pregnancy, HR adoption appeared to be limited by the lack of research on its impact on the fetus ( $n = 2$ ) and the ethical dilemmas that could arise ( $n = 2$ ).

### *Theme 4: Factors related to the workplace*

Workplace philosophies that run counter to HR in cannabis use ( $n = 4$ ) and lack of cooperation and collaboration within the team ( $n = 4$ ) could hinder the adoption of HR (Table 4). Stakeholders in favor of adopting HR in their practice found it difficult to do so when their managers were not aligned with their standpoint or when the workplace position on HR was unclear (32, 66, 74, 75). Working in certain settings (e.g., detoxification residences, residential rehabilitation services, and community-based organizations) could also limit its adoption. Davis and Rosenberg (74) suggested that fear of losing funding or accreditation if HR was adopted also came into play.

Table 4. - References for the frequently cited facilitators and obstacles to HR adoption

	Facilitators	Obstacles
<b>Theme 1: Stakeholders' characteristics</b>		
Education	Training in SUD or HR (64-66, 70, 76)	Lack of training in SUD or HR (32, 64, 66, 70, 71, 75, 77-80)
	High education level (64, 67, 73)	Low education level (67, 73)
Sociodemographic characteristics	Young stakeholder age (73, 74, 81)	Older stakeholder age
Beliefs and perceptions	Considering that the zero-tolerance approach may have a reverse effect (63, 82)	Maintaining personal beliefs stigmatizing drug use (75, 81)
	<b>Theme 2: Clients' characteristics</b>	
Factors related to SUD	SUD severity: moderate (74, 76, 81, 83-86)	SUD severity: severe (74, 76, 81, 83-87)
	HR used as intermediate treatment goal (74, 76, 81, 83-86)	HR used as final treatment goal (74, 76, 81, 83, 84, 86).
Medical and/or psychiatric status	Comorbidity with a psychiatric disorder (32, 64)	(71, 74, 75, 84)
<b>Theme 3: Factors related to HR</b>		
HR principles	HR focuses on clients' needs and objectives (32, 66, 69, 76, 79, 83, 87, 89)	
	HR creates a nonjudgmental framework (32, 77, 89, 80)	
HR efficacy and/or misconceptions	HR efficacy Perceptions of HR benefits and efficacy (32, 64, 72, 91)	Misconceptions related to HR Uncertainties about HR efficacy and/or dangerousness (32, 64, 74, 76, 78, 80)

	HR seen as fostering clients' engagement	Misunderstanding HR practices (e.g., lack of knowledge about treatment application)
	(32, 64, 66, 75, 79, 88, 90, 91)	(32, 64, 71, 78, 79, 89)
External and other factors	Laws that favor HR adoption	Illegality of cannabis among a specific clientele
	(66, 69, 82)	(74, 79, 82)
<b>Theme 4: Factors related to the workplace</b>		
General factors	Management leadership and support	Workplace philosophies that run counter to HR
	(66, 71, 85, 91)	(32, 71, 74, 88)

### Stakeholders' clienteles

The second research sub-question sought to investigate the “population” component of the PCC model: “Who are the clientele of the HSS practitioners identified in the studies?” To provide a complete and detailed response to our sub-question, we decided to tackle three variables of interest rather than one: 1) the HSS practitioners' clienteles; 2) the studies' populations (i.e., practitioners, stakeholders); and 3) the workplace (see Additional file 4).

First, the populations recruited in the selected studies worked mainly with adults ( $n = 10$ ), young adults ( $n = 9$ ), and adolescents ( $n = 6$ ). Some practitioners worked with other specific clienteles, such as individuals with a mental health disorder or from communities of color, pregnant persons, young people involved in the criminal justice system, young adults with a first psychotic episode, polysubstance users, HIV-positive persons, new parents, homeless persons, and prison or probationary populations (see Additional file 4).

Second, the selected studies were carried out with professionals occupying a variety of functions, and some targeted more than one population. Mental health professionals (e.g., therapists, psychotherapists, psychologists, clinicians, addiction specialists) ( $n = 16$ ), counselors ( $n = 10$ ), and managers ( $n = 8$ ) were the most frequently recruited stakeholders. Other populations were also

targeted in some of the selected studies, such as social workers ( $n = 8$ ), front-line healthcare workers (e.g., nurses) ( $n = 8$ ), university students (i.e., practitioners in training) ( $n = 3$ ), psycho-educators or educators ( $n = 1$ ), police officers ( $n = 1$ ), health professionals (e.g., physicians, psychiatrists) ( $n = 1$ ), school staff (e.g., principals, teachers) ( $n = 1$ ), and higher education administrators (e.g., deans, directors) ( $n = 1$ ) (see Additional file 4).

Third, the workplaces in which the recruited stakeholders worked most were: outpatient agencies for SUDs and/or mental health disorders ( $n = 10$ ); inpatient or residential addiction rehabilitation services ( $n = 9$ ); community-based organizations ( $n = 8$ ); and private practices ( $n = 8$ ). Workplaces mentioned moderately were: detoxification residences; halfway houses; hospitals; universities; and prison settings. The least-cited settings were: schools; inpatient agencies (public and/or private) for SUDs and/or mental health disorders; homeless services; assessment, referral, and counseling services; the criminal justice system; early intervention services for first-episode psychosis; public agencies; agencies for pregnant persons with SUDs; and the police sector (see Additional file 4).

### **HR definitions**

Given the lack of consensus on the definition of HR, our review aimed to address this issue and examine how it is conceptualized across different studies. This also enabled us to identify and compare the definitions of HR used in the included studies, ensuring a clearer understanding of how the concept is conceptualized across various studies.

To answer the third research sub-question related to the “concept” component of the PCC model (“What is the definition of HR in cannabis use?”), we first collected the definitions cited in the studies and then analyzed them in a descriptive qualitative manner. By coding the definitions, we were able to identify recurring commonalities. However, 12 studies did not define HR, focusing instead on its acceptability to stakeholders or people who used psychoactive substances. In the studies that did define HR ( $n = 23$ ), the focus was either on: 1) HR conceptualization; 2) HR principles; or 3) HR efficacy (see Additional file 5).

First, some studies pointed out that it is often designated as a “non-abstinence model” ( $n = 2$ ) and does not have a universal definition ( $n = 1$ ). Second, the studies that defined it by relying on HR principles mainly emphasized the notions that HR does not primarily focus on substance abstinence ( $n = 5$ ), that it originates from the field of public health ( $n = 5$ ), and that it broadens the spectrum of intervention goals deemed acceptable in HR treatments ( $n = 4$ ). Furthermore, HR enables access to health services ( $n = 3$ ) and implements educational and preventive strategies ( $n = 4$ ) that promote a sense of control or self-efficacy regarding the initiation and/or cessation of use ( $n = 3$ ). HR has also been defined as a pragmatic ( $n = 2$ ) and non-stigmatizing model ( $n = 2$ ) (see Additional file 5). Third, some studies based their definitions of HR on its efficacy. For example, HR has shown potential for reducing the negative legal, medical, professional, social, economic, and/or family harms of the substance ( $n = 15$ ). It is a model that enables moderate or controlled substance use (reduced amount and/or less frequent use) ( $n = 6$ ) and that ensures safe, secure, and enjoyable use ( $n = 6$ ) (see Additional file 5).

## Discussion

HR is a prevention and intervention model aimed at helping individuals moderate and control their substance use while applying safety measures to reduce the harms of the substance on several levels (e.g., legal, medical, professional, social, economic, relational) (84, 92). The main objective of this scoping review was to identify facilitators of and obstacles to HSS practitioners’ adoption of HR in cannabis use in OECD countries. Several factors related to stakeholders’ and clients’ characteristics, to HR attributes, and to the workplace, were found to play a role. To explore our sub-research questions, we retrieved HR definitions as articulated by the authors of the included studies and presented the populations recruited in each study as well as their clienteles and workplaces.

## **Stakeholders' educational background**

Stakeholders' educational background appeared to play an important role in their adoption of HR in cannabis use. Having attended a training program in SUD or HR and holding a high-level degree (master's or PhD) facilitated HR adoption. In contrast, stakeholders who lacked training in this domain and who held lower levels of education (certificate or bachelor's degree) were more likely to be opposed to applying HR in cannabis use in their practice. These findings support certain courses of action identified by other researchers, who point out the need to overcome the lack of knowledge about HR in cannabis use by organizing training, for example, or by clarifying the guidelines for safe cannabis use (32, 64, 66, 75, 78, 79, 81, 89, 92). A systematic review on education for HSS practitioners revealed that those who pursued higher education not only nourished their critical thinking ability, but also tended to be more open to questioning the effectiveness of their previous practice and modifying it accordingly, if necessary (93). This finding confirms our results and can serve to better understand them. In other words, practitioners completing an advanced level of education might find themselves reflecting on the efficacy of their previous practice founded on the abstinence-based model and becoming more open to learning and applying new evidence-based practices (i.e., HR).

However, achieving a higher level of education may not be feasible for several reasons (e.g., time, cost) for many HSS practitioners. To address this reality, institutions and organizations could consider several strategies to make HR training more accessible to practitioners with lower education levels. For instance, they can offer additional training opportunities by creating concise, accessible training modules, offering mentorship programs, and orienting individuals to available training opportunities. Developing alternative training formats that cater to diverse learning needs can also ensure that those less inclined towards HR practices receive the necessary support.

## **Stakeholders' clientele**

It is worth noting that our study does not aim to identify the specific factors that facilitate or limit the adoption of HR in cannabis use based on the type of clientele. Instead, it provides a general overview. Some of the included studies mentioned facilitators and obstacles related to different

client populations, and these will be discussed in the present section. However, not all of the included studies provided detailed information on these aspects.

Our findings reveal that working with certain clienteles affect the acceptability of HR in cannabis use by stakeholders. For example, HSS practitioners are encouraged to adopt HR in cannabis use while working with pregnant persons because it reduces the harms of the substance on both the pregnant person and the fetus, lessens the sense of shame and guilt, and enhances the client's engagement in the treatment. Conversely, some practitioners might be reluctant to apply HR in cannabis use with this clientele due to lack of training and poor comprehension of HR practices during pregnancy, the lack of research on the impact of HR during this period, and the ethical dilemmas that might emerge. In fact, facing ethical dilemmas when applying HR and assessing the potential risks that might emerge are among the influential factors that might limit its implementation with a pregnant person (31, 32, 94).

When working with adolescents or young adults between 18 and 24 years of age, some stakeholders tended to accept HR in cannabis use because it is non-stigmatizing, focuses on the youth's objectives and needs, and thereby enhances their commitment to the treatment. On the other hand, some stakeholders were opposed to applying HR in cannabis use with this young population due to the illegality of cannabis in their regard, concerns about sending the wrong messages, lack of training and poor understanding of HR techniques, or the presence of a non-HR workplace philosophy. These findings are aligned with future research needs as formulated by other researchers on this topic, who stress the need to determine whether practitioners' attitudes towards HR are in line with their work and/or academic environment, the legal status of the substance, and other potentially influential factors (63, 73, 82-85, 89).

Understanding the factors that facilitate and limit the adoption of HR in cannabis use among youth can provide valuable insights to optimize its applicability. For instance, addressing concerns about the legality of cannabis and clarifying HR principles can help mitigate some of the obstacles. Additionally, providing targeted training and resources to practitioners can enhance their ability to effectively apply HR. Practitioners can also use these insights to reflect on their own practices, identify potential obstacles to the adoption of HR among certain groups, and work to enhance its

applicability. Future actions should be informed by these empirical findings to develop strategies that address the unique challenges and leverage the opportunities for HR adoption among youth.

### **Severity of SUDs and other comorbidities**

In this scoping review, HR in cannabis use adoption appeared to be facilitated among practitioners working with clients presenting a moderate SUD (i.e., not severe) and when HR was used as an intermediate, rather than final, treatment goal. This result applied to those working with any clientele and corroborated the findings in our literature review cited earlier. In fact, the long-standing War on Drugs policies and the conceptualization of addiction as a disease sometimes made it harder for practitioners to perceive HR as a legitimate treatment goal (31, 32). A national study excluded from this scoping review because it was conducted in a non-OECD country (Ukraine) also found that addiction treatment providers were more prone to apply HR in the case of harmful cannabis use than for cases of dependence (95). However, in this Ukrainian study, practitioners were more inclined to adopt HR as a final, rather than intermediate, treatment goal when working with clients presenting harmful cannabis use, which is contradictory to our findings (95).

Furthermore, we were not able to conclude on the impact of clients' psychiatric conditions on stakeholders' adoption of HR in cannabis use. Some of the included studies found that practitioners were more encouraged to apply HR with clients who presented a psychiatric comorbidity, whereas other studies indicated that this factor acted as an obstacle to HR acceptability. However, in the presence of a psychiatric comorbidity, we noted that the practitioners inclined toward adopting HR in cannabis use were those working in organizations serving people who use substances (e.g., community agencies or services for homeless populations), whereas those opposed to it were employed in governmental institutions (e.g., outpatient agency for SUD and/or mental health, hospital, halfway house, prison, detoxification residence, inpatient or residential addiction rehabilitation services, private practice). It should also be noted that, while the presence of a psychiatric condition might facilitate or hinder HR adoption, the presence of a medical condition was only considered an obstacle.

## **Impact of perceived HR in cannabis use efficacy**

As stated by Lauritsen (85), it is important not to confuse HR “acceptability” and “perceived efficacy”; these are two different concepts, although one can affect the other. Stakeholders who perceived the benefits of HR in cannabis use, in terms of its capacity to focus on clients’ needs and objectives in the present moment while creating a non-judgmental environment, tended to be more accepting of it. In contrast, practitioners were reluctant to adopt HR in cannabis use when they were uncertain about its efficacy or did not understand its practices. HSS practitioners sometimes perceived HR as ambiguous and requiring tangible implementation methods, which could hinder its acceptability (32). This being said, poor understanding of HR applicability could continue to limit its use by practitioners and lead them to adopt models that are clearer but with limited efficacy, such as abstinence-based models.

Based on these findings, several actions can be taken to increase HR acceptability and perceived efficacy, ultimately leading to more effective treatment outcomes. Organizations might benefit from 1) offering or directing practitioners to HR training programs and ensuring that they are knowledgeable about HR, its applicability, and effectiveness; 2) defining and communicating their stance on the adoption of HR to implement consistent practices; 3) designating a resource person who can answer practitioners’ questions and provide clinical support; and 4) facilitating discussions about beliefs and perceptions related to HR. Ensuring a shared and accurate understanding of the approach among all practitioners can improve its implementation and acceptability.

When discussing the impact of perceived HR efficacy, it is important to keep in mind the concept of Consequence Analysis (CA) raised in one of the included studies (70). As mentioned earlier, integrating the CA method into an HR questionnaire consists of asking participants not only to respond to the questions, but also to predict each item’s effect (i.e., helpful or harmful; large or small) on the client (70). When doing this, practitioners are led to step back, reflect on the effect of each statement, and perceive the benefits and usefulness of HR, so they can become more open toward it (70). This outcome led Moore and Mattaini (70) to recommend that researchers apply the CA method in future studies quantitatively assessing HR acceptability among practitioners and/or stakeholders.

## **Impact of external factors on HR in cannabis use adoption**

External factors were also found to affect HR in cannabis use acceptability, such as laws regarding its adoption, the legal status of cannabis in relation to certain clienteles, the funding situation, or the availability of research on HR. However, we were not able to conclude on the impact of cannabis legalization on attitudes toward HR. Some studies found that practitioners were more persuaded to apply HR when cannabis was legal, whereas in others, practitioners expressed acceptance of HR even when cannabis was illegal. While our study does not definitively determine if cannabis legalization facilitates HR adoption, the legal context in countries like Canada offers a valuable opportunity to enhance HR initiatives. Legalization can create a supportive environment for HR by fostering open dialogue about cannabis use, increasing public awareness, and facilitating funding and resources for HR programs. This framework can also help tailor HR strategies to specific regional needs. This validates the need to further study the impact of cannabis legalization on HR implementation (85, 89).

Moreover, working in a place that does not clearly favor the adoption of HR in cannabis use, might limit its applicability by practitioners. Practitioners are more encouraged to apply HR in their practice when their organization supports it. For example, a study conducted among practitioners working with youth in a residential treatment facility in Quebec recommended adopting a comprehensive HR policy and developing a common vision of their mandate; upon doing this, practitioners became more open to applying HR (46). As stated earlier, some HSS practitioners had concerns about ending the treatment upon achieving HR goals because they conceptualized it as opposed to the traditional therapeutic model of abstinence; this underscores the need for institutional approval to apply HR (31, 32).

## **Strengths and limitations**

This study encompasses several strengths, as we rigorously followed the six stages conceptualized by Arksey and O'Malley (55) for conducting scoping reviews.

First, we formulated the research question (i.e., stage 1) on the basis of the PCC model, as it is more suitable for scoping studies than the PICO (Patient-Intervention-Comparison-Outcome) model. The PCC model allows the broad scope of the study to be respected without specifying restrictive inclusion criteria, as are required in Cochrane-type systematic reviews (58). Specific research questions associated with the components of the PCC model were also formulated to further deepen our findings.

Second, we undertook a thorough process to identify relevant studies for inclusion (i.e., stage 2), which allowed us to retrieve a prominent number of results. Using the PRESS tool, two information specialists contributed to the development of the search strategy, which was adapted to several health databases (60). Additional studies were also identified by searching the grey literature and consulting the reference lists of the included studies.

Third, two reviewers worked independently throughout the entire study selection stage (i.e., stage 3). The inter-rater agreement between them was high, showing the clarity and comprehensibility of the inclusion and exclusion criteria specified. Despite the presence of specific eligibility criteria, the number of included studies ( $N = 35$ ) is high, reflecting the richness of the results and their potential to contribute to the advancement of scientific knowledge. Another strength is the framework that includes all the facilitators of and obstacles to HR adoption, independently of their type or the population or clientele found in the identified studies.

Fourth, we extracted from the included studies not only facilitators of and obstacles to HR adoption, but also the various definitions of HR and the characteristics of the populations studied (i.e., stage 4).

Finally, after the data had been extracted and merged, we conducted both a numerical quantitative analysis and a thematic qualitative analysis to ensure the rigor of the analysis process (i.e., stage 5). The quantitative analysis provided an overview of the general characteristics of the selected studies, while the thematic qualitative analysis facilitated the grouping of results into themes and sub-themes, presenting them in a summarized, clear, and coherent manner (Table 4) (see Additional file 3).

However, this scoping study presents some limitations. Steps could have been implemented to identify additional studies, such as not limiting the publication language to English or French. Moreover, despite the relevance of including only studies conducted in OECD countries to be able to generalize the results to Canada's reality, omitting this inclusion criterion would potentially have provided additional results. Contacting authors or organizations working in the HR field might also have led us to include other unpublished studies. Furthermore, even though assessing the methodological quality of the included studies remains an optional step in scoping studies aiming to map the current literature on a specific subject, it would have been preferable to undertake it using the Mixed Methods Appraisal Tool (96). Finally, some of the selected studies tackled drugs in general (including cannabis) and thus did not clearly distinguish between facilitators of and obstacles to cannabis-specific or other drug-related HR practices.

## **Conclusion**

Cannabis use remains highly prevalent among adults and youth and can generate potential harms to the individual on several levels (3-5, 7, 22). Due to the limited efficacy of abstinence-oriented programs usually implemented among people who use substances, encouraging HSS practitioners' adoption of HR remains essential (21, 32, 37). For this, an understanding of the factors that facilitate or hinder HR acceptability is vital. In our extensive literature search, we found several factors that affect HR acceptability, related to stakeholders' characteristics, clients' characteristics, HR attributes, and/or the workplace. Stakeholders' educational backgrounds, their clientele, the severity of clients' SUDs, as well as the purpose of applying HR in treatment should be taken into consideration when assessing facilitators of and obstacles to the adoption of HR in cannabis use. Perceiving the benefits of adopting HR, having laws that support its use, and working in a place that encourages it also shape stakeholders' attitudes toward HR. However, lack of knowledge about HR hinders its acceptability and, by extension, its adoption.

We consider that some courses of action should be taken firmly into consideration in future research, such as training HSS practitioners to apply HR and clarifying its practices. In addition, the misconceptions associated with HR principles, practices, and efficacy lead us to highlight the

need for a knowledge translation process aimed at HSS practitioners and stakeholders. This would help to clarify HR guidelines and applicability, which could improve HR adoption by practitioners.

The inclusion of studies conducted in OECD countries will allow the results to be generalized to the 38 OECD countries and hence, to the reality of Canada and Quebec. However, even with this inclusion criterion, the results could still be useful and potentially generalizable elsewhere. This scoping review will help researchers better address the adoption of HR in cannabis use. Clarification of the facilitators of and obstacles to the adoption of HR in cannabis use can help knowledge translation specialists tackle HR applicability among practitioners and stakeholders more effectively. This could enhance HR implementation, especially in the presence of evidence-based data that show the effectiveness of adopting HR with people who use substances.

## **Abbreviations**

CUD: Cannabis use disorder

HR: Harm reduction

HSS: Health and social services

OECD: Organisation for Economic Co-operation and Development

PCC: Population-Concept-Context

PICO: Population-Intervention-Comparison-Outcome

PRESS: Peer Review of Electronic Search Strategies

PRISMA-ScR: Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews

SCIDUA: Integrated School- and Community-based Demonstration Intervention Addressing Drug Use among Adolescents

SHAHRP: School Health and Alcohol Harm Reduction Project

SUD: Substance use disorders

## **Acknowledgements**

We wish to thank Karine Bélanger, senior librarian at the *Bibliothèque québécoise sur les dépendances* in Quebec, for developing the initial search strategy used in this scoping review. We also wish to thank Julie Desnoyers, the information specialist affiliated with the RENARD Team for Knowledge Translation at Université de Montréal, for validating the search strategy, adapting it to the selected databases and then executing it. We also thank Yuan Song for her involvement in the entire studies selection stage as a second reviewer.

## **Authors' contributions**

RH, CD, JSF, and CH conceptualized the study. RH wrote the manuscript, extracted, analyzed, and interpreted the data. CD verified and approved the summary sheets and data analysis. All authors critically reviewed the manuscript and approved the final manuscript.

## **Funding**

This work was supported by the *Ministère de la Santé et des Services sociaux (MSSS)*, *Fonds de recherche du Québec – Santé (FRQS)*, and *Fonds de recherche du Québec – Société et culture (FRQSC)* (Grant number: 2023-OPTR-322652). We gratefully acknowledge the financial support received from the *Recherche et intervention sur les substances psychoactives (RISQ)* organization, which was dedicated to assisting with the writing and publication of scientific articles in peer-reviewed journals.

## **Availability of data and materials**

All data generated or analyzed during this study are included in this published article (and its supplementary information files). Additional search strategies executed on the databases are available from the corresponding author on reasonable request.

## **Declarations**

### **Ethics approval and consent to participate**

Not applicable.

### **Consent for publication**

Not applicable.

### **Competing interests**

The authors declare that they have no competing interests.

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## Additional file 1: Medline Search Strategy

Searched online: 10/10/2022

Number of results: 251

#	Concept	Equations	Results	
1	Harm reduction	Harm Reduction/	3898	
2		Risk Reduction Behavior/	14132	
3		(protective adj2 strateg*).ab,kf,ti.	2818	
4		((reduc* or minimi*) adj5 (harm? or harmful or risk?)).ab,kf,ti.	239459	
5		1 or 2 or 3 or 4	251821	
6	Clinicians	exp Health Personnel/	588634	
7		Social Workers/	971	
8		Counselors/	541	
9		exp Health Occupations/	1819039	
10		exp Allied Health Occupations/	52626	
11		exp Allied Health Personnel/	53169	
12		(worker? or psychoeducator? or psycho-educator? or educator? or nurse? or criminologist? or psychologist? or clinician? or practitioner? or physician? or professional? or provider? or co?nselor or co?nselors or caregiver? or giver? or therapist? or psychotherapist? or staff? or personnel? or employee? or doctor?).ab,kf,ti.	2002544	
13		6 or 7 or 8 or 9 or 10 or 11 or 12	3625104	
14		Cannabis	Cannabis/	12307
15			"Marijuana Use"/	1689
16			Marijuana Abuse/	6905
17	Marijuana Smoking/		5425	
18	(mari?uana or cannabis or hashish or Pot or weed or tetrahydrocannabinol or THC or CDB or cannabidiol or cannabinoid?).ab,kf,ti.		100005	
19	14 or 15 or 16 or 17 or 18		102988	
20	Strategies	("strateg*" or "approach*" or intervention? or prevent* or practice? or service? or "method*" or technique? or tactic? or co?nseling or	15074452	

		treatment? or program? or "guide*").ab,kf,ti.	
21	Combination of 3 concepts	5 and 13 and 19	272
22	Limit date	limit 21 to yr="1990 -Current"	272
23	Limit language	limit 22 to (english or french)	263
24	Filter OECD		
25	TOTAL	23 not 24	249
22	Combination of 4 concepts	5 and 13 and 19 and 20	251

## Additional file 2: Narrative organization of the included studies

<b>Data</b>	<b>Study 1</b>	<b>Study 2</b>	<b>Study ...</b>
Type of publication			
Date of publication			
Country of study			
Legal status of cannabis in the country of the study			
Definition of HR in cannabis use			
Design of the study			
Target population			
Place of work of the target population			
Clientele of the target population			
Data collection method			
Key findings: <ul style="list-style-type: none"><li>- Facilitators or enabling conditions</li><li>- Obstacles or adverse conditions</li></ul>			
Secondary outcomes			

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### Additional file 3: Full list of facilitators and obstacles to the adoption of HR in cannabis use

	Facilitators	Obstacles
<b>Theme 1 : Stakeholders' characteristics</b>		
Education	Training in substance use disorders (SUD) or harm reduction (HR) (Clark & Wyllie, 2014; Housenbold Seiger, 2005; Kapur, 2016; Moore & Mattaini, 2014; Rosenberg & Davis, 2014)	Lack of training in SUD or HR (Barbosa-Leiker et al., 2022; Broussard, 2019; Clark & Wyllie, 2014; Kapur, 2016; Long, 2016; Mancini et al., 2008; Moore & Mattaini, 2014; O'Leary et al., 2018; Oluwoye & Fraser, 2021; Sauvageau, 2018)
	High level of education (Master's or PhD) (Clark & Wyllie, 2014; King, 2020; Richards et al., 2021)	Low level of education (certificate or bachelor's degree) (King, 2020; Richards et al., 2021)
	Having attended conferences and/or courses in HR (Clark & Wyllie, 2014; Kapur, 2016)	
	Certification in SUD (Moore & Mattaini, 2014)	
	Field of study: Law, addiction, psychology, social work (Abbott-Chapman et al., 2007; Davis & Lauritsen, 2016)	Field of study: Nursing, medicine, education
Living environment	Urban	Rural or semi-urban (Kyser, 2010)
Practical experiences	Ability to apply HR	Lack of ability to apply HR (Oluwoye & Fraser, 2021)
	High number of years of experience in the SUD field	High workload with SUD cases

	(King, 2020; Kyser, 2010; Moore & Mattaini, 2014)	(Vayda, 2016)
		Likelihood of working with adolescents in future career (Abbott-Chapman et al., 2007)
		Working using the recovery model (Waterhouse, 2020)
Socio-demographic characteristics	Young age of the practitioner	Advanced age of the practitioner (Davis & Rosenberg, 2013; Richards et al., 2021; Xin et al., 2022)

Personal characteristics	Being close to a person presenting an SUD (Kyser, 2010)	Personal history of substance use (Rosenberg & Davis, 2014)
	Humility, compassion, flexibility, patience, respect, and hope for others (Kapur, 2016)	Low staff morale (O’Leary et al., 2018)
Beliefs and perceptions	Considering that the zero-tolerance approach may have a reverse effect (Abbott-Chapman et al., 2007; Waterhouse, 2020)	Stigmatizing drug use (O’Leary et al., 2018; Xin et al., 2022)
	Acceptability of other HR interventions (behavioral, pharmaceutical, etc.) (Lauritsen, 2017; Ogborne & Birchmore-Timney, 1998)	Beliefs about the causes of addiction (Kapur, 2016)
	Perception of substance abuse as a social and mental health issue (Waterhouse, 2020)	Perception of substance abuse as a criminal act issue
	HR = legitimate treatment objective (Mancini et al., 2008)	Recovery = total abstinence (Clark & Wyllie, 2014)
		Use during pregnancy perceived as problematic (Benoit et al., 2014)
Status	University students or practitioners (Davis & Lauritsen, 2016; King, 2020)	
Gender	Male	Female (Richards et al., 2021)

## Theme 2: Clients' characteristics

Factors related to SUD	SUD severity: moderate	SUD severity: severe
	(Davis & Lauritsen, 2016; Davis & Rosenberg, 2013; Davis et al., 2017; Lauritsen, 2017; Rosenberg & Davis, 2014; Rosenberg & Melville, 2005; Xin et al., 2022)	(Davis & Lauritsen, 2016; Davis & Rosenberg, 2013; Davis et al., 2017; Lauritsen, 2017; Rosenberg & Davis, 2014; Rosenberg & Melville, 2005; Schippers & Nelissen, 2006; Xin et al., 2022)
	Presence of non-use days; Clear arguments in favor of controlled use	Use fulfils an important psychological function and/or use of other illegal substances
	(Schippers & Nelissen, 2006)	
	Substance consumed: cannabis	Number of previous treatments; Polydrug use
	(Davis & Lauritsen, 2016)	(Davis & Rosenberg, 2013)
		Duration and frequency of use
	(O'Leary et al., 2018)	
Therapy considerations	HR used as an intermediate treatment goal	HR used as the final treatment goal
	(Davis & Lauritsen, 2016; Davis & Rosenberg, 2013; Davis et al., 2017; Lauritsen, 2017; Rosenberg & Davis, 2014; Rosenberg & Melville, 2005; Xin et al., 2022)	(Davis & Lauritsen, 2016; Davis & Rosenberg, 2013; Davis et al., 2017; Rosenberg & Davis, 2014; Rosenberg & Melville, 2005; Xin et al., 2022).
	High motivation for change; Treatment for the first time; HR is the only intervention that would keep the client in treatment	
	(Schippers & Nelissen, 2006)	
	Pre-contemplation phase of change	
	(Tatar et al., 2021)	

	Client goals: harm reduction without total abstinence (Ogborne & Birchmore-Timney, 1998)
Medical and/or psychiatric status	Comorbidity with a psychiatric disorder (Clark & Wyllie, 2014; Mancini et al., 2008) (Davis & Rosenberg, 2013; Davis et al., 2017; O’Leary et al., 2018; Sauvageau, 2018)
	First psychotic episode (Oluwoye & Fraser, 2021)
	Comorbidity with a medical condition (Davis & Rosenberg, 2013; O’Leary et al., 2018)
	Poor physical health (O’Leary et al., 2018; Schippers & Nelissen, 2006)
Personal characteristics	Pregnancy period (Barbosa-Leiker et al., 2022; Halladay et al., 2018; Long, 2016; Waterhouse, 2020) (Benoit et al., 2014)
	Young age (Waterhouse, 2020) (Davis & Rosenberg, 2013)
	Advanced age (Broussard, 2019; Davis & Rosenberg, 2013; Duke et al., 2020)
	Being part of the black community (Eversman, 2014)
	Being homeless (Davis & Rosenberg, 2013)

Relational and family characteristics	Having to support your family; Be in a relationship (Davis & Rosenberg, 2013)
	General family environment (Long, 2016)
Professional characteristics	Being employed (Davis & Rosenberg, 2013)
Psychological characteristics	Emotional instability; Criminal background (Davis & Rosenberg, 2013)
	Impulsivity, self-control (Schippers & Nelissen, 2006)
	Poor cognitive and emotional skills (Long, 2016)
	Family history of drug abuse (Oluwoye & Fraser, 2021)
Social characteristics	Having a large social network (Davis & Rosenberg, 2013)

### Theme 3: Factors related to HR

HR principles	HR focuses on the client's needs and objectives (Davis & Lauritsen, 2016; Duke et al., 2020; Kapur, 2016; Leiker, 2021; Long, 2016; Mancini et al., 2008; Rosenberg & Davis, 2014; Suissa & Bélanger, 2001)
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### HR creates a non-judgmental framework

(Barbosa-Leiker et al., 2022; Halladay et al., 2018; Leiker, 2021; Mancini et al., 2008)

### HR focuses on the present

(Kapur, 2016; Leiker, 2021; Suissa & Bélanger, 2001)

### HR is flexible

(Clark & Wyllie, 2014; Duke et al., 2020; Soura, 2016)

### HR is non-punitive

(Halladay et al., 2018; Leiker, 2021; Long, 2016)

### HR is non-stigmatizing

(Barbosa-Leiker et al., 2022; Kapur, 2016; Suissa & Bélanger, 2001)

### HR is preventive

(Barbosa-Leiker et al., 2022; Duke et al., 2020; Tatar et al., 2021)

### HR is a motivational intervention or prevention model

(Halladay et al., 2018; Leiker, 2021)

### HR is opposed to cannabis criminalization

(Eversman, 2014; Suissa & Bélanger, 2001)

### HR values clients

(Kapur, 2016; Mancini et al., 2008)

Achieving minimal goals is perceived as a success, and desired behaviors are rewarded

(Sauvageau, 2018; Suissa & Bélanger, 2001)

HR educates young people about substance use through prevention activities

(Duke et al., 2020; Halladay et al., 2018; Soura, 2016; Suissa & Bélanger, 2001)

HR facilitates access to healthcare services

(Kapur, 2016)

HR does not encourage use, is not dangerous, and is a valid and useful approach

(Mancini et al., 2008)

HR is pragmatic

(Duke et al., 2020)

HR efficacy and/or misconceptions

HR efficacy

Misconceptions related to HR

Perception of the benefits and effectiveness of HR

(Clark & Wyllie, 2014; Ellison, 2017; Mancini et al., 2008; Soura, 2016)

Uncertainties about the efficacy and/or dangerousness of HR

(Broussard, 2019; Clark & Wyllie, 2014; Davis & Rosenberg, 2013; Mancini et al., 2008; Oluwoye & Fraser, 2021; Rosenberg & Davis, 2014)

HR is effective especially when abstinence is unattainable

(Davis & Lauritsen, 2016; Tatar et al., 2021)

Misunderstanding HR practices (e.g., lack of knowledge about treatment application)

(Broussard, 2019; Clark & Wyllie, 2014; Leiker, 2021; Long, 2016; Mancini et al., 2008; Sauvageau, 2018)

HR fosters the client's engagement

Considering that HR conveys the wrong messages

(Clark & Wyllie, 2014; Duke et al., 2020; Halladay et al., 2018; Kapur, 2016; Long, 2016; Mancini et al., 2008; O’Leary et al., 2018; Soura, 2016)	(Davis & Rosenberg, 2013; Eversman, 2014; Kapur, 2016; Mancini et al., 2008)
HR fosters young people’s engagement	Considering that HR promotes substance use
(Soura, 2016)	(Clark & Wyllie, 2014; Kapur, 2016; O’Leary et al., 2018; Sauvageau, 2018)
HR puts youth in control of their lives	Considering that HR provokes clients who choose to abstain from substances
(Duke et al., 2020)	(O’Leary et al., 2018)
HR promotes the therapeutic alliance	Considering that tolerance of use does not help the individual
(Mancini et al., 2008; O’Leary et al., 2018; Sauvageau, 2018)	(Clark & Wyllie, 2014)
HR promotes the quality of life	Considering that HR is an ambiguous approach
(Mancini et al., 2008; Suissa & Bélanger, 2001)	(Mancini et al., 2008)
HR promotes reflection and safe decision-making	
(Duke et al., 2020; Halladay et al., 2018; Kapur, 2016)	
HR promotes the sense of responsibility and autonomy	
(Duke et al., 2020; Mancini et al., 2008; Suissa & Bélanger, 2001)	
HR contributes to the reduction and/or control of the use	
(Duke et al., 2020; Ellison, 2017; Rosenberg & Davis, 2014; Tatar et al., 2021)	
HR minimizes the symptoms’ severity	
(Ellison, 2017; Tatar et al., 2021)	
HR reduces guilt and shame	
(Leiker, 2021; Long, 2016)	

	HR reduces harms to the individual		
	(Kapur, 2016; Tatar et al., 2021)		
	HR reduces harms to the pregnant woman and the fetus		
	(Barbosa-Leiker et al., 2022; Benoit et al., 2014; Long, 2016)		
	HR promotes life satisfaction, a sense of self-efficacy and improves daily functioning and self-confidence		
	(Tatar et al., 2021)		
	HR improves physical health, social and mental well-being		
	(O'Leary et al., 2018)		
	HR improves coping strategies		
	(Ellison, 2017)		
	HR promotes safe use and client's integration into the social system		
	(Kapur, 2016)		
	External and other factors	Laws that favor HR adoption	The illegality of cannabis among a specific clientele
		(Kapur, 2016; Suissa & Bélanger, 2001; Waterhouse, 2020)	(Davis & Rosenberg, 2013; Long, 2016; Waterhouse, 2020)
		Ineffectiveness of the War on Drugs	Lack of research on HR
		(Eversman, 2014)	(Broussard, 2019; Kapur, 2016; Leiker, 2021)
	Using a "Consequence Analysis" (CA)	Harm Reduction Acceptability Scale	
	(Moore & Mattaini, 2014)		

Lack of funding

(Halladay et al., 2018; Kapur, 2016; Leiker, 2021; Long, 2016; Oluwoye & Fraser, 2021)

Lack of research on HR in the case of pregnancy

(Barbosa-Leiker et al., 2022; Benoit et al., 2014)

Ethical dilemmas in the case of pregnancy

(Benoit et al., 2014; Long, 2016)

HR is not accepted by young individual's parents

(Kapur, 2016)

Reduced care capacity

(Benoit et al., 2014; Kapur, 2016)

**Theme 4: Factors related to the workplace**

General factors

Management leadership and support

(Kapur, 2016; Lauritsen, 2017; Sauvageau, 2018; Soura, 2016)

Workplace philosophies that run counter to HR

(Davis & Rosenberg, 2013; Duke et al., 2020; Mancini et al., 2008; Sauvageau, 2018)

In the case of stakeholders undergoing HR training:

- Presence of a facilitator for HR activities
- Facilitator qualities: ability to listen, communicate, negotiate, empathize and be patient

(Soura, 2016)

Lack of cooperation and collaboration within the team

(Kapur, 2016; O'Leary et al., 2018; Sauvageau, 2018; Soura, 2016)

Presence of multi-systemic, multi-disciplinary and diverse knowledge and skills

Fear of losing funding or accreditation

	(Kapur, 2016)	(Davis & Rosenberg, 2013)
		Unclear policies
		(O'Leary et al., 2018)
Workplace type	Universities	Detoxification residences; Residential rehabilitation services
	(Halladay et al., 2018)	(Davis & Rosenberg, 2013)
	Homeless services	Community-based organizations
	(King, 2020)	(Oluwoye & Fraser, 2021)
		Hospital
	(Davis & Rosenberg, 2013; O'Leary et al., 2018)	(Vayda, 2016)
	Assessment, referral, and counseling services; Outpatient agency for SUD and/or mental health disorders	School
	(Ogborne & Birchmore-Timney, 1998)	(Suissa & Bélanger, 2001)
		Community-based organization
	(Benoit et al., 2014)	(Clark & Wyllie, 2014)
	Private practice	Agency located near apply HR
	(Davis & Rosenberg, 2013)	(Davis & Rosenberg, 2013)
	Criminal justice system	
	(Duke et al., 2020)	

## Additional file 4: Clientele, workplace, and population identified in the selected studies

Populations identified in the selected studies	References
Mental health professionals (e.g., therapists, psychotherapists, psychologists, clinicians, addiction specialists)	(Davis & Lauritsen, 2016; Davis & Rosenberg, 2013; Davis et al., 2017; Duke et al., 2020; Eversman, 2014; Halladay et al., 2018; Lauritsen, 2017; Leiker, 2021; Mancini et al., 2008; Ogborne & Birchmore-Timney, 1998; Oluwoye & Fraser, 2021; Richards et al., 2021; Rosenberg & Melville, 2005; Tatar et al., 2021; Vayda, 2016; Waterhouse, 2020)
Counselors	(Benoit et al., 2014; Clark & Wyllie, 2014; Ellison, 2017; Kapur, 2016; King, 2020; Kyser, 2010; Ogborne & Birchmore-Timney, 1998; Richards et al., 2021; Sauvageau, 2018; Schippers & Nelissen, 2006)
Managers	(Clark & Wyllie, 2014; Kapur, 2016; Long, 2016; Ogborne & Birchmore-Timney, 1998; Oluwoye & Fraser, 2021; Rosenberg & Melville, 2005; Sauvageau, 2018; Tatar et al., 2021)
Social workers	(Halladay et al., 2018; Housenbold Seiger, 2005; Long, 2016; Richards et al., 2021; Suissa & Bélanger, 2001; Vayda, 2016; Waterhouse, 2020; Xin et al., 2022)
Front-line healthcare workers (e.g., nurses)	(Barbosa-Leiker et al., 2022; Halladay et al., 2018; Long, 2016; O’Leary et al., 2018; Oluwoye & Fraser, 2021; Tatar et al., 2021)
University students (i.e., practitioners in training)	(Abbott-Chapman et al., 2007; Davis & Lauritsen, 2016; Moore & Mattaini, 2014)
Psycho-educators or educators	(Richards et al., 2021)
Police officers	(Richards et al., 2021)
Health professionals (e.g., doctors, psychiatrists)	(Tatar et al., 2021)
School staff (e.g., principals, teachers)	(Soura, 2016)

Higher education administrators (e.g., deans, directors)	(Broussard, 2019)
<b>Populations' clientele</b>	<b>References</b>
Adults	(Davis & Lauritsen, 2016; Davis et al., 2017; Kapur, 2016; Leiker, 2021; Ogborne & Birchmore-Timney, 1998; Rosenberg & Melville, 2005; Schippers & Nelissen, 2006; Vayda, 2016; Waterhouse, 2020; Xin et al., 2022)
Young adults	(Broussard, 2019; Davis & Lauritsen, 2016; Davis et al., 2017; Ellison, 2017; Halladay et al., 2018; Kapur, 2016; Leiker, 2021; Waterhouse, 2020; Xin et al., 2022)
Adolescents	(Davis & Lauritsen, 2016; Davis et al., 2017; Kapur, 2016; Leiker, 2021; Soura, 2016; Xin et al., 2022)
Individuals with a mental health disorder	(Clark & Wyllie, 2014; Leiker, 2021; Oluwoye & Fraser, 2021; Sauvageau, 2018)
Pregnant women	(Barbosa-Leiker et al., 2022; Benoit et al., 2014; Long, 2016)
Young people involved in the criminal justice system	(Duke et al., 2020; Richards et al., 2021)
Homeless population	(King, 2020; Mancini et al., 2008)
Individuals from communities of color	(Eversman, 2014)
Young adults with a first psychotic episode	(Tatar et al., 2021)
Poly-substance users	(Leiker, 2021)
HIV-positive people	(O'Leary et al., 2018)
New parents	(Benoit et al., 2014)
In prison or on probation population	(Leiker, 2021)
<b>Populations' workplace</b>	<b>References</b>
Outpatient agencies for SUDs and/or mental health disorders	(Davis & Rosenberg, 2013; Davis et al., 2017; Housenbold Seiger, 2005; Lauritsen, 2017; Leiker, 2021; Ogborne & Birchmore-Timney, 1998; Rosenberg & Davis, 2014; Schippers & Nelissen, 2006; Vayda, 2016; Xin et al., 2022)

Inpatient or residential addiction rehabilitation services	(Davis & Rosenberg, 2013; Davis et al., 2017; Lauritsen, 2017; O’Leary et al., 2018; Ogborne & Birchmore-Timney, 1998; Rosenberg & Davis, 2014; Sauvageau, 2018; Vayda, 2016; Xin et al., 2022)
Community-based organizations	(Benoit et al., 2014; Clark & Wyllie, 2014; Kapur, 2016; Kyser, 2010; Oluwoye & Fraser, 2021; Suissa & Bélanger, 2001; Vayda, 2016; Waterhouse, 2020)
Private practice	(Davis & Rosenberg, 2013; Davis et al., 2017; Kyser, 2010; Lauritsen, 2017; Leiker, 2021; Rosenberg & Davis, 2014; Vayda, 2016; Xin et al., 2022)
Universities	(Broussard, 2019; Ellison, 2017; Halladay et al., 2018; Lauritsen, 2017; Vayda, 2016; Xin et al., 2022)
Detoxification residences	(Davis et al., 2017; Leiker, 2021; Ogborne & Birchmore-Timney, 1998; Rosenberg & Davis, 2014; Rosenberg & Melville, 2005; Xin et al., 2022)
Halfway houses	(Davis & Rosenberg, 2013; Lauritsen, 2017; Rosenberg & Davis, 2014; Xin et al., 2022)
Hospitals	(Barbosa-Leiker et al., 2022; Davis et al., 2017; O’Leary et al., 2018; Vayda, 2016)
Prison settings	(Davis et al., 2017; Kyser, 2010; Richards et al., 2021; Suissa & Bélanger, 2001)
Schools	(Kyser, 2010; Soura, 2016; Suissa & Bélanger, 2001)
Inpatient agencies (public and/or private) for SUDs and/or mental health disorders	(Eversman, 2014; Leiker, 2021; Suissa & Bélanger, 2001)
Homeless services	(King, 2020; Mancini et al., 2008)
Assessment, referral, and counseling services	(Ogborne & Birchmore-Timney, 1998; Rosenberg & Melville, 2005)
Criminal justice system	(Duke et al., 2020)
Early intervention services for first-episode psychosis	(Tatar et al., 2021)
Public agencies	(Suissa & Bélanger, 2001)

Agencies for pregnant women with SUDs (Long, 2016)

Police sector (Kyser, 2010)

## Additional file 5: Harm reduction definitions as per the authors of the included studies

Concepts retrieved from HR definitions	References
Studies that did not define HR	(Barbosa-Leiker et al., 2022; Broussard, 2019; Ellison, 2017; Halladay et al., 2018; Long, 2016; Oluwoye et Fraser, 2021; Rosenberg et Melville, 2005; Sauvageau, 2018; Schippers et Nelissen, 2006; Suissa et Bélanger, 2001; Tatar et al., 2021; Waterhouse, 2020)
<b>HR conceptualization</b>	
Other appellation for HR: “non-abstinence model”	(Davis et Lauritsen, 2016; Davis et Rosenberg, 2013)
No universal definition	(Mancini et al., 2008)
<b>Principals of HR</b>	
HR does not primarily focus on substance abstinence	(Clark et Wyllie, 2014; King, 2020; O’Leary et al., 2018; Ogborne et Birchmore-Timney, 1998; Richards et al., 2021)
HR originates from the field of public health	(Eversman, 2014; Housenbold Seiger, 2005; Kapur, 2016; Lauritsen, 2017; Mancini et al., 2008)
HR includes policies, programs, and practices	(King, 2020; Mancini et al., 2008; Moore et Mattaini, 2014; O’Leary et al., 2018; Ogborne et Birchmore-Timney, 1998)
HR broadens the spectrum of intervention goals deemed acceptable	(Kyser, 2010; O’Leary et al., 2018; Richards et al., 2021; Vayda, 2016)
HR enables access to health services	(Clark et Wyllie, 2014; Kapur, 2016; Kyser, 2010)
HR implements educational and preventive strategies	(Duke et al., 2020; Kapur, 2016; Lauritsen, 2017; Soura, 2016)
HR is a pragmatic intervention	(Lauritsen, 2017; O’Leary et al., 2018),

HR is alternative to traditional treatments	(Kyser, 2010; Vayda, 2016)
HR is based on humanistic values	(Housenbold Seiger, 2005; Kapur, 2016)
HR brings together different treatment methods	(Housenbold Seiger, 2005; Kyser, 2010)
HR reaches the clients where they are	(Kyser, 2010; Lauritsen, 2017)
HR disfavors stigmatization	(Richards et al., 2021; Vayda, 2016)
HR perceives substance use as a universal societal behavior	(Eversman, 2014)
HR is evidence-based	(O’Leary et al., 2018)
HR is a non-humiliating and non-punitive model	(Lauritsen, 2017)
HR is often presented as the opposite of the abstinence-based model	(Abbott-Chapman et al., 2007)
<b>Efficacy of HR</b>	
HR reduces the negative legal, medical, professional, social, economic and/or family harms of the substance	(Benoit et al., 2014; Clark et Wyllie, 2014; Davis et Rosenberg, 2013; Davis et al., 2017; Duke et al., 2020; Housenbold Seiger, 2005; King, 2020; Kyser, 2010; Leiker, 2021; Mancini et al., 2008; Moore et Mattaini, 2014; O’Leary et al., 2018; Ogborne et Birchmore-Timney, 1998; Soura, 2016; Xin et al., 2022)
HR enables moderate or controlled substance use (reduced amount and/or less frequent use)	(Davis et Rosenberg, 2013; Davis et al., 2017; Housenbold Seiger, 2005; Kyser, 2010; Lauritsen, 2017; Xin et al., 2022)
HR ensures safe, secure, and enjoyable use of the substance	(Benoit et al., 2014; Housenbold Seiger, 2005; Kapur, 2016; King, 2020; Lauritsen, 2017; Rosenberg et Davis, 2014)
HR promotes a sense of control or self-efficacy regarding the initiation and/or cessation of use	(Benoit et al., 2014; Davis et al., 2017; Xin et al., 2022)
HR prevents problematic substance use	(Duke et al., 2020)
HR promotes client’s engagement in treatment	(O’Leary et al., 2018)
HR aims to improve clients’ health	(Rosenberg et Davis, 2014)
HR promotes quality of life	(Lauritsen, 2017)
HR promotes client integration into society	(Abbott-Chapman et al., 2007)

# Chapitre 5 – Article III : Mixed-methods study on professionals’ attitudes toward harm reduction in cannabis use and the development of a knowledge translation plan

Roula Haddad\*<sup>1</sup>, Jean-Sébastien Fallu<sup>2,3,4</sup>, Christophe Huynh<sup>3,5</sup>, Mathieu-Joël Gervais<sup>1</sup>, Christian Dagenais<sup>1</sup>

**To cite:** Haddad, R., Fallu, J.-S., Huynh, C., Gervais, M.-J., & Dagenais, C. (2025). Mixed-methods study on professionals’ attitudes toward harm reduction in cannabis use and the development of a knowledge translation plan. *Scientific Reports*, 15(1), 13225. <https://doi.org/10.1038/s41598-025-96001-x>

<sup>1</sup> Department of Psychology, Université de Montréal

<sup>2</sup> Department of psychoeducation, Université de Montréal

<sup>3</sup> Institut universitaire sur les dépendances, Centre intégré universitaire de santé et de services sociaux du Centre-Sud-de-l’Île-de-Montréal

<sup>4</sup> Center for Public Health Research (CReSP), Centre intégré universitaire de santé et de services sociaux du Centre-Sud-de-l’Île-de-Montréal

<sup>5</sup> Department of Psychiatry and Addictology, Université de Montréal

\*Corresponding author: Roula Haddad ([roula.haddad@umontreal.ca](mailto:roula.haddad@umontreal.ca))

## Abstract

**Background.** Several factors limit the adoption of harm reduction in cannabis use (HR-c). A knowledge translation (KT) process can help optimize its adoption. This study aims to: 1) identify the attitudes toward HR-c of health and social services (HSS) practitioners working among young people in Quebec; and 2) develop a KT plan to enhance its adoption.

**Methods.** Two conceptual frameworks guided the study: the Knowledge-to-Action model and the Consolidated Framework for Implementation Research. Managers and practitioners working among young people in difficulty in Quebec were recruited. Mixed methods tools were used, involving consultations ( $N = 14$ ) and questionnaires ( $N = 167$ ). Qualitative data underwent thematic analysis, while descriptive and inferential statistics were executed to analyze quantitative data.

**Results.** Participants presented positive attitudes toward HR-c ( $M = 44.79$ ), negative attitudes toward abstinence-based treatments ( $M = 9.68$ ), and moderate perceived levels of training in HR-c ( $M = 12.3$ ). Their needs and contextual factors that might influence HR-c adoption were identified. Based on these findings, a KT plan was developed to optimize HR-c adoption by HSS practitioners.

**Conclusions.** Despite some negative factors impacting its applicability, HR-c is generally accepted and implemented by practitioners. This study represents the pre-implementation phase of the KT plan, which will then guide the effective implementation of a KT process for HR-c adoption.

**Key words:** Harm Reduction; Knowledge Translation; Implementation Science; Cannabis; Public Health; Knowledge Transfer.

## Introduction

### **Cannabis use in Quebec and abstinence-based models**

In 2018, the federal legislation of the *Cannabis Act* in Canada regulated the use, possession, and purchase of cannabis, setting a minimum age of 18 years (1). In Quebec, the legal age was raised to 21 years and sales were restricted to the *Société Québécoise du Cannabis* (SQDC) (2). However, despite not having legal access to cannabis, young adults exhibit high rates of cannabis use (3, 4). In 2023, 22.6% of individuals aged 15 to 20 years in Quebec reported cannabis consumption within the past year (5). To prevent young adults' cannabis use (whether problematic or not), or to treat related problems, abstinence-based models have been widely implemented despite their limited effectiveness (e.g., high risk of relapse and dropout) (4, 6-8). These programs conceive the total elimination of the substance as a prerequisite for program entry and retention or as the only relevant treatment goal (7-9). However, given the limited effectiveness of such programs, more flexible and effective alternative treatments, such as harm reduction in cannabis use (HR-c), have been recommended (7, 8, 10-12).

### **Harm reduction in cannabis use**

Harm reduction (HR) aims to minimize potential harms of the substance by proposing protective consumption-related behaviors to individuals (e.g., delaying initiation of cannabis use, avoiding deep inhalation, using legal cannabis products) and has been found to be effective (6-10, 13-18). The decision to cease cannabis use should represent a personal and unforced choice, as it may be an unrealistic or undesirable objective for some individuals and/or in some cases (e.g., in case of comorbidities) (8, 10, 19, 20). Despite the proven effectiveness of HR, health and social services (HSS) professionals often resist its adoption (8, 11, 21). This is particularly evident when working with adolescents and young adults (18–21 years) (8, 11, 21).

Prior to this study, our team conducted a scoping review aimed at identifying factors that facilitate and hinder the adoption of HR-c by HSS practitioners (22). The factors found in the 35 included studies were grouped into four categories: 1) stakeholders' characteristics (e.g., level of

education and training in HR, years of experience); 2) clients' characteristics (e.g., substance use disorder [SUD] gravity, comorbidities); 3) HR-related factors (e.g., HR principles, effectiveness and misconceptions, legal status of cannabis); and 4) workplace-related factors (e.g., management support). To optimize HR-c adoption, the development and implementation of a knowledge translation (KT) plan that takes into consideration these findings would seem essential to facilitate the effective transfer of knowledge from research to practice (see Purpose section).

## **Knowledge translation**

### Definition

A persistent gap between available knowledge in the fields of health, social sciences, and education and its use by stakeholders highlights the need to address this reality to improve practice (23-27). Multiple terms refer to the Knowledge-to-Action (KTA) model but, for the present study, the term “knowledge translation” (KT) has been adopted as it remains the most frequently used in the health and social sciences fields (28-31). KT represents a dynamic and continuous process that encompasses all the stages related to the KTA model, from knowledge production through to the implementation of activities that promote the dissemination, adoption, and appropriation of knowledge by target audiences (24).

### KT theoretical models and conceptual frameworks

A KT process involves two entities (knowledge producers, users) and could derive from several models, of which the following three are primary (24, 31-33). The *Knowledge Push* model is characterized by a unidirectional relationship between knowledge users and producers, assuming producers can effectively convey research results (24, 32). In contrast, the *Knowledge Pull* model seeks to respond to the needs and interests of target audiences to promote knowledge use and solve their problems (24, 32, 33). Finally, the *Linkage and Exchange* model, considered the most promising, regularizes interactions between both entities, such that target audiences become “knowledge co-producers” (24, 33-35). In this model, researchers can transfer

knowledge tailored to the needs of those audiences and aligned with their circumstances, and thereby facilitate knowledge use (36-38).

Of the numerous conceptual frameworks developed to clarify KT process components, the KTA model of Graham, Logan (30) remains the most widely used and is among those that have been evaluated (25, 35, 39). It encompasses two stages: 1) the “knowledge production or co-production” stage, which consists of creating, mobilizing, or selecting knowledge that could be used; and 2) the “putting into action” stage, which begins with adapting evidence to users’ needs and context (30). Knowledge dissemination efforts promote the reception, adoption, appropriation, and use of knowledge by target audiences (30).

#### Development and evaluation of a KT process

Given the KTA model’s complexity and diversity, it is useful to develop a KT plan to facilitate its implementation by outlining components that should be addressed, such as: situation analysis; overall objective; content to transfer; target audiences and specific objectives; actors to involve; KT strategies; and evaluation (24, 30, 33, 36). Situation analysis is done to assess target audiences’ needs and context, hence the value of consulting them (24). Positioning audiences as “knowledge co-producers” allows researchers to 1) address barriers to research-based evidence use (e.g., ineffective communication with stakeholders), and 2) determine whether the transferred knowledge bridges the gap between the current and desired situations (24, 36, 40).

Following a KT plan implementation, its evaluation is essential (24). For this purpose, the Consolidated Framework for Implementation Research (CFIR) provides a structured framework to improve implementation practices and guide health intervention evaluations (41). It combines constructs grouped into five domains that influence the implementation process: innovation (i.e., intervention), outer setting, inner setting, individuals, and implementation process (41, 42). The CFIR can be used to assess all implementation phases (i.e., pre-implementation, implementation, post-implementation) (41).

## **Purpose**

The present study is part of a three-stage research project, following a logical sequence. The first study aimed to identify, through a scoping review, factors that facilitate and hinder HSS practitioners' adoption of HR-c (22, 43). This second study tackled two interrelated objectives: 1) identify the attitudes toward HR-c of HSS practitioners working among young adults (i.e., 14 to 21 years old) in difficulty in Quebec, in order to 2) develop a KT plan aimed at enhancing their adoption of HR-c. Based on the scoping review and this pre-implementation study, we will conduct a third study focusing on the KT plan implementation and evaluation (22, 43).

## **Methods**

### **Conceptual frameworks**

This study is guided by two conceptual frameworks: the KTA model (30) and the CFIR (41). As we aimed to involve target audiences in developing a KT plan, the first stage of the KTA model (i.e., knowledge production or co-production) directed us through this stage (30). Additionally, the CFIR served as a guide for the pre-implementation phase to develop data collection tools; it helped us question potential facilitators and obstacles that might be encountered in the implementation phase (41, 44).

### **Data collection**

A non-probabilistic sampling method was chosen: participants were selected based on their accessibility in a given location at a given time (45). Two populations of interest, managers and practitioners working among adolescents and young adults in a center of the following residential treatment facilities in Quebec, were recruited: *Regroupement des Auberges du cœur du Québec* (RACQ), *Centre de réadaptation en dépendance* (CRD), *Centre de réadaptation pour les jeunes en difficulté d'adaptation* (CRJDA), *Centre local de services communautaires* (CLSC) (46-49).

RACQ is a provincial community agency that offers social reintegration services and shelters young people in difficulty who are experiencing homelessness, family conflict, social exclusion, or other difficult life circumstances. CRD is a public center intended for young individuals or adults experiencing difficulties with alcohol, medication, drugs, or gambling. CRJDA is a social and mental health public center that offers adaptation, rehabilitation, and social integration services for young people experiencing significant social adaptation difficulties that manifest as maladaptive behaviors and jeopardize their safety. CLSCs provide front-line health and social services to adults and young people, including general medical care, nursing consultations, mental health support, and rehabilitation services.

A mixed-methods evaluation was set up to assess their attitudes toward HR-c and, from that, develop a KT plan. Participants were consulted and a questionnaire administered between November 2023 and January 2024. The project was approved by two ethics committees (see Ethics declaration) and all methods were performed in accordance with the guidelines and regulations of the Declaration of Helsinki.

#### Qualitative component

For the consultations, a contact person (general manager or assistant) in each organization received a recruitment e-mail from the first author (RH) and was asked to forward it to managers and practitioners working among young people in their workplace. Interested participants contacted RH and completed a consent form before the 45-minute consultation. Two interview grids based on the CFIR and adapted from a study aimed at improving the healthcare system in Mali were developed to consult managers and practitioners (41, 50) (Supplemental Material 1; Supplemental Material 2). Managers were consulted individually, whereas some practitioners working in the same organization participated in a group consultation. Consulted participants worked in one CLSC, six CRJDAs, and two CRDs, all in urban areas, as well as two RACQs, one in a suburban area and one in an urban area.

### Quantitative component

Following the consultations, participants completed a LimeSurvey questionnaire comprising two sections: 1) sociodemographic and career-related questions developed by the research team (total of 7 questions on education level, years of experience, work-role, etc.), and 2) an HR-c questionnaire (Supplemental Material 3). It is worth noting that information is available on participants' work roles (practitioners working directly with youth, or managers in decision-making roles), but details regarding their educational background or field of study were not collected.

The HR-c questionnaire was developed as part of a study aimed at exploring practitioners' perceptions of HR-c and has not been subjected to a validation study (8). It contained 24 statements divided into three subscales that explore participants' attitudes toward: 1) HR; 2) abstinence-based treatments; and 3) their perceived level of training in HR-c (8). Each item was graded on a 5-point Likert scale ranging from "strongly disagree" to "strongly agree", with 10 reverse-coded items. For this study, two types of adaptations were made to the questionnaire. First, it was translated from English to French using the back-translation technique, which consists of freely translating it into French and then asking a professional translator to back-translate it to the source language (i.e., English) to check whether the professional's translation and the initial questionnaire are similar (51). Second, the initial questionnaire tackled "drugs" in general, but we made it specific for "cannabis".

### Data analysis

Mixed-methods analyses were implemented through a post-parallel analysis: quantitative and qualitative data were analyzed separately and subsequently combined to complete interpretation of results and respond to the study's objectives (52).

### Qualitative analysis

Consultations were partially transcribed using NVivo software (Version 14.24.0), which involves fragmenting each consultation into segments and transcribing the main ideas without specifying verbal nods and filler words (53). This method efficiently facilitates reviewing certain extracts, without having to listen to the entire interview. Following data transcription, a thematic qualitative analysis was undertaken: recurring concepts were coded to identify themes and sub-themes, which were then interpreted to draw conclusions (54).

Consultations were coded using a mixed approach, combining a deductive-inductive strategy (55): categories derived from the initial consultation grids (i.e., CFIR constructs), but were grouped into two general themes aligned with the “situation analysis” component of the KT plan. To ensure qualitative rigor, several strategies were implemented: 1) *Credibility* was reinforced through data triangulation (i.e., three data sources were used to develop the KT plan), and peer validation (i.e., CD reviewed, confirmed, and refined themes), strengthening internal validity; 2) *Transferability* was supported by detailed descriptions of the study setting, participants, and context, enhancing external validity; 3) *Dependability* was ensured through systematic documentation of research decisions, coding steps, and methodological choices, improving reliability; 4) *Confirmability* was upheld by communicating the results based on the gathered data; and 5) *Data saturation* was reached when no new themes emerged from the consultations (56, 57).

### Quantitative analysis

The questionnaire results were imported to IBM SPSS Statistics (Version 29.0.1.0). Reverse-coded items were first recoded.

### *Categorical and continuous variables*

The questionnaire covered several categorical variables: gender, age, workplace, and work role. Following data collection, three categorical variables were established, each encompassing two to three groups:

- Education level: lower than a bachelor's degree; bachelor's degree; higher than a bachelor's degree.
- Number of years of experience in the current workplace: 0 to 7 years; 8 years and above.
- Number of years of experience among adolescents and young adults: 0 to 12 years; 13 years and above.

The categories for the education level variable were designed to ensure balanced groups, while the average number of years of experience was used to categorize the other two variables. Subsequently, three continuous variables were created for each subscale of the questionnaire: 1) attitude toward harm reduction in cannabis use (HR-c); 2) attitude toward abstinence-based treatments (ABST); and 3) perceived level of training in HR-c (TRAIN).

### *Statistical analyses*

Cronbach's alpha was calculated for each subscale to test its internal consistency: a score above 0.7 is considered acceptable (58). Additionally, item and factorial analyses were conducted to identify low quality items affecting the internal consistency of the subscales.

Descriptive analyses were performed for all variables. Then, three types of inferential statistics were conducted: one-way ANOVA, Pearson correlation, and multiple regression. First, one-way ANOVA testing reveals mean differences among several groups and examines the impact of independent variables on a dependent variable (58). Three one-way ANOVA tests were performed to separately assess the impact of participants' workplace (independent categorical variable) on the HR-c, ABST, and TRAIN subscales (dependent continuous variables). Additionally, two one-way ANOVA tests were done to evaluate the impact of participants' education level and

number of years of experience among young people (independent categorical variables) on the HR-c subscale (dependent continuous variable).

Second, three Pearson correlation analyses were conducted to evaluate the linear relationship between the three continuous variables (HR-c, ABST, TRAIN). This test simultaneously considers two continuous variables, and consequently the distinction between dependent and independent variables does not apply (58).

Finally, a multiple regression was executed to simultaneously evaluate the impact of the ABST and TRAIN subscales (independent continuous variables) on predicting attitudes toward HR-c (dependent continuous variable) (58). Statistical assumptions were validated for all the analyses, and all criteria were met: 1) Independence: the values of one variable are not influenced by another variable; 2) Normality: the variables adhere to a normal distribution, with skewness and kurtosis coefficients falling within the range of -1 to 1, indicating the absence of extreme scores; 3) Homoscedasticity: scatter plots showed that the variance of residuals remains constant across all variable levels, indicating a normal distribution of residuals; 4) Linearity: the relationship between the variables being correlated is linear (58).

## **Results**

The following sections present the qualitative analysis of the consultations, followed by the quantitative analysis of the questionnaire.

### **Qualitative analysis of the consultations**

Semi-structured interviews were conducted with 14 participants, and thematic data saturation was achieved, i.e., the data encompassed all the information needed to address the research questions, with no new themes being identified (59). Participants occupied either managerial ( $n = 6$ ) or practitioner ( $n = 8$ ) positions in centers providing services for adolescents and young adults in difficulty: RACQ, CRD, CRJD, and CLSC. Two themes—needs analysis and context

analysis—emerged from the thematic analysis of the consultation and contributed to the “situation analysis” component of the KT plan. Consultations were conducted in French and relevant transcripts were freely translated into English as needed.

### Theme 1: Needs analysis

The first theme comprised four sub-themes: 1) the gap between the actual and desired situations; 2) interest and receptivity to new knowledge; 3) attitudes and skills in applying HR; and 4) communication channel preferences.

#### *Gap between the actual and desired situations*

Future knowledge users (i.e., practitioners and managers) raised several issues they saw as creating a gap between their actual and desired situations with respect to HR-c adoption.

First, the majority of practitioners lacked knowledge not only about HR-c principles and applicability, but also about the evidence supporting its effectiveness among young people: “[HR is] applied according to our understanding of it” (Manager #4). They attributed this partially to the rapid flow of information and the emergence of new drugs, which left them feeling constantly lagging behind. Second, some residential facilities receive young people for problems other than SUDs. When young individuals do not use cannabis, some practitioners hesitate to engage in substance use prevention based on HR-c principles out of concern that it may inadvertently promote cannabis use. Third, almost half of the participants considered that they were sending mixed messages to their clientele, as their practices often did not align with their HR-c discourse. A manager mentioned that “If we were really in an HR culture, it would mean that when the young person comes back from his outing, we ask him to give us his consumption items, which we would store safely away..., rather than encouraging him to hide them” (Manager #2). This underscores a fundamental challenge in the implementation of HR-c, arising from the tension between organizational policies and front-line practices. Fourth, misconceptions related to applying HR-c,

such as concerns that it would encourage substance use or that it could have harmful consequences for young people or the group, seemed to hinder its adoption significantly.

Almost all the participants believed that offering HR-c training and clarifying guidelines for its adoption would help to fill the current gaps and enhance HR-c adoption. Moreover, some practitioners had previously applied the abstinence-based model in other workplaces; this change of practice could thus be critical for them and further highlighted the need for training. Participants also recommended having a contact person within the organizations (i.e., facilitator on site) to respond to their questions, provide clinical support, facilitate discussions around complex cases, and thereby mitigate their reluctance toward HR-c adoption.

#### *Interest and receptivity to new knowledge*

All participants expressed interest in updating their knowledge about HR-c (i.e., principles, effectiveness) and learning how to navigate certain situations (e.g., the illegality of cannabis among young people). One manager suggested that this would make them more comfortable in managing parents' discomfort related to HR-c adoption. Following the adoption of HR-c in their workplaces, some managers seemed keen to optimize its applicability.

#### *Attitudes and skills in applying HR-c*

The practitioners believed they possessed "generally good skills" in applying HR-c, although some acknowledged there was room for improvement. They perceived applying HR-c in a group context to be more challenging than working with individuals, because of group members' age differences. One practitioner found it easier to apply HR when focusing on drugs in general rather than on cannabis, while another felt more at ease applying HR to cannabis use rather than other drugs.

### *Communication channel preferences*

Participants indicated their openness to attending an interactive HR-c training that would establish direct contact with practitioners. They stressed the importance of having on-site contact persons for guidance and support. They also felt that any newly recruited practitioners who had previously applied the abstinence-based model should attend the training. The sharing of tools or information leaflets as training supplements was also recommended.

### Theme 2: Context analysis

The second theme comprised three sub-themes: 1) facilitators and obstacles related to knowledge users; 2) factors related to young people who use psychoactive substances; and 3) factors related to organizational characteristics.

### *Facilitators and obstacles related to knowledge users*

Facilitators and obstacles related to potential knowledge users appear to play a role in HR adoption. For example, all participants stated that local attitudes within the organizations (i.e., acceptability of HR, motivation to apply it) favored its adoption. Practitioners were open to discussing their challenges in HR-c adoption with researchers or colleagues. The perceived benefits of HR-c (e.g., better meeting the clientele's needs, quality of services, commitment to treatment) facilitated its applicability for the majority.

However, the lack of staff and practitioners' high workload limit HR-c adoption, in that they impede practitioners' availability for training. Furthermore, participants' openness to HR-c might be restrained by their personal values and tolerance threshold for HR, as well as a sense of powerlessness in relation to its adoption. For instance, a practitioner stated that "*it's difficult to allow young people to be in a state of drug use.... It makes me feel very powerless*" (Practitioner #5). As indicated, some find it challenging to witness young individuals using substances, which creates an obstacle for HR-c adoption.

Finally, practitioners and managers focused on various aspects when defining HR. For some, HR was aimed at raising awareness around responsible consumption, informing about the risks and consequences of use, and/or attempting to minimize them. Others considered that HR was aimed at reducing the use of psychoactive substances and was the opposite of the abstinence-based model.

*Factors related to young people who use psychoactive substances*

Participants felt less comfortable applying HR-c with minors, especially those under 14 years old, as it could lead to issues in different spheres: legal (i.e., due to the illegal status of cannabis); family (i.e., due to parents' lack of understanding or discomfort with HR-c); and school (i.e., due to schools' lack of openness to HR). Moreover, HR-c applicability could be limited by concerns around safety issues for the young person, as well as by mental health comorbidities, for which the practitioners often felt they lacked expertise.

*Factors related to organizational characteristics*

Three organizational characteristics could influence HR-c adoption. First, HR-c was already being implemented in all the targeted organizations, as it was aligned with their needs and organizational cultures. Practitioners had both the opportunity and management support to adopt it. The presence of an on-site facilitator helped promote HR-c. However, certain organizational regulations could limit its adoption (e.g., prohibiting the possession or use of cannabis on the premises). Second, certain structural characteristics of organizations could hinder HR-c implementation, for example, practitioners feared that, during encounters, young people who use cannabis might influence others who do not. Third, collaborators could influence HR-c implementation; opposition from some could limit it, whereas adherence and support from others could encourage it, as could its adoption in other workplaces.

## Quantitative analysis

### Descriptive statistics: Participants' characteristics

Table 1 presents participants' sociodemographic characteristics ( $N = 167$ ). The majority of the sample were women (76.6%). The largest age group was between 40 and 49 years (36.6%), and nearly half of participants had completed a bachelor's degree (47.9%). Almost half of the sample worked at the CRJDA (44.9%), and 77.8% were practitioners. On average, participants had held their current position for 7.63 years and had experience working with adolescents and young adults for an average of 12.87 years (Table 1).

Table 1. - Participants' sociodemographic characteristics

		Frequency ( $N = 167$ )	Valid percent
Gender	Male	37	22.2
	Female	128	76.6
	Non-binary	2	1.2
Age	20–29 years	37	22.2
	30–39 years	43	25.7
	40–49 years	61	36.6
	50 years and above	26	15.6
Education level	Lower than a bachelor's degree	45	21.6
	Bachelor's degree	80	47.9
	Higher than a bachelor's degree	42	1.8
Place of work	CRJDA <sup>1</sup>	75	44.9
	CLSC <sup>2</sup>	42	25.1
	RACQ <sup>3</sup>	33	19.8
	CRD <sup>4</sup>	17	10.2
Work role	Practitioners	130	77.8
	Managers	32	19.2
	Practitioners and managers	5	3
Number of years of experience in the current workplace	0 to 7 years	109	65.3
	8 years and above	58	34.7
Number of years of experience working among young people	0 to 12 years	86	51.5
	13 years and above	81	48.5

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<sup>1</sup> Centre de réadaptation pour les jeunes en difficulté d'adaptation (CRJDA);

<sup>2</sup> Centre local de services communautaires (CLSC);

<sup>3</sup> Regroupement des Auberges du cœur du Québec (RACQ);

<sup>4</sup> Centre de réadaptation en dépendance (CRD).

### Psychometric properties and analysis of the questionnaire

Cronbach's alpha was calculated for each subscale. Results revealed an acceptable internal consistency for the harm reduction (HR-c) and abstinence (ABST) subscales and a moderate internal consistency for the training (TRAIN) subscale (Table 2). However, detailed analysis of the results, and specifically analysis of the "Cronbach's alpha if item deleted" and "corrected item-total correlation" coefficients, revealed three low quality items affecting the internal consistency of the HR-c and ABST subscales. Factorial analyses confirmed the necessity of removing these three items, as they were not accurately measuring their intended factors and were undermining the validity and reliability of the instrument. After doing so, the Cronbach's alpha of the HR-c and ABST subscales increased, indicating moderate and improved outcomes (Table 2).

Table 2. - Subscale scores and psychometric properties

	Subscale score ranges	Minimum score	Maximum score	Mean	Standard deviation	Initial Cronbach's alpha	Cronbach's alpha after items' removal
HR-c subscale	11 to 55	31	55	44.79	5.34	0.78	0.80
ABST subscale	6 to 30	6	19	9.68	3.10	0.75	0.81
TRAIN subscale	4 to 20	4	20	12.3	3.65	0.83	

### Inferential statistics

#### *Subscale scores and job position*

Score ranges on each subscale are presented in Table 2, and the interpretation of the scores is based on the mean value within each range. That said, a score closer to the high end of the range reflects more positive attitudes, whereas a score closer to the low end indicates the negative

attitudes. Participants reported positive attitudes toward HR-c ( $M = 44.79$ ,  $SD = 5.34$ ), negative attitudes toward abstinence-based models ( $M = 9.68$ ,  $SD = 3.1$ ), and slightly above the average perceived level of training in HR-c ( $M = 12.3$ ,  $SD = 3.65$ ) (Table 2). To further explore the data, one-way ANOVA tests revealed no significant differences in the results of the three subscales based on job position (i.e., manager or practitioner) ( $p > 0.05$ ). Thus, attitudes toward HR-c, attitudes toward abstinence-based treatments, and perceived level of training in HR-c showed no significant differences between managers and practitioners.

#### *Subscale scores and workplace*

One-way ANOVA tests showed no significant differences in attitudes toward HR-c and abstinence-based treatments depending on the workplace. However, a significant relationship was found between attitudes toward the perceived level of training in HR-c and the workplace [ $F(3, 155) = 5.91$ ,  $p < 0.001$ ]. Bonferroni post-hoc test revealed that participants working at the CJRDA ( $M = 11.8$ ,  $SD = 3.46$ ,  $p < 0.05$ ) and CLSC ( $M = 11.14$ ,  $SD = 3.77$ ,  $p < 0.05$ ) had a significantly lower perceived level of training in HR-c than those employed at the RACQ ( $M = 13.9$ ,  $SD = 2.86$ ,  $p < 0.05$ ) or CRD ( $M = 14.23$ ,  $SD = 3.89$ ,  $p < 0.05$ ).

#### *Attitudes toward HR, level of education, and years of experience among young people*

Two one-way ANOVA tests were executed to determine whether positive attitudes toward HR-c were linked to participants' education level (lower than a bachelor's degree; bachelor's degree; higher than a bachelor's degree) and number of years of experience working among young people (12 years or less; more than 12 years). The results revealed no statistically significant differences among the groups in terms of education level [ $F(2, 164) = 2.01$ ,  $p > 0.05$ ] and years of experience among young people [ $F(2, 165) = 0.21$ ,  $p > 0.05$ ]. Thus, participants' education level and years of experience among young people did not influence their attitudes toward HR.

### *Correlations between the three subscales*

Pearson correlations were executed to assess the relationships between the three subscales (HR-c, ABST, TRAIN). The results revealed a positive and a low to moderate correlation between attitudes toward HR-c and perceived level of training in HR-c ( $r = 0.28, p < 0.01$ ). A strong and negative correlation was also found between HR-c and ABST subscales ( $r = -0.53, p < 0.01$ ). Thus, positive attitudes toward HR-c were moderately related to positive attitudes toward perceived level of training in HR-c and strongly related to negative attitudes toward abstinence-based models. Finally, we found a non-significant correlation between attitudes toward abstinence-based models and perceived level of training in HR-c ( $p > 0.05$ ).

### *Multiple regression*

The Pearson correlation analyses revealed a significant relationship between the HR-c subscale and the ABST and TRAIN subscales. Subsequently, a multiple regression analysis was conducted to assess the relative impact of the independent variables (ABST and TRAIN) on predicting the dependent variable (HR-c). The results indicated that both attitudes toward abstinence-based treatments ( $\beta = -0.50, p < 0.001$ ) and perceived level of training in HR-c ( $\beta = 0.22, p < 0.001$ ) significantly and independently predicted attitudes toward HR-c [ $R = 0.57, F(2,156) = 37.61, p < 0.001, R^2 = 0.32$ ]. This suggests that positive attitudes toward HR-c can be fostered by addressing attitudes toward abstinence-based treatments while simultaneously enhancing HR-c training.

### **Conceptualization of a KT plan**

According to the questionnaire results, participants' positive attitudes toward HR-c were strongly correlated to their negative attitudes toward abstinence-based treatments. Positive attitudes toward HR-c were not associated with participants' education level or years of experience among young people, but were linked to their positive perception of their training in HR-c. Participants

expressed interest in further HR-c training; lack of training was mentioned during the consultations and reflected in the TRAIN subscale, with scores slightly above average.

These findings further validate the results of our scoping review, indicating that a clear understanding of HR-c principles, recognition of its benefits, and increased HR-c training can facilitate its adoption (22). However, training should consider needs and context analysis, as well as the factors identified in the initial scoping review as influencing HR-c adoption by HSS practitioners (22). Based on these findings, we developed a KT plan encompassing the seven components proposed by the INSPQ (Table 3) (60). By implementing KT strategies (e.g., policy briefs, deliberative dialogues), the KT process aims to optimize HR-c adoption by HSS practitioners working among young people in difficulty in Quebec.

Table 3. - KT Plan

General objective	Promote a positive attitude among HSS practitioners toward HR-c and ensure its optimal implementation among adolescents and young adults in difficulty.
Situation analysis	This component includes an analysis of the target audiences' needs and contexts and is based on thematic analysis of the consultations (see qualitative analysis section).
Content to transfer	Four general subjects will be tackled (Supplemental Material 4): 1) General presentation of HR-c; 2) Implementation of HR-c among adolescents and young adults in difficulty; 3) Misconceptions related to HR-c; 4) Facilitators and obstacles to the adoption of HR-c.
Target audiences	Managers and practitioners working among adolescents and young adults in difficulty in four residential treatment facilities in Quebec (RACQ, CRJDA, CRD, CLSC).
Specific objectives	<ul style="list-style-type: none"> <li>- Promote a better understanding of HR-c.</li> <li>- Optimize the adoption and application of HR-c among adolescents and young adults in difficulty.</li> <li>- Improve organizational and professional practices.</li> </ul>

Actors to be involved	General managers and administrative assistants from the organizations involved, project co-researchers specializing in KT and HR, and facilitators of a KT strategy (i.e., deliberative dialogues).
KT strategies	<ul style="list-style-type: none"> <li>- Policy brief summarizing the content of the deliberative dialogues.</li> <li>- Deliberative dialogues: managers and practitioners will be invited to participate in a distinct deliberative dialogue structured in two phases (training content; deliberating and formulating recommendations).</li> </ul>
KT plan evaluation	<p>The KT plan will be implemented in September and October 2024. Two weeks following its implementation, we will evaluate it using a mixed-methods approach:</p> <ul style="list-style-type: none"> <li>- A <i>quantitative component</i>, which will include questionnaires to assess participants': 1) perceptions regarding the utility of the policy brief; 2) appreciation of the deliberative dialogues; 3) intentions to use the transferred knowledge; and 4) conceptualization of HR-c following the KT process (8, 61, 62).</li> <li>- A <i>qualitative component</i>, which will involve conducting semi-structured interviews with participants to evaluate the implementation of the KT plan and its effects on their practice.</li> </ul>

## Discussion

Several factors were found to facilitate or impede the adoption of HR-c. First, participants 1) are open to HR-c and motivated to enhance its applicability, 2) possess the capability to adopt it and are keen to enhance their skills, and 3) have their management's support and the opportunity to do so. These findings underscore elements that will eventually facilitate the implementation of the KT plan. In fact, Langer, Tripney (63) found that the capacity, motivation, and opportunity (CMO) of knowledge users represent behavioral components that increase knowledge use. The CFIR framework also highlights the influence of these factors on intervention implementation (41). Furthermore, clearly defining HR-c practice guidelines is crucial to maintain consistent communication with clients and avoid conveying conflicting messages, especially that HR-c conceptualization may differ due to personal interpretations (64). By doing so, the CMO of knowledge users will be addressed, thereby enhancing HR-c applicability.

Second, contextual factors found to influence HR-c adoption align with the results of our scoping review (i.e., factors related to knowledge users, to young people, to organizational characteristics) (22). Moreover, participants employed at the CRD exhibited a significantly higher perceived level of training in HR-c compared to participants in other organizations. While attitudes toward HR-c did not significantly differ across the organizations, a detailed examination of the results revealed that participants at the CRD also had the highest positive attitudes toward HR-c ( $M = 46.64$ ,  $SD = 5.36$ ), once again reflecting the possible effect of training which corroborates with the results of our scoping review (22).

Third, our scoping review stipulated that an extended period of experience among young people promotes HR-c acceptability (22). In this study, we did not find a correlation between positive attitudes toward HR-c and the number of years of experience among young people. This discrepancy may be explained by insights from the consultations: some practitioners who currently implement HR-c previously followed an abstinence-based approach in other organizations. Therefore, despite their extensive experience among young people, some might have previously favored abstinence-based treatments, potentially limiting their acceptability of HR-c. This highlights that experience alone does not necessarily translate into HR-c acceptability. Instead, prior exposure to abstinence-based models may act as a barrier to adopting HR-c, emphasizing the need for tailoring KT efforts, especially to practitioners with an abstinence-based background. These findings underscore once again the importance of engaging target audiences in the KT process.

Based on the scoping review (22) and the results of this study, the KT plan developed aligns with the needs and context of our target audiences. First, the KT plan conceptualization tackled three of the six mechanisms identified by Breckon and Dodson (65) that were found to promote research use. Those are aimed at: 1) raising users' awareness of the usefulness of research; 2) developing a shared understanding between researchers and users; and 3) fostering interactions between them (65). The KT plan implementation will continue focusing on those mechanisms, as well as the other three, aimed at: 1) improving access to and communication of research results; 2) developing users' skills to access and understand research results; and 3) influencing organizational structures (65).

Second, in this pre-implementation study, future knowledge users played an active role in co-developing a KT plan tailored to their needs, context, and preferences. The study design was directly informed by KT frameworks, particularly the *KTA* and *Linkage and Exchange* models, which emphasize on co-creating knowledge with target audiences and engaging in continuous interaction to foster collaboration between researchers and knowledge users (30, 34). This theoretical foundation ensures that the KT plan aligns with their context and enhances future knowledge use (30, 34, 35, 66). For instance, managers indicated that the training team should establish direct contact with practitioners, especially since varying hierarchical positions in group settings may introduce power dynamics and impede participants' engagement (67-69). This was taken into consideration, as we plan to organize two separate deliberative dialogues to manage these dynamics effectively, which will be described in the following point.

Third, we selected KT strategies based on the consultations and evidence-based data. Participants were eager for training and interested in receiving summary sheets. Consequently, we decided to distribute a policy brief and conduct a deliberative dialogue comprising two phases: 1) training content; 2) deliberations to formulate practice recommendations. Deliberative dialogues integrate research evidence with the perspectives, experiences, and tacit knowledge of stakeholders involved in or impacted by decisions on critical issues (70). Research supports the effectiveness of disseminating a policy brief before a deliberative dialogue to establish a shared foundation for discussions (70-72).

This study is characterized by several strengths. First, three types of data were used and triangulated to develop the KT plan. The scoping review guided the conduct of this study, and the mixed-methods approach facilitated a more thorough investigation of the findings and validation of the scoping review results. The qualitative findings provided a contextual understanding of the acceptability, needs, and challenges associated with HR-c adoption, while the quantitative findings measured attitudes toward HR-c and abstinence-based treatments, assessed perceived training levels, and identified potential correlations between key findings and socio-demographic variables, offering deeper insights into influencing factors. Combining both methods offered a

comprehensive perspective, reinforcing the study's mixed-methods approach. Second, crafting qualitative consultation grids based on the CFIR framework enabled us to explore evidence-based factors that could impact the KT plan implementation (41). Thematic analysis of the consultations helped fulfill the situation analysis component of the KT plan, and the number of participants consulted ( $N = 14$ ) ensured data saturation. Other qualitative rigor approaches were also ensured (i.e., credibility, transferability, dependability, and confirmability). As for the quantitative component, by including three subscales in the questionnaire we were able to gather data on several factors. Its completion by 167 participants also underscores its robust statistical power. Finally, we gained diverse insights on this subject matter by involving participants from four different residential treatment facilities in Quebec. While the study is rooted in the Quebec context, it highlights potential factors that could influence the implementation of a KT process, which can be considered in different settings. Additionally, the structured approach presented for developing a KT plan provides a framework that can be adapted to other provinces and countries, supporting the generalizability of the study.

Several limitations should also be noted. First, participants recruited from the CRJDA, CLSC, and CRD were affiliated with the *Centre intégré universitaire de santé et de services sociaux du Centre-Sud de l'île de Montréal* (CCSMTL) and thus located in urban areas. Including participants from suburban and rural areas would have enhanced comparisons of attitudes toward HR-c across different settings. Although the RACQ recruitment for the consultations did include one suburban and one rural participant, a larger sample from these areas would have provided more comprehensive insights. Adding a question on the urbanicity of participants in the questionnaire could also have facilitated the analysis of regional differences. Second, while integrating perspectives from various stakeholders offers valuable insights, the lack of direct input from young adults in difficulty remains a limitation. Their perspectives could have further enhanced the findings by providing a deeper understanding of their needs, experiences, and the practical implications of HR-c adoption among them. Additionally, the questionnaire has not been subjected to a validation study. However, despite the subscales' acceptable Cronbach's alpha, the evaluation of the scale's psychometric properties (item and factorial analysis) demonstrates methodological strength. Finally, the questionnaire data cannot be linked to the consultations,

which limits the ability to analyze participants' responses in relation to their needs and contextual factors identified during those consultations.

In brief, to develop a KT plan aimed at enhancing the adoption of HR-c, the attitudes of managers and practitioners working with young adults in Quebec were assessed regarding HR-c, abstinence-based treatments, and their perceived level of HR-c training. A qualitative needs and context analysis was also conducted to develop a KT plan tailored to target audiences' reality and useful for their practice.

In a future study, we plan to implement and evaluate the KT plan to identify potential practice changes. Future research should delve deeper into specific HR-c practices within organizations to gain a more comprehensive understanding of HR-c implementation. A more comprehensive assessment of the utility and effectiveness of developing a KT plan to guide the implementation process of an intervention would also be advantageous.

### **Data availability**

The datasets used and/or analysed during the current study available from the corresponding author on reasonable request.

Received: 4 November 2024; Accepted: 25 March 2025

Published online: 17 April 2025

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## **Acknowledgements**

We wish to thank all the participants who took part in the study as well as the administrations of the participating organizations for facilitating the recruitment process. The authors declare that they have no competing interests.

## **Authors' contributions**

RH, CD, JSF, and CH conceptualized the study and developed the KT plan. RH crafted data collection tools, conducted data collection, analysis, and interpretation. MJG verified statistical analyses. CD verified and approved qualitative and quantitative analyses. All authors critically reviewed the manuscript and approved the final manuscript.

## **Funding**

This work was supported by the *Ministère de la Santé et des Services sociaux (MSSS)*, *Fonds de recherche du Québec – Santé (FRQS)*, and *Fonds de recherche du Québec – Société et culture (FRQSC)* (Grant number: 2023-OPTR-322652). A grant obtained by the *Centre de recherche en santé publique (CReSP)* helped in partially covering the revision and publication fees of this article. We also gratefully acknowledge the financial support received from the *Institut universitaire sur les dépendances*, which was dedicated to assisting with the writing of the article.

## **Consent statement**

## **Competing interests**

The authors declare no competing interests.

## Ethics declaration

The project was approved by the *Comité d'éthique de la recherche en éducation et psychologie* (#2023-4408) of *Université de Montréal* and by the *Comité d'éthique de la recherche – Jeunes en difficulté* (#2024-1949) of the *Centre intégré universitaire de santé et de services sociaux du Centre-Sud de l'île de Montréal*. All methods were performed in accordance with the guidelines and regulations of the Declaration of Helsinki.

## Informed consent

was obtained from all the participants.

## Additional information

**Supplementary Information** The online version contains supplementary material available at <https://doi.org/10.1038/s41598-025-96001-x>.

**Correspondence** and requests for materials should be addressed to R.H.

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## Supplemental Material 1: Consultation grid – Managers

Do you have any questions before we get started?

- What organization do you work for [RACQ, CRJD, CRD, or CLSC] and what position do you currently hold?

Domain 1: Innovation (i.e., intervention)	
Innovation source	1. Generally speaking, what is your understanding of HR in cannabis use? How would you define this approach, and what do you think of its origins?
Innovation relative advantage	2. In your opinion, what would be the advantages and disadvantages of adopting HR in cannabis use among youth in your organization?
	3. Is HR in cannabis use currently applied in your organization with adolescents and young adults in difficulty? Do you think its adoption improves or could improve the services you currently offer to this clientele?
	4. Do you think that adopting HR in cannabis use in your organization would enable you to better meet the needs of adolescents and young adults in difficulty present in your organization? Why or why not?
Domain 2: Outer setting	
Local attitudes	5. Are you currently open to integrating HR in cannabis use into your organization? Why or why not?
	6. If the effectiveness and added value of adopting HR in cannabis use in your organization were presented to you, would you be open to the idea of encouraging its adoption by practitioners working with adolescents and young adults in difficulty in your organization? If so, how? If not, why not?
<ul style="list-style-type: none"> <li>- Local conditions</li> <li>- Financing</li> </ul>	7. What would facilitate the adoption of HR in cannabis use in your organization? Are there any conditions that would favor its implementation?
	8. What could hinder the adoption of HR in cannabis use in your organization? Are there any obstacles that could limit its implementation?

Partnerships	9. Does your organization network with external organizations in the field of HR in cannabis use? If so, how do these partnerships influence the implementation of HR in cannabis use in your organization?
Policies & laws	10. What policies, laws, or regulations influence the implementation of HR in cannabis use in your organization?
External pressure	11. If other organizations working with adolescents and young adults in difficulty decided to adopt HR in cannabis use, would you be more encouraged to implement it? Why or why not?
<b>Domain 3: Inner setting</b>	
Structural characteristics	12. Do you think your organization's structural characteristics (e.g., physical, technological, and work infrastructures) influence the implementation of HR in cannabis use?
- Tension for change - Relative priority	13. Do you think the current situation within your organization requires change and necessarily calls for interventions based on HR in cannabis use to improve the quality of interventions offered? Why or why not?
Compatibility Mission alignment	14. Do you think HR in cannabis use aligns with your organizational culture and needs? How might your organizational culture influence the implementation of HR in cannabis use?
<b>Domain 4: Individuals</b>	
Capability Opportunity	15. If practitioners in your organization are open to the idea of adopting HR in cannabis use in their practice with adolescents and young adults in difficulty, would you support their choice?
Motivation	16. How would you describe your motivation to integrate HR in cannabis use at the organizational level in your settings?
<b>Domain 5: Implementation process</b>	
Assessing context	17. If a team of researchers wanted to introduce you to the principles of HR in cannabis use, its effectiveness, and the added value of implementing it in your environment, what would be your opinion of this initiative?
Tailoring strategies	18. If a team of researchers wanted to introduce you to the principles of HR in cannabis use, its effectiveness, and the added value of implementing it

	in your environment, what would be your preferences regarding communication channels and the format of the intervention?
--	--

*I've asked all my questions, is there anything else you'd like to talk about?*

## Supplemental Material 2: Consultation grid – Practitioners

Do you have any questions before we get started?

- What organization do you work for [RACQ, CRJD, CRD, or CLSC] and what position do you currently hold?

<b>Domain 1: Innovation</b> (i.e., intervention)	
Innovation source	1. Generally speaking, what is your understanding of HR in cannabis use? How would you define this approach, and what do you think of its origins?
Innovation evidence base	2. Are you familiar with studies on the effectiveness of HR in cannabis use with adolescents and young adults with difficulties? If so, what do you think of the scientific knowledge related to HR in cannabis use?
Innovation relative advantage	3. Are you currently applying HR in cannabis use among adolescents and young adults in difficulty? Do you think its adoption would or could improve the services you currently offer to this clientele?
	4. In your opinion, what would be the advantages and disadvantages of adopting HR in cannabis use among youth in your organization?
Innovation adaptability	5. Do you think interventions based on HR in cannabis use can be adapted to the needs of your practice?
<b>Domain 2: Outer setting</b>	
Local attitudes	6. Are you currently open to adopting HR in cannabis use in your practice? Why or why not?
	7. If the effectiveness and added value of adopting HR in cannabis use in your practice were presented to you, would you be open to applying it more with adolescents and young adults in difficulty? Why or why not?
Local conditions Partnerships Policies & laws	8. What would facilitate the adoption of HR in cannabis use in your organization? Are there any conditions that would favor its implementation?
Financing External pressure	9. What could hinder the adoption of HR in cannabis use in your organization? Are there any obstacles that could limit its implementation?

	10. Could certain strategies for HR in cannabis use be more difficult to implement? If so, why and which ones?
<b>Domain 3: Inner setting</b>	
Tension for change	11. Do you consider that there is a concrete “need” for interventions based on HR in cannabis use in your organization? Why or why not?
Compatibility Mission alignment	12. Do you think HR in cannabis use aligns with your organizational culture and needs?
Relative priority	13. To what extent do you consider the implementation of interventions based on HR in cannabis use in your organization to be a priority?
<b>Domain 4: Individuals</b>	
Capability	14. How do you feel about your ability to implement HR in cannabis use with adolescents and young adults in difficulty?
Opportunity	15. If you are or could be open to adopting HR in cannabis use, do you think you have the opportunity to do so in your organization? Are you actively involved in major decisions taken by your organization? 16. If you experienced any challenges in applying HR in cannabis use, would you be interested in discussing them with colleagues or researchers to see how they could be overcome?
Motivation	17. How would you describe your motivation to adopt HR in cannabis use in your practice with adolescents and young adults in difficulty?
<b>Domain 5: Implementation process</b>	
Assessing context	18. If a team of researchers wanted to introduce you to the principles of HR in cannabis use, its effectiveness, and the added value of implementing it in your environment, what would be your opinion of this initiative?
Tailoring strategies	19. If a team of researchers wanted to introduce you to the principles of HR in cannabis use, its effectiveness, and the added value of implementing it in your environment, what would be your preferences regarding communication channels and the format of the intervention?

*I've asked all my questions, is there anything else you'd like to talk about?*

## Supplemental Material 3: Questionnaire

### Part A: Sociodemographic and career-related questions

1. With which gender do you identify?
  - Male
  - Female
  - Non-binary
  - Other gender
  - Prefer not to answer
  
2. How old are you?
  - 20–29 years
  - 30–39 years
  - 40–49 years
  - 50 years and over
  
3. What is the highest diploma you have obtained?
  - High school or college
  - Undergraduate certificate
  - Bachelor's degree
  - Master's degree
  - Doctorate
  - Other (please specify) : \_\_\_\_\_
  
4. Which organization do you work for?
  - *Regroupement des Auberges du cœur du Québec (RACQ)*
  - *Centre de réadaptation pour les jeunes en difficulté d'adaptation (CRJD)*
  - *Centre de réadaptation en dépendance (CRD)*
  - *Centre local de services communautaires (CLSC)*
  
5. What position do you hold?
  - Practitioner
  - Manager
  - Practitioner and manager
  - Other (please specify): \_\_\_\_\_
  
6. I have been in my current position for \_\_\_\_\_ years.
  
7. How many years have you worked with adolescents and young adults in difficulty in Quebec?

Write the number of years : \_\_\_\_\_

**Part B: Questions on harm reduction in cannabis use**

Please indicate your level of agreement with the following statements	Strongly disagree		Neutral	Strongly agree	
	1	2	3	4	5
*HR-c: Harm reduction in cannabis use					
<b>Attitudes toward HR-c</b>					
8. HR-c* is not an effective approach for cannabis use.					
9. HR-c* for cannabis use is dangerous.					
10. HR-c* for cannabis use is an effective form of treatment.					
11. HR-c strategies for cannabis use encourage cannabis use.					
12. People diagnosed with psychiatric disorders and addictions can benefit from HR-c.					
13. People diagnosed with <i>severe</i> psychiatric disorders and addictions can benefit from HR-c.					
14. I believe shelter services should NOT require abstinence.					
15. HR-c is effective in keeping individuals in treatment.					
16. HR-c is a valid and useful treatment modality.					
17. HR-c does not make people accountable for their actions.					
18. HR-c use supports cannabis use.					

19. I believe residential services such as shelters or hostels should be reserved for people who are ready to achieve or maintain abstinence.	
<b>Attitudes toward abstinence-based treatments</b>	
20. Complete abstinence is the only objective in treatment for cannabis use.	
21. Abstinence is a reasonable and achievable objective for all individuals.	
22. Accepting cannabis use has no place in treatment.	
23. You cannot help someone with an addiction if you tolerate cannabis use.	
24. Recovering from cannabis use means complete abstinence from cannabis.	
25. You cannot help someone recover by tolerating cannabis use in any way.	
26. Relapse is a natural phase of the treatment.	
27. A legitimate treatment goal is to help people reduce their cannabis use to a level that allows them to function effectively in society.	
<b>Your perceived level of training in HR-c</b>	
28. I feel that I'm sufficiently trained in HR-c	
29. I feel that I understand HR-c perfectly.	
30. I need more training in HR-c.	
31. I have serious concerns about the level of training I have received to be able to work effectively with adolescents and young adults in difficulty.	

**Thank you for your participation!**

## Supplemental Material 4: Content to transfer and desired effects

Themes (T)	Desired effects
<b><i>T1: General presentation of HR in cannabis use</i></b>	
<ul style="list-style-type: none"> <li>• Definition</li> <li>• Brief background: why and when did HR emerge?</li> <li>• General principles of HR in cannabis use</li> <li>• Why is HR in cannabis use useful for young people?</li> <li>• Evidence on the effectiveness of HR in cannabis use, especially among young people</li> </ul>	Better understanding of the history of HR in cannabis use, its principles, and its effectiveness, especially among young people
<b><i>T2: Implementation of HR in cannabis use among adolescents and young adults with difficulties</i></b>	
<ul style="list-style-type: none"> <li>• What are practices and strategies for HR in cannabis use among adolescents and young adults with difficulties?</li> <li>• Concretely, what does it mean to adopt HR in cannabis use?</li> <li>• Discuss the usefulness of adopting HR in cannabis use at the organizational level and its potential to improve practices within the organization</li> </ul>	<ul style="list-style-type: none"> <li>• Better understanding of how to apply HR in cannabis use among adolescents and young adults in difficulty who use or do not use psychoactive substances</li> <li>• Good familiarity with the guidelines for adoption of HR in cannabis use and reduction or elimination of mixed messaging to young people</li> <li>• Greater knowledge about individual strategies for HR in cannabis use among young people</li> </ul>
<b><i>T3: Misconceptions related to HR in cannabis use</i></b>	
<ul style="list-style-type: none"> <li>• Discuss the misconceptions associated with HR in cannabis use and how to overcome them, with a focus on the realities</li> <li>• Examples of misconceptions: fear of harming young people or the group; fear of trivializing and/or encouraging cannabis consumption</li> </ul>	Demystification and clarification of misconceptions associated with the adoption of HR in cannabis use
<b><i>T4: Facilitators and obstacles to the adoption of HR in cannabis use</i></b>	

- Presentation of the results of the scoping review (study 1)
- What obstacles might practitioners encounter in adopting HR in cannabis use? How can they be overcome?
- What factors could encourage and facilitate the adoption of HR in cannabis use?
- As a stakeholder or manager, what is your role and how could you optimize the adoption of HR in cannabis use?
- Greater awareness among target audiences of potential facilitators and barriers to adopting HR in cannabis use
- Positive change in attitudes and wider adoption of HR in cannabis use among adolescents and young adults with difficulties

# **Chapitre 6 – Article IV : Implementation and evaluation of a knowledge translation process to optimize the adoption of harm reduction in cannabis use by practitioners working with youth in Quebec: a mixed-methods study**

Roula Haddad<sup>1</sup>, Jean-Sébastien Fallu<sup>2,3,4,5</sup>, Christophe Huynh<sup>3,6</sup>, Laurence D’Arcy<sup>3</sup>, Yuan Song<sup>1</sup>, Christian Dagenais<sup>1</sup>

**To cite:** Haddad, R., Fallu, J.-S., Huynh, C., D’Arcy, L., Song, Y., & Dagenais, C. (in revision). *Implementation and evaluation of a knowledge translation process to optimize the adoption of harm reduction in cannabis use by practitioners working with youth in Quebec: A mixed-methods study*. Département de psychologie, Université de Montréal.

<sup>1</sup> Department of Psychology, Université de Montréal

<sup>2</sup> School of Psychoeducation, Université de Montréal

<sup>3</sup> Institut universitaire sur les dépendances, Centre intégré universitaire de santé et de services sociaux du Centre-Sud-de-l’Île-de-Montréal

<sup>4</sup> Centre for Public Health Research (CReSP), Centre intégré universitaire de santé et de services sociaux du Centre-Sud-de-l’Île-de-Montréal

<sup>5</sup> Recherche et intervention sur les substances psychoactives (RISQ), Université du Québec à Trois-Rivières

<sup>6</sup> Department of Psychiatry and Addictology, Université de Montréal

Corresponding author: Roula Haddad ([roula.haddad@umontreal.ca](mailto:roula.haddad@umontreal.ca))

## Abstract

**Background.** Cannabis use initiation is highly common among youth. Harm reduction in cannabis use (HR-c) has proven effective in minimizing the potential harms of the substance. However, its adoption by health and social services (HSS) practitioners remains limited due to several obstacles. This study marks the final phase of a broader research initiative. It aims to: 1) present the implementation of a knowledge translation (KT) plan developed to enhance HR-c adoption and formulate actionable strategies to support its applicability; and 2) evaluate its immediate and short- to-medium-term effects.

**Methods.** Ziam et al.'s (2024) evaluation framework guided our description of the KT plan implementation and our evaluation of its effects. Using a non-probabilistic sampling method, we recruited managers and practitioners from four residential facilities for youth in Quebec ( $N = 19$ ). Two KT strategies—policy briefs and deliberative dialogues—were implemented, during which participants co-developed final actions to optimize HR-c adoption. A mixed-methods evaluation followed, involving a questionnaire with five scales and semi-structured interviews. Data were analyzed using post-parallel analysis, combining descriptive statistics and thematic analysis to assess the KT plan's implementation and effects. Cronbach's alpha of the subscales was calculated to assess their internal consistency.

**Results.** The final actions formulated with participants addressed HR-c, youth, and organizations. Quantitative findings revealed: 1) a high appreciation for the deliberative dialogues; 2) positive attitudes toward HR-c; 3) negative attitudes toward abstinence-based treatments; 4) participants' favorable perception of their training level in HR-c; and 5) a strong intention to implement the proposed actions. The qualitative findings revealed that participants were using the transferred knowledge (e.g., HR-c strategies applicable by youth) and planned to disseminate the formulated actions within their teams to enhance practices.

**Conclusions.** A systematic and multidirectional KT process was implemented to optimize HR-c adoption among HSS practitioners working with youth in Quebec, serving as a model for similar interventions. The study reinforced HR-c applicability, facilitated its adoption, and contributed to the formulation of concrete implementation actions. Future research should examine the long-

term impact of KT initiatives on HR-c adoption and explore strategies to support practitioners in applying the transferred knowledge.

**Key words:** Knowledge translation; Knowledge mobilization; Implementation science; Harm reduction; Cannabis; Health; Social services; Public health; Adolescents; Youth

### **Contributions to the literature**

- This study bridges the knowledge gap in structured KT efforts in the HR-c field by offering a systematic, multidirectional approach to translate research into practice.
- This comprehensive overview details the development, implementation, and evaluation of a KT plan in HR-c tailored to professionals in the Quebec context.
- The post-implementation evaluation examined the attitudes toward HR-c adoption of professionals working with youth in Quebec.
- To the best of our knowledge, this is the first study on this topic, with the potential to optimize the adoption of HR-c by health practitioners and improve practices.

## Background

### Harm reduction in cannabis use

Cannabis use initiation in adolescence and young adulthood is highly common and can be attributed to several motives (e.g., pleasure-seeking, self-medication) (1-4). In a 2023 Quebec statistical survey, 23% of youth aged 15 to 29 years who were surveyed in that year reported using cannabis in the past three months (5). Moreover, cannabis is one of the most used substances among youth with difficulty residing in treatment facilities in Quebec (6, 7). The term “youth with difficulty” refers to individuals presenting developmental or behavioral problems, facing difficulties with school adaptation (e.g., delinquency, violence), and/or requiring appropriate help to ensure their development and safety (e.g., from abuse, neglect) or to prevent such problems (8).

Various prevention and intervention models, approaches, and objectives can be applied to youth and people who use cannabis (PWUC), including abstinence-based goals, motivational approaches, and cognitive and behavioral models (3, 4, 9, 10). However, the harm reduction in cannabis use (HR-c) approach, based on values of pragmatism and humanism, has been found to be effective in minimizing potential harms of cannabis use and in leading PWUC to adopt protective consumption-related behaviors (e.g., delaying the initiation of cannabis use, avoiding deep inhalation, using legal cannabis products) without abstaining from use (3, 11-21).

Despite the proven efficacy of HR-c, its adoption by health and social services (HSS) practitioners is impeded by persistent obstacles, including ambiguities in its conceptualization, ethical dilemmas, and fear of encouraging cannabis use (18, 21, 22). In response to this situation, our team conducted a research project aimed at enhancing HR-c applicability by implementing and evaluating a KT process, which is the focus of this study.

## Context of the research project

This study is part of a broader research initiative focused on harm reduction for cannabis use. While the legal age for cannabis use is 18 years in Canada, it is 21 in the province of Quebec, where the study was conducted (5, 27). Within this legislative context, the *2018-2028 Quebec Interministerial Action Plan on Dependence* and the Quebec Research Funds have prioritized research on cannabis (6, 23). Accordingly, this study focuses specifically on cannabis and is funded by a concerted action program dedicated exclusively to research on non-medical cannabis use, given its high prevalence among youth and the challenges associated with implementing HR-c.

Initially, our research team conducted two scoping reviews. The first aimed to identify factors that facilitate and hinder HR-c adoption by HSS practitioners (24, 25). Results revealed that HR-c applicability was influenced by stakeholders' characteristics (e.g., level of education and training in HR), clients' characteristics (e.g., substance use disorder [SUD] gravity, comorbidities), HR-related factors (e.g., misconceptions, legal status of cannabis), and/or workplace-related factors (e.g., management support) (25).

The second scoping review identified HR-c strategies applicable by youth. These were grouped into four categories based on the timing of cannabis use: 1) *planning use*: strategies related to sourcing (e.g., purchasing from a reliable source), context and social environment, timing and use motives, and the frequency and amount used; 2) *before use*: product-related strategies (e.g., avoiding the mixing of substances); 3) *during use*: strategies related to consumption methods; and 4) *after use*: travel-related strategies and spacing use episodes (e.g., abstaining from consumption when effects are not immediately felt) (26).

Following the two scoping reviews, we conducted a mixed-methods study to explore the views of managers and practitioners working among adolescents and young adults (14 to 21 years old)

with difficulties in four residential facilities in Quebec (RACQ<sup>2</sup>, CRJDA<sup>3</sup>, CRD<sup>4</sup>, CLSC<sup>5</sup>) toward HR-c (27). The collected data enabled us to analyze managers' and practitioners' needs, context, attitudes toward HR-c, abstinence-based treatments, and their perceived level of training in HR-c. Results revealed that HR-c was already implemented in all targeted organizations but that its applicability was not fully optimized due to certain obstacles that limited its implementation (27). Therefore, with the target audiences, we co-developed a knowledge translation (KT) plan that aims to optimize HR-c adoption by HSS practitioners working among youth with difficulty in Quebec (Additional file 1) (25-27). The KT plan focused on disseminating evidence-based data about HR-c and nine preliminary actions that can help optimize HR-c adoption (25-27). The present study was focused on describing the implementation of our KT plan and evaluating its effects (see Objectives section).

### **Translating knowledge into practice**

The “Knowledge-to-Action” gap refers to the existing discrepancy between research and practice in several domains (28-30). KT emerged as a field aimed at reducing this gap and enhancing evidence-based practices (28, 31, 32). The Quebec National Institute of Public Health (*Institut national de santé publique du Québec; INSPQ*) defines KT as a dynamic and continuous process starting from knowledge production to the implementation of activities that promote the dissemination, adoption, and assimilation of knowledge by target audiences (33). Graham et al. (29) consider that a KT process involves a “knowledge production or co-production” stage (i.e.,

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<sup>2</sup> *Regroupement des Auberges du cœur du Québec* (RACQ) is a provincial community agency that offers social reintegration services and shelters youth with difficulty experiencing homelessness, family conflict, social exclusion, or other difficult life circumstances.

<sup>3</sup> *Centre de réadaptation pour les jeunes en difficulté d'adaptation* (CRJDA) is a social and mental health public youth center that offers adaptation, rehabilitation, and social integration services for young people and families experiencing significant difficulties that jeopardize their safety.

<sup>4</sup> *Centre de réadaptation en dépendance* (CRD) is a public center intended for young individuals or adults experiencing difficulties with alcohol, medication, drugs, or gambling.

<sup>5</sup> *Centre local de services communautaires* (CLSC) centers provide front-line health and social services to adults and youth, including general medical care, nursing consultations, mental health support, and rehabilitation services.

creating, mobilizing, or selecting knowledge to transfer) followed by a “putting into action” stage (i.e., adapting knowledge to target audiences and disseminating it to promote knowledge use). This model highlights the presence of two entities in a KT process—knowledge producers and knowledge users—whose interactions can take several forms (34). However, maintaining regular interactions between them positions knowledge users as “knowledge co-producers”, reduces ineffective communication between them, and can facilitate knowledge use (34-36).

Given the complexity and diversity of a KT process, the INSPQ recommends developing a KT plan consisting of seven key components to prepare and execute it effectively: situation analysis (i.e., analysis of target audiences’ needs and context), general objective, content to transfer, target audiences and specific objectives, actors to involve, KT strategies, and evaluation (33). Among the available KT strategies, policy briefs and deliberative dialogues are the most commonly used. A policy brief is defined as a brief document combining graphics and text to summarize key research findings, offering a concise explanation of a policy issue or problem, and sometimes providing actionable options and specific recommendations for addressing it (37). A deliberative dialogue is a group process designed to integrate and interpret scientific and contextual evidence to inform policy development (38). Studies have shown that disseminating a policy brief a few weeks before conducting a deliberative dialogue is an effective way to familiarize target audiences with the topics to be covered (37, 39).

KT theories do not necessarily detail “how” to implement knowledge (40). Implementation science, a related field, addresses this component to guide a KT process implementation (28, 30, 40, 41). Eccles et al. (42) define implementation science as “the scientific study of methods to promote the systematic uptake of clinical research findings into routine clinical practice, and hence to reduce inappropriate care”. Several theories, models, and frameworks have emerged to promote effective implementation (43-45). For instance, the widely used Consolidated Framework for Implementation Research (CFIR) offers a structured framework consisting of five domains that influence the implementation process: innovation (i.e., intervention), outer setting, inner setting, individuals, and implementation process (45-47). Each domain groups several constructs that researchers should consider in the pre-

implementation, implementation, and post-implementation phases to identify potential facilitators and obstacles to their process and thereby improve it (46).

Although rarely done, evaluating a KT plan implementation is useful to assess its effectiveness and impacts on knowledge use (48, 49). Given the growing array of theories, models, and frameworks in KT and implementation science that guide evaluation efforts, Ziam et al. (49) conducted a scoping review to compile a preliminary inventory of their characteristics. Those authors developed a “toolbox” that provides an evaluation framework encompassing four general dimensions: 1) context (i.e., assess internal and external contextual factors in the pre-implementation phase); 2) process (i.e., describe the implementation process—e.g., planning, KT strategies, implementation roll-out); 3) effects (i.e., evaluate the immediate and short-to-medium-term effects); and 4) impact (i.e., determine impacts on organizations, professionals, etc.) (49). Each dimension includes subdimensions and components that represent key factors to consider when evaluating a KT process (49). Researchers and KT specialists were consulted to validate the framework and its components using the Delphi approach, to ensure its rigor (49, 50).

## **Objectives**

This study represents the final step in the chronological progression of our research project. Our aims here are to: 1) present the KT plan implementation process and validate the preliminary actions aimed at enhancing HR-c adoption among adolescents and young adults (14 to 21 years old); and 2) evaluate the KT plan’s immediate and short-to-medium-term effects by assessing five factors: assessment of the KT process and strategies; intention to use the transferred knowledge; attitudes toward HR-c; abstinence-based treatments; and perceived level of training in HR-c.

## Methodology

### Conceptual frameworks

The present study was guided by Ziam et al.'s (49) evaluation framework, focusing on two of its four dimensions: 1) the “process” dimension, to describe the implementation phase of the KT plan; and 2) the “effects” dimension, to evaluate the immediate effects of the implementation (e.g., participants’ satisfaction, intention to use knowledge) as well as its short-to-medium-term effects (e.g., knowledge adoption, assimilation, application) (Additional file 2). The Standards for Reporting Implementation Studies (STaRI) checklist was used to ensure comprehensive and structured reporting of the study, as it encompasses both implementation and evaluation components (Additional file 3) (51).

### KT plan implementation

A non-probabilistic sampling method was used to recruit participants for the implementation phase (52). A contact person in each organization transferred the recruitment email to managers and practitioners. Participation was voluntary, based on interest expressed to RH.

The KT plan incorporated two strategies—policy briefs and deliberative dialogues—tailored for each target audience (practitioners and managers). Managers ( $N = 4$ ) and practitioners ( $N = 15$ ) from RACQ, CRJDA, CRD, and CLSC were recruited (Table 1). Participants first received a policy brief highlighting the themes of the deliberative dialogue and the preliminary proposed actions to optimize HR-c adoption. Two weeks later, each target audience took part in separate online deliberative dialogues, which comprised two phases:

- Phase 1 (training content), in which recent empirical information on HR-c was presented to ensure a shared understanding among participants, addressing any misconceptions that might arise. It included a historical overview of substance use and HR-c, misconceptions around HR-c, factors influencing HR-c adoption, HR-c strategies applicable by youth, and the nine preliminary actions (25, 26).

- Phase 2 (deliberations), a group activity, with managers forming one single group, while practitioners were divided into three smaller groups based on their workplaces. For each of the nine actions, each group responded to the following questions: 1) Does the action need clarification or reformulation? If so, how?; 2) How important is the action in your context? [1 = not very important; 5 = very important]; 3) [For managers] How feasible is it to implement the action?; [For practitioners] What would be the impact of implementing (or not implementing) the action?

After the group activity, participants and researchers together reviewed the responses, and each team submitted its completed activity sheet. The research team then formulated final actions, classified them by priority, and assessed their feasibility and potential impact. Following the deliberative dialogues, the target audiences received a policy brief outlining the final actions (Additional file 4).

The managers’ deliberative dialogue was held in September 2024 as a 4-hour event that included both phases (i.e., training content and deliberations). The practitioners’ deliberative dialogue occurred in October 2024 and consisted of a 1.5-hour training phase followed by a 3-hour deliberation phase on separate days (Table 1).

Table 1. - Number of participants at the deliberative dialogues by organization

	<b>Managers (N = 4)</b>	<b>Practitioners; Phase 1 (N = 15)</b>	<b>Practitioners; Phase 2 (N = 11)*</b>
RACQ	1	6	5
CRJDA	1	6	3
CRD	1	3	3
CLSC	1	0	0

*\*Four practitioners who had attended the first phase of the deliberative dialogue did not attend the second phase.*

## **KT plan evaluation**

### Data collection

The KT plan implementation was evaluated to measure its effects and determine whether it had successfully achieved its initial goal of optimizing HR-c adoption by HSS practitioners working among youth with difficulty in Quebec. The mixed-methods data collection tools employed (questionnaire, interviews) covered the components identified by Ziam et al. (49) to evaluate the immediate and short-to-medium-term effects of the KT plan implementation. Recruitment took place two weeks after the deliberative dialogues, using a non-probabilistic sampling method (52): interested participants responded to the questionnaire on LimeSurvey and/or took part in 45-minute semi-structured interviews.

### *Quantitative component*

The questionnaire consisted of 62 questions organized into four subsections (Additional file 5). The first subsection consisted of sociodemographic and career-related questions (e.g., level of education, years of experience).

The second subsection consisted of the Participant Feedback Questionnaire (PFQ), which demonstrates good internal consistency, with Cronbach's alpha scores ranging from 0.73 to 0.92 (53). Through 18 quantitative questions rated on a 7-point Likert scale, it assessed participants' appreciation of the deliberative dialogue's content, structure, learning strategy, and facilitator. It also included four qualitative questions to capture participants' initial expectations and overall appreciation.

The third subsection consisted of the Continuing Professional Development – Reaction (CPD-Reaction) questionnaire, designed to assess participants' intention to use the transferred knowledge (i.e., implement the proposed actions) (54). Through 12 questions, it evaluated five factors that influence the occurrence of a behavior (54). A score closer to 7 on each factor indicates greater likelihood of the behavior occurring. The Cronbach's alpha of each factor varied between 0.79 and 0.89, showing good internal consistency (54).

The last subsection included the 22 statements of the Harm Reduction Questionnaire, divided into three subscales that assessed participants' attitudes toward HR-c and abstinence-based treatments and their perceived level of training in HR-c (18). Each item was rated on a 5-point Likert scale, including 10 reverse-coded items. The questionnaire has not undergone validation. Three adaptations were made to the questionnaire: 1) it was translated from English to French using the back-translation technique (i.e., the French version subsequently re-translated into English by a professional translator, and the two English versions compared to ensure consistency) (55); 2) it was modified to focus specifically on "cannabis" rather than "drugs" in general; and 3) three items were removed to enhance the instrument's validity and reliability, as item and factorial analyses conducted on the questionnaire in our previous study revealed that those items were not effectively measuring their intended factors (27).

#### *Qualitative component*

Individual semi-structured interviews of 45 minutes were conducted with managers and practitioners who participated in the deliberative dialogues. The interview grid addressed the immediate and short-to-medium-term effects of the KT plan, the participants' appreciation of the KT process and strategies, and types of knowledge use (Additional file 6).

#### *Data analysis*

Mixed-methods analyses were implemented through post-parallel analysis, which involved three steps (56, 57): 1) quantitative data were first collected and statistically analyzed; 2) qualitative data were gathered and analyzed using thematic analysis; and 3) the results from both analyses were compared and integrated to provide a more comprehensive understanding of the research findings. The following section details the quantitative and qualitative analyses.

### *Quantitative analysis*

The questionnaire's results were imported to IBM SPSS Statistics (Version 29.0.1.0). Reverse-coded items were first recoded.

#### Categorical and continuous variables

The questionnaire covered several categorical variables, including gender, age, workplace, and work role. Three categorical variables were then defined, each consisting of two groups to ensure balanced representation, i.e., that the groups were of approximately equal size (the cutoff for years of experience being set at the median, such that roughly half of the participants fell into each group to ensure a balanced representation) (58):

- Education level: bachelor's degree; higher than a bachelor's degree.
- Years of experience in the current workplace: less than 4; 4 to 14.
- Years of experience working among youth: 1 to 10; 11 to 25.

Subsequently, four continuous variables were established, corresponding to: 1) the PFQ and each subscale of the Harm Reduction Questionnaire; 2) attitudes toward HR-c (HR-c); 3) attitude toward abstinence-based treatments (ABST); and 4) perceived level of training in HR-c (TRAIN).

#### Statistical analysis

Descriptive analyses were performed for all categorical (e.g., age, education level) and continuous variables (PFQ, HR-c, ABST, TRAIN). As for the CPD-Reaction questionnaire, the mean of the items corresponding to each of the five factors was calculated. Cronbach's alpha was calculated for the five subscales to test internal consistency; a score above 0.7 is considered acceptable (58).

### *Qualitative analysis*

Interviews were partially transcribed using NVivo software (Version 14.24.0). This approach facilitates re-listening to specific segments and capturing the main ideas of each segment while avoiding verbal nods and filler words (59). A thematic qualitative analysis based on a mixed-methods deductive-inductive coding approach was used to analyze interview content (60): initial codes were derived from Ziam et al.'s (49) inventory and completed based on participants' responses. Thematic data saturation was reached; the data covered all necessary information to answer the research questions, with no new themes emerging (61). Additional steps were implemented to ensure components of qualitative rigor, such as peer validation of thematic analysis (credibility), in which another researcher (CD) reviewed and confirmed the identified themes to enhance credibility, reduce bias, and ensure consistency in the qualitative data interpretation. Other steps included detailed descriptions of the study setting, participants, and context (transferability), and thorough documentation of research decisions, coding steps, and methodological choices (dependability) (62, 63).

## **Results**

### **Actions aimed at optimizing HR-c adoption**

As stated earlier, managers and practitioners participated in formulating the final actions during the group activity at the deliberative dialogue. The following section briefly presents their content. The actions proposed for each target audience focus on the same elements but are formulated differently to reflect what they could potentially implement based on their work roles (Table 2). Their assessed feasibility in each organization and the potential impact of their implementation are presented in Additional file 7.

Overall, the actions tackled three main categories: 1) HR-c-related actions; 2) organization-related actions; and 3) youth-related actions. The first category emphasizes the utility of implementing measures to clarify the principles of HR-c, facilitate its adoption, and address any misconceptions or beliefs that hinder its applicability. These measures include consulting a

contact person, attending HR-c trainings, and engaging with team members to reflect on personal conceptions surrounding HR-c.

In the second category, organization-related actions involve reiterating and being informed of the organizations' orientation regarding HR-c adoption, particularly among youth under 21 years old, clarifying the individual and collective intervention framework to avoid conveying contradictory messages to youth and effectively address challenges related to HR-c implementation, such as the presence of mental and/or physical health issues.

Finally, youth-related actions highlight the necessity of adopting HR-c based on the needs of young people, even when issues related to cannabis use (e.g., cannabis use disorder) are present, and if possible, to promote understanding of HR-c among young people's parents and schools.

Table 2. - Actions to optimize HR-c adoption in interventions with youth in difficulty

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<b>Actions to be implemented by practitioners</b>	
<b>1</b>	Consult a contact person (internal or external) to get answers to your questions, obtain clinical support, and discuss complex cases.
<b>2</b>	Become informed and contribute to the clarification of individual and collective intervention frameworks for adopting HR-c among young people in cases of concomitant mental and/or physical health issues; if possible, obtain the support of health professionals (e.g., psychiatrists).
<b>3</b>	Adopt HR-c based on young people's needs, even if there are issues related to cannabis use (e.g., cannabis use disorder).
<b>4</b>	Become informed about available training opportunities on HR and participate in them to enhance your knowledge of HR strategies applicable by youth, HR principles, HR effectiveness, and applicability among young people who use/don't use substances.

5 Review the organization’s orientation regarding HR-c adoption, taking into account the legal status of cannabis among young people under 21 and, if available, read the documentation on that orientation.

6 If possible, and depending on the situation, promote understanding of HR-c principles among parents of young people and among schools (e.g., facilitate information meetings, distribute tools, etc.).

7 Interact and discuss with members of your work teams to reflect on your conceptions and beliefs regarding HR-c.

8 In team discussions, align the individual and collective intervention frameworks with HR-c principles to limit transmission of contradictory messages to young people.

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### **Actions to be implemented by managers**

1 Offer or direct practitioners to HR-c training opportunities to increase their knowledge of its principles and effectiveness, its applicability among young people who use/don’t use cannabis, and HR-c strategies applicable by young people.

2 Clarify the therapeutic framework for adopting HR-c among young people (aged 14–24) in cases of concomitant mental and/or physical health issues.

3 Ensure organizational practices are aligned with the organization’s HR-c orientation toward young people (aged 14–24), so as not to send them contradictory messages.

4 Designate a contact person to answer practitioners' questions, provide clinical support, and facilitate discussions on complex cases.

5 Encourage opportunities for discussion among members of work teams to foster reflection on their conceptions and beliefs about HR-c and to ensure share and valid understanding.

6 Promote an understanding of HR-c principles among parents of young people.

7 If possible, and depending on the situation, promote HR-c support by schools, partners, and/or collaborators of your organization.

- 8 Reiterate the organization’s orientation regarding HR-c adoption, while taking into account the legal status of cannabis among young people under the age of 21.
- 9 Adopt HR-c based on young people’s needs, even if there are issues related to cannabis use (e.g., dependence).

**KT plan implementation effects**

To evaluate the KT plan’s effects, the 15 participants (four managers and 11 practitioners) involved in the second phase of the deliberative dialogues were invited to complete a questionnaire and participate in semi-structured individual interviews. The following section outlines the quantitative and qualitative findings of the evaluation process. The term “participants” was used to refer collectively to both managers and practitioners when no significant differences were observed between these groups; specific subgroup distinctions are made only when relevant findings emerged for either managers or practitioners.

Quantitative findings

*Characteristics of questionnaire respondents*

Of the 15 participants in the deliberations, 12 completed the questionnaire (participation rate: 80%). Half were aged between 30 and 39 years, 67% (*n* = 8) held only a bachelor’s degree, 58.3% (*n* = 7) were practitioners, and 50% (*n* = 6) worked within the RACQ. A quarter of the respondents had held their current position for less than four years, and half had 10 years or less of experience working with youth, while the other half had up to 25 years of experience (Table 3).

Table 3. - Sociodemographic characteristics of questionnaire respondents

		Frequency ( <i>N</i> = 12)	Valid percent (%)
Gender	Male	3	25.0

	Female	8	66.7
	Prefer not to respond	1	8.3
Age	20–29 years	1	8.3
	30–39 years	6	50
	40–49 years	4	33.3
	50 years and above	1	8.3
Education level	Bachelor’s degree	8	66.7
	Higher than a bachelor’s degree	4	33.3
Place of work	CRJDA	2	16.7
	CLSC	1	8.3
	RACQ	6	50.0
	CRD	3	25
Work role	Practitioners	7	58.3
	Managers	3	25.0
	Practitioners and managers	2	16.7
Years of experience in the current workplace	Less than 4 years	5	41.7
	4 to 14 years	7	58.3
Years of experience working with youth	1 to 10 years	6	50.0
	11 to 25 years	6	50.0

#### *Reliability of the questionnaires*

Cronbach’s alpha was calculated for each of the five subscales. Results revealed a moderate internal consistency for the deliberative dialogues appreciation questionnaire (PFQ), the attitudes toward the HR-c subscale (HR-c), and the attitudes toward abstinence-based treatments subscale (ABST). Additionally, high internal consistency was attained for the CPD-

Reaction questionnaire, while the perceived level of training in HR-c subscale (TRAIN) showed low internal consistency (Table 4).

Table 4. - Psychometric properties of the subscales

	Cronbach's alpha
PFQ subscale	0.89
CPD-Reaction	0.93
HR-c subscale	0.81
ABST subscale	0.83
TRAIN subscale	0.60

*Subscales scores*

Five subscales were used to assess the impact of implementing the KT plan (Table 5). The interpretation of the scores is based on the mean value within each range: a score closer to the high end of the range reflects a higher appreciation of the deliberative dialogue or more positive attitudes toward HR-c, ABST, and TRAIN, and vice versa. Participants' average score on the PFQ reflects their high level of satisfaction and appreciation for the deliberative dialogues, particularly in terms of content, organization, facilitation, and delivery ( $M = 95.16$ ). Additionally, participants reported positive attitudes toward HR-c ( $M = 48.27$ ), negative attitudes toward abstinence-based treatments ( $M = 7.82$ ), and a positive perception of their level of training in HR-c ( $M = 14.54$ ).

Table 5. - Subscales scores

	Subscale possible score ranges	Minimum	Maximum	Mean	Standard deviation
PFQ subscale	18 to 126	73	109	95.16	3.36

HR-c subscale	11 to 55	38	55	48.27	1.61
ABST subscale	6 to 30	73	109	7.82	0.72
TRAIN subscale	4 to 20	10	19	14.54	0.9

Participants' intention to implement the proposed actions is reflected in their above-average scores across all five factors on the CPD-Reaction questionnaire (Table 6). Specifically, participants expressed their intention to implement the actions (Factor 1), were surrounded by colleagues who were likely to apply the actions (Factor 2), felt confident in their abilities to apply them (Factor 3), considered the actions to be ethical and acceptable (Factor 4), and believed their implementation would to beneficial outcomes (Factor 5).

Table 6. - CPD-Reaction Questionnaire scores on each factor

	Range	Mean ( <i>M</i> )
Factor 1 – Intention to implement actions	1 to 7	5.40
Factor 2 – Social influence	1 to 7	4.71
Factor 3 – Perception of capabilities	1 to 7	5.06
Factor 4 – Moral norms	1 to 7	5.72
Factor 5 – Perceived consequences	1 to 7	5.95

#### Qualitative findings

Thematic analysis of the interviews, guided by Ziam et al.'s (49) evaluation framework, revealed two main themes comprising several subthemes: 1) immediate effects; and 2) short-to-medium-term effects of evidence use.

### *Characteristics of interview participants*

Of the 15 participants in the deliberations, 10 participated in the interviews (participation rate: 66.6%). Among them, 50% worked at the RACQ, 60% were practitioners, and 30% held managerial positions (Table 7).

Table 7. - Characteristics of interview participants

		Frequency (N = 10)	Valid percent (%)
Place of work	CRJDA	2	20
	CLSC	1	10
	RACQ	5	50
	CRD	2	20
Work role	Practitioner	6	60
	Manager	3	30
	Practitioner and manager	1	10

### *Theme 1: Immediate effects*

#### Participants' satisfaction

Participants (managers and practitioners) expressed overall satisfaction with the KT initiative, particularly valuing its credibility, the involvement of target audiences in developing the KT plan, and their engagement in formulating the final actions: *"You built your work on the reality experienced by those on the ground, which is highly effective.... As a result, when it comes to transferring knowledge, it will resonate with target audiences"*<sup>6</sup> (Practitioner #2). However, they identified areas for improvement, such as involving more collaborators (e.g., schools, police, physicians), engaging individuals with less HR-c knowledge, and expanding knowledge dissemination efforts to a larger audience.

<sup>6</sup> Interviews were conducted in French and relevant transcripts were freely translated into English as needed.

As mentioned earlier, the KT plan featured two strategies: policy briefs and deliberative dialogues. All participants read the policy brief prior to the deliberative dialogue, finding it clear, concise, and valuable for introducing HR-c, preparing for discussions, and familiarizing them with the content. While the theoretical component of the deliberative dialogues was found useful, suggestions included providing additional materials to shorten it, assessing participants' prior HR knowledge to tailor the content, and offering more practical insights.

Participants valued the group dynamics, with managers appreciating the heterogeneity of the group and practitioners valuing the homogeneity of their subgroups, which ensured a common vision: *"As we came from different backgrounds, everyone was open to hearing what the other had to say, and had certain questions depending on the reality of their environment"* (Manager #1); *"It was relevant to be in homogeneous groups, which facilitated a common vision in our responses"* (Practitioner #1). Group discussions and the plenary session were seen as beneficial for learning about other organizations' practices. However, suggestions for improvement included having a facilitator during subgroup discussions, more precise communication of the deliberative dialogues' objectives, more time for group discussions and plenary feedback to deepen understanding of practices across different settings, and additional support to promote application of the transferred knowledge.

#### Perceived learning

Some participants did not perceive that they had acquired new knowledge on HR-c, while others updated their existing knowledge. The transferred knowledge was perceived as particularly effective for practitioners less familiar with HR-c. Participants appreciated the tangible and actionable steps provided to optimize HR-c adoption and recognized the usefulness of the proposed approach to formulating the final ones: *"The proposed actions seem realistic to me, with nothing utopian or difficult to apply"* (Manager #2).

### Change in beliefs and attitudes

Overall, participants were generally receptive to HR-c, as it was already implemented in their practice. However, a shift in beliefs and attitudes was observed in one practitioner who had limited prior familiarity with HR-c: *“I wasn’t that familiar with HR and couldn’t understand why someone wouldn’t want to stop consuming.... My mindset has truly changed.... I now prefer to work collaboratively with residents, respecting their own willingness and allowing them to decide what steps they want to take regarding their consumption”* (Practitioner #4).

### Intention to use knowledge

Several participants expressed their intention to use the materials shared during and prior to the deliberative dialogue with their teams to further integrate HR-c into their practices: *“They’re materials I could use with my team to discuss HR-c”* (Practitioner #3). They also highlighted their willingness to apply some of the transferred knowledge, particularly HR-c strategies applicable by youth: *“A lot of HR-c strategies were presented..., they’re directions that I apply with the residents”* (Practitioner #4).

## *Theme 2: Short-to-medium-term effects of evidence use*

### Knowledge adoption

Participants discussed their intention to adopt the transferred knowledge and/or their implementation of it. This included integrating HR-c strategies applicable by youth into young adults’ consumption plans, as those strategies provided a broader perspective for participants’ interventions: *“There are tools I can apply and things I know I’m going to change in the way I do things so that HR-c is more systematically implemented”* (Practitioner #4). Some participants noted that, over time, they would be better equipped to assess the incorporation of the transferred knowledge into their practice. Participants also considered the transferred knowledge to be coherent and adapted to their practice, which facilitated its adoption and encouraged the applicability of HR-c.

### Knowledge assimilation

Participants reported that the deliberation exercise (i.e., formulation of actions), along with the materials provided (e.g., PowerPoint presentation, policy briefs), allowed them to revisit key concepts that enriched their interventions with youth and facilitated a deeper assimilation of the transferred knowledge. Most participants indicated that they had already discussed the transferred knowledge with their teams and shared the materials, contributing to a stronger assimilation. Others planned to revisit the deliberation process with their teams to evaluate which ideas could be applied, tailor them to their context, deepen their assimilation, and realign the organizational practices with HR-c: *“Our goal is to go through the deliberative dialogue’s process again.... We’ll explore how we can adapt and integrate these actions into our organization, examine any practices that can be modified or improved in terms of HR...”* (Practitioner #3).

### Knowledge application

Most participants reported having already adopted HR-c principles in their interventions with youth. However, the KT process allowed them to validate their approaches and reinforced their adherence to HR-c: *“I was already convinced, but I think I have more arguments to believe in HR-c adoption and convince others”* (Practitioner #3); *“It revalidated the way we work”* (Manager #1). Moreover, participants identified several factors that could facilitate or hinder HR-c adoption. Facilitating factors included attending training sessions, the young age of practitioners, access to resource persons that can guide practitioners in their interventions, and promoting an organizational culture aligned with HR-c. Hindering factors included legal issues surrounding cannabis use among minors, organizational challenges (e.g., policies or directors opposing HR-c, substance confiscation in the facility), lack of knowledge and skills to implement HR-c, opposition from partners or collaborators (e.g., schools), the presence of co-occurring disorders, the severity of SUDs, personal values and beliefs (e.g., stigmatization of drug use, misconceptions about HR-c), and challenges in meeting the diverse needs of youth in group settings.

Decision-making support using acquired knowledge

Managers said the actions presented would help them convey their vision of HR-c adoption to collaborators and partners and that those actions could serve as a reference if they needed to realign their approach: *“If we ever plan to re-evaluate our practices, I will consult the policy brief as a baseline”* (Manager #1).

## **Discussion**

Drawing on empirically supported practices in KT, a systematic process was implemented to optimize HR-c adoption by HSS practitioners working with youth in Quebec. The KT plan, co-developed with target audiences, included disseminating policy briefs and organizing deliberative dialogues with managers and practitioners. These deliberative dialogues facilitated a shared understanding of HR-c principles and effectiveness and the formulation of final actions related to HR-c, youth, and organizations that can optimize HR-c adoption.

The mixed-methods evaluation of the KT plan implementation showed high satisfaction regarding the KT strategies, positive attitudes toward HR-c, negative attitudes toward abstinence-based treatments, and positive perceived level of training in HR-c. While already implementing HR-c, participants expressed strong intention to apply the new knowledge, reported implementing some of the knowledge transferred (i.e., integrating HR-c strategies into their clients' consumption plans), and planned to disseminate the actions within their teams to enhance organizational adoption. The distinction between intention to use transferred knowledge and its implementation is worth noting. Individuals' intention refers to their motivational or cognitive commitment to adopt a behavior, whereas implementation is the actual execution of that behavior in practice (64, 65). For instance, an individual might strongly intend to apply the new knowledge, yet practical barriers (e.g., lack of resources, organizational constraints) can prevent successful implementation (64, 65).

### **Implications of designing a systematic and multidirectional KT process**

Research shows that adopting a *linkage and exchange* model and thereby regularizing interactions between researchers and target audiences enhances knowledge assimilation (29, 66-68). Our findings support this: while HR-c was already part of their workplace practices, the KT process reinforced participants' commitment to its principles, leading them to integrate HR-c strategies into youth consumption plans and disseminate the tools within their teams. Participants also valued the contextual adaptation of the content and expressed their intention to replicate the action-formulation exercise with their colleagues.

In addition to commonly cited obstacles to HR-c adoption (e.g., stigma, misconceptions, and organizational factors), our findings suggest that limiting structured KT efforts may also impede effective implementation (18, 21, 25). While many studies focus on HR, the challenges of translating HR-c knowledge into practice are less documented. In particular, the absence of targeted knowledge dissemination and assimilation strategies appears to be a significant impediment. Practitioners may be informed about HR-c, but targeted KT activities are essential for them to assimilate and apply HR-c strategies effectively within their specific contexts. In this study, two KT strategies were employed, each integrating theoretical knowledge and varying levels of engagement: 1) dissemination strategy: independent reading of a policy brief; 2) assimilation strategy: deliberative dialogues where participants engaged actively to formulate the final actions (33, 69, 70).

### **Exploring outcomes through practice change theories**

Behavior adoption is not a mere physical act but the result of a complex interplay of affective and cognitive processes guiding individual decisions (71). Among theories of organizational practice change, Lewin's Theory of Planned Change suggests that successful behavioral change at the organizational level emerges from the interaction of multiple components, including *field theory* and *action research*, which may explain our results (72, 73).

According to *field theory*, group interactions and conformity pressures significantly shape individual behaviors within organizations (72, 74, 75). This principle is also reflected in the CPD-Reaction scale, which assesses *social influence* as a factor influencing the intention to use the transferred knowledge (i.e., individuals are more inclined to adopt a behavior if their peers do so) (54, 76). In our study, although the social influence score was above average, it was the lowest of all the evaluated factors of the scale, potentially explaining some limitations in HR-c adoption. However, the overall CPD-Reaction scale scores were high, indicating a strong intention among participants to apply the transferred knowledge. It is also worth noting that the *Integrated Behavioral Model* (IBM), a theory of practice change at the individual level, suggests that an individual's behavioral intention and motivation to engage in a new practice primarily influences its implementation (77, 78). It also recommends consulting target audiences to develop effective communication tools, a strategy applied in our research project (27, 78).

Additionally, *action research* emphasizes performing a thorough contextual analysis and identifying a perceived need for change (72). The in-depth analysis of target audiences' needs and context allowed us to develop a tailored KT plan, thereby enhancing the likelihood of successful behavior adoption (27). Lewin also argues that organizational policies drive radical behavior change (72, 74, 75). Accordingly, we involved managers to ensure decision-makers could effectively influence organizational policies and support the implementation process. Overall, Lewin's theoretical framework enhances our understanding of the underlying mechanisms of practice change and our ability to identify key factors for optimizing knowledge use (72, 73, 75).

### **Broader contextual factors**

Several cultural, policy, and institutional factors related to Quebec influence our findings, underscoring the necessity of interpreting them within this broader contextual framework. For instance, the *2018-2028 Interministerial Action Plan on Dependence* seeks, among other objectives, to support professionals working in targeted settings by disseminating recognized HR practices (6). While its implementation may not be optimal, Quebec's healthcare system is

generally guided by policies that favor HR. These contextual factors likely influenced both the overall adoption of HR-c and the target audiences' receptiveness to it.

However, the legal age for cannabis access in Quebec is 21 years, which introduces a unique dimension to our study focusing on health professionals working with individuals under 21 (79, 80). This legal threshold may contribute to more cautious attitudes among practitioners when applying HR-c with younger individuals. Practitioners might feel compelled to tailor HR-c strategies to navigate legal constraints, potentially limiting its optimal applicability. However, regardless of legality, young people continue to use substances, making it imperative to apply HR-c among them.

### **Beyond cannabis: reflections on HR for other substances**

Our study specifically focuses on HR for cannabis use. However, reflecting on how our project might have differed if it had addressed other substances provides valuable insights.

First, although cannabis use remains illegal in Quebec for individuals under 21, it is legal for those over 21, creating a regulatory framework that generally facilitates the adoption of HR approaches (6). In contrast, the regulatory contexts for substances such as cocaine or opioids may present additional challenges to consider when implementing a KT process that promotes HR adoption. Second, the evolving social acceptance of the recreational use of cannabis establishes a cultural context that differs markedly from that of other substances (81). For example, if our project had focused on opioids, the associated stigma and urgent public health concerns would likely have necessitated alternative KT interventions, such as targeted capacity-building training for healthcare providers, public awareness campaigns, and expert panels among policymakers (82-84). Third, while the fundamental principles of HR are applicable across all substances, the specific HR strategies may vary from one substance to another. For instance, HR for cannabis might focus on strategies to apply before, during, or after consumption, whereas HR for opioids could involve the broader distribution of naloxone and the establishment of supervised consumption sites (26, 83, 84).

Thus, each substance is associated with distinct factors that must be considered when developing and implementing a KT process. Nevertheless, our study presents a systematic approach that effectively translates research into practice, serving as a model for KT interventions targeting other substances.

### **Strengths and limitations**

Our study is characterized by several strengths and limitations. One primary strength is its contribution to the HR-c literature and its potential generalizability to contexts where cannabis use remains illegal. The study demonstrates that a structured and multidirectional KT process can effectively bridge the gap between research and practice. The implementation and evaluation of the plan followed a structured approach that considered factors that could potentially influence the KT process. A key component of our process was organizing separate deliberative dialogues tailored to each target audience and adapting policy briefs accordingly, which were further refined after the deliberations.

Despite the relatively small number of participants in the deliberations ( $N = 15$ ), the response rate to the questionnaire ( $N = 12$ ) and the participation in the consultations ( $N = 10$ ) were relatively high, reflecting strong engagement in the study. Moreover, even though participants mainly worked in urban areas, diverse perspectives were provided: consulted participants worked in four different residential facilities related to two CRD centers, five RACQ centers, two CRJDA, and one CLSC. This favored data saturation and enhanced the representativeness of the sample and the generalizability of the findings. Additionally, participants' active engagement in the study, positive appreciation of the KT initiative and transferred knowledge, intention to apply the knowledge, and dissemination efforts among their colleagues underscore the broader impact of this study, in that its effects extended beyond the immediate participants, influencing a wider range of practitioners and managers within the targeted organizations.

Finally, a mixed-methods analysis was conducted to evaluate the implementation and effects of the KT plan. The questionnaire incorporated five subscales to collect data on a range of factors.

Combining quantitative and qualitative methods reinforced the study's approach and offered a comprehensive perspective on the findings.

However, there are some limitations in the study. First, a potential limitation is the risk of sampling bias, as participants were primarily already open to HR-c and implementing it, raising questions about the representativeness of the sample. Recruiting individuals with lower scores on the attitudes toward HR-c questionnaire would have been preferable, but anonymity and ethical constraints prevented this. Consequently, the findings may primarily reflect the experiences of those already engaged in HR-c rather than those more resistant to its adoption.

Second, following the deliberative dialogues, participants were not accompanied in implementing the proposed actions in their practice, as it was beyond the scope of the study. However, plans are in place to integrate this step into a follow-up project. Third, the number of participants in the deliberative dialogues was relatively low, which may have been due to high workloads or personnel shortages; higher participation, particularly from managers, would have enabled comparative analyses among the four residential facilities to identify potential similarities and differences.

Additionally, the subscales of the HR-c questionnaire have not been subjected to a validation study. However, Cronbach's alpha was calculated for all subscales to assess their internal consistency, and in our previous study on the development of the KT plan the psychometric properties of the HR-c questionnaire were validated through item and factor analysis (27). Finally, the inability to link questionnaire data to the interviews restricts our capacity to analyze participants' responses to their inputs during the interviews.

## **Conclusions**

This study represents a crucial step in our research project aimed at optimizing the adoption of HR-c by HSS practitioners working among youth with difficulty in Quebec. Through a structured and multidirectional KT process, managers and practitioners engaged in co-developing, implementing, and evaluating the KT plan. The evaluation of its implementation demonstrated

high participant satisfaction, positive attitudes toward HR-c, and a strong intention to integrate the acquired knowledge into practice. The deployed KT efforts played a significant role in reinforcing commitment to HR-c principles and enhancing its adoption. In this study practitioners and managers also formulated actions they could implement to optimize HR-c adoption in their workplaces.

Future research should explore the long-term effects of KT initiatives on HR-c adoption and assess their impact on youth treatment outcomes. Expanding the KT process to involve a broader range of stakeholders could further enhance its impact and effectiveness. While this study was conducted on a small scale, its implementation and observed effects suggest potential to drive meaningful change. Therefore, its implications should extend beyond this research project by fostering collaborations with institutional actors, including the Ministry of Health and Social Services (MSSS). This could involve: 1) integrating the formulated actions into existing training programs for HSS practitioners to ensure broader dissemination; 2) supporting target audiences in implementing the actions; or 3) scaling the training to the provincial level, in alignment with the objectives of the *2018-2028 Interministerial Action Plan on Dependence*.

## List of abbreviations

ABST: Abstinence-based treatments

CFIR: Consolidated Framework for Implementation Research

CLSC: *Centre local de services communautaires*

CPD-Reaction: Continuing Professional Development – Reaction

CRD: *Centre de réadaptation en dépendance*

CRJDA: *Centre de réadaptation pour les jeunes en difficulté d'adaptation*

HR-c: Harm reduction in cannabis use

HR: Harm reduction

HSS: Health and social services

INSPQ: *Institut national de santé publique du Québec*

KT: Knowledge translation

PFQ: Participant Feedback Questionnaire

RACQ: *Regroupement des Auberges du cœur du Québec*

SUD: Substance use disorder

TRAIN: Perceived level of training in HR-c

## Declarations

### Ethics approval and consent to participate

The project was approved by the *Comité d'éthique de la recherche en éducation et psychologie* (#2023-4408) of *Université de Montréal* and by the *Comité d'éthique de la recherche – Jeunes en difficulté* (#2024-1949) of the *Centre intégré universitaire de santé et de services sociaux du*

*Centre-Sud-de-l'Île-de-Montréal*. Participants gave their written consent to participate in the study.

### **Consent for publication**

Consent for publication was obtained from all recruited participants.

### **Availability of data and materials**

The datasets used during the current study are available from the corresponding author on reasonable request. All data analyses are included in this published article [and its supplementary information files].

### **Competing interests**

The authors declare that they have no competing interests.

### **Funding**

This work was supported by the *Ministère de la Santé et des Services sociaux* (MSSS), *Fonds de recherche du Québec – Santé* (FRQS), and *Fonds de recherche du Québec – Société et culture* (FRQSC) (Grant number: 2023-OPTR-322652).

### **Authors' contributions**

RH, CD, JSF, and CH conceptualized the study, developed the KT plan, and participated in its implementation. RH crafted data collection tools, conducted data collection, analysis, and interpretation. YS and LD participated in facilitating the deliberative dialogues. RH wrote the

initial version of the manuscript. RH, CD, JSF, CH, and YS critically reviewed the manuscript and approved the final manuscript.

### **Acknowledgements**

We wish to thank all the participants who took part in the study as well as the administrations of the participating organizations for facilitating the recruitment process.

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## Additional file 1: Knowledge translation (KT) plan

General objective	Promote a positive attitude toward HR-c among HSS practitioners and ensure its optimal implementation among adolescents and young adults in difficulty.
Situation analysis	This component includes an analysis of the target audiences' needs and contexts and is based on thematic analysis of the consultations (see qualitative analysis section).
Content to transfer	Four general subjects covered: 1) General presentation of HR-c; 2) Implementation of HR-c among adolescents and young adults in difficulty; 3) Misconceptions related to HR-c; 4) Facilitators and obstacles to the adoption of HR-c; 5) HR-c strategies applicable by youth; 6) Actions to implement to optimize the adoption of HR-c among youth.
Target audiences	Managers and practitioners working among adolescents and young adults in difficulty in four residential facilities in Quebec (RACQ, CRJDA, CRD, CLSC).
Specific objectives	<ul style="list-style-type: none"> <li>- Promote a better understanding of HR-c.</li> <li>- Optimize the adoption and application of HR-c among adolescents and young adults in difficulty.</li> <li>- Improve organizational and professional practices.</li> </ul>
Actors to be involved	General managers and administrative assistants from the organizations involved, project co-researchers specializing in KT and HR, and facilitators of a KT strategy (i.e., deliberative dialogues).
KT strategies	<ul style="list-style-type: none"> <li>- Policy brief summarizing the content of the deliberative dialogues.</li> <li>- Deliberative dialogues: managers and practitioners are invited to participate in a distinct deliberative dialogue structured in two phases (training content; deliberations and formulation of recommendations).</li> </ul>
KT plan evaluation	The KT plan was implemented in September and October 2024. Using a mixed-methods approach, it was evaluated two weeks following its implementation:

- The *quantitative component* included questionnaires to assess participants': 1) appreciation of the deliberative dialogues; 2) intentions to use the transferred knowledge; 3) attitudes toward HR-c; 4) attitudes toward abstinence-based treatments; and 5) perceived level of training in HR-c.
- The *qualitative component* involved conducting semi-structured interviews with participants to evaluate the implementation of the KT plan, its immediate results, and its effects in the short-to-medium-term.

## Additional file 2: Operationalization of the evaluation framework of Ziam et al. (2024)

Dimension: PROCESS		
Subdimensions	Components	Operationalization
Planning	A knowledge mobilization (KMb) plan	Yes
	An evaluation plan for the KMb strategy	Yes
KMb strategy	Characteristics of the strategy	Two KT strategies designed for each target audience (managers, practitioners), adapted to their context and needs, and aligned with the study objectives: <ul style="list-style-type: none"> <li>- Policy briefs;</li> <li>- Deliberative dialogues, including training content and group deliberations.</li> </ul>
	Characteristics of the content	Evidence-based knowledge, covering: <ul style="list-style-type: none"> <li>- Historical overview of HR and substance use;</li> <li>- Misconceptions related to HR-c;</li> <li>- HR-c strategies applicable by youth;</li> <li>- Facilitators and obstacles to HR-c adoption;</li> <li>- Actions aimed at optimizing the adoption of HR-c among youth in Quebec.</li> </ul> Content is aligned with the target audiences' needs and presented clearly.
	Characteristics of those responsible for the KMb strategy	<ul style="list-style-type: none"> <li>- Team: credible researchers specialized in KMb and HR; doctoral candidate specialized in KMb and HR.</li> <li>- Satisfactory interactions between participants and the team.</li> </ul>
Implementation	Level of participation	Managers' deliberative dialogue: 4 participants; Practitioners' deliberative dialogue: 15 (training phase); 11 (deliberations phase).

Reason (motivation) for participation	<ul style="list-style-type: none"> <li>- Motivation and willingness to optimize the adoption of HR-c among youth in Quebec;</li> <li>- Reasons for 4 practitioners' non-participation at the deliberations are partially documented.</li> </ul>
Engagement	Participants were actively involved in the deliberative dialogues (e.g., reacted frequently and shared their experiences with other members).
Implementation fidelity	KMb strategies were mostly implemented as planned, with one modification: the two phases of the deliberative dialogues were combined in one session for managers.
Adaptation of the KMb strategy	KMb strategies were adapted to the needs and contexts of target audiences.
Implementation and evaluation follow-up	Two weeks following the deliberative dialogues a questionnaire was administered to participants, and they were invited to participate in evaluation interviews.

Dimension: EFFECTS		
Subdimensions	Components	Operationalization
Immediate effects	Participants' satisfaction	<p><i>Quantitative:</i> Questionnaire on their assessment of the deliberative dialogues.</p> <p><i>Qualitative:</i> Interview with questions on their assessment of the KT strategies and process.</p>
	Perceived learning	<p><i>Quantitative:</i> Questionnaire on their perceived level of HR-c training; subsections from the deliberative dialogues assessment questionnaire.</p>
	Change in beliefs and attitudes	<p><i>Quantitative:</i> Questionnaire on their attitudes toward HR-c and abstinence-based treatments.</p> <p><i>Qualitative:</i> Interview questions on their beliefs and attitudes (e.g.: To what extent did the policy brief and deliberative dialogue modify or influence your conceptions and attitudes toward HR-c?)</p>

<b>Short-to-medium-term effect of evidence use</b>	Intention to use knowledge	<i>Quantitative:</i> Questionnaire on their intention to use the transferred knowledge
	Knowledge adoption	<i>Qualitative interview questions:</i> Yes (e.g.: Did the policy brief and the deliberative dialogue influence your practices among youth?)
	Knowledge assimilation	<i>Qualitative interview questions:</i> Yes (e.g.: Given the information you received, did this influence your decision to join RDM-C?)
	Knowledge application	<i>Qualitative interview questions:</i> Yes (e.g.: Do you have any reservations about applying HR-c among youth?; What might facilitate and/or hinder your adoption of HR-c among youth?)
	Decision-making support using acquired knowledge	<i>Qualitative interview questions:</i> Yes, for managers (e.g.: Did the KT strategies influence your organization's practices among youth?)

## Additional file 3: Standards for Reporting Implementation Studies: the StaRI checklist for completion

The StaRI standard should be referenced as: Pinnock H, Barwick M, Carpenter C, Eldridge S, Grandes G, Griffiths CJ, Rycroft-Malone J, Meissner P, Murray E, Patel A, Sheikh A, Taylor SJC for the StaRI Group. Standards for Reporting Implementation Studies ([StaRI](#)) statement. *BMJ* 2017;356:i6795



The detailed Explanation and Elaboration document, which provides the rationale and exemplar text for all these items is: Pinnock H, Barwick M, Carpenter C, Eldridge S, Grandes G, Griffiths C, Rycroft-Malone J, Meissner P, Murray E, Patel A, Sheikh A, Taylor S, for the StaRI group. Standards for Reporting Implementation Studies ([StaRI](#)). *Explanation and Elaboration document*. *BMJ Open* 2017 2017;7:e013318

Notes: A key concept of the StaRI standards is the dual strands of describing, on one hand, the implementation strategy and, on the other, the clinical, healthcare, or public health intervention that is being implemented. These strands are represented as two columns in the checklist.

The primary focus of implementation science is the implementation strategy (column 1) and the expectation is that this will always be completed.

The evidence about the impact of the intervention on the targeted population should always be considered (column 2) and either health outcomes reported or robust evidence cited to support a known beneficial effect of the intervention on the health of individuals or populations.

The StaRI standards refer to the broad range of study designs employed in implementation science. Authors should refer to other reporting standards for advice on reporting specific methodological features. Conversely, while all items are worthy of consideration, not all items will be applicable to, or feasible within, every study.

Checklist item	Reported on page #	Implementation Strategy	Reported on page #	Intervention
		“Implementation strategy” refers to how the intervention was implemented		“Intervention” refers to the healthcare or public health intervention that is being implemented.
<b>Title and abstract</b>				
Title	1	1		Identification as an implementation study, and description of the methodology in the title and/or keywords
Abstract	2	2		Identification as an implementation study, including a description of the implementation strategy to be tested, the evidence-based intervention being implemented, and defining the key implementation and health outcomes
<b>Introduction</b>				
Introduction	3	4-6		Description of the problem, challenge, or deficiency in healthcare or public health that the intervention being implemented aims to address

Rationale	4	7	The scientific background and rationale for the implementation strategy (including any underpinning theory/framework/model, how it is expected to achieve its effects, and any pilot work)		The scientific background and rationale for the intervention being implemented (including evidence about its effectiveness and how it is expected to achieve its effects)
Aims and objectives	5	8	The aims of the study, differentiating between implementation objectives and any intervention objectives		
<b>Methods: description</b>					
Design	6	8	The design and key features of the evaluation (cross referencing to any appropriate methodology reporting standards) and any changes to study protocol, with reasons		
Context	7	9	The context in which the intervention was implemented (consider social, economic, policy, healthcare, organizational barriers and facilitators that might influence implementation elsewhere)		
Targeted 'sites'	8	9	The characteristics of the targeted 'site(s)' (e.g., locations/personnel/resources, etc.) for implementation and any eligibility criteria		The population targeted by the intervention and any eligibility criteria
Description	9	9	A description of the implementation strategy		A description of the intervention
Subgroups	10	N/A	Any subgroups recruited for additional research tasks, and/or nested studies		
<b>Methods: evaluation</b>					
Outcomes	11	10	Define pre-specified primary and other outcome(s) of the implementation strategy and how they were assessed. Document any pre-determined targets.		Define pre-specified primary and other outcome(s) of the intervention (if assessed), and how they were assessed. Document any pre-determined targets.
Process evaluation	12	10-11	Process evaluation objectives and outcomes related to the mechanism by which the strategy is expected to work		
Economic evaluation	13	N/A	Methods for resource use, costs, economic outcomes, and analysis for the implementation strategy		Methods for resource use, costs, economic outcomes, and analysis for the intervention
Sample size	14	9-10	Rationale for sample sizes (including sample size calculations, budgetary constraints, practical considerations, data saturation, as appropriate)		
Analysis	15	12-13	Methods of analysis (with reasons for that choice)		

Subgroup analyses	16	N/A	Any a priori subgroup analyses (e.g., between different sites in a multicentre study, different clinical or demographic populations) and subgroups recruited to specific nested research tasks		
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<b>Results</b>					
Characteristics	17	15-16	Proportion recruited and characteristics of the recipient population for the implementation strategy		Proportion recruited and characteristics (if appropriate) of the recipient population for the intervention
Outcomes	18	14-15	Primary and other outcome(s) of the implementation strategy		Primary and other outcome(s) of the intervention (if assessed)
Process outcomes	19	15-21	Process data related to the implementation strategy mapped to the mechanism by which the strategy is expected to work		
Economic evaluation	20	N/A	Resource use, costs, economic outcomes, and analysis for the implementation strategy		Resource use, costs, economic outcomes, and analysis for the intervention
Subgroup analyses	21	N/A	Representativeness and outcomes of subgroups, including those recruited to specific research tasks		
Fidelity/adaptation	22	11	Fidelity to implementation strategy as planned and adaptation to suit context and preferences		Fidelity to delivering the core components of intervention (where measured)
Contextual changes	23	N/A	Contextual changes (if any) which may have affected outcomes		
Harms	24	N/A	All important harms or unintended effects in each group		
<b>Discussion</b>					
Structured discussion	25	22-25	Summary of findings, strengths and limitations, comparisons with other studies, conclusions, and implications		
Implications	26	22-23-25-26	Discussion of policy, practice, and/or research implications of the implementation strategy (specifically including scalability)		Discussion of policy, practice, and/or research implications of the intervention (specifically including sustainability)
<b>General</b>					
Statements	27	27-28	Include statement(s) on regulatory approvals (including, as appropriate, ethical approval, confidential use of routine data, governance approval), trial/study registration (availability of protocol), funding, and conflicts of interest		

# Additional file 4: Final policy briefs of managers and practitioners

## Managers' policy brief

### POUR UNE MEILLEURE ADOPTION DE LA RÉDUCTION DES MÉFAITS LIÉS AU CANNABIS AUPRÈS DES JEUNES

Roula Haddad<sup>1,2</sup>, Aurélie Hot<sup>1,2</sup>, Yuan Song<sup>1</sup>, Laurence D'Arcy<sup>3</sup>, Christophe Huÿnh<sup>3,4</sup>, Jean-Sébastien Fallu<sup>2,3,5,6,7</sup>, Christian Dagenais<sup>1,2</sup>

<sup>1</sup> Département de psychologie, Université de Montréal (UdeM) ; <sup>2</sup> Équipe RENARD, UdeM ; <sup>3</sup> Institut universitaire sur les dépendances, CIUSSS du Centre-Sud-de-l'Île-de-Montréal ; <sup>4</sup> Département de psychiatrie et d'addictologie, UdeM ; <sup>5</sup> École de psychoéducation, UdeM ; <sup>6</sup> Centre de recherche en santé publique, CIUSSS du Centre-Sud-de-l'Île-de-Montréal ; <sup>7</sup> Recherche et intervention sur les substances psychoactives - Québec

#### FAITS SAILLANTS

Saviez-vous qu'il existe une **multitude de stratégies** que les jeunes pourraient appliquer pour **limiter** les méfaits liés à leur usage de cannabis ?

Divers facteurs notamment liés aux **intervenant.e.s**, aux **jeunes**, à la réduction des méfaits liés au cannabis (**RDM-C**) et au **milieu de travail** pourraient faciliter et limiter l'adoption de la RDM-C. Leur prise en compte pourrait aboutir à une **optimisation de l'adoption de la RDM-C** !

#### INTRODUCTION

L'usage du cannabis peut générer des conséquences **indésirables** chez les jeunes (p. ex., troubles respiratoires lorsque le cannabis est fumé, problèmes juridiques liés à l'usage du cannabis dans des lieux publics). Pour contourner et limiter les méfaits liés à leur consommation, la RDM-C a été démontrée efficace.

En plus d'être une approche ou une philosophie générale, la RDM-C est un modèle de prévention et d'intervention qui vise à favoriser l'adoption de **comportements plus sécuritaires** relatifs à la consommation (p. ex., s'approvisionner dans le marché légal) pour diminuer les risques et conséquences négatives de l'usage du cannabis.

**Quelles sont les stratégies de RDM-C applicables par les jeunes ?  
Quelles sont les actions à entreprendre pour optimiser l'adoption de la RDM-C par les intervenant.e.s auprès des jeunes ?**

Cette note de politique a été conçue dans le but de présenter les actions à entreprendre pour optimiser l'adoption de la RDM-C par les intervenant.e.s œuvrant auprès des jeunes en difficulté au Québec. Ces actions ont été formulées en s'appuyant sur **deux recensions** des écrits scientifiques ainsi que sur les résultats de **consultations** menées auprès d'intervenant.e.s et de gestionnaires œuvrant auprès de la clientèle en question.

#### QU'AVONS-NOUS FAIT ?

Deux recensions systématiques des écrits scientifiques ont été réalisées pour identifier **1) les stratégies de RDM-C applicables** par les jeunes et **2) les facteurs qui facilitent et limitent** l'adoption de la RDM-C par les intervenant.e.s.

Nous avons également consulté des **intervenant.e.s** et des **gestionnaires** œuvrant auprès de jeunes en difficulté au Québec. Cela nous a permis d'identifier leurs **besoins** et leurs **facteurs contextuels** pouvant influencer l'adoption de la RDM-C.

#### QU'AVONS-NOUS TROUVÉ ?

Au total, 63 stratégies divisées en **8 catégories** en fonction de la **temporalité de la consommation** de cannabis ont été repérées dans les publications scientifiques.

C O N S O M M A T I O N	<b>Planification</b>	<b>1. Approvisionnement</b> - Ex : Acheter du cannabis d'une source fiable <b>2. Contexte</b> - Ex : Consommer en présence de gens de confiance <b>3. Moment/Motif</b> - Ex : Éviter de consommer tôt dans la journée <b>4. Fréquence et quantité</b> - Ex : Réduire la fréquence et la durée d'un épisode de consommation
	<b>Avant</b>	<b>5. Contenu du produit</b> - Ex : Éviter les mélanges des substances
	<b>Pendant</b>	<b>6. Méthode de consommation</b> - Ex : Commencer par une petite quantité et attendre avant de reconsommer
	<b>Après</b>	<b>7. Conduite motorisée</b> - Ex : Utiliser un moyen de transport alternatif <b>8. Post- consommation</b> - Ex : En cas de malaise, aller prendre l'air

## POUR OPTIMISER L'ADOPTION DE LA RDM-C AUPRÈS DES JEUNES, VOICI DES ACTIONS À ENTREPRENDRE :

- 1 Offrir ou orienter les intervenant.e.s vers des formations sur la RDM-C pour favoriser leurs connaissances sur ses principes, efficacité, applicabilité auprès des jeunes qui consomment ou pas du cannabis, et sur les stratégies de RDM-C applicables par les jeunes (p. ex., formation "Repérage, détection et intervention précoce jeunesse consommation DEP-ADO" offerte par le CISSS des Laurentides)
- 2 Clarifier le cadre thérapeutique de l'adoption de la RDM-C auprès des jeunes (14-24 ans) en cas de concomitance avec des enjeux de santé mentale et/ou physique
- 3 S'assurer que les pratiques organisationnelles sont alignées avec l'orientation de RDM-C de l'organisation auprès des jeunes (14-24 ans), pour ne pas leur transmettre des messages contradictoires
- 4 Identifier une personne-ressource pour répondre aux questions des intervenant.e.s, offrir du soutien clinique et animer des échanges sur les cas complexes
- 5 Favoriser des moments de discussion et d'échanges entre les membres des équipes de travail afin de permettre de réfléchir aux conceptions et croyances vis-à-vis de la RDM-C et de s'assurer d'une compréhension commune et valide de l'approche
- 6 Promouvoir la compréhension des parents des jeunes des principes de la RDM-C (p. ex., les orienter vers le « Service à l'Entourage-Jeunesse » du CISSS ou leur distribuer des outils)
- 7 Dans la mesure du possible et dépendamment de la réalité du terrain, promouvoir l'adhésion des écoles, partenaires et/ou collaborateurs de votre milieu à la RDM-C
- 8 Réitérer l'orientation de l'organisation sur l'adoption de la RDM-C, tout en prenant en compte le statut légal du cannabis auprès des jeunes de moins de 21 ans
- 9 Appliquer la RDM-C en fonction des besoins des jeunes, même lorsqu'il y a des enjeux liés à la consommation de cannabis (p. ex., dépendance)

### CONCLUSION

La RDM-C est une approche qui permet d'accompagner les jeunes consommateurs pour aboutir à une consommation sécuritaire et limiter les potentiels méfaits du cannabis.

Une grande quantité d'études montrent l'efficacité de la RDM-C auprès des jeunes. Pour optimiser son adoption, il serait essentiel de s'informer des stratégies de RDM-C applicables par les jeunes et d'entreprendre des actions pour contourner de potentiels obstacles entravant sa mise en œuvre.

### Références

- Haddad, R., Fallu, J.-S., Huynh, C., Gervais, M.-J. et Dagenais, C. (2024). Development of a knowledge translation plan: assessment of professionals' attitudes toward the adoption of harm reduction in cannabis use among youth in Quebec [Article en préparation]. Université de Montréal.
- Haddad, R., Dagenais, C., Fallu, J.-S., Huynh, C., D'Arcy, L. et Hot, A. (2024). Facilitators and barriers to healthcare providers' adoption of harm reduction to cannabis use: a scoping review. *Harm Reduction Journal*, 21(178). <https://doi.org/10.1186/s12954-024-01093-9>
- Haddad, R., Dagenais, C., Huynh, C. et Fallu, J. S. (2024). Facilitators of and barriers to healthcare providers' adoption of harm reduction in cannabis use: a scoping review protocol. *BMJ Open*, 14(4), e078427. <https://doi.org/10.1136/bmjopen-2023-078427>
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roula.haddad@umontreal.ca



## Practitioners' policy brief

### POUR UNE MEILLEURE ADOPTION DE LA RÉDUCTION DES MÉFAITS LIÉS AU CANNABIS AUPRÈS DES JEUNES

Roula Haddad<sup>1,2</sup>, Aurélie Hot<sup>1,2</sup>, Yuan Song<sup>1</sup>, Laurence D'Arcy<sup>3</sup>, Christophe Huynh<sup>3,4</sup>, Jean-Sébastien Fallu<sup>2,3,5,6,7</sup>, Christian Dagenais<sup>1,2</sup>

<sup>1</sup> Département de psychologie, Université de Montréal (UdeM); <sup>2</sup> Équipe RENARD, UdeM; <sup>3</sup> Institut universitaire sur les dépendances, CIUSSS du Centre-Sud-de-l'Île-de-Montréal; <sup>4</sup> Département de psychiatrie et d'addictologie, UdeM; <sup>5</sup> École de psychoéducation, UdeM; <sup>6</sup> Centre de recherche en santé publique, CIUSSS du Centre-Sud-de-l'Île-de-Montréal; <sup>7</sup> Recherche et intervention sur les substances psychoactives - Québec

#### FAITS SAILLANTS



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#### INTRODUCTION

L'usage du cannabis peut générer des conséquences **indésirables** chez les jeunes (p. ex., troubles respiratoires lorsque le cannabis est fumé, problèmes juridiques liés à l'usage du cannabis dans des lieux publics). Pour contourner et limiter les méfaits liés à leur consommation, la RDM-C a été démontrée efficace.

En plus d'être une approche ou une philosophie générale, la RDM-C est un modèle de prévention et d'intervention qui vise à favoriser l'adoption de **comportements plus sécuritaires** relatifs à la consommation (p. ex., s'approvisionner dans le marché légal) pour diminuer les risques et conséquences négatives de l'usage du cannabis.

**Quelles sont les stratégies de RDM-C applicables par les jeunes ?**  
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#### QU'AVONS-NOUS FAIT ?

Deux recensions systématiques des écrits scientifiques ont été réalisées pour identifier **1) les stratégies de RDM-C** applicables par les jeunes et **2) les facteurs qui facilitent et limitent** l'adoption de la RDM-C par les intervenant.e.s.



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#### QU'AVONS-NOUS TROUVÉ ?

**Au total, 63 stratégies** divisées en **8 catégories** en fonction de la **temporalité de la consommation** de cannabis ont été repérées dans les publications scientifiques.



#### Planification

1. **Approvisionnement** - Ex : Acheter du cannabis d'une source fiable
2. **Contexte** - Ex : Consommer en présence de gens de confiance
3. **Moment/Motif** - Ex : Éviter de consommer tôt dans la journée
4. **Fréquence et quantité** - Ex : Réduire la fréquence et la durée d'un épisode de consommation

#### Avant

5. **Contenu du produit** - Ex : Éviter les mélanges des substances

#### Pendant

6. **Méthode de consommation** - Ex : Commencer par une petite quantité et attendre avant de reconsommer

#### Après

7. **Conduite motorisée** - Ex : Utiliser un moyen de transport alternatif
8. **Post-consommation** - Ex : En cas de malaise, aller prendre l'air

## POUR OPTIMISER L'ADOPTION DE LA RDM-C AUPRÈS DES JEUNES, VOICI DES ACTIONS À ENTREPRENDRE :

- 1 Consulter une personne-ressource (interne ou externe) pour répondre à vos questions, vous offrir du soutien clinique et échanger sur les cas complexes
- 2 S'informer et contribuer à la clarification et la précision du cadre d'intervention individuel et collectif sur l'adoption de la RDM-C auprès des jeunes en cas de concomitance avec des enjeux de santé mentale et/ou physique ; si possible, avoir des professionnels de santé à l'appui (p. ex., psychiatres)
- 3 Adopter la RDM-C en fonction des besoins des jeunes et ce, même s'il y a des enjeux liés à la consommation de cannabis (p. ex., trouble de l'usage)
- 4 Se renseigner sur les formations disponibles sur la RDM et y participer pour favoriser vos connaissances sur les stratégies de RDM applicables par les jeunes, les principes de la RDM, son efficacité et son applicabilité auprès des jeunes qui consomment ou pas des substances (p. ex., consulter l'offre de formation de l'IUD)
- 5 Faire le point sur l'orientation de l'organisation concernant l'adoption de la RDM-C, en tenant compte du statut légal du cannabis auprès des jeunes de moins de 21 ans, et, si disponible, prendre connaissance du document d'information qui la présente
- 6 Dans la mesure du possible et dépendamment de la réalité du terrain, promouvoir la compréhension des principes de la RDM-C auprès des parents des jeunes et des écoles (p. ex., animer des rencontres d'informations, distribuer des outils, etc.)
- 7 Échanger et discuter avec les membres de vos équipes de travail afin de réfléchir à vos conceptions et croyances vis-à-vis la RDM-C
- 8 Discuter en équipe de l'alignement du cadre d'intervention individuel et collectif avec les principes de la RDM-C pour limiter la transmission de messages contradictoires aux jeunes

### CONCLUSION

La RDM-C est une approche qui permet d'accompagner les jeunes consommateurs pour aboutir à une consommation sécuritaire et limiter les potentiels méfaits du cannabis.

Une grande quantité d'études montrent l'efficacité de la RDM-C auprès des jeunes. Pour optimiser son adoption, il serait essentiel de s'informer des stratégies de RDM-C applicables par les jeunes et d'entreprendre des actions pour contourner de potentiels obstacles entravant sa mise en œuvre.

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- Song, Y. P. (2024). *Jeunes et cannabis: Comment peuvent-ils se protéger? Revue de portée des stratégies de réduction des méfaits relatives à la consommation de cannabis chez les jeunes* [mémoire de maîtrise inédit]. Université de Montréal.



roula.haddad@umontreal.ca



## **Additional file 5: Questionnaire for evaluating the deliberative dialogues, intention to use the transferred knowledge, and conceptualization of harm reduction in cannabis use**

### **Part A: Sociodemographic and career-related questions**

1. With which gender do you identify?
  - Male
  - Female
  - Non-binary
  - Other gender
  - Prefer not to answer
  
2. How old are you?
  - 20–29 years
  - 30–39 years
  - 40–49 years
  - 50 years and over
  
3. What is the highest diploma you have obtained?
  - High school or college
  - Undergraduate certificate
  - Bachelor’s degree
  - Master’s degree
  - Doctorate
  - Other (please specify): \_\_\_\_\_
  
5. Which organization do you work for?
  - *Regroupement des Auberges du cœur du Québec (RACQ)*
  - *Centre de réadaptation pour les jeunes en difficulté d’adaptation (CRJD)*
  - *Centre de réadaptation en dépendance (CRD)*
  - *Centre local de services communautaires (CLSC)*
  
5. What position do you hold?
  - Practitioner

- Manager
- Practitioner and manager
- Other (please specify): \_\_\_\_\_

6. You have been in your current position for \_\_\_\_\_ years.
7. How many years have you worked with adolescents and young adults in difficulty in Quebec?  
Write the number of years : \_\_\_\_\_

**Part B: Questions on the deliberative dialogue**

8. What were your expectations when you decided to take part in this activity?

*For each of the following statements, circle the number in the right-hand column that corresponds to your level of agreement.*

Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
1	2	3	4	5	6	7

**Deliberative dialogue objectives and content**

9. The content of this deliberative dialogue met my expectations 1 2 3 4 5 6 7
10. I am satisfied with the topics covered 1 2 3 4 5 6 7
11. I am satisfied with the quality of the discussions 1 2 3 4 5 6 7
12. I am satisfied with the quality of the presentations 1 2 3 4 5 6 7
13. The workshop concepts were new to me 1 2 3 4 5 6 7
14. The content presented was understandable 1 2 3 4 5 6 7
15. The information presented will be useful in my work 1 2 3 4 5 6 7

### **Deliberative dialogue organization**

- |   |               |
|---|---------------|
| 16. I am satisfied with the organization of deliberative dialogue | 1 2 3 4 5 6 7 |
| 17. I am satisfied with the presentation material                 | 1 2 3 4 5 6 7 |

### **Learning strategy**

- |  |               |
|--|---------------|
| 18. The subgroup activity contributed to my learning               | 1 2 3 4 5 6 7 |
| 19. The task I performed with a group was appropriate              | 1 2 3 4 5 6 7 |
| 20. The exchanges with the facilitators contributed to my learning | 1 2 3 4 5 6 7 |
| 21. The group discussions contributed to my learning               | 1 2 3 4 5 6 7 |

### **Facilitators**

- |  |               |
|--|---------------|
| 22. The facilitators had a good grasp of the content of the workshop             | 1 2 3 4 5 6 7 |
| 23. The facilitators presented the training content clearly                      | 1 2 3 4 5 6 7 |
| 24. The facilitators gave satisfactory answers to questions                      | 1 2 3 4 5 6 7 |
| 25. The facilitators helped to maintain my interest in the deliberative dialogue | 1 2 3 4 5 6 7 |

### **Overall appreciation and suggestions for improvement**

- |   |               |
|---|---------------|
| 26. Overall, I was satisfied with this deliberative dialogue  | 1 2 3 4 5 6 7 |
| 27. What did you appreciate most about this deliberative dialogue?                                    |               |
| 28. What did you appreciate least about this deliberative dialogue?                                   |               |
| 29. What suggestions (content, material, other) do you have for improving this deliberative dialogue? |               |

### **Part C: Intention to use the transferred knowledge**

**Instructions:** Please answer each of the following questions by indicating the opinion that best corresponds to the behavior indicated (circle the number). Some questions may seem similar to you, but they measure different aspects of the stated behavior.

HR-c: Harm reduction in cannabis use

*Note: During the deliberative dialogue, nine actions to optimize the adoption of HR-c among adolescents and young adults with difficulties were presented to you. This section focuses on these actions.*

30. I intend to implement the presented actions in my practice.

[1] Strongly disagree

[2] Disagree

[3] Somewhat disagree

[4] Neither agree nor disagree

[5] Somewhat agree

[6] Agree

[7] Strongly agree

31. To the best of my knowledge, the proportion of my colleagues who implement the presented actions in their practice is:

0–20%

21–40%

41–60%

61–80%

81–100%

32. I am confident that I could implement the presented actions in my practice if I wanted to.

- [1] Strongly disagree
- [2] Disagree
- [3] Somewhat disagree
- [4] Neither agree nor disagree
- [5] Somewhat agree
- [6] Agree
- [7] Strongly agree

33. It is ethical to implement the presented actions in my practice.

- [1] Totally disagree
- [2] Disagree
- [3] Somewhat disagree
- [4] Neither agree nor disagree
- [5] Somewhat agree
- [6] Agree
- [7] Totally agree

34. For me, implementing the presented actions in my practice would be:

- [1] Extremely difficult
- [2] Difficult
- [3] Somewhat difficult
- [4] Neutral
- [5] Somewhat easy
- [6] Easy
- [7] Extremely easy

35. Now think of a colleague whom you respect as a professional. In your opinion, do they implement the presented actions in their practice?

- [1] Never

- [2]
- [3]
- [4]
- [5]
- [6]
- [7] Always

36. I plan to implement the presented actions in my practice.

- [1] Strongly disagree
- [2] Disagree
- [3] Somewhat disagree
- [4] Neither agree nor disagree
- [5] Somewhat agree
- [6] Agree
- [7] Strongly agree

37. Generally speaking, I think that implementing the presented actions in my practice would, for me, be:

- [1] Useless
- [2]
- [3]
- [4] Neutral
- [5]
- [6]
- [7] Useful

38. Most of the people who are important to me in my profession implement the presented actions in their practice.

- [1] Strongly disagree

- [2] Disagree
- [3] Somewhat disagree
- [4] Neither agree nor disagree
- [5] Somewhat agree
- [6] Agree
- [7] Strongly agree

39. It is acceptable to implement the presented actions in my practice.

- [1] Totally disagree
- [2] Disagree
- [3] Somewhat disagree
- [4] Neither agree nor disagree
- [5] Somewhat agree
- [6] Agree
- [7] Totally agree

40. I am capable of implementing the presented actions in my practice.

- [1] Strongly disagree
- [2] Disagree
- [3] Somewhat disagree
- [4] Neither agree nor disagree
- [5] Somewhat agree
- [6] Agree
- [7] Strongly agree

41. Generally speaking, I think that implementing the presented actions in my practice would,  
for me, be:

- [1] Harmful
- [2]

[3]

[4] Neutral

[5]

[6]

[7] Beneficial

**Part D: Questions on harm reduction in cannabis use**

Please indicate your level of agreement with the following statements	Strongly disagree		Neutral	Strongly agree	
	1	2	3	4	5
HR-c: Harm reduction in cannabis use					
<b>Attitudes toward HR-c</b>					
42. HR-c is not an effective approach for cannabis use.					
43. HR-c for cannabis use is dangerous.					
44. HR-c for cannabis use is an effective form of treatment.					
45. HR-c strategies for cannabis use encourage cannabis use.					
46. People diagnosed with psychiatric disorders and addictions can benefit from HR-c.					
47. People diagnosed with <i>severe</i> psychiatric disorders and addictions can benefit from HR-c.					
48. I believe shelter services should NOT require abstinence.					
49. HR-c is effective in keeping individuals in treatment.					
50. HR-c is a valid and useful treatment modality.					
51. HR-c does not make people accountable for their actions.					
52. HR-c use supports cannabis use.					
<b>Attitudes toward abstinence-based treatments</b>					

53. Complete abstinence is the only objective in treatment for cannabis use.	
54. Abstinence is a reasonable and achievable objective for all individuals.	
55. Accepting cannabis use has no place in treatment.	
56. You cannot help someone with an addiction if you tolerate cannabis use.	
57. Recovering from cannabis use means complete abstinence from cannabis.	
58. You cannot help someone recover by tolerating cannabis use in any way.	
<b>Your perceived level of training in HR-c</b>	
59. I feel that I'm sufficiently trained in HR-c	
60. I feel that I understand HR-c perfectly.	
61. I need more training in HR-c.	
62. I have serious concerns about the level of training I have received to be able to work effectively with adolescents and young adults in difficulty.	

## **Additional file 6: Interview grid**

Do you have any questions before we get started?

1. What organization do you work for [RACQ, CRJD, CRD, or CLSC]?
2. What position do you currently hold?

### ***Questions on the implemented knowledge translation strategies***

You have received a policy brief and participated in a deliberative dialogue aimed at optimizing the adoption of harm reduction in cannabis use (HR-c) by practitioners working among adolescents and young adults with difficulty in Quebec.

3. What do you think of this initiative?
4. Do you think the policy brief and deliberative dialogue were successful in transferring to you the actions you need to implement in order to optimize your adoption of HR-c among youth? Why or why not?
5. Do you think other knowledge translation strategies should have been implemented? Why or why not?

### ***Policy brief***

A policy brief was disseminated to you prior to the deliberative dialogue.

6. Did you consult the policy brief before the deliberative dialogue?
7. Did you read the entire policy brief before the deliberative dialogue?
8. What do you think of the choice and quality of the policy brief as a knowledge translation strategy?

9. Do you think it was advantageous to disseminate the policy brief before the deliberative dialogue? Why and how?
10. In what ways could the policy brief be improved?

*Deliberative dialogue*

11. What do you think of the choice and quality of the deliberative dialogue as a knowledge translation strategy?
12. How would you describe the deliberative dialogue you took part in?
13. What do you think of the facilitation of the deliberative dialogue?
14. What do you think of the groups' composition during the deliberative dialogue?
15. How would you describe the group dynamics during the deliberative dialogue?
16. What do you think of the information conveyed in the four presentations of the deliberative dialogue (phase 1)?
17. What do you think of the group activity and deliberations (i.e., phase 2 of the deliberative dialogue) on actions aimed at optimizing HR-c adoption?

***Questions on types of knowledge use***

18. In what way did the policy brief and the deliberative dialogue that were implemented to transfer knowledge modify or influence your conceptions of, and attitudes toward, HR-c?  
  
(Follow-up question: Did their implementation allow you to explore or revise certain conceptions you had regarding HR-c?)
19. [For managers] Did the policy brief and the deliberative dialogue influence the practices of your organization among adolescents and young adults?

[For practitioners] Did the policy brief and the deliberative dialogue influence your practices among adolescents and young adults?

20. Did the information that was transmitted to you influence your adoption of HR-c?
21. Do you have any reservations regarding the adoption of HR-c among adolescents and young adults with difficulty? If so, what would facilitate your adoption of HR-c among adolescents and young adults with difficulty?
22. In your opinion, are there any factors that hinder or limit your adoption of HR-c when intervening with adolescents and young adults with difficulty (e.g., factors related to the organization, the client, the legal status of cannabis, your personal values, etc.)?

***Questions on the general assessment of the knowledge translation process***

The main objective of our study was to implement a knowledge translation process aimed at optimizing the adoption of HR-c among adolescents and young adults with difficulty in Quebec. Our knowledge translation plan was co-developed with the target audiences to meet their needs and take into account their context.

23. In your opinion, what worked well in our knowledge translation process?
24. In your opinion, what worked less well in our knowledge translation process?
25. In your opinion, what could be improved in our knowledge translation process?

(Follow-up question: Is there anything else we should have done or done differently?)

*I've asked all my questions, is there anything else you'd like to talk about?*

## Additional file 7: Actions aimed at optimizing HR-c adoption, along with their importance, implementation impact, and feasibility

Actions to be implemented by practitioners	
<b>Action 1</b>	Consult a contact person (internal or external) to get answers to your questions, obtain clinical support, and discuss complex cases.
<i>Importance</i>	4.25/5
<i>Impact</i>	<ul style="list-style-type: none"> <li>Practitioners' knowledge is enriched and their thinking more nuanced.</li> <li>Accessibility of contact persons remains an issue.</li> <li>Practitioners often consult internal people but recognize the benefit of seeking external resources for additional advice, which highlights the need for flexibility in choice of internal or external resources.</li> </ul>
<b>Action 2</b>	Become informed and contribute to the clarification of individual and collective intervention frameworks for adopting HR-c among young people in cases of concomitant mental and/or physical health issues; if possible, obtain the support of health professionals (e.g., psychiatrists).
<i>Importance</i>	4/5
<i>Impact</i>	<ul style="list-style-type: none"> <li>Practitioners are better equipped to support young people presenting concomitant mental and/or physical health issues.</li> <li>Practitioners are able to help in limiting certain symptoms, identifying risks of mental health deterioration, and defining realistic expectations for follow-up.</li> <li>A collaborative approach with young people is encouraged.</li> </ul>
<b>Action 3</b>	Adopt HR-c based on young people's needs, even if there are issues related to cannabis use (e.g., cannabis use disorder).
<i>Importance</i>	4/5
<i>Impact</i>	<ul style="list-style-type: none"> <li>Action frequently implemented by practitioners.</li> <li>Continuing its application would meet the needs of young people and foster the adoption of an awareness-raising and prevention approach.</li> </ul>
<b>Action 4</b>	Become informed about available training opportunities on HR and participate in them to enhance your knowledge of HR strategies applicable by youth, HR principles, HR effectiveness, and applicability among young people who use/don't

use substances (e.g., consult the training offered by the *Institut universitaire sur les dépendances*)

*Importance* 3.66/5

- Impact*
- Improved level of training in HR and better quality interventions.
  - Lasting influence on professional practices.
  - More effective and consistent interventions: HR-c strategies would also be beneficial for parents, for understanding consumption behaviors within the group, and for encouraging young people's autonomy in managing their use.
  - According to practitioners, it is essential for managers to take part in training sessions to harmonize the collective framework.
  - Given that participation in training courses entails costs for the organization and requires staff, practitioners recommended offering different training modalities (e.g., recorded webinars, documentation), while maintaining the ability to ask questions.

**Action 5** Review the organization's orientation regarding HR-c adoption, taking into account the legal status of cannabis among young people under 21 and, if available, read the documentation on that orientation.

*Importance* 3.66/5

- Impact*
- Practitioners are able to consolidate and update their knowledge of HR-c intervention modalities, while taking into consideration the legal context.
  - Practitioners are able to function more easily within the legal constraints in their practice.
  - Facilitates the modification of certain organizational policies.
  - Helps to preserve the bond of trust between parents and the organization.

**Action 6** If possible, and depending on the situation, promote understanding of HR-c principles among parents of young people and among schools (e.g., facilitate information meetings, distribute tools, etc.).

*Importance* 3/5

- Impact*
- Ensures better understanding and coherence among all stakeholders, while taking into account cultural diversities.
  - Paves the way to addressing certain prejudices about young people who use substances, although certain preconceived ideas are difficult to refute.
  - Action could potentially be implemented by front-line workers in schools (i.e., school boards can train educational staff), and by creating and sharing tools (e.g., leaflets, material on HR-c, promoting organizations' services).

**Action 7** Interact and discuss with members of your work teams to reflect on your conceptions and beliefs regarding HR-c.

*Importance* 3/5

- Impact*
- Fosters a shared vision within work teams.
  - Improves HR-c adoption by all team members.
  - Opportunities to discuss complex cases and broaden the range of possible solutions.
  - Enhances practitioners' openness, and helps to limit the influence of inhibitory beliefs and conceptions on their practice.

**Action 8** In team discussions, align individual and collective intervention frameworks with HR-c principles to limit transmission of contradictory messages to young people.

*Importance* 2.66/5

- Impact*
- Ensures a clearer, more coherent message to young people, particularly in the face of challenges that could limit HR-c adoption (e.g., partners opposed to HR-c, age differences among young people, presence in the group of young people who do not use substances).

### Actions to be implemented by managers

**Action 1** Offer or direct practitioners to HR-c training opportunities to increase their knowledge of its principles and effectiveness, its applicability among young people who use/don't use cannabis, and HR-c strategies applicable by young people (e.g., "*Repérage, détection et intervention précoce jeunesse consommation DEP-ADO*" training offered by the CISSS des Laurentides).

*Importance* 5/5

- Feasibility*
- Managers need to be aware of training opportunities available to practitioners and to facilitate access to the registration platforms.

**Action 2** Clarify the therapeutic framework for adopting HR-c among young people (aged 14–24) in cases of concomitant mental and/or physical health issues.

*Importance* 4/5

- Feasibility*
- Feasibility can be complex, given the challenges of consultations, clinical discussions, confidentiality among professionals, and number of professionals involved.

- The *Centre d'expertise et de collaboration en troubles concomitants* supports organizations in implementing and sustaining a service offer adapted to the specific care needs of people with concomitant disorders.

**Action 3** Ensure organizational practices are aligned with the organization's HR-c orientation toward young people (aged 14–24), so as not to send them contradictory messages

*Importance* 4/5

- Feasibility*
- Feasibility is challenging and depends on practices conveyed by managers as well as on ethical concerns.
  - Organizations aspire to convey a coherent message that advocates for HR-c, but at the micro level, this message can sometimes get lost, especially because HR-c applicability can sometimes be complex and challenging.

**Action 4** Designate a contact person to answer practitioners' questions, provide clinical support, and facilitate discussions on complex cases.

*Importance* 3.5/5

- Feasibility*
- Feasibility depends upon the organization.
  - In some organizations, clinical leaders already play this role to some extent and contact persons are already present, whereas in other organizations this is more complex because of the autonomy of different centers affiliated with the same organization.

**Action 5** Encourage opportunities for discussion among members of work teams to foster reflection on their conceptions and beliefs about HR-c and to ensure shared and valid understanding.

*Importance* 3/5

- Feasibility* While this is entirely feasible within teams, it represents just one important subject for them, among other equally crucial issues.

**Action 6** Promote an understanding of HR-c principles among parents of young people (e.g., direct them to the CISSS's *Service à l'Entourage-Jeunesse* or distribute tools).

**Action 7** If possible, and depending on the situation, promote HR-c support by schools, partners, and/or collaborators of your organization.

*Importance* 1/5

- Feasibility of actions 6 & 7*
- Feasibility depends on expectations and context (e.g., distributing tools to parents is generally simpler than organizing information meetings in schools).
  - Assigning this task to a specific person ensures its success.

- Some organizations have already set up an open group for parents of teenagers, whereas this is not yet implemented in other workplaces.

**Action 8** Reiterate the organization’s orientation regarding HR-c adoption, while taking into account the legal status of cannabis among young people under the age of 21.

*Importance* 1/5

*Feasibility* Management direction is clear, but reiterating it and ensuring HR-c applicability are crucial. As well, different departments within the same organization may adopt different directions.

**Action 9** Adopt HR-c based on young people’s needs, even if there are issues related to cannabis use (e.g., dependence).

*Importance & Feasibility* *During the group activity, importance and feasibility were not assessed by managers because the initial action was not clear to them.*

## Chapitre 7 – Discussion générale

### Bilan du déroulement des études

Par le biais de trois études rapportées dans quatre articles scientifiques, la présente thèse visait à concevoir une démarche de TMC afin d’optimiser l’adoption de l’approche de RDM-C par les intervenant.e.s de la santé et des services sociaux œuvrant auprès des adolescent.e.s et des jeunes adultes en difficulté au Québec. Dans un premier temps, les facteurs qui facilitent et limitent son adoption par les professionnel.le.s de ces milieux ont été identifiés par le biais d’une étude de portée dont le protocole et les résultats ont fait l’objet de deux articles (Haddad, Dagenais, Fallu, et al., 2024; Haddad, Dagenais, Huynh, et al., 2024).

Dans le cadre de la seconde étude, des intervenant.e.s et des gestionnaires de quatre centres d’hébergement ou de traitement résidentiels pour les jeunes au Québec ont été consulté.e.s et un questionnaire leur a été administré. Les données qualitatives et quantitatives collectées ont permis de repérer leurs attitudes envers l’approche de RDM-C, l’approche d’abstinence des substances, leur niveau de formation perçue en RDM-C, les facteurs qui influencent son adoption et qui pourraient affecter la mise en œuvre de la démarche de TMC (Haddad et al., 2025).

En s’appuyant sur ces résultats et ceux de l’étude de portée, un plan de TMC visant à optimiser leur adoption de l’approche de RDM-C a été élaboré (Haddad et al., 2025). Celui-ci a été mis en œuvre et évalué dans le cadre de la troisième étude (Haddad et al., en révision). Le plan de TMC regroupait deux outils de TMC adaptés à chaque public cible (intervenant.e.s et gestionnaires) : notes de politique et ateliers délibératifs. Le contenu théorique des stratégies de TMC (i.e., contenu de la note de politique et première partie de l’atelier délibératif) consistait à partager les principes de base de l’approche de RDM-C, son efficacité et son applicabilité auprès des jeunes, les conceptions erronées liées à son adoption et les facteurs qui influencent sa mise en œuvre. De plus, lors de la deuxième partie de l’atelier délibératif (i.e., délibérations), les publics cibles ont eu l’opportunité de travailler sur les pistes d’actions initialement élaborées par l’équipe de recherche en les reformulant lorsque nécessaire, en les classant par ordre de priorité et en

identifiant la faisabilité et l'impact de leur mise en œuvre. L'applicabilité de ces actions pourrait contribuer à une meilleure adoption de l'approche de RDM-C auprès des jeunes.

Enfin, entre quatre et huit semaines après les délibérations, les publics cibles ont été sollicités pour répondre à un questionnaire et participer à des entrevues individuelles. Grâce à cette collecte de données, une évaluation mixte de la mise en œuvre du plan de TMC, de ses effets immédiats ainsi que de ses retombées à court-moyen terme a été réalisée (Haddad et al., en révision).

## **Synthèse des principaux résultats**

### **Les déterminants de l'adoption de l'approche de RDM-C**

Les résultats de l'étude de portée (article 2) ainsi que ceux issus des données mixtes collectées pour élaborer le plan de TMC (article 3) s'entrecoupent à divers niveaux et révèlent des facteurs qui facilitent et limitent l'adoption de l'approche de RDM-C par les professionnel.le.s de la santé et des services sociaux (Haddad, Dagenais, Fallu, et al., 2024; Haddad et al., 2025).

Premièrement, des facteurs liés aux caractéristiques des professionnel.le.s jouent un rôle clé dans l'adoption de l'approche de RDM-C. Par exemple, les études incluses dans l'étude de portée montrent qu'un niveau d'éducation élevé ou la participation à des formations en RDM-C favorisent son adoption. Lors des consultations menées pour élaborer le plan de TMC, il est apparu que, malgré la présence d'attitudes positives envers l'approche de RDM-C, les participant.e.s manquaient de connaissances sur ses principes fondamentaux, son applicabilité et son efficacité. Cela pourrait expliquer les réticences observées face à sa mise en œuvre. Néanmoins, malgré la charge de travail élevée et le manque de personnel, une ouverture à l'idée de suivre une formation en RDM-C a été démontrée de la part des participant.e.s. Contrairement aux résultats de l'étude de portée, aucun lien n'a été observé entre le nombre d'années d'expérience et l'ouverture à l'approche de RDM-C. Cela pourrait s'expliquer par les données issues des consultations, selon lesquelles certain.e.s intervenant.e.s avaient déjà appliqué des modèles basés sur l'approche d'abstinence de substances dans d'autres contextes professionnels.

Ce changement de pratique pourrait être perçu comme un défi majeur, mettant en évidence la nécessité d'une formation adaptée pour faciliter son applicabilité.

Deuxièmement, en ce qui concerne les caractéristiques de la clientèle, l'étude de portée met en évidence que les professionnel.le.s sont davantage enclin.e.s à adopter l'approche de RDM-C lorsque leur client.e présente un TUC modéré plutôt que sévère, et lorsque la RDM-C est perçue comme un objectif intermédiaire de l'intervention, plutôt que final. L'utilisation du terme « objectif final de traitement » fait référence à la terminologie employée dans les études incluses dans l'étude de portée et fait référence à une posture où l'objectif n'est plus nécessairement l'abstinence, mais plutôt, une consommation plus sécuritaire, fonctionnelle et compatible avec une meilleure qualité de vie. De plus, pour certain.e.s professionnel.le.s, la présence d'un trouble concomitant (p. ex., trouble psychotique, dépression majeure, trouble de stress post-traumatique, phobie sociale) favorisait leur adoption de la RDM-C et les amenait à adopter une posture plus flexible. Cependant, pour d'autres, cela entravait son adoption par crainte, entre autres, d'intensifier la symptomatologie. Par ailleurs, la présence d'une condition médicale, d'un problème de santé ou d'une maladie chronique était uniquement considérée comme un obstacle à l'adoption de la RDM-C en raison des préoccupations quant à la détérioration de l'état de santé physique et des contre-indications médicales. Cependant, lors des consultations, il est apparu que la présence d'une comorbidité psychiatrique semblait davantage limiter l'adoption de l'approche de RDM-C : les intervenant.e.s exprimaient un manque d'expertise pour accompagner efficacement ces cas. Cette complexité liée aux comorbidités souligne l'importance d'une formation spécialisée pour renforcer la compétence des intervenant.e.s dans la gestion de ces situations spécifiques.

Troisièmement, l'étude de portée et les consultations révèlent plusieurs facteurs en lien avec l'approche de RDM-C qui influencent son adoption. Par exemple, l'accent mis sur les objectifs et les besoins spécifiques de la clientèle, la création d'un environnement sans jugement, flexible et non punitif, constitue des principes fondamentaux de l'approche de RDM-C qui facilitent son intégration dans les pratiques professionnelles. En outre, la perception de son efficacité et de son potentiel d'amélioration de l'engagement de la clientèle dans le suivi, jouent un rôle déterminant dans son adoption. Toutefois, l'existence d'incertitudes concernant son efficacité et de

conceptions erronées limitent considérablement sa mise en œuvre. Un autre élément clé est le contexte légal : un cadre législatif favorable à l'approche de RDM-C semble favoriser son applicabilité, tandis que la crainte de potentiels enjeux légaux, constitue un frein à son adoption.

Quatrièmement, les facteurs liés au milieu de travail révèlent que le soutien organisationnel et une philosophie de travail alignée avec les principes de l'approche de RDM-C favorisent son adoption par les professionnel.le.s. De plus, la présence d'une personne-ressource pour accompagner les intervenant.e.s dans leur processus d'adoption de l'approche de RDM-C pourrait grandement le faciliter. Cependant, la présence de collaborateur.rice.s opposé.e.s à l'adoption de l'approche de RDM-C pourrait constituer un obstacle majeur à son applicabilité, créant ainsi des tensions internes qui entravent sa mise en œuvre.

### **La démarche de TMC mise en œuvre**

Le plan de TMC développé dans le cadre de ce projet doctoral a été coconstruit avec les publics cibles tout en s'appuyant sur diverses sources de données, telles que l'étude de portée (article 2), les consultations réalisées auprès des publics cibles (article 3), les études issues du projet de recherche global (Fallu et al., en préparation; Song, 2024), ainsi que les données probantes sur l'approche de RDM-C et le TMC. Cette phase de pré-implantation s'est appuyée sur deux cadres conceptuels : 1) le modèle *Knowledge-to-Action* (KTA) de Graham et al. (2006) a orienté l'étape de co-production des connaissances avec les publics cibles ; 2) le *Consolidated Framework for Implementation Research* (CFIR) a servi de guide pour élaborer les outils de collecte de données.

L'implication des publics cibles à cette étape a permis de mener une analyse approfondie de leurs besoins et des facteurs contextuels susceptibles d'influencer la mise en œuvre du plan de TMC. Plus précisément, l'analyse des besoins a mis en évidence les écarts entre la situation réelle et désirée des publics cibles, leur intérêt face aux nouvelles connaissances, leurs attitudes et leurs habiletés à appliquer l'approche de RDM-C, ainsi que leurs préférences quant aux canaux de communication. En parallèle, l'analyse du contexte a permis d'identifier des facteurs susceptibles d'influencer la mise en œuvre du plan de TMC, ces facteurs étant liés aux publics cibles, aux jeunes et à l'organisation elle-même.

La collecte de données quantitatives menée à cette étape a révélé des attitudes positives envers l'approche de RDM-C, négatives envers les traitements basés sur l'abstinence et une perception positive du niveau de formation en RDM-C. Toutefois, ces résultats ne semblaient pas être reliés au statut professionnel (intervenant.e ou gestionnaire). Cependant, des corrélations ont été observées entre 1) les attitudes positives envers l'approche de RDM-C et la perception positive du niveau de formation en RDM-C, et 2) les attitudes positives envers l'approche de RDM-C et les attitudes négatives envers les traitements fondés sur l'abstinence.

Suite à son élaboration, la mise en œuvre du plan de TMC consistait à élaborer et diffuser une note de politique et à organiser un atelier délibératif auprès d'intervenant.e.s et de gestionnaires œuvrant au RACQ, CRD, CRJD et CLSC auprès d'adolescent.e.s et de jeunes adultes en difficulté. Le cadre de Ziam et al. (2024) a servi pour décrire le déroulement de sa mise en œuvre et évaluer ses effets immédiats ainsi que ses retombées à court-moyen terme (article 4).

La démarche d'évaluation mixte de sa mise en œuvre a révélé une satisfaction élevée face aux stratégies de TMC, des attitudes positives envers l'approche de RDM-C, négatives envers les traitements basés sur l'abstinence, et une perception positive de niveau de formation en RDM-C. Les participant.e.s ont exprimé une forte intention d'appliquer les nouvelles connaissances acquises, ont rapporté avoir intégré certaines des stratégies de RDM-C dans leurs pratiques auprès des jeunes et ont prévu de diffuser les actions formulées au sein de leurs équipes pour favoriser leur adoption organisationnelle.

## **Mise en perspective des résultats à la lumière de la littérature scientifique**

### **Les divergences dans la définition de l'approche de RDM-C : Un besoin de consensus**

À travers les 35 études incluses, l'étude de portée a permis d'examiner comment l'approche de RDM-C est conceptualisée pour identifier les éléments récurrents présents dans les définitions

proposées (Haddad, Dagenais, Fallu, et al., 2024). Les résultats ont révélé qu'un tiers des études abordaient principalement l'acceptabilité de l'approche de RDM-C, sans pour autant en fournir une définition. Les autres études ayant défini l'approche de RDM-C se sont appuyées sur ses principes fondamentaux et/ou son efficacité. Le manque de consensus sur la définition de l'approche de RDM-C représente un défi majeur pour son adoption uniforme et efficace dans les pratiques professionnelles. Cela dit, l'utilité de proposer une définition universelle, claire et exhaustive de l'approche de RDM-C s'avère essentielle pour différentes raisons qui dépassent la nécessité théorique.

Premièrement, en l'absence de définition universelle, l'approche de RDM-C peut être interprétée de manière variable, ce qui laisse la place à des interprétations subjectives et personnelles, possiblement teintées par des croyances individuelles et de fausses conceptions, ainsi qu'à une divergence dans son applicabilité sur le terrain (Broussard, 2019; Long, 2016; Mancini et al., 2008). En effet, même lors des consultations, les participant.e.s ont exprimé qu'ils appliquaient l'approche de RDM-C, mais manquaient d'une compréhension approfondie de cette approche, et que leurs croyances personnelles influençaient son adoption.

Deuxièmement, ce manque de clarté peut entraver les efforts de formation et la diffusion de connaissances cohérentes sur l'approche de RDM-C, car des interprétations variées pourraient émerger, nuisant ainsi à une compréhension commune de l'approche (Kourgiantakis et al., 2024). Comme le montrent les travaux en TMC, déterminer et définir de façon précise le contenu à transférer par le biais des stratégies de diffusion et d'appropriation des connaissances, constitue l'une des bases essentielles d'une démarche de TMC efficace (Graham et al., 2006; Lemire et al., 2009; Ziam et al., 2024).

Troisièmement, il existe une fréquente confusion entre la réduction des méfaits et la réduction de l'usage des substances (D'Arcy et Fallu, 2023). Cela peut entraîner une mauvaise conceptualisation et application de l'approche de RDM-C, d'où l'importance d'une définition précise pour résoudre toute ambiguïté. En effet, l'approche de RDM-C ne se réduit pas à une stratégie visant uniquement à diminuer la fréquence de consommation ou la quantité consommée, mais représente une approche globale visant, entre autres, à réduire les potentiels

méfais associés à l'utilisation du cannabis, sans imposer l'abstinence et, surtout, sans nécessairement réduire la consommation. Cette distinction entre la réduction des méfaits et la réduction de l'usage peut être illustrée par l'exemple suivant, en établissant un parallélisme avec l'éducation sexuelle des jeunes : contrairement aux programmes d'abstinence sexuelle, les programmes d'éducation sexuelle intégrée ne cherchent pas à réduire la fréquence des relations sexuelles, mais plutôt, à favoriser l'adoption de comportements qui les rendront plus sécuritaires du point de vue de la santé sexuelle (Bradley, 2024; Holt et al., 2025).

En conclusion, une définition précise et une compréhension commune de l'approche de RDM-C permettra d'éviter la confusion, les interprétations erronées, de faciliter et d'uniformiser sa mise en œuvre.

### **Adoption de l'approche de RDM-C auprès des jeunes : Entre les attitudes des professionnel.le.s et les besoins des jeunes**

Bien qu'il existe une ouverture de la part des professionnel.le.s de la santé et des services sociaux à l'égard de l'approche de RDM-C, son adoption reste largement influencée par leurs croyances, leurs perceptions et leurs attitudes envers cette approche et envers la question de la consommation de substances psychoactives. Comme l'indiquent nos données qualitatives collectées avant et après la mise en œuvre du plan de TMC (articles 3 et 4), les publics cibles reconnaissent l'importance de l'approche de RDM-C, notamment pour favoriser l'engagement des jeunes dans le suivi. Cependant, des réticences persistent quant à son intégration optimale dans les pratiques professionnelles en raison de divers facteurs, tels que le cadre juridique, le manque de formation, la vie de groupe au sein des unités d'hébergement, la crainte d'envoyer le mauvais message aux jeunes ainsi que la présence de troubles concomitants et de conceptions erronées.

De leur côté, des études rapportent que les jeunes montrent une ouverture envers l'approche de RDM-C, car cette approche leur offre un accompagnement visant à favoriser une consommation plus sécuritaire et responsable, tout en réduisant les risques associés à leur usage et sans les

contraindre à l'abstinence (Gouvernement du Canada, 2021; Coronado-Montoya, 2024; Kourgiantakis et al., 2024; McKiernan et Fleming, 2017). De plus, les jeunes peuvent être confrontés à une stigmatisation vis-à-vis leur usage du cannabis qui découle de leur environnement social et légal (p. ex., les lois punitives) (Basedow et al., 2025; Hinderyckx et Neufeld, 2025). Dans ce contexte, l'approche de RDM-C leur offre un cadre non stigmatisant, ce qui est essentiel pour encourager leur adhésion au suivi et favoriser la demande de soutien (Fallu et Brisson, 2013; Pratschke, 2024). Néanmoins, l'un des défis réside dans l'écart entre les pratiques des intervenant.e.s et les besoins réels des jeunes (Kourgiantakis et al., 2024).

L'intégration partielle de l'approche de RDM-C dans les pratiques peut créer des incohérences, engendrer des tensions, envoyer des messages contradictoires aux jeunes et ainsi, rendre son adoption plus complexe (Kourgiantakis et al., 2024). En effet, cela peut se refléter lorsque l'intervenant.e prône l'approche de RDM-C dans son discours, mais que les pratiques organisationnelles mises en place virent davantage vers une approche axée sur l'abstinence des substances (p. ex., fouilles, confiscation des substances), comme le montrent les résultats de nos analyses qualitatives (articles 3 et 4). Cela montre la nécessité d'assurer une cohérence entre les discours professionnels et les pratiques organisationnelles tout en adoptant des approches efficaces et adaptées aux besoins des jeunes. Leur intégration dans le processus décisionnel concernant les objectifs de leur suivi peut aussi renforcer leur engagement, améliorer l'efficacité des interventions et favoriser l'alignement des pratiques avec leurs réalités.

Les constats évoqués dans cette section s'alignent avec certaines recommandations issues du rapport « *Prévention de la consommation à risque ou problématique de substances psychoactives chez les jeunes hébergés en institution au Québec* » dirigé par l'Institut universitaire sur les dépendances (IUD) du Québec dans le cadre du *Programme sur l'usage et les dépendances aux substances* (PUDS) (Fallu et al., 2022). Ces recommandations soulignent l'importance 1) d'adopter une politique globale de RDM et de clarifier le mandat de l'organisation quant à son adoption, 2) de former les professionnel.le.s de la santé en RDM pour aboutir à une meilleure compréhension de ses principes, aborder les enjeux de la stigmatisation et améliorer son applicabilité, et 3) de tenir compte des perceptions et des perspectives des jeunes quant aux services en dépendance (Fallu et al., 2022).

## **Influence des modèles traditionnels d'abstinence des substances sur l'adoption de l'approche de RDM-C**

L'adoption de l'approche de RDM-C est souvent influencée par les modèles traditionnels d'abstinence des substances qui sont largement ancrés dans les pratiques et les philosophies d'intervention, et qui prônent l'arrêt total de la consommation de substances (Stowe et al., 2024). Ces modèles, renforcés par des politiques comme la « Guerre contre les drogues » (*War on Drugs*) menée aux États-Unis dans les années 1970, ont contribué à la criminalisation de l'usage de substances et à la conception de la dépendance comme une maladie (Cooper, 2015). Cette approche a longtemps dominé les interventions, rendant plus difficile l'acceptation de l'approche de RDM-C comme une alternative pour accompagner les personnes qui consomment des substances (Cohen et al., 2024; Mancilha et Covic, 2024; Stowe et al., 2024).

En effet, les résultats de nos études montrent que l'un des obstacles à l'adoption de l'approche de RDM-C, réside dans le fait d'avoir préalablement appliqué l'approche d'abstinence des substances dans d'autres contextes professionnels ou d'avoir été formé selon ses principes. Cela peut créer un biais et rendre difficile l'adoption de la RDM-C, car elle va à l'encontre de la formation de base ou des expériences professionnelles passées de l'intervenant.e. En outre, les jeunes eux-mêmes peuvent être influencés par cette conception stricte de l'abstinence, surtout si leur environnement (familial, social, institutionnel) valorise l'idée d'une consommation « zéro ». Ce contexte peut créer une tension entre ce qu'ils perçoivent comme la norme sociale et leurs besoins (Kourgiantakis et al., 2024).

Un autre élément essentiel à évoquer à ce niveau revient à la mesurabilité de l'efficacité de l'approche d'abstinence des substances et de celle de l'approche de RDM-C. Les modèles d'abstinence ciblent des objectifs binaires (i.e., arrêt ou non-arrêt de la consommation), ou, alternativement, la réduction de la fréquence de consommation, ce qui pourrait relativement faciliter leur évaluation et leur adoption. En revanche, les objectifs de l'approche de RDM-C sont plus nuancés (p. ex., réduire les méfaits physiques et sociaux, améliorer le bien-être, adopter des comportements sécuritaires, favoriser l'engagement dans le suivi), ce qui rend leur évaluation plus complexe et exige des outils adaptés (p. ex., entretiens qualitatifs, impacts au niveau de la

santé publique à long terme). Cette différence dans la mesurabilité, combinée à l'acceptabilité sociale et professionnelle des approches visant la réduction, voire l'arrêt de la consommation, même celle « non-problématique », peut créer des résistances face à l'adoption de l'approche de RDM-C, surtout dans des contextes institutionnels qui privilégient les résultats immédiats et tangibles.

En résumé, pour faciliter l'adoption de l'approche de RDM-C, il est crucial de remettre en question les modèles traditionnels d'abstinence, notamment leur efficacité et leur pertinence limitées, de développer des outils d'évaluation adaptés à l'approche de RDM-C et de promouvoir l'adoption d'une approche flexible qui respecte les choix individuels des jeunes et priorise leur sécurité (Cohen et al., 2024; Stowe et al., 2024).

### **Impact du cadre légal : Un levier pour la mise en œuvre de l'approche de RDM-C**

Parmi les 35 études incluses dans l'étude de portée, 24 ont mentionné le statut légal du cannabis au moment et au pays de déroulement de l'étude. De plus, 11 études ont évoqué, en plus des facteurs facilitant et limitant l'adoption de l'approche de RDM-C (i.e., objectif général), son acceptabilité par la population recrutée. Une analyse plus approfondie de ces données montre que, dans un pays où l'usage du cannabis est illégal, certain.e.s professionnel.le.s de la santé font preuve d'une ouverture face à l'approche de RDM-C malgré les restrictions légales (Clark et Wyllie, 2014; Kapur, 2016; King, 2020; Kyser, 2010; Mancini et al., 2008; Suissa et Bélanger, 2001), tandis que d'autres demeurent réticent.e.s (Benoit et al., 2014; Ellison, 2017). Ainsi, les résultats de l'étude de portée ne permettent pas de conclure de manière définitive au sujet de l'impact de la légalisation du cannabis sur l'acceptabilité de l'approche de RDM-C, mais il s'agit clairement d'un obstacle pour certaines personnes. C'est pourquoi, l'une des recommandations issue du PUDS repose sur la nécessité de favoriser l'adoption de l'approche de RDM par les professionnel.le.s des systèmes judiciaires pour faciliter son adoption par les professionnel.le.s de la santé et assurer une cohérence dans les pratiques (Fallu et al., 2022).

Cependant, nos études menées dans le but d'élaborer et d'évaluer le plan de TMC (articles 3 et 4) révèlent que les intervenant.e.s et les gestionnaires (i.e., contexte où l'usage du cannabis est uniquement légal pour les adultes de plus de 21 ans) présentent généralement des attitudes positives envers l'approche de RDM-C et une acceptabilité marquée vis-à-vis de ses principes. Cependant, ceci n'a pas éliminé la présence d'obstacles qui limitent son adoption de leur part.

En combinant les résultats de l'ensemble de nos études et en adoptant une perspective plus large, il est possible de conclure que la légalisation du cannabis n'influence pas nécessairement, ou de manière significative, « l'acceptabilité » de l'approche de RDM-C, mais présente un impact plus direct sur son « adoption », d'où la nécessité de différencier entre ces deux concepts : un.e intervenant.e peut percevoir les principes de l'approche de RDM-C comme « acceptables », mais rencontrer des obstacles pratiques et des enjeux légaux lors de sa mise en œuvre, ce qui limite son « adoption » de l'approche, sans pour autant affecter son acceptabilité. Cette distinction entre « acceptabilité » et « adoption » est également soutenue par la littérature scientifique. L'acceptabilité d'une intervention se réfère à sa perception positive et satisfaisante par les parties prenantes alors que l'adoption correspond à l'action concrète de la mettre en œuvre dans les pratiques (Ryan et al., 2020; Seth et al., 2020).

Au niveau du cadre légal, il s'avère utile de mentionner que la *Loi sur le cannabis* du Canada et la *Loi encadrant le cannabis* au Québec régissent la production, la distribution et la consommation de cannabis, avec des restrictions plus strictes au Québec, telles que la limitation de son usage aux adultes de 21 ans et plus (Gouvernement du Canada, 2022; Gouvernement du Québec, 2024). L'un des objectifs de la mise en place de ces lois est de « réduire au minimum les méfaits associés à la consommation de cannabis » et de « protéger les jeunes contre les méfaits associés à la consommation de cannabis » (Gouvernement du Canada, 2022, p. 5). En dépit de cela, celles-ci n'abordent pas directement la question de l'adoption de l'approche de RDM-C, notamment auprès des jeunes qui n'ont pas accès au cannabis légal, ce qui peut constituer un frein supplémentaire à son adoption. Cela dit, bien que la légalisation du cannabis puisse faciliter certains aspects de l'adoption de l'approche de RDM-C, notamment l'acceptabilité accrue de la consommation de cannabis dans la population générale, elle ne garantit pas une mise en œuvre fluide et généralisée de l'approche. Ce constat souligne l'importance de structurer le cadre

législatif comme un levier essentiel pour favoriser l'adoption de l'approche de RDM-C, en mettant en place des politiques de santé publique qui soutiennent activement cette approche.

### **De la recherche à la pratique : Du TMC pour optimiser l'adoption de l'approche de RDM-C**

La mise en œuvre d'une démarche de TMC a été essentielle pour optimiser l'adoption de l'approche de RDM-C par des intervenant.e.s de la santé et des services sociaux œuvrant auprès des adolescent.e.s et des jeunes adultes en difficulté au Québec. Plusieurs éléments relatifs au TMC ont été pris en compte pour optimiser l'efficacité de la démarche et aboutir à une meilleure utilisation des connaissances.

D'abord, les deux étapes du modèle *Knowledge-to-Action* (KTA) de Graham et al. (2006) ont été suivies : 1) les publics cibles ont participé à l'étape de *coproduction des connaissances*, ce qui permet de surmonter de potentiels obstacles à la démarche (p. ex., communication inefficace avec les publics cibles, non-adéquation des connaissances transférées à la réalité du terrain); 2) l'étape de *mise en action* a débuté par l'adaptation des connaissances aux besoins spécifiques et au contexte des publics cibles. Dans le cadre de ce projet, cela implique, entre autres, la sensibilisation des publics cibles aux stratégies de RDM-C applicables par les jeunes et aux actions à entreprendre pour optimiser l'adoption de l'approche de RDM-C. Le modèle KTA souligne également la nécessité des efforts de diffusion des connaissances pour promouvoir leur réception, adoption et appropriation (Graham et al., 2006). En effet, l'implication des publics cibles a permis de concevoir des stratégies de TMC qui leur sont adaptées. Un outil de diffusion des connaissances (notes de politique) a été combiné à une activité d'appropriation des connaissances (ateliers délibératifs), ce qui est soutenu par la littérature scientifique en tant que moyen efficace pour favoriser l'utilisation des connaissances (Arnautu et Dagenais, 2021; Lavis et al., 2009; Lemire et al., 2009; Nutley et al., 2009).

Ensuite, pour opérationnaliser les différentes étapes complexes du modèle KTA, un plan de TMC a été élaboré et structuré autour des six mécanismes identifiés par Breckon et Dodson (2016)

pour promouvoir l'utilisation des connaissances et donc, pour optimiser l'adoption de l'approche de RDM-C (Reardon et al., 2006; Tchameni Ngamo et al., 2016). Le Tableau 1 ci-dessous présente en détail la manière dont chaque mécanisme a été ciblé dans le cadre de ce projet (Breckon et Dodson, 2016). Les facteurs clés de capacité, de motivation et d'opportunité (CMO) des publics cibles ont été pris en considération tout au long de la démarche de TMC en raison de leur impact sur l'utilisation effective des connaissances (Damschroder et al., 2022; Langer et al., 2016).

Tableau 1. - Ciblage des mécanismes clés dans le processus de TMC pour optimiser l'adoption de l'approche de RDM-C

Mécanismes	Moments et stratégies de ciblage du mécanisme
1) Sensibiliser à l'utilité des connaissances	- Étape de pré-implantation : Consultations
2) Développer une compréhension partagée	- Étape de mise en œuvre : Contenu de la note de politique et de l'atelier délibératif
3) Favoriser les interactions entre les producteur.rice.s et utilisateur.rice.s des connaissances	Tout au long du projet :
	- Étape pré-implantation : Consultations et administration d'un questionnaire - Étape de mise en œuvre : Interactions lors de l'atelier délibératif - Étape post-implantation : Entrevues et questionnaire d'évaluation
4) Améliorer l'accès aux résultats de la recherche	- Étape de mise en œuvre : Données probantes diffusées et partagées à l'aide de la note de politique et d'autres outils de diffusion (i.e., liste des stratégies de RDM-C applicables par les jeunes, présentation PowerPoint de l'atelier délibératif)
5) Renforcer les compétences des publics cibles	- Étape de mise en œuvre : Compétences renforcées à travers le partage de données probantes sur l'approche de RDM-C et des actions à entreprendre pour optimiser son adoption

- 6) Influencer les structures - Tout au long du projet, en sollicitant les gestionnaires des milieux ciblés pour participer à l'ensemble des étapes organisationnelles

Il s'avère utile d'évoquer les différents types d'utilisation des connaissances susceptibles d'émerger d'une démarche de TMC. Selon la littérature scientifique, trois types sont généralement identifiés : 1) *L'utilisation conceptuelle* des connaissances revient à la clarification et la compréhension d'une problématique ; 2) *L'utilisation instrumentale* implique l'usage concret des connaissances dans l'élaboration d'une politique, dans la prise de décision ou un changement de pratique; 3) *L'utilisation symbolique* des connaissances revient à l'usage des données probantes dans le but de construire un argumentaire ou de légitimer des décisions (Campione et al., 2025; Lavis et al., 2003; Straus et al., 2013).

Dans le cadre de cette thèse, la démarche de TMC mise en œuvre a fait émerger les trois types d'utilisation des connaissances à des degrés différents. La dimension conceptuelle de l'utilisation des connaissances a été mise en évidence lorsque les publics cibles ont exprimé avoir atteint une meilleure compréhension des principes fondamentaux de l'approche de RDM-C, des stratégies qui en découlent, des facteurs susceptibles d'influencer son adoption et de son efficacité. Quant à l'utilisation instrumentale, celle-ci se reflète dans l'intégration des stratégies de RDM-C dans les plans de consommation des jeunes, ce qui illustre un usage concret des connaissances dans la pratique. Enfin, l'utilisation symbolique des connaissances se reflète dans les propos des gestionnaires qui ont mentionné que les informations transférées les aideraient à communiquer leur vision de l'adoption de l'approche de RDM-C à leurs partenaires et que les actions proposées pourraient leur être utiles en cas de besoin de réaligner les pratiques organisationnelles.

En conclusion, la démarche de TMC a constitué un moyen efficace pour optimiser l'adoption de l'approche de RDM-C. La mise en œuvre d'une démarche adaptée aux réalités du terrain a permis de créer un environnement propice pour contribuer à l'utilisation des connaissances transférées et optimiser l'adoption de l'approche de RDM-C auprès des jeunes en difficulté. Cela a été facilité grâce à divers éléments, tels que l'implication des publics cibles et la prise en compte des mécanismes favorisant l'utilisation de la recherche.

## Implications théoriques et pratiques

La présente thèse de doctorat se caractérise par différentes implications théoriques et pratiques. Au niveau théorique, l'étude de portée met en évidence la nécessité d'une définition claire et unifiée de l'approche de RDM-C afin d'éviter les interprétations subjectives et d'assurer une application cohérente. Les études réalisées enrichissent la littérature scientifique sur l'approche de RDM-C en la contextualisant dans les pratiques de santé au Québec. Une autre implication théorique majeure réside dans l'exploration de l'impact d'une démarche rigoureuse et structurée de TMC pour faciliter le passage de la théorie à la pratique et ainsi contribuer à l'optimisation de l'adoption de l'approche de RDM-C. À notre connaissance, il s'agit du premier projet recensant les facteurs facilitant et entravant l'adoption de l'approche de RDM-C, tout en mettant en place une démarche de TMC pour en favoriser son applicabilité.

Au niveau pratique, l'identification des facteurs facilitant et limitant l'adoption de l'approche de RDM-C offre des pistes concrètes pour améliorer son applicabilité surtout que, théoriquement, son acceptabilité ne suffit pas pour garantir son adoption effective. En effet, des actions spécifiques ont été proposées pour soutenir les intervenant.e.s et les gestionnaires dans l'optimisation de l'adoption de l'approche de RDM-C au sein de leurs milieux. L'atteinte de cet objectif permet non seulement de renforcer les pratiques fondées sur des données probantes, mais aussi, présente de potentielles retombées positives pour les jeunes suivis. De plus, le contenu théorique dispensé lors de l'atelier délibératif et le déroulement des délibérations fournissent des orientations pour les futurs efforts de formation en RDM-C.

Bien que ce projet soit mené au Québec, la démarche de TMC mise en œuvre peut être, en partie, généralisée à d'autres substances et contextes, notamment là où le cannabis demeure illégal. En effet, la mise en lumière des facteurs pouvant influencer la démarche et la présentation d'une approche structurée pour la guider fournissent un cadre adaptable à d'autres provinces, pays et substances psychoactives, soutenant ainsi la généralisation des résultats. Enfin, l'évaluation de la démarche de TMC montre que ses effets vont au-delà des participant.e.s immédiats, influençant un éventail plus large d'intervenant.e.s et de gestionnaires au sein des organisations ciblées.

Ainsi, en contribuant à la fois à la théorie et à la pratique, ce projet offre des perspectives concrètes pour l'adoption de l'approche de RDM-C, tout en fournissant des orientations pour les futures interventions et initiatives de TMC dans ce domaine.

## **Perspectives pour la pérennisation des résultats**

Pour garantir la pérennité des résultats de cette thèse et favoriser l'adoption continue de l'approche de RDM-C auprès des jeunes, plusieurs stratégies peuvent être envisagées. Tout d'abord, le projet démontre qu'une démarche de TMC fondée sur les réalités du terrain et les données probantes peut contribuer de manière significative aux résultats souhaités. Par conséquent, cette approche devrait être priorisée par les organismes responsables de la formation des professionnel.le.s des milieux de pratique au Québec, tels que le Ministère de la Santé et des Services sociaux (MSSS), les Centres de réadaptation en dépendance (CRD), ainsi que l'IUD, partenaire du projet. Établir des collaborations avec ces instances institutionnelles clés permettrait d'étendre les implications de ce projet à un niveau provincial, ce qui s'inscrit pleinement dans les objectifs du *Plan d'action interministériel sur la dépendance 2018-2028* (Ministère de la Santé et des Services sociaux, 2018).

Ensuite, les actions formulées devraient être diffusées à une échelle plus large afin d'accroître l'impact du projet. Cela pourrait se concrétiser par leur intégration dans les formations provinciales en RDM-C destinées aux intervenant.e.s de la santé et des services sociaux, par leur partage avec l'ensemble des intervenant.e.s et gestionnaires des milieux ciblés, et non seulement avec ceux et celles ayant participé à l'atelier délibératif. Dans cette optique, et suite à ce projet, nous envisageons la création d'une vidéo de diffusion de ces actions afin de renforcer la pérennisation des résultats. Celle-ci sera conçue en collaboration avec les milieux de pratique pour assurer l'adaptabilité de son format et favoriser ses effets.

Enfin, le transfert des résultats de ce projet, à la fois auprès de publics experts et non-experts, doit se poursuivre pour les partager de manière plus large. Ces efforts de transfert de connaissances pourraient possiblement favoriser la prise en compte des conclusions de ce projet

dans d'autres cadres professionnels. En effet, tout au long des trois études, les connaissances ont été non seulement communiquées dans des articles scientifiques, mais aussi, lors d'activités de vulgarisation des connaissances (p. ex., *Ma thèse en 180 secondes*) et de conférences adressées à divers publics (p. ex., Congrès de la *Fédération Addiction* à Bordeaux; Congrès scientifique du Centre de recherche en santé publique à Montréal; Journée scientifique du département de psychologie de l'Université de Montréal; Colloques au sein du congrès de l'Acfas; Midis-Conférences de *Convergence Recherche et Intervention* de l'IUD).

## **Forces et limites de la thèse**

La présente thèse de doctorat comporte des forces et des limites. Dans la section qui suit, les forces et les limites 1) de l'étude de portée (articles 1 et 2) ainsi que 2) de la démarche de TMC (articles 3 et 4) sont présentées.

### **Forces et limites de l'étude de portée**

Pour mener l'étude de portée, les étapes conceptuelles définies par Arksey et O'Malley (2005) ont été rigoureusement suivies : 1) Les questions de recherche générales et spécifiques ont été formulées en utilisant le modèle PCC, ce qui a permis de maintenir la large portée de l'étude ; 2) La stratégie de recherche a été élaborée par deux spécialistes de l'information, adaptée et exécutée sur plusieurs bases de données en santé et dans la littérature grise ; 3) Deux réviseuses ont travaillé indépendamment tout au long de la sélection des études, avec un accord interjuges élevé ; 4) Plusieurs types de données ont été extraits (facilitateurs et obstacles à l'adoption de l'approche de RDM-C, définitions de l'approche de RDM et caractéristiques des populations) ; 5) Une analyse quantitative numérique et une analyse qualitative thématique ont été menées, garantissant ainsi une approche méthodologique complète et rigoureuse. De plus, le nombre d'études incluses ( $N = 35$ ) reflète la richesse des résultats.

Cependant, l'étude de portée présente quelques limites. Certaines mesures supplémentaires auraient pu être mises en place pour identifier des études supplémentaires, telles que 1) inclure

des études menées hors des pays de l'OCDE, bien que cela aurait limité la possibilité de généraliser les résultats à la réalité du Canada, et 2) contacter des chercheur.euse.s ou des organisations travaillant dans le domaine de la RDM-C pour repérer de potentielles études non publiées. De plus, bien que l'évaluation de la qualité méthodologique des études incluses soit une étape optionnelle dans les études de portée, il aurait été préférable de la réaliser en utilisant le *Mixed Methods Appraisal Tool* (Hong et al., 2018). Enfin, certaines des études sélectionnées abordaient les substances psychoactives en général (y compris le cannabis) et ne distinguaient donc pas clairement les facilitateurs et les obstacles spécifiques à l'approche de RDM pour le cannabis ou pour d'autres substances.

### **Forces et limites de la démarche de TMC**

La démarche de TMC se distingue par plusieurs forces ayant contribué à son efficacité et à sa rigueur. D'abord, le développement du plan de TMC a bénéficié de la triangulation de trois types de données : l'étude de portée, les consultations et un questionnaire regroupant trois sous-échelles. Cette approche a permis de trianguler ces données riches et variées, facilitant l'élaboration d'un plan de TMC guidé par les données probantes et adapté aux réalités des publics cibles. À cette étape, les données quantitatives collectées auprès de 167 personnes ont également permis d'identifier des corrélations entre les résultats et des variables sociodémographiques, offrant ainsi une compréhension plus complète des facteurs influençant l'adoption de l'approche de RDM-C et validant la puissance statistique de l'échantillon.

Lors de la mise en œuvre du plan de TMC, une approche structurée a été suivie, prenant en compte les facteurs susceptibles d'influencer le processus de TMC. Les stratégies conçues pour transférer les connaissances (notes de politique et ateliers délibératifs) ont été adaptées à chaque public cible pour assurer leur appropriation et maximiser leur impact. De plus, le déroulement de la mise en œuvre du plan de TMC ainsi que ses effets et ses retombées ont été évalués, une étape qui reste souvent peu appliquée. Une démarche mixte a été poursuivie, combinant des méthodes qualitatives (entrevues) et quantitatives (questionnaire combinant cinq sous-échelles). Tout au long de la démarche de TMC, des participant.e.s provenant de divers établissements du Québec

ont été recrutés, ce qui a permis d'obtenir des perspectives variées. Malgré le nombre plus ou moins limité de participant.e.s aux délibérations, un fort engagement a soutenu l'étape d'évaluation.

En ce qui concerne les outils quantitatifs, l'utilisation de plusieurs échelles avant et après la mise en œuvre du plan de TMC a enrichi la collecte de données. Le calcul de l'alpha de Cronbach pour chaque sous-échelle a permis d'évaluer leur cohérence interne. De plus, bien que le questionnaire sur les attitudes envers l'approche de RDM-C ne soit pas validé, ses propriétés psychométriques ont été évaluées par le biais d'une analyse factorielle et d'une analyse des items, menant au retrait de trois items et soulignant la rigueur méthodologique de l'étude.

Enfin, en ce qui concerne le volet qualitatif, les outils ont été élaborés en s'appuyant sur des cadres conceptuels bien définis : le *Consolidated Framework for Implementation Research* (CFIR) (Damschroder et al., 2022) a été utilisé pour concevoir la grille des consultations alors que l'inventaire de Ziam et al. (2024) a servi pour développer la grille des entretiens d'évaluation. Tout au long du projet, la rigueur qualitative des données a été assurée à travers différentes stratégies : 1) La crédibilité a été renforcée par la triangulation des données et la validation des thématiques par les pairs (CD) ; 2) La transférabilité a été soutenue par des descriptions détaillées du cadre de l'étude, des participant.e.s et du contexte, garantissant ainsi la validité externe ; 3) La fiabilité a été assurée grâce à une documentation systématique des décisions de recherche, des étapes de codage et des choix méthodologiques ; 4) La confirmabilité a été maintenue par la communication claire des résultats fondés sur les données recueillies ; 5) La saturation des données a été atteinte lorsqu'aucun nouveau thème n'est apparu lors des consultations et des entretiens d'évaluation, assurant la complétude des informations collectées.

Cependant, plusieurs limites ressortent de la démarche de TMC, principalement liées à l'échantillonnage, au questionnaire et à l'accompagnement offert.

En ce qui concerne l'échantillonnage, une limitation liée à l'urbanité est apparue. En effet, la majorité des participant.e.s recruté.e.s travaillent dans des milieux urbains. Un échantillon plus large provenant de zones suburbaines et rurales aurait permis d'obtenir des perspectives plus complètes et de repérer les attitudes envers l'approche de RDM-C dans différents contextes. De

plus, l'ouverture de la part des participant.e.s face à l'adoption de RDM-C, pourrait mettre en lumière un biais d'échantillonnage. Cela dit, les résultats peuvent refléter les expériences de professionnel.le.s déjà engagé.e.s dans la RDM-C, plutôt que ceux et celles qui en résistent face à son adoption. En outre, une plus grande participation lors des ateliers délibératifs, particulièrement de la part des gestionnaires, aurait enrichi les résultats et permis d'effectuer des analyses comparatives entre les différents centres d'hébergement. Il est également important de souligner l'absence de contributions directes des jeunes dans le projet, ce qui aurait pu offrir une compréhension plus approfondie de leurs besoins, leurs expériences, des implications pratiques de l'adoption de l'approche de RDM-C auprès d'eux et des potentiels changements au niveau des interventions à la suite des ateliers délibératifs.

Concernant les données collectées par questionnaire, celles-ci ne peuvent pas être associées aux participant.e.s aux consultations ou aux entretiens d'évaluation, ce qui restreint la possibilité d'analyser les réponses des participant.e.s en fonction de leurs discours lors des consultations ou des entretiens. De plus, l'ajout d'une question sur l'urbanité des participant.e.s aurait facilité l'analyse des différences régionales.

Enfin, après les ateliers délibératifs, les participant.e.s n'ont pas bénéficié d'un accompagnement pour mettre en œuvre les actions proposées dans leur pratique, ce qui était au-delà du cadre de l'étude. Un tel accompagnement aurait facilité la mise en œuvre et l'intégration des actions dans leur travail auprès des jeunes.

## Chapitre 8 – Conclusion

Cette thèse de doctorat visait à concevoir une démarche de TMC afin d'optimiser l'adoption de l'approche de RDM-C par les intervenant.e.s œuvrant auprès des adolescent.e.s et des jeunes adultes en difficulté au Québec. Pour ce, trois études faisant l'objet de quatre articles scientifiques ont été menées (Haddad, Dagenais, Fallu, et al., 2024; Haddad, Dagenais, Huynh, et al., 2024; Haddad et al., 2025; Haddad et al., en révision). Celles-ci visaient à 1) identifier, par le biais d'une étude de portée, les facilitateurs et les obstacles rencontrés par les intervenant.e.s de la santé et des services sociaux face à l'adoption de l'approche de RDM-C, 2) élaborer un plan de TMC pour optimiser son adoption et 3) mettre en œuvre le plan de TMC et évaluer ses effets et ses retombées à court-moyen terme.

Les résultats de l'étude de portée ont indiqué la présence de facteurs en lien avec les professionnel.le.s de la santé et des services sociaux, de leur clientèle, de l'approche de RDM et du milieu de travail qui entrent en jeu en facilitant ou limitant l'adoption de l'approche de RDM-C. Leur prise en compte dans le cadre d'une démarche de TMC s'avère essentielle pour accroître ses retombées.

Le codéveloppement du plan de TMC avec les publics cibles reposait sur une démarche d'analyse mixte et approfondie ayant permis de repérer leurs besoins, d'analyser leur contexte, d'identifier les facteurs susceptibles d'influencer la démarche de TMC, et d'évaluer leurs attitudes envers l'approche de RDM-C, l'approche d'abstinence des substances et leur niveau de formation en RDM-C. La mise en œuvre du plan de TMC a permis, entre autres, d'informer et d'explorer avec les publics cibles les actions à entreprendre pour optimiser l'adoption de l'approche de RDM-C auprès des jeunes dans leur pratique. Les résultats de l'évaluation de la mise en œuvre du plan de TMC ont montré l'appréciation des publics cibles de la démarche de TMC, leur intention d'utiliser les connaissances transférées, leur adoption de certains contenus de formation dans leur pratique et leur motivation à adopter les actions présentées dans leur pratique pour optimiser l'adoption de l'approche de RDM-C tout en les partageant avec leurs collègues.

Les résultats issus de cette thèse de doctorat montrent l'impact d'une démarche de TMC sur les pratiques des professionnel.le.s de la santé et des services sociaux, en particulier dans le contexte de l'adoption de l'approche de RDM-C auprès des jeunes. Bien qu'elle se concentre sur les réalités des milieux de pratique au Québec, cette thèse s'inscrit également dans un débat plus large sur les politiques publiques de santé et l'impact de la criminalisation de l'usage de substances. En effet, un obstacle majeur à l'adoption de la RDM est le contexte législatif et politique, notamment les effets de la « Guerre contre la drogue » et la criminalisation de l'usage des substances. Ce cadre répressif favorise la stigmatisation des personnes qui consomment des substances et exacerbe les problèmes qu'il cherche à résoudre, tels que les atteintes à la santé. Dans cette optique, et en adoptant une perspective de RDM, il devient essentiel de remettre en question les politiques publiques, particulièrement là où l'usage du cannabis demeure illégal pour certaines populations. Cela permettrait de mettre en place des politiques alignées avec les connaissances scientifiques et de réduire non seulement les potentiels méfaits liés à la consommation de substances grâce aux stratégies de RDM, mais aussi, d'atténuer les effets néfastes des politiques elles-mêmes.

Par ailleurs, la question de l'adoption de la RDM-C au sein des établissements de la santé et des services sociaux soulève des défis pratiques importants. En effet, les partenariats entre ces institutions et d'autres acteur.rice.s, y compris la police et les autorités juridiques, créent parfois des tensions qui compliquent l'adoption de l'approche. Ainsi, les intervenant.e.s peuvent se retrouver en train de naviguer dans un cadre parfois contradictoire, où les ajustements pratiques deviennent essentiels pour répondre aux besoins des jeunes. Ces ajustements, souvent basés sur des savoirs pratiques, limitent l'adoption optimale de l'approche de RDM-C et reflètent la complexité de sa mise en œuvre dans un système où des enjeux légaux et des valeurs répressives sont en jeu. Face à ces défis, il devient, encore une fois, nécessaire de réfléchir à l'impact des politiques actuelles sur les pratiques auprès des jeunes en difficulté, de considérer des réformes pour rendre cette approche plus accessible et de poursuivre les travaux réalisés dans le cadre de cette thèse.

Pour conclure, cette thèse présente à la fois des implications théoriques et pratiques, notamment l'avancement des connaissances scientifiques en matière de RDM-C, la possibilité d'améliorer les

pratiques auprès des jeunes en difficulté et d'optimiser les efforts de formation des intervenant.e.s. De plus, elle appelle à une restructuration du cadre législatif de manière à faciliter et favoriser l'adoption de l'approche de RDM-C. Les conclusions de cette thèse montrent que la démarche de TMC peut être généralisée à d'autres contextes et adoptée dans diverses structures issues du réseau de la santé et des services sociaux pour favoriser l'adoption de cette approche fondée sur des données probantes. Pour garantir la pérennisation des résultats obtenus, il serait recommandé d'accompagner les publics cibles pour intégrer les actions formulées dans leur pratique et d'établir des partenariats avec des instances institutionnelles clés ou des établissements de santé pour accroître les retombées de l'étude. Par ailleurs, il serait avantageux de conceptualiser des stratégies de diffusion des connaissances additionnelles dans le but de partager les actions formulées avec un plus grand nombre de professionnel.le.s de la santé et des services sociaux.

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