

# Health Promotion and Chronic Disease Prevention in Canada

## *Research, Policy and Practice*

Volume 44 • Number 6 • June 2024

### **Special issue: Social prescribing in Canada: an emerging approach to health and well-being, part I**

**Guest Editors: Sandra Allison, Kiffer G. Card and Kate Mulligan**

#### *Editorial*

- 241** Social prescribing in Canada: health promotion in action, 50 years after the Lalonde report

#### *Evidence synthesis*

- 244** Outcomes and instruments used in social prescribing: a modified umbrella review

#### *Original qualitative research*

- 270** How does fresh food prescribing fit into the social service landscape? A qualitative study in Ontario, Canada

#### *Commentary*

- 279** Food prescribing in Canada: evidence, critiques and opportunities
- 284** Nature prescribing: emerging insights about reconciliation-based and culturally inclusive approaches from a tricultural community health centre
- 288** Building the social prescribing student movement in Canada

#### *At-a-glance*

- 292** Black-focused social prescribing: the importance of an Afrocentric approach

#### *Letter to the Editor*

- 296** Nonclinical prescriptions gave me light of hope: perspectives from people with lived experiences
- 297** Patient voice at the core of social prescribing: perspectives from people with lived experiences
- 298** Social prescribing training for doctors: perspectives from people with lived experiences

#### *Announcement*

- 299** Call for papers: Generating stronger evidence to inform policy and practice: natural experiments on built environments, health behaviours and chronic diseases
- 301** Other PHAC publications

Indexed in Index Medicus/MEDLINE, DOAJ, SciSearch® and Journal Citation Reports/Science Edition



Public Health  
Agency of Canada

Agence de la santé  
publique du Canada

Canada

---

## Editorial team

Robert Geneau, PhD  
Editor-in-Chief

Margaret de Groh, PhD  
Associate Editor-in-Chief

Tracie O. Afifi, PhD  
Associate Scientific Editor

Minh T. Do, PhD  
Associate Scientific Editor

Justin J. Lang, PhD  
Associate Scientific Editor

Scott Leatherdale, PhD  
Associate Scientific Editor

Gavin McCormack, PhD  
Associate Scientific Editor

Kelly Skinner, PhD  
Associate Scientific Editor

Alexander Tsertsvadze, MD, PhD  
Associate Scientific Editor

Paul Villeneuve, PhD  
Associate Scientific Editor

Neel Rancourt, BA  
Managing Editor

Sylvain Desmarais, BA, BEd  
Production Editor

Nicolas Fleet, BSocSc  
Assistant Production Editor

Susanne Moehlenbeck  
Assistant Editor

Joanna Odrowaz, BSc  
Freelance Copyeditor

Anna Olivier, PhD  
Freelance Copyeditor

Dawn Slawecki, BA  
Freelance Copyeditor

## Editorial Board

Caroline Bergeron, DrPH  
Public Health Agency of Canada

Lisa Bourque Bearskin, PhD  
Thompson Rivers University

Martin Chartier, DMD  
Public Health Agency of Canada

Erica Di Ruggiero, PhD  
University of Toronto

Leonard Jack, Jr, PhD  
Centers for Disease Control and Prevention

Howard Morrison, PhD  
Public Health Agency of Canada

Jean-Claude Moubarac, PhD  
Université de Montréal

Candace Nykiforuk, PhD  
University of Alberta

Jennifer O'Loughlin, PhD  
Université de Montréal

Scott Patten, MD, PhD, FRCPC  
University of Calgary

Mark Tremblay, PhD  
Children's Hospital of Eastern Ontario  
Research Institute

Joslyn Trowbridge, MPP  
University of Toronto

**To promote and protect the health of Canadians through leadership, partnership, innovation and action in public health.**  
— Public Health Agency of Canada

Published by authority of the Minister of Health.

© This work is licensed under a [Creative Commons Attribution 4.0 International licence](https://creativecommons.org/licenses/by/4.0/)

ISSN 2368-738X

Pub. 230541

[HPCDP.journal-revue.PSPMC@phac-aspc.gc.ca](mailto:HPCDP.journal-revue.PSPMC@phac-aspc.gc.ca)

Également disponible en français sous le titre : *Promotion de la santé et prévention des maladies chroniques au Canada : Recherche, politiques et pratiques*

Submission guidelines and information on article types are available at:

<https://www.canada.ca/en/public-health/services/reports-publications/health-promotion-chronic-disease-prevention-canada-research-policy-practice/information-authors.html>

---

## Editorial

# Social prescribing in Canada: health promotion in action, 50 years after the Lalonde report

Kate Mulligan, PhD (1); Kiffer G. Card, PhD (2); Sandra Allison, MD (3)

### Abstract

The Lalonde report, published in 1974 by the Canadian Minister of National Health and Welfare, broke ground for public health in Canada by acknowledging that the determinants of health are much broader than health care services. Fifty years later, this special issue of *Health Promotion and Chronic Disease Prevention in Canada* charts a clear path towards addressing upstream determinants of health through an emerging intervention called “social prescribing.” Social prescribing connects patients with community resources tailored to their individual priorities, fostering a paradigm shift from a deficit-based to a strengths-based approach in health promotion. Part 1 of this issue covers the rapid growth and diverse applications of social prescribing across Canada, with targeted initiatives for various populations and interventions ranging from nature and arts to physical activity and social connectivity. Contributions from a wide range of partners, including researchers, health professionals and community members, explore the adaptability of social prescribing for different groups, underscore the role of community and lived experiences in research, and call for more studies on social prescribing’s effectiveness and outcomes. Highlighted case studies demonstrate tangible benefits in health equity and access to social services. This issue not only reflects the current scope and impact of social prescribing in Canada but also sets the stage for its future development and integration into broader health practices.

**Keywords:** *social prescribing, health promotion, health systems, population health*

### Introduction

This special issue of *Health Promotion and Chronic Disease Prevention in Canada* marks a national first—the first journal issue entirely dedicated to social prescribing, a rapidly growing field in Canada. The issue arrives 50 years after the 1974 Lalonde report highlighted the impact of social factors such as poverty and social isolation on health.<sup>1</sup> Over the past half century, health care professionals and communities have increasingly recognized the limitations of purely clinical approaches to health, although systematic, practical solutions to address these social determinants of health have continued to lag far behind—until recently.

Social prescribing offers a new approach. It connects patients with nonmedical resources in their communities, focussing on their individual priorities and measuring the impact on overall health and well-being.<sup>2</sup> Critically, social prescribing embeds health promotion—the increased capacity for individuals and communities to take control over their health and its determinants<sup>3</sup>—into health systems by providing both social supports and a paradigm shift away from a deficit-based focus (i.e. “What’s the matter with us?”) to a holistic, strengths-based focus (i.e. “What matters to us?”).<sup>4</sup> While these principles have always been important, they are particularly needed in the wake of the COVID-19 pandemic, which has significantly taxed health systems and health care providers.

Inspired in part by the growth of social prescribing in the United Kingdom and other countries,<sup>5</sup> the practice of social prescribing is experiencing significant growth across Canada, with initiatives underway in every province.<sup>6</sup> Some are focussed on particular populations, such as caregivers,<sup>7</sup> older adults,<sup>8</sup> Black communities,<sup>9</sup> Indigenous populations,<sup>10</sup> children and youth,<sup>11</sup> and those living with mental health conditions.<sup>12</sup> Some are focussed on specific interventions, such as food,<sup>13</sup> nature,<sup>10</sup> arts and culture,<sup>14</sup> physical activity<sup>15</sup> and social connection,<sup>16</sup> or support mechanisms, such as community service databases and technologically enabled referrals.<sup>16-18</sup>

The papers in Part 1 of this special issue demonstrate that research and evaluation

Editorial by Mulligan K et al.  
in the HPCDP Journal  
licensed under a [Creative Commons Attribution 4.0 International licence](#)



### Highlights

- Social prescribing connects patients with nonmedical resources, shifting the focus from deficits to a strengths-based approach in health.
- Growing initiatives target diverse populations including caregivers, youth, racialized peoples and Indigenous communities.
- Case studies demonstrate social prescribing’s benefits in health equity and expanding access to essential services.

### Author references:

1. Dalla Lana School of Public Health, University of Toronto, Toronto, Ontario, Canada
2. Faculty of Health Sciences, Simon Fraser University, Vancouver, British Columbia, Canada
3. University of British Columbia, Vancouver, British Columbia, Canada

**Correspondence:** Kiffer G. Card, Faculty of Health Sciences, Simon Fraser University, 8888 University Drive West, Burnaby, BC V5A 1S6; Tel: 778-782-9917; Email: [kcard@sfu.ca](mailto:kcard@sfu.ca)

of social prescribing in Canada are growing alongside, and not far behind, this expansion in practice. Here, authors from across Canada—students, health professionals, researchers, community members, social services workers and more—explore the versatility and adaptability of social prescribing of different interventions by and for different populations, highlight the need for next-generation leadership by young people and those with community-based and lived expertise, and set out vital areas in need of further study.

Part 1 of this special issue includes several examples of social prescribing in action. Vaillancourt et al. explore how relationships with nature and connecting with the land are culturally based and can be beneficial for health for both Indigenous and non-Indigenous communities.<sup>10</sup> Their reflexive practice highlights the importance of decolonization and incorporating Indigenous healing practices into social prescribing initiatives. Ramirez et al. explore how social prescribing can be adapted to build health equity for Black communities, focussing on how to create culturally safe programs built on trust and Afrocentric values.<sup>19</sup> Finally, Brubacher et al. analyze a food-based social prescribing program in Guelph, Ontario.<sup>20</sup> Their findings show the program not only improved key outcomes but also expanded access to social services, allowing participants to spend their limited resources on other essentials.

This issue also explores the need for further research on social prescribing. Ashe et al. review existing studies to identify how researchers currently measure social prescribing's effectiveness and outcomes.<sup>21</sup> While they find that mental and emotional well-being are well studied areas, more research is needed to understand the impact on physical health, thinking skills and memory. Additionally, the review emphasizes the importance of considering sociodemographic factors such as income, education and ethnicity when evaluating the program's fairness and effectiveness for everyone. Little et al. focus their commentary on food prescribing in particular, exploring research needs and opportunities related to food at the intersections between health and social services, and individual and population-level actions for health.<sup>22</sup>

Because what matters to people and communities is at the heart of social prescribing,

the expertise of participants with lived and living experience must also be at the heart of social prescribing research. We are fortunate to be able to include three powerful letters to the Editor in this issue. Norman,<sup>23</sup> Barre<sup>24</sup> and Paquette<sup>25</sup> all share their lived experiences, highlighting the impact of social prescribing interventions and emphasizing the importance of participant expertise in both program development and health care professional training.

Highlighting the potential for social prescribing to become widely adopted by future health professionals, community leaders and researchers, Muhl et al. report on a surge in postsecondary student interest in social prescribing across the country.<sup>26</sup> The authors call for students, health care systems and universities to work together to build partnerships and integrate social prescribing into teaching, research and everyday practice.

Social prescribing is a burgeoning field in Canada, and we received many excellent submissions for this issue. As a result, we plan to issue a second part to this issue in September 2024. We further encourage researchers, practitioners and funders to pursue research into social prescribing to ensure the growing practice is effective, equitable, meaningful, measurable and health promoting. Fifty years after the release of the Lalonde report on health promotion, social prescribing has become a potential cornerstone of health promotion and chronic disease prevention in Canada—perhaps for the next 50 years, or even more.

### Conflicts of interest

KM, KGC, and SA were Guest Editors for this issue of the HPCDP Journal, but removed themselves from the editorial decision-making associated with this manuscript.

### Statement

The content and views expressed in this article are those of the authors and do not necessarily reflect those of the Government of Canada.

### References

1. Lalonde M. A new perspective on the health of Canadians. [Working document.] Ottawa (ON): Government of Canada; 1974. [Catalogue No.: H31-1374]. 77 p.

2. Muhl C, Mulligan K, Bayoumi I, Ashcroft R, Godfrey C. Establishing internationally accepted conceptual and operational definitions of social prescribing through expert consensus: a Delphi study. *BMJ Open*. 2023;13(7):e070184. <https://doi.org/10.1136/bmjopen-2022-070184>
3. World Health Organization (WHO). Health promotion [Internet]. Geneva (CH): WHO; 1986 [cited 2024 May 01]. Available from: <https://www.who.int/teams/health-promotion/enhanced-wellbeing/first-global-conference>
4. Canadian Institute for Social Prescribing (CISP). What matters to you [Internet]. Ottawa (ON): CISP; 2024 [cited 2024 May 01]. Available from: [www.socialprescribing.ca](http://www.socialprescribing.ca)
5. Morse DF, Sandhu S, Mulligan K, et al. Global developments in social prescribing. *BMJ Glob Health*. 2022;7(5):e008524. <https://doi.org/10.1136/bmjgh-2022-008524>
6. Mulligan K, Hsiung S, Bloch G, et al. Social prescribing in Canada: a tool for integrating health and social care for underserved communities. *Healthc Q*. 2023;25(4):17-22. <https://doi.org/10.12927/hcq.2023.27022>
7. Canadian Centre for Caregiving Excellence (CCCE). A social prescription for care: new pan-Canadian social prescribing initiative aims to improve the well-being of caregivers across the country [Internet]. [Media release.] Ottawa (ON): CCCE; 2024. Available from: <https://canadiancaregiving.org/social-prescribing-for-care/>
8. United Way British Columbia (UWBC). Rediscovering purpose, connection, and creativity in retirement years through social prescribing in British Columbia [Internet]. Burnaby (BC): UWBC; 2023 [cited 2024 May 01]. Available from: <https://uwbc.ca/stories/2023/rediscovering-purpose-connection-and-creativity-in-retirement-years-through-social-prescribing-in-british-columbia>



9. Alliance for Healthier Communities (AHC). New Black-focused social prescribing project aims to improve health in Black communities with a proven holistic approach grounded in Afrocentric principles of wellbeing [Internet]. [Media release.] Toronto (ON): AHC; 2022 [cited 2024 May 01]. Available from: <https://www.allianceon.org/news/New-Black-focused-Social-Prescribing-Project-aims-improve-health-Black-communities-proven>
10. Vaillancourt A, Barnstaple R, Robitaille N, Williams T. Nature prescribing: emerging insights about reconciliation-based and culturally inclusive approaches from a tricultural community health centre. *Health Promot Chronic Dis Prev Can.* 2024;44(6):284-7. <https://doi.org/10.24095/hpcdp.44.6.05>
11. Vanier Social Pediatric Hub. Social prescribing [Internet]. Ottawa (ON): Vanier Social Pediatric Hub; 2023 [cited 2024 May 01]. Available from: <https://www.cpsv-vsph.com/services-4>
12. KDE Hub. Social prescribing for better mental health [Internet]. Ottawa (ON): KDE Hub; 2023 [cited 2024 May 01]. Available from: <https://kdehub.ca/projects/mh-covid/social-prescribing-for-better-mental-health/>
13. Little M, Dodd W, Grewal A, Stringer E, Richter A. A 52-week fresh food prescribing program reduces food insecurity and improves fruit and vegetable consumption in Ontario, Canada. *Research Square* [Preprint]. 2023 [cited 2024 Apr 30]. Available from: <https://doi.org/10.21203/rs.3.rs-3084278/v1>
14. BC Alliance for Arts and Culture. Announcing arts on prescription pilot project [Internet]. Vancouver (BC): BC Alliance for Arts and Culture; 2023 [cited 2024 May 01]. Available from: <https://www.allianceforarts.com/blog/2023/12/12/announcing-arts-on-prescription-a-bc-alliance-pilot-project>
15. Prescription to Get Active. Prescription to get active [Internet]. Airdrie (AB): Prescription to Get Active; 2020 [cited 2024 May 01]. Available from: <https://www.prescriptiontogetactive.com/>
16. Canadian Red Cross. Friendly calls program [Internet]. Ottawa (ON): Canadian Red Cross; 2024 [cited 2024 May 01]. Available from: <https://www.redcross.ca/how-we-help/community-health-services-in-canada/friendly-calls-program>
17. Clic Social. Welcome to Clic Social [Internet]. Montréal (QC): Clic Social; date unknown [cited 2024 May 01]. <https://clicsocial.ca/en/>
18. Ontario SPOR Support Unit (OSSU). Just what the doctor ordered [Internet]. Toronto (ON): OSSU; 2023 [cited 2024 May 01]. Available from: <https://ossu.ca/2023/12/just-what-the-doctor-ordered/>
19. Ramirez S, Beaudin N, Rayner J, Price N, Townsend D. Black-focused social prescribing: the importance of an Afrocentric approach. *Health Promot Chronic Dis Prev Can.* 2024;44(6):292-5. <https://doi.org/10.24095/hpcdp.44.6.07>
20. Brubacher LJ, Little M, Richter A, Dodd W. How does fresh food prescribing fit into the social service landscape? A qualitative study in Ontario, Canada. *Health Promot Chronic Dis Prev Can.* 2024;44(6):270-8. <https://doi.org/10.24095/hpcdp.44.6.03>
21. Ashe MC, dos Santos IK, Alfares H, Chudyk AM, Esfandiari EE. Outcomes and instruments used in social prescribing: a modified umbrella review. *Health Promot Chronic Dis Prev Can.* 2024;44(6):244-69. <https://doi.org/10.24095/hpcdp.44.6.02>
22. Little M, Dodd W, Brubacher LJ, Richter A. Food prescribing in Canada: evidence, critiques and opportunities. [Commentary.] *Health Promot Chronic Dis Prev Can.* 2024;44(6):279-83. <https://doi.org/10.24095/hpcdp.44.6.04>
23. Norman M. Nonclinical prescriptions gave me light of hope: perspectives from people with lived experiences. [Letter to the Editor.] *Health Promot Chronic Dis Prev Can.* 2024;44(6):296. <https://doi.org/10.24095/hpcdp.44.6.08>
24. Barre S. Patient voice at the core of social prescribing: perspectives from people with lived experiences. [Letter to the Editor.] *Health Promot Chronic Dis Prev Can.* 2024;44(6):297. <https://doi.org/10.24095/hpcdp.44.6.09>
25. Paquette H. Social prescribing training for doctors: perspectives from people with lived experiences. [Letter to the Editor.] *Health Promot Chronic Dis Prev Can.* 2024;44(6):298. <https://doi.org/10.24095/hpcdp.44.6.10>
26. Muhl C, Bhaskar L-T, Ruhigisha M, McGarity-Shipley E. Building the social prescribing student movement in Canada. [Commentary]. *Health Promot Chronic Dis Prev Can.* 2024;44(6):288-91. <https://doi.org/10.24095/hpcdp.44.6.06>

# Evidence synthesis

## Outcomes and instruments used in social prescribing: a modified umbrella review

Maureen C. Ashe, PhD (1,2); Isis Kelly dos Santos, PhD (3); Hadil Alfares, BSc (1,2); Anna M. Chudyk, PhD (4); Elham Esfandiari, PhD (1,2)

This article has been peer reviewed.

### Abstract

**Introduction:** Previous social prescribing work highlights a range in the types and number of outcomes used in published studies. We aimed to describe social prescribing outcome core areas and instruments to build capacity for future research and program evaluation.

**Methods:** This was a modified umbrella review following standard guidelines. We registered the study and searched multiple databases (all languages and years); inclusion criteria were peer-reviewed publications containing outcomes for self-described social prescribing for adults aged 18 years and older. The last search date was 9 July 2023. From the included systematic reviews, we identified primary studies using the same inclusion criteria. For primary studies, we sorted extracted outcomes and instruments into six core areas using a published taxonomy. We located information on instruments' description and measurement properties and conducted two rating rounds for (1) the quality of systematic reviews and (2) reporting of instruments in primary studies. We conducted a narrative synthesis of reviews, primary studies and outcomes (PROSPERO 2023 CRD42023434061).

**Results:** We identified 10 systematic reviews and 33 primary studies for inclusion in our review. Outcomes covered most core taxonomy areas, with an emphasis on psychosocial factors (e.g. well-being) and less emphasis on cognition, physical activity, and caregivers and volunteers. We noted few studies provided detailed information on demographic data of participants or measurement properties of instruments.

**Conclusion:** This synthesis provides an overview and identifies knowledge gaps for outcomes and instruments used in social prescribing interventions. This work forms the basis of our next step of identifying social prescribing-related outcomes that matter most across interested parties, such as individuals providers and decision makers.

**Keywords:** *determinants of health, healthy aging, outcomes research, social prescribing*

### Introduction

Social prescribing is a health and social model of care with origins in the United Kingdom (UK) and is quickly spreading to many other locations around the globe, including Canada. It has been well described elsewhere,<sup>1,2</sup> but a key feature of social

prescribing is the addressing of people's unmet nonmedical social needs by connecting them to resources within the community. The most current comprehensive pathway for social prescribing<sup>2</sup> involves health and social providers, or community organizations working with people to identify social needs and making a nonmedical

referral to a community navigator, sometimes called a "community link worker." Together, within a strengths-based approach, the person and link worker identify "what matters most" and the link worker will connect, or even in some cases accompany, people to community assets such as a service, greenspace or network (depending on needs).<sup>2,3</sup>

Social prescribing is informed by other evidence-based work, for example, community referrals, navigator systems,<sup>4</sup> and the benefits associated with engaging in activities such as physical activity<sup>5</sup> and

Evidence synthesis by Ashe MC et al. in the HPCDP Journal licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)



### Highlights

- We synthesized and categorized outcomes and instruments identified in 10 reviews and 33 primary studies for social prescribing.
- We highlight a range in the types and number of outcomes used in published studies.
- Many studies focussed on well-being and mental health outcomes.
- We noted less emphasis on use of outcomes for cognition, physical activity, and caregivers and volunteers.
- The field would benefit from comprehensive reporting of participants' demographic information.

### Author references:

1. Department of Family Practice, The University of British Columbia, Vancouver, British Columbia, Canada
2. Edwin S.H. Leong Centre for Healthy Aging, The University of British Columbia, Vancouver, British Columbia, Canada
3. Department of Physical Education, Federal University of Rio Grande do Norte, Natal, Brazil
4. College of Pharmacy, University of Manitoba, Winnipeg, Manitoba, Canada

**Correspondence:** Maureen C. Ashe, Department of Family Practice, The University of British Columbia, 3F - 5950 University Blvd., Vancouver, BC V6T 1Z3; Email: [maureen.ashe@ubc.ca](mailto:maureen.ashe@ubc.ca)

arts-<sup>6</sup> or museum-based programs.<sup>7</sup> However, we<sup>8,9</sup> and others<sup>10</sup> have noted definitive evidence is lacking on the effectiveness of social prescribing. One challenge to synthesizing evidence may be due to the previous lack of an accepted definition of social prescribing; however, a new definition is available, co-created through an international modified-Delphi approach.<sup>3</sup> In Canada, social prescribing is in the early stages of development, but is well supported by clinicians' use of community referrals in practice and the large community-based sector of nonprofit, volunteer and other organizations that support people. The "new" definition and pathways of social prescribing are complemented by the integration of the health and social sectors and the strengths-based and person-centred approaches.<sup>2</sup>

Developing an evidence base for a complex intervention such as social prescribing requires considering many factors. One area we identified from our previous reviews,<sup>8,9</sup> which may be useful in advancing the science and practice of social prescribing, is related to the outcomes measured within research and program evaluations. Inconsistencies in using and reporting outcomes within trials and programs present challenges when determining the effectiveness of an intervention (such as social prescribing), ensuring person-centred, meaningful and important outcomes are included, and, later, when combining data for evidence syntheses.

Two previous studies used mapping review methods to identify and categorize outcomes in social prescribing.<sup>11,12</sup> While both reviews provide important knowledge and perspectives, we proposed to go further and identify outcomes used in social prescribing studies and compare them against a recently published taxonomy of outcomes for health and social interventions from Dodd and colleagues.<sup>13</sup> Reviewing currently used outcomes provides the opportunity to determine if any core areas or domains are missing from data collection and to describe current reporting practices.

Therefore, in this modified umbrella review, we aimed to describe outcomes, domains and instruments used in previous social prescribing studies for adults and older adults. The United Kingdom (UK) National Health Service (NHS) developed a Social Prescribing Common

Outcomes Framework,<sup>14</sup> but to our knowledge there is not a core outcome set for social prescribing research. We proposed to address this knowledge gap,<sup>15</sup> and describe outcomes used in previous social prescribing research in advance of developing a core set.<sup>16</sup> Taken together, we approached this work to provide practical guidance for choosing outcome measures, with the overall aim of contributing to the science that underpins social prescribing.

## Methods

We conducted a modified umbrella review following the guidelines outlined by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement<sup>17</sup> and the Joanna Briggs Institute (JBI) standards for conducting an umbrella review, or review of reviews.<sup>18</sup> We modified the review process by screening (via two authors, independently) each primary study within included reviews to confirm it met our inclusion criteria. We made the changes for two main reasons: (1) there was a wide age range and grey literature within the identified systematic reviews, and some of the primary studies did not meet our inclusion criteria; and (2) there was an overlap of primary studies across included reviews.

We registered the protocol with the international Prospective Register of Systematic Reviews (PROSPERO; 2023 CRD42023434 061)<sup>19</sup> before conducting searches with our final strategy. Our two exploratory research questions were: (1) What outcomes have been used in social prescribing research for community-dwelling adults aged 18 years and older? and (2) How do the identified instruments map onto the taxonomy of outcome core areas and domains?

### Eligibility criteria

We included peer-reviewed systematic reviews and primary studies from all languages and all years that synthesized quantitative data for self-described social prescribing interventions for adults aged 18 years and older, and across the continuum of settings, such as hospitals primary care, community settings, etc. We included programs that have been described as "social prescribing," such as arts-based or museum-based programs (known as "arts-on-prescription" or "museum-on-prescription"). We included evidence for adults and older adults for this synthesis, as this

was our focus for developing a core set of outcomes. Further, younger and older populations have distinct needs and services, and therefore we did not include outcomes from younger age groups in this synthesis.

We excluded publications that did not provide any outcome measures. We made the decision to include only peer-reviewed literature, because we wanted to compare reporting in the primary studies, which may be more likely to follow research reporting guidelines.

The following were our criteria based on the population, intervention, comparator and outcome (PICO) framework. Population: we focussed on peer-reviewed evidence that included adults aged 18 years and older receiving social prescribing. Intervention: we included reviews and primary studies that self-identified as social prescribing. Comparator: studies included in the reviews could have any or no comparator. Outcomes: as our aim was to identify all possible outcomes, we did not place any limits on this component.

### Information sources and search strategy

We searched the databases listed below; the date of our last search was 9 July 2023. One author (MCA) ran all of the searches and uploaded identified citations into Covidence systematic review software (Veritas Health Innovation, Melbourne, AU). We also conducted a forward and backward (reference list) search for peer-reviewed publications from all included reviews based on citations downloaded from Web of Science or Google Scholar. The databases, along with keywords, were:

- Ovid MEDLINE® and Epub Ahead of Print, In-Process, In-Data-Review & Other Non-Indexed Citations, Daily and Versions and Embase. Keywords: ("social prescribing" or "social prescription"). ab,ti. AND "systematic review". ab,ti.
- EBM Reviews - Cochrane Database of Systematic Reviews. Keywords: "social prescribing" OR "social prescription" AND "systematic review"
- EBSCO (APA PsycArticles, APA PsycInfo, CINAHL Complete, Social Work Abstracts, SPORTDiscus) social prescribing or



social prescription (title) AND systematic review

- Epistemonikos "social prescribing" OR "social prescription" AND "systematic review" title and abstract
- Google Scholar "social prescribing" OR "social prescription" AND "systematic review" title

### Selection process

All systematic reviews identified through search strategies were independently screened at Level 1 (titles and abstracts) and Level 2 (full text) by two authors (IKS, MCA) based on the inclusion criteria described above. We reviewed the primary studies from each included review and categorized them as peer-reviewed or unpublished studies/evaluations. We then reviewed the primary studies (e.g. a separate round of Level 1 and 2 screening) to decide if they met our inclusion criteria.

### Data collection process

We extracted the following information for each review: author, publication year, systematic review question(s) and aims, population, setting, demographic information, summary of findings, and outcome measures or instruments. We also compared across reviews to look for overlap of primary studies to better understand data contributing to findings. For each included peer-reviewed primary study, we extracted the following information: author, publication year, population, setting, social prescribing intervention, and descriptive and outcome data collected. For this phase, one author (IKS or MCA) extracted information from studies in Covidence and Excel, and two other authors (EE and HA) reviewed and confirmed extracted findings. In the case of discrepancies between reviewers, a third review author (AC) made the final decision.

### Sorting process

For each primary study, we extracted data on quantitative outcomes and sorted them based on a published taxonomy,<sup>13</sup> we chose this taxonomy because it was developed to use in determining core outcome sets. The original taxonomy has five core areas: death, physiological and clinical, life impact, resource use, and adverse events. Within the core areas there are 38 categories or domains. Two authors (IKS, MCA) independently sorted outcomes into

core areas and domains following the guidelines provided by the taxonomy,<sup>13</sup> with two modifications: (1) we changed the domain "psychiatric outcomes" to "mental health" in the physiological/clinical core area; and (2) we moved the domain "delivery of care" to its own core area.

One author (MCA) created the first table of sorted outcomes from the previous step, and then all other authors (IKS, EE, HA, AC) reviewed the table. We also reviewed and compared the extracted outcomes with the NHS Social Prescribing Common Outcomes Framework,<sup>14</sup> which has four main areas: impact on the person (control and well-being, physical activity, management of daily life activities, connection); impact on community groups (confidence, impact of taking referrals, impact of social prescribing, changes in number of volunteers, capacity of the volunteer sector, and support needed); impact on the health and social care system (provider visits, medications, "morale of staff in general practice and other referral agencies"<sup>14,p.30</sup>); and other data collection (referrals, "equality monitoring,"<sup>14,p.31</sup> contacts with link workers, satisfaction).<sup>14</sup> Finally, for extracted instruments, we located information on measurement properties for a similar population (community-dwelling adults), when possible.

### Assessment of systematic reviews and primary studies

We used the JBI critical appraisal tool<sup>18</sup> to analyze systematic reviews included in this synthesis. For each primary study, we compared the outcome reporting against one criterion proposed by the Consolidated Standards of Reporting Trials (CONSORT) 2020 Extension for Outcomes:<sup>20</sup> "Item 6a.8. Provide a description of the study instruments used to assess the outcome (e.g. questionnaires, laboratory tests) along with reliability, validity and responsiveness in a population similar to the study sample."<sup>20,p.2254</sup> We reviewed each study to locate the term within the publication; this could include either stating an instrument was valid, reliable and/or responsive, or providing a reference or measurement statistic. We also compared extracted demographic information for each primary study with the criteria proposed by PROGRESS-Plus<sup>21</sup>: age, gender/sex, ethnicity/culture/language/race, education, occupation, place of residence, religion, social capital and socioeconomic status.

### Synthesis methods

We conducted a narrative synthesis, including compiling and sorting a list of outcomes and instruments contained within reviews and primary studies.

### Potential review biases

We considered bias throughout our review process. A priori, we tried to address potential bias by following standard procedures and registering and updating our protocol. We planned for conflicts of interest, such as if an author on this synthesis were also to be an author on an included review or primary study. In this case, another author, not in conflict of interest, would provide a rating of the review.

Team membership consisted of trainees and researchers, and two of the co-authors had clinical training. Our team also spanned the age range from young adult to older adult; team members had experience with multiple research methods, and authors with experience in systematic reviews mentored less experienced team members. However, none of the authors had direct, lived experience with social prescribing as defined in this work.

We acknowledge that we only included peer-reviewed studies, and that this may create a publication bias, but this was intentional in order to identify and evaluate the reporting for outcome measures for studies that usually follow standard reporting guidelines (e.g. CONSORT 2020, or similar statements based on different study designs). However, by not including unpublished literature, we may have missed some outcomes, in particular as they may relate to implementation of a program (e.g. via a process evaluation).

## Results

### Study selection

After two rounds of Level 1 and 2 screening, we included 10 systematic reviews (Figure 1A) and 33 primary studies (Figure 1B).

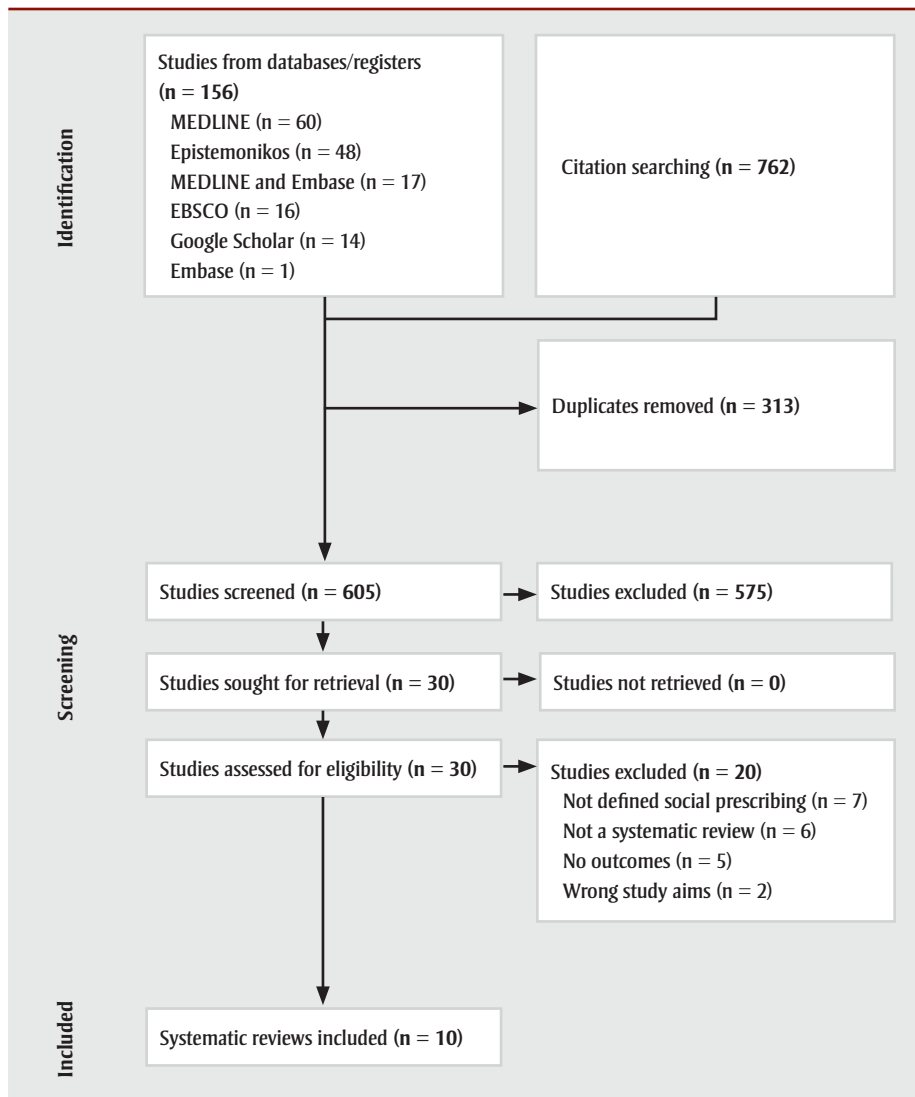
### Systematic review characteristics (n = 10)

There were six systematic reviews with authors located in the UK,<sup>10,22-26</sup> and one study each from Canada,<sup>8</sup> Germany,<sup>27</sup> Ireland<sup>28</sup> and Portugal.<sup>29</sup> Table 1 provides a summary of the systematic reviews,



**FIGURE 1**  
PRISMA flow diagram for umbrella review (A) and individual studies (B)

**A. Umbrella review**



Continued on the following page

including the study aims and the number of included primary studies. Overall, participants' descriptive information was missing from several systematic reviews;<sup>10,25,26</sup> however, this may be because the information was missing from some of the primary studies.

Almost all of the reviews aimed to look at the general effect or impact of social prescribing, with some reviews reporting more specific criteria such as social prescribing from one location (UK),<sup>10,23</sup> or focussed on loneliness,<sup>24,26</sup> mental health,<sup>23</sup> primary care<sup>8,22,29</sup> or older adults.<sup>8</sup> One review focussed on social prescribing interventions that used a co-design or co-production approach.<sup>25</sup> The review by

Vidovic and colleagues<sup>26</sup> provides an overview of outcomes used in social prescribing for four key measures: loneliness, social isolation, well-being and connectedness. Systematic reviews consistently noted positive outcomes but with limited evidence due to small sample sizes and methodological challenges with primary studies (Table 1). Most systematic reviews commented on the variability in the outcome measures.<sup>10,22,23,25,26,28,29</sup>

**Primary study characteristics (n = 33)**

Table 2 provides an overview of the 33 primary studies. Overall, 29 (88%) studies were conducted in the UK; three studies were from Australia,<sup>30-32</sup> and one was from South Korea.<sup>33</sup> Studies were published

between 2008 and 2022, with 19 (58%) studies published from 2019 onwards, but before the publication of the social prescribing definition by Muhl and colleagues in 2023.<sup>3</sup> Four studies<sup>34-37</sup> were based on arts-on-prescription, "... part of mainstream social prescribing provision in primary health care."<sup>37,p.1</sup> Two studies were based on museums-on-prescription.<sup>7,38</sup> Two studies<sup>39,40</sup> were based on the social cure approach, which "suggests that social identities can enhance health/well-being through psychological resource provision."<sup>40,p.387</sup> We noted overlap for studies included in the 10 systematic reviews. Over half of the primary studies 19 (58%) appeared in more than one review, with a range in the number of times they were included: two,<sup>7,30,35,36,40-43</sup> three,<sup>7,44-47</sup> four,<sup>48-50</sup> five,<sup>39,51</sup> and six.<sup>52</sup>

**Assessment of systematic review methods and instrument reporting**

Most systematic reviews were in agreement with the JBI critical appraisal criteria,<sup>18</sup> with all but two reviews<sup>24,26</sup> scoring eight or higher (out of 11 possible points). The question (from the JBI tool) rated with the most "no" or "unclear" responses was related to reporting the research question based on PICO format. Of primary studies, most publications did not provide detailed information on instruments' basic measurement properties. Validity was most often mentioned or referenced,<sup>7,30-34,36,37,41-44,47,48,50,51,53-59</sup> followed by reliability<sup>33,36,38,42,43,48,53,54,57</sup> and responsiveness.<sup>37,42,45,60</sup> Few studies provided specific information, such as a measurement statistic (e.g. Cronbach alpha or kappa).

**Results of synthesis**

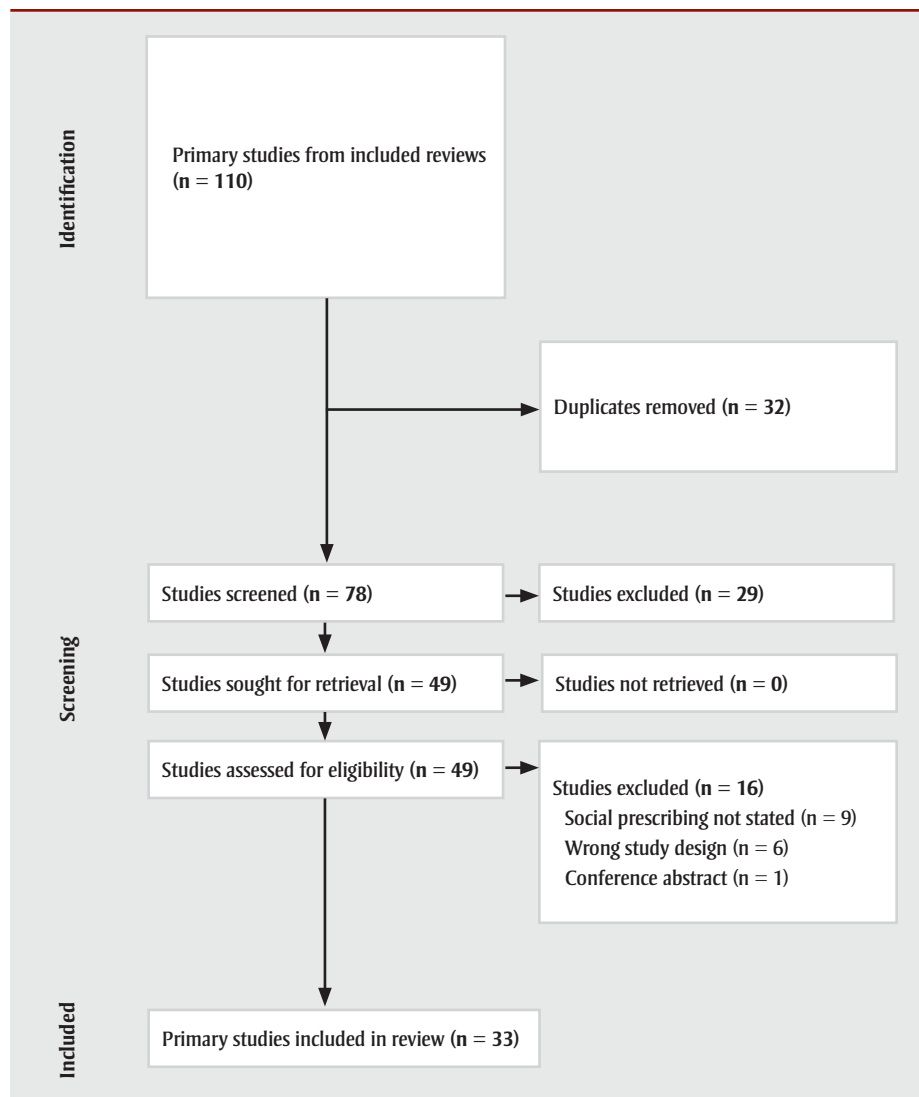
**Categorization of outcomes**

Many extracted instruments were patient-reported outcomes measures (PROM) focussed on well-being, with variability in the number and types of outcomes used; there were some patient-reported experience measures (PREM; e.g. satisfaction). Figure 2 and Table 3 provide an overview of outcomes and information from primary studies. Overall, almost all taxonomy core areas were represented, except death, but most domains contained instruments from only a few studies (e.g. physical functioning such as physical activity), with some exceptions.

Specifically, over half of primary studies used at least one of six different well-being

**FIGURE 1 (continued)**  
**PRISMA flow diagram for umbrella review (A) and individual studies (B)**

**B. Individual studies**



**Note:** PRISMA template from Page MJ, McKenzie JE, Bossuyt PM, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *Int J Surgery*. 2021;88:105906. <https://doi.org/10.1016/j.ijsu.2021.105906>

instruments, although most studies used one of two outcome instruments: Warwick-Edinburgh Mental Well-being Scale (WEMWBS)<sup>32,34-37,42-45,47,51,53</sup> and Short Warwick-Edinburgh Mental Well-being Scale.<sup>41,54,55,60,61</sup> Many studies had a specific level of cognition as an inclusion criterion, but only two studies<sup>56,62</sup> reported a related instrument; however, the WEMWBS aims to “capture a wide conception of well-being, including ... cognitive-evaluative dimensions.”<sup>63,p.2</sup> Only one study reported on adverse events (unintended outcomes).<sup>56</sup> Table 4 lists identified instruments within primary studies, alongside a description and some measurement properties.

When comparing extracted outcomes (Table 3) with the NHS Social Prescribing

Common Outcomes Framework,<sup>14</sup> most categories were included by one or more primary studies. We observed that family caregivers, volunteers and voluntary groups were mentioned in many primary studies.<sup>32,33,38,41,52,54,56,57,61</sup> Two primary studies<sup>54,56</sup> included family caregivers within data collection, but we did not locate specific measures to evaluate volunteers’ experience or information related to societal or cost outcomes, despite the inclusion in the NHS framework. It is notable only six primary studies<sup>46,50,52,53,57,58</sup> reported on physical activity (also mentioned in the NHS framework), and these studies were all published before 2020. However, the NHS Social Prescribing Common Outcomes Framework<sup>14</sup> was dated June 2020 and pertains to the health and social care

system in the UK. Therefore, not all included primary studies may have followed the framework (as a guideline) because of where the study was located (e.g. outside of the UK) and when it was published, as only 13 (39%) studies were published in 2020 or later.

**Demographic information**

Reporting varied for information provided in primary studies (n = 33). All primary studies but two<sup>59,61</sup> reported participants’ age and gender/sex. Thirteen primary studies collected information on ethnicity/culture/language/race;<sup>7,30,39,41-43,47,48,52-54,57,58</sup> 12 primary studies reported on occupation/employment;<sup>3,30,35-37,39,42,46,48,50,52,58,60</sup> seven primary studies reported on socioeconomic status (based on place of residence);<sup>34-37,50,53,54</sup> four primary studies reported on education;<sup>33,40,52,58</sup> and four primary studies mentioned disability.<sup>30,51,57,58</sup>

**Discussion**

We provide an overview of the outcomes and instruments used in peer-reviewed literature for social prescribing with adults aged 18 years and older, and highlight variability in the type and number of instruments used within studies. Our findings support and extend previous work<sup>11,12</sup> by comparing identified outcomes with a published taxonomy.<sup>13</sup> Many instruments were PROMs, alongside some PREMs, with less emphasis on physical activity, cognition or people providing unpaid care, such as family members and volunteers; only one study reported on unintended outcomes (e.g. harms). We further identified, similar to the recent mapping review,<sup>12</sup> missing information related to equity: most studies only provided basic participant descriptive information, yet these data inform the development of equity within program development and delivery. Further, this evidence synthesis is a reminder for more comprehensive reporting of outcomes, given the recent development of reporting guidelines.<sup>20</sup> Overall, this synthesis could be used to guide future research studies and program evaluations. It will be used to support our next phase—to conduct a modified Delphi study to determine outcomes important for people who impact or are impacted by social prescribing.<sup>15</sup>

**General interpretation**

Almost all taxonomy core areas and domains were included across social prescribing

**TABLE 1**  
**Summary of information for the 10 included systematic reviews**

| First author<br>Location<br>Year           | Number of<br>information<br>sources | Number of peer-reviewed<br>studies<br><i>Total and included in outcome<br/>synthesis</i> | What systematic review aimed<br>to determine   | Findings  |
|--|-------------------------------------|--|--|---|
| Bickerdike <sup>10</sup><br>UK<br>2016     | 16 reports<br>15 studies            | 5<br>2 <sup>48,59</sup>  | “... effectiveness of social prescribing programs relevant to the UK NHS setting” (p. 2)   | <ul style="list-style-type: none"> <li>• Most studies had positive findings</li> <li>• Included studies had methodological limitations including possible confounding factors</li> <li>• “[A] lack of standardized and validated measuring tools” (p. 15)</li> </ul>  |
| Cooper <sup>23</sup><br>UK<br>2022         | 17 reports<br>13 studies            | 13<br>14 <sup>7,34-41,43,45,46,52,57</sup>   | “... effectiveness, and active ingredients of UK-based social prescribing interventions targeting mental health” (p. 2)  | <ul style="list-style-type: none"> <li>• Positive outcomes in 12/13 studies</li> <li>• Methodological limitations with high attrition rates</li> <li>• “[S]ubstantial variability in outcome measures” (p. 11)</li> </ul>   |
| Costa <sup>29</sup><br>Portugal<br>2021    | 13 studies                          | 13<br>11 <sup>36,39,43,45-52</sup>   | “[T]o locate and summarize evidence regarding the effectiveness of SP targeting the adult population assisted in primary health-care settings.” (p. 3)   | <ul style="list-style-type: none"> <li>• 8/10 studies reported positive physical or psychological well-being outcomes</li> <li>• Evidence regarding the effectiveness of SP continues to be unclear</li> <li>• “More studies are needed to establish the adequate and more standardized outcome measurement tools” (p.14)</li> </ul>  |
| Kiely <sup>28</sup><br>Ireland<br>2022     | 9 reports<br>8 studies              | 9<br>2 <sup>50,52</sup>  | “... effects on health outcomes and costs of social prescribing link workers ... for people in community settings focussing on people experiencing multimorbidity and social deprivation” (p. 1) | <ul style="list-style-type: none"> <li>• Only identified social prescribing may improve self-rated health</li> <li>• “[O]verall certainty of the evidence for our selected outcomes, which was low or very low for most outcomes.” (p. 11)</li> <li>• “... there was a lot of variation in outcomes included and how they were measured ...” (p. 11)</li> </ul>   |
| Napierala <sup>27</sup><br>Germany<br>2022 | 68 reports<br>53 studies            | 33<br>18 <sup>30,31,35,38,39,41,42,44,45,47-52,55,58,60</sup>                            | “... effectiveness of SP for facilitating psychosocial support with an international focus” (p. 2)   | <ul style="list-style-type: none"> <li>• Uncontrolled trials had positive findings</li> <li>• Limitations of evidence due to confounding and other possible sources of bias</li> <li>• “Most frequently studied outcomes represent the domains of mental health and well-being, loneliness, quality of life, general health, self-efficacy, and health care utilization.” (p. 8)</li> </ul>   |
| Percival <sup>8</sup><br>Canada<br>2022    | 7 studies                           | 7<br>7 <sup>7,33,44,49,51,54,56</sup>  | “... effect of social prescribing for older adults within primary care” (p. 2)   | <ul style="list-style-type: none"> <li>• “There were some positive effects of social prescribing on physical and psychosocial outcomes (e.g. social participation, well-being)” (p. 1)</li> <li>• Limitations noted in methodology (study design, small sample sizes, missing data)</li> <li>• Outcome measures reported included: physical and psychosocial outcomes and health resource use</li> </ul>  |
| Pescheny <sup>46</sup><br>UK<br>2019       | 16 studies                          | 7<br>4 <sup>48,49,51,52</sup>  | “... outcomes of social prescribing programs based on primary care and involving navigators” (p. 664)  | <ul style="list-style-type: none"> <li>• “The existing evidence for improvements in health and well-being, health-related behaviours, self-concepts and daily functioning is mixed.” (p. 670)</li> <li>• “... the quality of the majority of included studies was poor ... sparse data on numbers of participants and loss of follow-up, a non-comprehensive sampling strategy, and a lack of information on data collection and analysis methods.” (p. 670)</li> <li>• “Although we found that studies are interested in similar outcome areas, the tools to measure these outcomes varied between studies.” (p. 670)</li> </ul> |

Continued on the following page

TABLE 1 (continued)  
Summary of information for the 10 included systematic reviews

| First author<br>Location<br>Year      | Number of<br>information<br>sources | Number of peer-reviewed<br>studies<br><i>Total and included in outcome<br/>synthesis</i> | What systematic review aimed<br>to determine  | Findings   |
|---------------------------------------|-------------------------------------|--|---|--|
| Reinhardt <sup>24</sup><br>UK<br>2021 | 9 studies                           | 2<br>1 <sup>39</sup>   | “... impact of social prescribing (SP) programs on <b>loneliness among participants and the population</b> ” (p. 204)   | <ul style="list-style-type: none"> <li>• “[S]ocial prescribing models designed to address loneliness have been largely viewed as helpful by both participants and service providers” (p. 211)</li> <li>• “[V]ariability and paucity of evidence and lack of control group comparisons make it difficult to draw conclusions” (p. 211)</li> <li>• “We demonstrate a gap between social prescribing design and social prescribing evaluation and illuminate a lack of impact assessment in relation to social care. We also note a lack of consensus on what the impact of a person-centred approach such as social prescribing should be.” (p. 12)</li> </ul> |
| Thomas <sup>25</sup><br>UK<br>2021    | 8 studies                           | 8<br>7 <sup>61</sup>   | “... SP that <b>engage communities in co-design and co-production leading to improvements in well-being</b> as well as examine barriers and facilitators to SP intervention development” (p. 3) | <ul style="list-style-type: none"> <li>• “Well-being outcomes across the included studies were reported to have been an increase in confidence, empowerment, and self-sufficiency as well as reduction in social isolation.” (p. 10)</li> <li>• “[A]ll included studies were of a low-quality standard.” (p. 11)</li> <li>• Missing data (e.g. study duration and participant numbers)</li> <li>• “[V]arious data collecting methods were used within each study” (p. 11)</li> </ul>   |
| Vidovic <sup>26</sup><br>UK<br>2021   | 51 studies                          | 33<br>13 <sup>30,32,38-40,42,44,46,47,50-53</sup>  | “... <b>impact of SP on addressing loneliness, social isolation, well-being, and connectedness...</b> at the individual, system, and community levels.” p. 1                                    | <ul style="list-style-type: none"> <li>• “[A] majority of studies in this report find change following a social prescribing intervention, but not necessarily change due to a social prescribing intervention.” (p. 14)</li> <li>• “Given this small number of studies that establish causality, conclusions regarding the impact of social prescribing are tentative, at best.” (p. 14)</li> <li>• “[V]ariability in the types of measures used in regard to the four outcomes ...” (p. 11). “[W]e recommend standardizing measurement and data collection to help deliver stronger, more reliable, and more rigorous evidence.” (p. 14)</li> </ul>         |

Abbreviations: NHS, National Health Service; SP, social prescribing; UK, United Kingdom.



**TABLE 2**  
**Summary of information for the 33 primary studies**

| First author<br>Location<br>Year         | Study characteristics                                       | Target population<br>Age   | N  | Program description   |
|--|---|--|--|---|
| Aggar <sup>30</sup><br>Australia<br>2020 | Retrospective analysis of pre- and post-intervention design | Adults and older adults<br>18–65 years   | 175  | <ul style="list-style-type: none"> <li>• 12-week social prescribing program with link workers</li> <li>• Social services; enrolment in social and therapeutic activities included arts and crafts, yoga and relaxation, equine therapy and social groups</li> </ul>   |
| Aggar <sup>31</sup><br>Australia<br>2021 | Exploratory, quantitative, longitudinal design              | Adults and older adults<br>18–65 years   | 13   | <ul style="list-style-type: none"> <li>• 10-week; facilitated by mental health social worker</li> <li>• Arts and crafts group led by practising artist/instructor</li> </ul>  |
| Bird <sup>53</sup><br>UK<br>2019         | Mixed methods design  | Adults with long-term conditions [type 2 diabetes, pre-diabetes and/or hypertension] and who were inactive<br>18–70 years or older | 602  | <ul style="list-style-type: none"> <li>• 12-week program that included a GP, activity program manager and exercise specialists who delivered the program</li> <li>• Physical activity intervention</li> </ul>   |
| Carnes <sup>52</sup><br>UK<br>2017       | Mixed methods design with a matched control group           | People from general practices who were frequent attenders and/or socially isolated   | 486  | <ul style="list-style-type: none"> <li>• Up to 6 sessions</li> <li>• GP referral to social prescribing coordinator who co-created an action plan with well-being goals</li> <li>• Sometimes community referrals were initiated</li> <li>• Support via social prescribing volunteers</li> </ul>  |
| Crone <sup>34</sup><br>UK<br>2013        | Prospective longitudinal follow-up design (observational)   | Adults<br>Mean (SD) age:<br>54 (16) years  | 157  | <ul style="list-style-type: none"> <li>• 10-week art program (e.g. poetry, ceramics, drawing, mosaic, painting)</li> <li>• GP or provider referral</li> <li>• Within a GP clinic or community location</li> </ul>   |
| Crone <sup>35</sup><br>UK<br>2018        | Prospective longitudinal follow-up design (observational)   | Adults<br>Mean (SD) age:<br>51.2 (15.9) years  | 818  | <ul style="list-style-type: none"> <li>• 10-week art program (e.g. poetry, ceramics, drawing, mosaic, painting)</li> <li>• GP or provider referral</li> <li>• Within a GP clinic or community location</li> </ul>   |
| Elston <sup>44</sup><br>UK<br>2019       | Pre- and post-intervention design                           | Adults and older adults with two or more long-term conditions<br>> 50 years  | Pre-intervention:<br>1046<br>Post-intervention: 82 | <ul style="list-style-type: none"> <li>• 12-week, strengths-based, with coordinators (link workers)</li> <li>• GP or other people/services who make the referral</li> <li>• Coaching, advocacy and navigation of and access to local health, social and economic services</li> </ul>  |
| Foster <sup>41</sup><br>UK<br>2021       | Concurrent mixed methods design                             | People who were experiencing, or at risk of, loneliness<br>Mean (SD) age:<br>65.5 (19.3) years                                     | 2250   | <ul style="list-style-type: none"> <li>• 12-week social prescribing service with referrals from any source and link worker support</li> <li>• Navigated access to community activities and resources</li> </ul>   |
| Giebel <sup>54</sup><br>UK<br>2021       | Pre- and post-intervention design                           | People with a diagnosis of dementia (any subtype and age) and their family carer<br>Mean (SD) age:<br>74.0 (8.0) years             | 25   | <ul style="list-style-type: none"> <li>• Referred by psychiatrist or GP</li> <li>• Collaboration with local NHS Trust, clinics, council, clinical commissioning group, other organizations, unpaid dementia carers and dementia care navigators</li> <li>• Classes were ongoing, 60-minute sessions at local community centres</li> <li>• Variety of activities such as low-impact exercises, local walks, tai chi, relaxation techniques, mindfulness and games, etc.</li> <li>• Assessment at 3 and 6 months</li> </ul> |

Continued on the following page

**TABLE 2 (continued)**  
**Summary of information for the 33 primary studies**

| First author<br>Location<br>Year         | Study characteristics                           | Target population<br>Age  | N   | Program description   |
|--|---|---|-----|---|
| Grayer <sup>48</sup><br>UK<br>2008       | Pre- and post-intervention design               | Adults with a psychosocial problem<br><br>Mean (SD) age:<br>43.1 (14.6) years   | 75  | <ul style="list-style-type: none"> <li>• Referrals from primary health care team</li> <li>• Graduate primary care mental health workers met with people to identify needs and make referrals to community resources</li> <li>• Assessment at 3 months</li> </ul>  |
| Holt <sup>42</sup><br>UK<br>2020         | Multi-level, repeated measures design           | Adults with anxiety and depression<br><br>Mean age: 47 years  | 66  | <ul style="list-style-type: none"> <li>• 12-week arts-on-prescription workshops</li> <li>• Led by artist and health provider</li> </ul>   |
| Howarth <sup>55</sup><br>UK<br>2020      | Case study                                      | Adults and older adults<br><br>Between 30 and 85 years<br>Age range: most people above 60 years   | 9   | <ul style="list-style-type: none"> <li>• 12-week, nature-based social prescription</li> <li>• Referrals to gardening</li> <li>• Provides a space to grow, reflect, and meet</li> </ul>  |
| Jones <sup>57</sup><br>UK<br>2013        | Pre- and post-intervention design               | Adults and older adults with low-level mental, long-term health conditions, low levels of physical activity, diet-related health, low income and/or social isolation<br><br>Age range: 18–70 years or older | 687 | <ul style="list-style-type: none"> <li>• Group of 10 (out of 15) community organizations delivering activities such as leisure, exercise, cooking, befriending, arts and crafts activities</li> <li>• Group activities in 10-week blocks of 2-hour sessions</li> <li>• Self-referral, health care agency or another agency</li> <li>• Baseline assessment occurred months 1–3, with follow-up between months 4–6</li> </ul> |
| Jones <sup>56</sup><br>UK<br>2020        | Pre- and post-intervention design               | Participants aged 55+, their families, staff, the NHS and local government<br><br>Mean (SD) age:<br>73.8 (8.9) years  | 66  | <ul style="list-style-type: none"> <li>• Health Precinct, a partnership with a health board and public health</li> <li>• 16 weeks in duration, with a focus on exercise goals, with allied health or nursing</li> <li>• Common referral path via an exercise referral scheme or cardiac rehab</li> <li>• Activities to encourage social participation and physical activity</li> </ul>                                      |
| Kellezi <sup>39</sup><br>UK<br>2019      | Mixed methods approach with longitudinal survey | GPs, health care providers, service users<br><br>> 29 years   | 630 | <ul style="list-style-type: none"> <li>• Used a “social cure” approach, e.g. group membership’s effect on social life, health and well-being</li> <li>• Referrals from GP practices and person meets with health coach; link workers connect people to social groups</li> <li>• Assessments completed 4 months apart</li> </ul>   |
| Kim <sup>33</sup><br>South Korea<br>2021 | Pre- and post-intervention design               | Older adults aged > 65 years<br><br>Mean (SD) age:<br>82.0 (5.9) years  | 10  | <ul style="list-style-type: none"> <li>• Once weekly for 10-week program: music storytelling, a self-help group and gardening</li> <li>• Review by public health doctor</li> <li>• Two program coordinators attended sessions</li> </ul>  |
| Kimberlee <sup>58</sup><br>UK<br>2016    | Pre- and post-intervention design               | Adults<br><br>36–40 years   | 70  | <ul style="list-style-type: none"> <li>• People referred from local GPs</li> <li>• Person collaborates with staff to co-produce goals</li> <li>• Can also access community resources</li> <li>• Program was ongoing, but assessments occurred at baseline and at least 3 months later</li> </ul>  |
| Loftus <sup>49</sup><br>UK<br>2017       | Quality improvement design                      | Older adults (65 years+) with a chronic condition with frequent GP visits or multiple medications<br><br>Mean (SD) age:<br>72.1 (6.8) years   | 28  | <ul style="list-style-type: none"> <li>• 12-week program</li> <li>• Referrals from GP to social prescribing coordinator</li> <li>• Variety of activities such as social clubs, counselling, arts program, falls prevention, exercises classes, etc.</li> </ul>  |

Continued on the following page

**TABLE 2 (continued)**  
**Summary of information for the 33 primary studies**

| First author<br>Location<br>Year          | Study characteristics                                  | Target population<br>Age   | N      | Program description   |
|---|--|--|--------|---|
| Maughan <sup>59</sup><br>UK<br>2016       | Observational study                                    | Adults with a mental health condition  | 55     | <ul style="list-style-type: none"> <li>Aimed to connect primary care and community services</li> <li>Program duration between 6 and 18 months (maximum 20 times)</li> <li>Asset map exercise to identify resources with a focus on mental health awareness and lifestyle change</li> </ul>  |
| Mercer <sup>50</sup><br>UK<br>2019        | Quasi-experimental cluster-randomized controlled trial | Adults aged > 18 years<br><br>Mean (SD) age:<br>49.0 (16.0) years<br>56.0 (15.0) years | 214    | <ul style="list-style-type: none"> <li>Community link worker/coordinator connected practices (referring GPs and nurses) and local community organizations</li> <li>Intervention was needs-dependent</li> <li>Baseline and follow-up questionnaire 9 months later</li> </ul>   |
| Morton <sup>45</sup><br>UK<br>2015        | Pre- and post-intervention design                      | Adults<br><br>Mean (SD) age:<br>52.0 (11.0) years                                      | 136    | <ul style="list-style-type: none"> <li>Most people referred by health providers, but some referrals from charitable organizations or others</li> <li>Provided series of free activities such as meditation, arts and crafts, etc.</li> </ul>  |
| Peschery <sup>46</sup><br>UK<br>2019      | Pre- and post-intervention design                      | Adults from primary care<br><br>Mean (SD) age:<br>51.2 (15.7) years                    | 56     | <ul style="list-style-type: none"> <li>12 sessions to free programs usually organized by third sector organizations</li> <li>GP referral to navigator</li> <li>Services include advice, physical activity, gardening, social activities, stress management and creative activities</li> </ul>   |
| Peschery <sup>60</sup><br>UK<br>2021      | Pre- and post-intervention design                      | Adults from primary care<br><br>Mean (SD) age:<br>50.3 (16.8) years                    | 68     | <ul style="list-style-type: none"> <li>12 sessions to free programs usually organized by third sector organizations</li> <li>GP referral to navigator</li> <li>Services include advice, physical activity, gardening, social activities, stress management and creative activities</li> </ul>   |
| Poulos <sup>32</sup><br>Australia<br>2019 | Pre- and post-intervention design                      | Older adults (65 years+)<br><br>Mean (SD) age:<br>78.1 (8.0) years                     | 127    | <ul style="list-style-type: none"> <li>Arts-on-prescription classes (6–8 participants per class) were held weekly for 8–10 weeks</li> <li>Health provider referral</li> <li>Community care worker or volunteer was available during each class to assist participants and artists</li> <li>Courses available: visual arts, photography, dance and movement, drama, singing and music</li> </ul> |
| Sumner <sup>36</sup><br>UK<br>2020        | Cohort study   | Adults<br><br>Mean (SD) age:<br>51.1 (15.9) years                                      | 1297   | <ul style="list-style-type: none"> <li>8–10-week arts-on-prescription intervention</li> <li>Referrals from GPs and other providers</li> <li>Courses available: creative arts such as painting, ceramics, playwriting and mosaics</li> </ul>   |
| Sumner <sup>37</sup><br>UK<br>2021        | Cohort study   | Adults<br><br>Mean (SD) age:<br>50.5 (15.7) years                                      | 245    | <ul style="list-style-type: none"> <li>Two 8-week arts-on-prescription interventions</li> <li>Referrals from GPs and other providers</li> <li>Courses available: creative arts such as painting, ceramics, playwriting and mosaics</li> </ul>   |
| Swift <sup>61</sup><br>UK<br>2017         | Case study   | Primary care patients  | > 5000 | <ul style="list-style-type: none"> <li>Community Wellbeing Practices program</li> <li>GP referrals</li> <li>Community navigators with up to 12 months of contact</li> <li>Provides access to educational courses, hobby and interest groups and volunteering opportunities</li> </ul>   |

Continued on the following page

**TABLE 2 (continued)**  
**Summary of information for the 33 primary studies**

| First author<br>Location<br>Year          | Study characteristics                           | Target population<br>Age  | N   | Program description  |
|---|---|---|-----|--|
| Thomson <sup>7</sup><br>UK<br>2018        | Repeated measures design                        | Older adults at risk of loneliness and social isolation<br>65–94 years  | 115 | <ul style="list-style-type: none"> <li>• 10 weekly sessions of museum-based programs</li> <li>• Referrals from health and social care, and third sector organizations</li> </ul>   |
| Thomson <sup>38</sup><br>UK<br>2020       | Exploratory sequential mixed methods design     | Adult mental health service users<br>44–70 years<br>Mean age: 53 years  | 46  | <ul style="list-style-type: none"> <li>• 10 weekly sessions</li> <li>• Referred via community partners (mental health nurse)</li> <li>• Outdoor horticultural activities and indoor nature-based creative activities</li> <li>• Delivered by a horticultural specialist, an arts tutor and a museum volunteer</li> </ul>                   |
| van de Venter <sup>43</sup><br>UK<br>2015 | Pre- and post-intervention mixed methods design | People with mild-to-moderate mental health problems<br>27–73 years<br>Mean age: 43 years  | 44  | <ul style="list-style-type: none"> <li>• 20-week arts-on-referral program</li> <li>• 4 artist-facilitated groups, held at GP practices or community centres</li> <li>• Included: painting, textiles, music, photography and film</li> </ul>  |
| Vogelpoel <sup>51</sup><br>UK<br>2014     | Mixed methods design                            | Older people with sensory impairments<br>61–95 years<br>Average age: over 80 years  | 12  | <ul style="list-style-type: none"> <li>• 12-week program for people with sensory impairments</li> <li>• GP referral</li> <li>• Practical arts workshop program</li> <li>• Visual and tactile arts facilitator</li> <li>• Travel support via transport options including community transport, taxis, buses and service transport</li> </ul> |
| Wakefield <sup>40</sup><br>UK<br>2022     | Multimethod longitudinal design                 | Adults with long-term health conditions or who reported being isolated/lonely/anxious<br>17–85 years<br>Mean (SD) age:<br>52.7 (14.8) years | 63  | <ul style="list-style-type: none"> <li>• Used a “social cure” approach, e.g. group membership’s effect on social life, health and well-being</li> <li>• Referrals from GP practices and person meets with health coach; link workers connect people to social groups</li> <li>• Baseline and follow-up assessment at 6–9 months</li> </ul> |
| Woodall <sup>47</sup><br>UK<br>2018       | Mixed methods design                            | Adults and older adults<br>16–94 years<br>Mean age (SD): 53.1 (18.0) years  | 342 | <ul style="list-style-type: none"> <li>• 6-session program, although most people completed it at 16 weeks (mean: 10 weeks)</li> <li>• Self-referral or via referrals from GPs, health, social care and other relevant providers</li> <li>• Coordinators provided information on local groups and services</li> </ul>                       |

**Abbreviations:** GP, general practitioner; NHS, National Health Service; SD, standard deviation; UK, United Kingdom.



**FIGURE 2**  
Overview of outcomes and information from primary studies based on the published taxonomy

| Physiological/<br>Clinical  | Life Impact  | Delivery of Care   | Resources Use   |
|---|--|--|---|
| <b>General Outcomes</b> <ul style="list-style-type: none"> <li>• General health</li> <li>• Number and impact of chronic conditions</li> <li>• Pain</li> </ul>               | <b>Physical Functioning</b> <ul style="list-style-type: none"> <li>• Frailty</li> <li>• Physical activity</li> </ul>   | <b>Adherence</b> <ul style="list-style-type: none"> <li>• Adherence</li> <li>• Completion</li> </ul>   | <b>Economic</b> <ul style="list-style-type: none"> <li>• Environmental impact</li> <li>• GP visits               <ul style="list-style-type: none"> <li>◦ home</li> <li>◦ in-person</li> <li>◦ phone call</li> </ul> </li> <li>• Social Return on Investment</li> </ul> |
| <b>Mental Health</b> <ul style="list-style-type: none"> <li>• Anxiety</li> <li>• Depression</li> <li>• Distress</li> <li>• General mental health</li> <li>• Mood</li> </ul> | <b>Social Functioning</b> <ul style="list-style-type: none"> <li>• Belonging</li> <li>• Friendship</li> <li>• Social groups</li> <li>• Social participation</li> </ul>                                   | <b>Patient/Carer satisfaction</b> <ul style="list-style-type: none"> <li>• Expectations</li> <li>• Perceived benefits</li> <li>• Satisfaction</li> </ul> |   |
| <b>Metabolism and Nutrition</b> <ul style="list-style-type: none"> <li>• Body composition</li> <li>• Energy expenditure</li> </ul>  | <b>Role Functioning</b> <ul style="list-style-type: none"> <li>• Work</li> </ul>   | <b>Process, implementation and service outcomes</b> <ul style="list-style-type: none"> <li>• Implementation factors</li> <li>• Referrals</li> </ul>      | <b>Hospital</b> <ul style="list-style-type: none"> <li>• ED visits</li> <li>• Hospitalizations</li> </ul>   |
| <b>Musculoskeletal and Connective Tissue</b> <ul style="list-style-type: none"> <li>• Muscle strength</li> </ul>  | <b>Emotional Functioning/ Well-being</b> <ul style="list-style-type: none"> <li>• Loneliness</li> <li>• Self-efficacy</li> <li>• Self-esteem</li> <li>• Self-perception</li> <li>• Well-being</li> </ul> |  | <b>Need for further Investigation</b> <ul style="list-style-type: none"> <li>• Community referrals</li> <li>• Health and social care services</li> <li>• Medications</li> </ul>   |
|   | <b>Cognitive functioning</b> <ul style="list-style-type: none"> <li>• Cognitive screening</li> </ul>   |  | <b>Societal Carer Burden</b> <ul style="list-style-type: none"> <li>• Social support</li> </ul>   |
|   | <b>Global Quality of Life</b> <ul style="list-style-type: none"> <li>• Quality of life</li> </ul>  |  | <b>Adverse Events</b> <ul style="list-style-type: none"> <li>• Unintended outcomes</li> </ul>   |
|   | <b>Perceived Health Status</b> <ul style="list-style-type: none"> <li>• Health status</li> <li>• Capability</li> </ul>   |  |   |
|   | <b>Personal Circumstances</b> <ul style="list-style-type: none"> <li>• Needs</li> <li>• Socioeconomic status</li> </ul>  |  |   |

**Source of published taxonomy:** Dodd S, Clarke M, Becker L, Mavergames C, Fish R, Williamson PR. A taxonomy has been developed for outcomes in medical research to help improve knowledge discovery. *J Clin Epidemiol.* 2018;96:84-92. <https://doi.org/10.1016/j.jclinepi.2017.12.020>

**Abbreviations:** ED, emergency department; GP, general practitioner.

**TABLE 3**  
**Outcomes extracted from primary studies, categorized using the published taxonomy, by core area and domain, showing instrument and citing primary study**

| Core                   |  | Domains  |  |  |  |
|------------------------|--|--|--|--|--|
| Physiological/clinical | General outcomes<br>(n = 4)  | Mental health<br>(n = 9)   | Metabolism and nutrition<br>(n = 2)  | Musculoskeletal and connective tissue<br>(n = 1)   |  |
|                        | <ul style="list-style-type: none"> <li>Burden of multimorbidity<sup>50</sup></li> <li>General health<sup>52</sup></li> <li>Number/presence of chronic conditions<sup>33,35,37,52</sup></li> <li>Pain scale<sup>30</sup></li> </ul>   | <ul style="list-style-type: none"> <li>Center for Epidemiological Studies Depression scale (CES-D-7)<sup>57</sup></li> <li>General Anxiety Disorder-7 (GAD-7)<sup>37,58</sup></li> <li>Geriatric Depression Scale Korean Version (GDS-K)<sup>33</sup></li> <li>General Health Questionnaire-12 (GHQ-12)<sup>48</sup></li> <li>Hospital Anxiety and Depression Scale (HADS)<sup>45,50,52</sup></li> <li>Kessler Psychological Distress Scale (K10)<sup>30,31</sup></li> <li>Patient Health Questionnaire-9 items (PHQ-9)<sup>58,61</sup></li> <li>Patient Health Questionnaire-8 items (PHQ-8)<sup>37</sup></li> <li>Short Mood Scale<sup>42</sup></li> </ul> | <ul style="list-style-type: none"> <li>BMI<sup>53,57</sup></li> <li>Energy expenditure<sup>46</sup></li> </ul>   | <ul style="list-style-type: none"> <li>Muscle strength<sup>53</sup></li> </ul>   |  |
| Life impact            | Physical functioning<br>(n = 6)  | Social functioning<br>(n = 4)  | Role functioning<br>(n = 3)  | Emotional functioning/well-being<br>(n = 18)   |  |
|                        | <ul style="list-style-type: none"> <li>Frailty<sup>32</sup></li> <li>General Practitioner Physical Activity Questionnaire (GPPAC)<sup>57</sup></li> <li>International Physical Activity Questionnaire (IPAQ)<sup>46,53,58</sup></li> <li>Number of creative, lifestyle or regular activities<sup>32,50,52</sup></li> <li>Participation in sport<sup>53</sup></li> <li>Rockwood Clinical Frailty Scale (RCFS)<sup>44</sup></li> </ul> | <ul style="list-style-type: none"> <li>Community belonging<sup>39,40</sup></li> <li>Friendship Scale<sup>58</sup></li> <li>Number of social groups<sup>39,40</sup></li> <li>Social Participation Scale<sup>33</sup></li> </ul>   | <ul style="list-style-type: none"> <li>Capacity to work<sup>30</sup></li> <li>Paid employment<sup>31</sup></li> <li>Work and Social Adjustment Scale (WSAS)<sup>48,50</sup></li> </ul> | <ul style="list-style-type: none"> <li>Campaign to End Loneliness Measurement Tool<sup>47,56</sup></li> <li>Clinical Outcomes in Routine Evaluation-Outcome Measure (CORE-OM)<sup>48</sup></li> <li>General Self-Efficacy Scale (GSE)<sup>45</sup></li> <li>General Self-Efficacy Scale (GSE) Korean Version<sup>33</sup></li> <li>Life satisfaction<sup>57</sup></li> <li>Museum Well-being Measure for Older Adults (MWM-OA)<sup>7,38</sup></li> <li>ONS Well-being<sup>58</sup></li> <li>Patient Activation Measure (PAM)<sup>44</sup></li> <li>Perceived creativity<sup>32</sup></li> <li>Rosenberg Self-Esteem Scale<sup>56</sup></li> <li>Rosenberg Self-Esteem Scale Korean Version<sup>33</sup></li> <li>Self-efficacy<sup>31</sup></li> <li>Southwest Well-being Questionnaire<sup>57</sup></li> <li>UCLA Loneliness Scale<sup>30,31,33,41</sup></li> <li>Short-form UCLA Loneliness Scale (ULS-8)<sup>39,40</sup></li> <li>Warwick–Edinburgh Mental Well-being Scale (WEMWBS)<sup>32,34-37,42,45,47,51,53</sup></li> <li>Short Warwick–Edinburgh Mental Well-being Scale (SWEMWBS)<sup>41,54,55,60,61</sup></li> <li>Well-being Star<sup>44</sup></li> </ul> |  |

Continued on the following page

**TABLE 3 (continued)**  
**Outcomes extracted from primary studies, categorized using the published taxonomy, by core area and domain, showing instrument and citing primary study**

| Core                    | Domains   |   |  |  |
|-------------------------|---|---|--|--|
| Life impact (continued) | <b>Cognitive functioning</b><br>(n = 2) <ul style="list-style-type: none"> <li>• 6 Item Cognitive Impairment Test (6CIT)<sup>56</sup></li> <li>• Korean Mini-Mental State Examination (K-MMSE)<sup>33</sup></li> </ul>  | <b>Global quality of life</b><br>(n = 1) <ul style="list-style-type: none"> <li>• World Health Organization Quality of Life—abbreviated 26 item (WHOQOL-BREF)<sup>30,31</sup></li> </ul>  | <b>Perceived health status</b><br>(n = 4) <ul style="list-style-type: none"> <li>• EuroQol-5 Dimensions (EQ-5D)<sup>30,31,40,47,50,56,61</sup></li> <li>• General Health Score (GHS)<sup>52</sup></li> <li>• Investigating Choice Experiments for the Preferences of Older People Capability Measure (ICE-CAP A)<sup>50</sup></li> <li>• Measure Yourself Medical Outcome Profile 2 (MYMOP2)<sup>52</sup></li> </ul>   | <b>Personal circumstances</b><br>(n = 2) <ul style="list-style-type: none"> <li>• Index of Multiple Deprivation (IMD)<sup>34-37,46,50,52,54,60</sup></li> <li>• Camberwell Assessment of Need Short Appraisal Schedule (CANSAS-P)<sup>30,31</sup></li> </ul> |
|                         | <b>Adherence/compliance</b><br>(n = 2) <ul style="list-style-type: none"> <li>• Attendance<sup>32,36,38,43,46,53,54,56,58</sup></li> <li>• Completion<sup>34,35,55</sup></li> </ul>   | <b>Patient/carer satisfaction</b><br>(n = 5) <ul style="list-style-type: none"> <li>• Client Satisfaction Questionnaire (CSQ)<sup>48</sup></li> <li>• Expectations<sup>30</sup></li> <li>• Perceived benefits<sup>32</sup></li> <li>• Program satisfaction<sup>30,33,35,47,52,57,61</sup></li> <li>• Satisfaction with social support<sup>30</sup></li> </ul> | <b>Process, implementation and service outcomes</b><br>(n = 12) <ul style="list-style-type: none"> <li>• Acceptability<sup>48</sup></li> <li>• Adoption<sup>53</sup></li> <li>• Community link evaluation<sup>48</sup></li> <li>• Implementation<sup>53</sup></li> <li>• Goal achievement<sup>44</sup></li> <li>• Program maintenance<sup>53</sup></li> <li>• Reach<sup>53</sup></li> <li>• Referral source (i.e. who made the referral)<sup>30,32,34,35,39,41,44,45,52,57</sup></li> <li>• Referral reason<sup>34-37,42,43,49,53,55,56,60</sup></li> <li>• Referral type (new or re-referral)<sup>34,35,37</sup></li> <li>• Program engagement<sup>34,35,50,52,57</sup></li> <li>• Uptake of referral<sup>34,35,49,50,56</sup></li> </ul> |  |
| Delivery of care        | <b>Economic</b><br>(n = 6) <ul style="list-style-type: none"> <li>• Environmental impact<sup>59</sup></li> <li>• GP consultations<sup>39,47-49,52,58,59</sup></li> <li>• GP home visits<sup>49</sup></li> <li>• GP phone calls<sup>39,49</sup></li> <li>• Health care utilization<sup>30</sup></li> <li>• Social return on investment<sup>41,56,58</sup></li> </ul> | <b>Hospital</b><br>(n = 2) <ul style="list-style-type: none"> <li>• Emergency department visits<sup>44,52</sup></li> <li>• Hospitalizations<sup>31</sup></li> </ul>   | <b>Need for further intervention</b><br>(n = 7) <ul style="list-style-type: none"> <li>• Community physiotherapy, occupational therapy, nursing<sup>44</sup></li> <li>• Community referrals<sup>44,48</sup></li> <li>• Complex referrals<sup>44</sup></li> <li>• GP referrals<sup>52,59</sup></li> <li>• Health and social care services<sup>56</sup></li> <li>• Medication prescriptions<sup>48,49,52,59</sup></li> <li>• Mental health referral<sup>48</sup></li> </ul>  | <b>Societal/carer burden</b><br>(n = 1) <ul style="list-style-type: none"> <li>• Social support<sup>40</sup></li> </ul>  |
|                         | <b>Resource use</b>   | <b>Adverse events</b><br>(n = 1) <ul style="list-style-type: none"> <li>• Unintended outcomes<sup>56</sup></li> </ul>   |  |  |

**Source of published taxonomy:** Dodd S, Clarke M, Becker L, Mavergames C, Fish R, Williamson PR. A taxonomy has been developed for outcomes in medical research to help improve knowledge discovery. *J Clin Epidemiol.* 2018;96:84-92. <https://doi.org/10.1016/j.jclinepi.2017.12.020>

**Abbreviations:** BMI, body mass index; GP, general practitioner; ONS, Office for National Statistics (UK); UCLA, University of California, Los Angeles.

**TABLE 4**  
**List of instruments used in the primary studies with a description of the instrument and measurement properties, when available, for a general adult population**

| Instrument  | Description   | Measurement properties   |
|---|---|--|
| 6 Item Cognitive Impairment Test (6CIT) <sup>78</sup>   | Brief cognitive screening tool  | “[C]orrelates well with the [Mini-Mental State Examination] MMSE and is thus a valid measure of cognitive impairment. The 6CIT is especially useful in the identification of milder dementia; although its sensitivity is only approximately 80%, this is considerably better than that of the MMSE, whose sensitivity ranges from 50% to 65%, depending on cutoff.” <sup>78,p.938-9</sup>   |
| Burden of Multimorbidity <sup>79</sup>  | Measures disease burden based on self-reported chronic conditions <sup>79</sup><br><br>“... respondents selected from a list of 21 common chronic diseases and additionally were allowed to add medical conditions not already on the list. They rated each condition on a five-point scale from 1 (interferes with daily activities “not at all”) to 5 (interferes with daily activities “a lot”). The total score representing level of morbidity was thus the sum of conditions weighted by the level of interference assigned to each.” <sup>79,p.2-3</sup> | “[V]alidation against medical records revealed that median sensitivity relative to a ‘gold standard’ of chart review was 75% (range 35%–100%) and median specificity was 92% (range 61%–100%) ...” <sup>79,p.3</sup>   |
| Camberwell Assessment of Need Short Appraisal Schedule Patient-rated (CANSAS-P) <sup>80</sup> | “[I]nstrument for the assessment of needs in people with severe mental health problems” <sup>80,p.114</sup>   | “The CANSAS-P exhibited comparable detection of needs with its predecessor, better identification of domains that are problematic for patients to respond to, good test–retest reliability, especially for unmet needs, and generally positive evaluations by patients.” <sup>80,p.113</sup>   |
| Campaign to End Loneliness Measurement Tool <sup>81</sup>                                     | Consists of three questions framed from a positive perspective, focussed on friendships and relationships   | “A reliability analysis indicated excellent internal consistency of the scale with a Cronbach’s alpha = 0.901.” <sup>81,p.3;82</sup>   |
| Center for Epidemiological Studies Depression Scale (CES-D-7) <sup>83</sup>                   | This 20-item instrument asks questions to rate symptoms of depression (related to sleep, appetite, loneliness) experienced in the past week <sup>84</sup>   | “The internal consistency, test–retest reliability and validity were high for all sex and age groups...” <sup>84,p.283</sup>   |
| Client Satisfaction Questionnaire <sup>85</sup>   | An 8-item questionnaire on people’s satisfaction with program/service received  | “It possesses a high degree of internal consistency and correlates with therapists’ estimates of client satisfaction.” <sup>85,p.204</sup><br><br>“In that study, the scale’s coefficient alpha was 90 when used with clients after their first service contact (n = 213), and 94 when used in a 90-day follow-up with the same clients (n = 113). On the other hand, the CSQ has been found to bear only moderate to low relationships with measures of outcome after a very brief or short-term follow-up interval.” <sup>85,p.205</sup> |
| Clinical Outcomes in Routine Evaluation-Outcome Measure (CORE-OM) <sup>86</sup>               | This is a 34-item instrument of subjective well-being, symptoms, function and risk <sup>86</sup>  | “Internal and test–retest reliability were good (0.75–0.95), as was convergent validity with seven other instruments, with large differences between clinical and nonclinical samples and good sensitivity to change.” <sup>86,p.51</sup>  |
| EuroQoI-5 Dimensions (EQ-5D) <sup>87</sup>  | This instrument consists of two components: (1) participants are asked to rate (scale 1–5) five domains of health (mobility, self-care, usual activities, pain/discomfort and anxiety/depression); and (2) a visual analogue scale: 0 (worst)–100 (best) for self-rated health  | “The EQ-5D-5L is a reliable and valid generic instrument that describes health status which can be applied to a broad range of populations and settings. The assessment of responsiveness, in particular, needs further and more rigorous exploration. Rather large ceilings persist in general population samples, reflecting the conceptualization of the EQ-5D instrument, which focusses on limitations in function and symptoms, and does not include positive aspects of health such as energy or well-being.” <sup>88,p.668</sup>   |

Continued on the following page



**TABLE 4 (continued)**  
**List of instruments used in the primary studies with a description of the instrument and measurement properties, when available, for a general adult population**

| Instrument  | Description  | Measurement properties   |
|---|--|--|
| General Anxiety Disorder-7 (GAD-7) <sup>89</sup>  | A 7-item self-report scale to identify general anxiety <sup>89</sup>   | <p>“The internal consistency of the GAD-7 was excellent (Cronbach <math>\alpha = .92</math>). Test–retest reliability was also good (intraclass correlation = 0.83)<sup>89,p.1094</sup>, “There was a strong association between increasing GAD-7 severity scores and worsening function on all 6 SF-20 scales.”<sup>89,p.1094</sup></p> <p>“The GAD-7 may be particularly useful in assessing symptom severity and monitoring change across time, although its responsiveness to change remains to be tested in treatment studies.”<sup>89,p.1095</sup></p>                                   |
| General Health Questionnaire-12 (GHQ-12) <sup>90</sup>  | The 12-item GHQ-12 screens for general (nonpsychotic) mental health problems among primary care patients <sup>90</sup>   | <p>“Reliability: The Cronbach’s alpha of the GHQ-12 for bimodal scoring (0-0-1-1) was 0.76, indicating satisfactory internal consistency.”<sup>91,p.7</sup></p> <p>“Validity coefficients for the GHQ-12 ... were generally high, with the mean area under the ROC curves being <math>0 \pm 88</math>, with a fairly narrow range ...”<sup>90,p.194</sup></p>  |
| General Practitioner Physical Activity Questionnaire (GPPAQ) <sup>92</sup>  | Four questions about weekly physical activity completed in the previous year related to work, exercise and vigorous exercise, and number of stairs climbed   | <p>“The repeatability of the physical activity index was high (weighted kappa = 0.6, <math>p &lt; 0.0001</math>). There were positive associations between the physical activity index from the questionnaire and the objective measures of the ratio of daytime energy expenditure to resting metabolic rate (<math>p = 0.003</math>) and cardiorespiratory fitness (<math>p = 0.001</math>).”<sup>92,p.407</sup></p>   |
| General Self-Efficacy Scale (GSE) <sup>93</sup>   | A 10-item scale to measure “the strength of an individual’s belief in his or her own ability to respond to novel or difficult situations and to deal with any associated obstacles or setback” <sup>93,p.35</sup>  | <p>“High internal consistency ratings ... ranged from .82 to .93”<sup>93,p.35</sup>; “concurrent validity ... [was] found with self-esteem (.52).”<sup>93,p.36</sup></p>   |
| General Self-Efficacy Scale–Korean Version <sup>94</sup>  |  | <p>“Cronbach’s alpha for the entire GSE scale Korean version is 0.81.”<sup>94,p.844</sup></p> <p>“Significantly, the EFA revealed two factors, coping and confidence; however, Cronbach’s alpha for the confidence subscale was 0.54, indicating that it was not reliable. Therefore, it is advised to use either the full GSE scale–Korean version or the subscale coping alone.”<sup>94,p.851</sup></p>  |
| Geriatric Depression Scale Korean Version (GDS-K) <sup>62</sup>   | A 30-item screening test for depression for older people in community and clinical settings  | <p>“Cronbach’s coefficient alpha for the GDS-KR was 0.90 and the test–retest reliability was 0.91 (<math>p &lt; 0.01</math>).”<sup>62,p.232</sup></p>  |
| Hospital Anxiety and Depression Scale (HADS) <sup>95</sup>  | A 16-item (8 items for anxiety and 8 items for depression) self-assessment scale for medical outpatient clinics  | <p>“Cronbach’s alpha for HADS-A varied from .68 to .93 (mean .83) and for HADS-D from .67 to .90 (mean .82).”<sup>96,p.69</sup> “Correlations between HADS and other commonly used questionnaires were in the range .49 to .83.”<sup>96,p.69</sup></p>   |
| Investigating Choice Experiments for the Preferences of Older People Capability Measure (ICE-CAP A) <sup>97</sup> | <p>Measures capability that “is primarily concerned with the evaluation of individual advantage based on a person’s ability to achieve ‘functionings’ in life that are valuable to them.”<sup>98,p.2</sup></p> <p>Measures five areas: “stability (‘settled and secure’), attachment (‘love, friendship and support’), autonomy (‘independent’), achievement (‘achieve and progress’) and enjoyment (‘enjoyment and pleasure’)”<sup>98,p.3</sup></p> | <p>“The reliability of the capability questions, which takes into account higher level of inherent variability, is in the range of 0.52 (autonomy) to 0.61 (stability). The reliability of the health status questions is somewhat higher, in the range of 0.60 (usual activities) to 0.79 (mobility).”<sup>99,p.627</sup></p> <p>“We found that the reliability of a simple measure of adult capability (the ICECAP-A) was slightly lower than that for a commonly used health functioning measure (the EQ-5D-3L) but not obviously affected by age, sex or education”<sup>99,p.628</sup></p> |

Continued on the following page

**TABLE 4 (continued)**  
**List of instruments used in the primary studies with a description of the instrument and measurement properties, when available, for a general adult population**

| Instrument   | Description   | Measurement properties  |
|--|---|---|
| International Physical Activity Questionnaire (IPAQ) <sup>100</sup>    | Self-report measure of physical activity; “The objective was to develop a self-reported measure of physical activity suitable for assessing population levels of physical activity across countries.” <sup>100,p.1381</sup>   | “Overall, the IPAQ questionnaires produced repeatable data (Spearman’s rho clustered around 0.8), with comparable data from short and long forms. Criterion validity had a median rho of about 0.30, which was comparable to most other self-report validation studies.” <sup>100,p.1381</sup>  |
| Kessler Psychological Distress Scale (K10) <sup>101</sup>              | A 10-item screening instrument for nonspecific psychological distress   | “There is a significant association between scores on the K10 and scores on the GHQ and SF-12, measures of symptoms and disability respectively, and between the K10 and the number of consultations for a mental problem in the previous 12 months. These findings support the validity of the K10 as a measure of psychological distress.” <sup>101,p.496-7</sup>   |
| Korean Mini-Mental State Examination (K-MMSE) <sup>102</sup>           | Translation of the Mini-Mental State Examination, a 30-item screening tool for cognitive impairment   | “The sensitivity of the K-MMSE was 48.7%, with a specificity of 89.9%. The incidence of false positive and negative results totalled 10.1% and 51.2%, respectively. In addition, the positive predictive value of the K-MMSE was 87.1%, while the negative predictive value was 55.6%.” <sup>102,p.177</sup>  |
| Measure Yourself Medical Outcome Profile 2 (MYMOP2) <sup>103</sup>     | A short, generic, patient-specific measure of health. People are asked to state and rate one or two symptoms and “one activity of daily living, which they have come for help with, and which they consider to be the most important in affecting their lives.” <sup>103,p.28</sup> | “The responsiveness index relating to minimal clinically important change was greater, for all MYMOP scales except well-being, than the level of 0.8 nominated as ‘high’ by previous work ... [the] well-being scale was less responsive, but practitioners reported that it was clinically useful, especially in chronic disease.” <sup>103,p.1018</sup><br><br>“MYMOP’s validity was supported by its ability to detect different degrees of change in relation to change scores and in acute and chronic conditions, and by its correlations with SF-36 scores. Although the issue of clinical usefulness was clouded by follow-up being postal and not related to clinical follow-up, interviews provided important information on the effect of using the instrument in the consultation.” <sup>103,p.1018</sup> |
| Museum Well-being Measure for Older Adults (MWM-OA) <sup>104,105</sup> | “[M]useum-focussed measure to evaluate the well-being benefits of museum and gallery events and activities” <sup>104,p.44</sup>   | Internal consistency reliability was constructed for positive ( $\alpha = 0.81$ ) and negative emotion ( $\alpha = 0.82$ ). “Comparison of pretest-posttest differences showed highly significant increases in positive scores and decreases in negative scores with medium to large effect sizes.” <sup>105,p.29</sup>   |
| Patient Activation Measure (PAM) <sup>106</sup>                        | A 13- or 22-item measure of activation, focussed on a person’s knowledge, skills and belief in their ability to self-manage health/health care  | “Assessments of the 22-item PAM using national sample data show a high level of reliability with infit values ranging from .71 to 1.44. All but one of the outfit statistics are between .80 and 1.34.” <sup>106,p.1020</sup><br><br>“The results indicate considerable evidence for the construct validity of the PAM. Those with higher activation report significantly better health as measured by the SF 8 ( $r = .38, p < 0.001$ ), and have significantly lower rates of doctor office visits, emergency room visits and hospital nights ( $r = -.07, p < 0.01$ ).” <sup>106,p.1021</sup>  |
| Patient Health Questionnaire-9 items (PHQ-9) <sup>107</sup>            | A 9-item depression questionnaire from the full PHQ for “making criteria-based diagnoses of depressive and other mental disorders commonly encountered in primary care” <sup>107,p.606</sup>  | “The internal reliability of the PHQ-9 was excellent, with a Cronbach’s $\alpha$ of 0.89 in the PHQ Primary Care Study and 0.86 in the PHQ OB-GYN Study.” <sup>107,p.608</sup><br><br>Test–retest reliability of the PHQ-9 was also excellent. “PHQ-9 score $\geq 10$ had a sensitivity of 88% and a specificity of 88% for major depression.” <sup>107,p.606</sup>   |

Continued on the following page

**TABLE 4 (continued)**  
**List of instruments used in the primary studies with a description of the instrument and measurement properties, when available, for a general adult population**

| Instrument   | Description  | Measurement properties  |
|--|--|---|
| Patient Health Questionnaire-8 items (PHQ-8) <sup>108</sup>      | This is the PHQ-9 questionnaire without the last question.   | “Correlation between PHQ-9 and PHQ-8 scores was $r = 0.997$ . Sensitivity and specificity for the PHQ-9 (54%, 90%) and PHQ-8 (50%, 91%) to detect major depression were similar.” <sup>109,p.163</sup>  |
| Rockwood Clinical Frailty Scale (CFS) <sup>110</sup>             | Instrument for clinicians to observe patients (using clinical judgment) “that evaluates specific domains including comorbidity, function and cognition to generate a frailty score ranging from 1 (very fit) to 9 (terminally ill).” <sup>110,p.1</sup>  | “Reliability of retrospective with prospective CFS scores was high ( $\kappa$ [kappa] = 0.89).” <sup>111,p.1009</sup> “Precision and interrater reliability of the comparison of retrospective CFS scores were high with narrow interquartile ranges and $\kappa = 0.85$ .” <sup>111,p.1009</sup>   |
| Rosenberg Self-Esteem Scale (RSES) <sup>112</sup>                | A 10-item scale to measure two facets of self-esteem, self-competence and self-liking (using both positive and negative statements). <sup>112</sup>  | “Internal consistency reliability: Cronbach coefficient a was .91 for the overall sample and ranged from .84 (66+ age group) to .95 (unemployed working group), with an average of .90.” <sup>112,p.72</sup>  |
| Rosenberg Self-Esteem Scale–Korean Version <sup>113</sup>        |  | “The analysis showed that item eight was a misfit, and items three, nine, and ten were challenging to answer. It was found that, as the response range, a 4-point Likert scale was appropriate, and most of the items between the old and young adults functioned differently. As a result, RSES is not suitable for use for the older Korean adults because it did not satisfy the construct validity.” <sup>113,p.28984</sup> |
| Short Mood Scale <sup>114</sup>                                  | A 6-item scale that measures changes in mood over the day, with a specific focus on calmness, valence and energetic arousal  | “The results suggest that the proposed three factors calmness, valence, and energetic arousal are appropriate to assess fluctuations within persons over time. However, calmness and valence are not distinguishable at the between-person level. Furthermore, the analyses showed that two-item scales provide measures that are reliable at the different levels and highly sensitive to change.” <sup>114,p.258</sup>        |
| Social Participation Scale <sup>115</sup>                        | “... eight items evaluated on a five-point scale to measure the level of older adults’ social participation in a variety of interpersonal relationships” <sup>33,p.5</sup>   | The Cronbach alpha of the instrument was 0.85. <sup>33</sup>  |
| Social Support <sup>116</sup>                                    | A 10-item questionnaire to assess perceived social support <sup>116</sup>  | The Cronbach alpha of the instrument was 0.81. <sup>116</sup>   |
| South West Well-being Questionnaire (SWWBQ) <sup>57</sup>        | “Designed to be used for before-and-after evaluation, the South West Well-being Questionnaire ... consisted of sets of validated and original measures that covered general health, social well-being, personal well-being, mental ill health, healthy eating and physical activity.” <sup>56,p.1952</sup> | “Post analysis of the study data indicated acceptable internal consistency for the scales: 1. CES-D-7 baseline Cronbach’s $\alpha$ 0.853; follow-up Cronbach’s $\alpha$ 0.715 2. WEMWBS-7 baseline Cronbach’s $\alpha$ 0.885; follow-up Cronbach’s $\alpha$ 0.849 3. SWB-6 baseline Cronbach’s $\alpha$ of 0.714; follow-up Cronbach’s $\alpha$ of 0.708.” <sup>56,p.1953</sup>   |
| UCLA Loneliness Scale (ULS-20) <sup>117</sup>                    | A 20-item measure of subjective loneliness and isolation   | “The measure has high internal consistency (coefficient alpha = .96) and a test–retest correlation over a two-month period of .73. Concurrent and preliminary construct validity are indicated by correlations with self-reports of current loneliness and related emotional states, and by volunteering for a ‘loneliness clinic.’” <sup>117,p.290</sup>   |
| ULS-8 (Short-form UCLA Loneliness Scale) <sup>118</sup>          | An 8-item version of the UCLA Loneliness Scale   | “Internal consistency reliability was high ... Cronbach’s (1951) alpha = 0.84” <sup>118,p.74</sup><br><br>“An eight-item short-form of loneliness, ULS-8, was selected on the basis of results from exploratory factor analysis, and it was found to be highly correlated with the ULS-20 ( $r = .91$ ).” <sup>118,p.77</sup>   |
| Warwick–Edinburgh Mental Well-being Scale (WEMWBS) <sup>63</sup> | A 14-item measure of well-being in the general population “capturing affective-emotional aspects, cognitive-evaluative dimensions, and psychological functioning” of well-being. <sup>63,p.2</sup>   | “A Cronbach’s alpha score of 0.89 (student sample) and 0.91 (population sample) suggests some item redundancy in the scale. WEMWBS showed high correlations with other mental health and well-being scales and lower correlations with scales measuring overall health... Test–retest reliability at one week was high (0.83).” <sup>63,p.1</sup>   |

Continued on the following page

**TABLE 4 (continued)**  
**List of instruments used in the primary studies with a description of the instrument and measurement properties, when available, for a general adult population**

| Instrument   | Description  | Measurement properties   |
|--|--|--|
| Short Warwick–Edinburgh Mental Well-being Scale (SWEMWBS) <sup>119</sup>           | A 7-item version of the WEMWBS, to measure mental well-being with the focus on function <sup>119</sup>   | “In this exploratory analysis, SWEMWBS demonstrates construct validity and sensitivity to change as a clinical outcome measure for patients with common mental disorders (CMDs) in primary care, demonstrating inverse correlation and comparable sensitivity to change over a course of clinical treatment when compared to two widely used clinical outcome measures.” <sup>119,p.7</sup>  |
| Well-being Star <sup>120</sup>   | A 7-domain scale, each scoring 1–10, “with a long-term health condition, to support and measure their progress in living as well as they can” <sup>121,p.1</sup> | “Internal consistency: internal consistency was good (Cronbach’s $\alpha = .82$ ).” <sup>121,p.1</sup><br>“Responsiveness to change: Wilcoxon Signed Rank Test revealed a statistically significant increase in all outcome areas ... A large effect size was found for the Lifestyle area, medium effect sizes for Looking after yourself, Managing symptoms, Work, volunteering and other activities and Feeling positive. The effect sizes for the other three areas were small–medium.” <sup>122,p.2</sup> |
| World Health Organization Quality of Life–abbreviated (WHOQOL-BREF) <sup>123</sup> | A quality-of-life and general health measure, contains 26 questions, designed to be used cross-culturally  | “Domain scores produced by the WHOQOL-BREF correlate highly (0.89 or above) with WHOQOL-100 domain scores (calculated on a four-domain structure). WHOQOL-BREF domain scores demonstrated good discriminant validity, content validity, internal consistency and test–retest reliability.” <sup>123,p.551</sup>  |
| Work and Social Adjustment Scale (WSAS) <sup>124</sup>                             | A 5-item self-report scale of ability to function (work, home, etc.) related to an identified problem (like the impact of mental health).                        | “Cronbach’s $\alpha$ measure of internal scale consistency ranged from 0.70 to 0.94. Test–retest correlation was 0.73. Interactive voice response administrations of the WSAS gave correlations of 0.81 and 0.86 with clinician interviews. Correlations of WSAS with severity of depression and obsessive-compulsive disorder symptoms were 0.76 and 0.61, respectively. The scores were sensitive to patient differences in disorder severity and treatment-related change.” <sup>124,p.461</sup>            |

primary studies, but there was a strong emphasis on well-being and mental health. Noteworthy is the lack of studies measuring physical and daily activity to quantify any behaviour change associated with participation resulting from the prescription. However, it is possible, based on our inclusion criteria, that we excluded studies focussed on exercise and physical activity but that did not call their program “social prescribing.” There were included studies that focussed on other activities (e.g. arts, museum, connection) which could result in incidental physical activity. However, the studies did not routinely capture “what” people are doing within programs (e.g. incidental physical activity). Arts- or museum-based programs are not necessarily promoted as physical activity, but they are opportunities to add movement into everyday life.

Another identified gap was the measurement or collection of information on people’s

cognition. Although more than 20 of the primary studies reported populations as middle-aged or older (40+ years), including nine studies of people aged over 60 years, only two studies reported using an instrument to directly evaluate the effect or impact of social prescribing on cognition.<sup>33,56</sup> There is an interplay between mental health (e.g. depression, anxiety), physical health and cognition. Depression in later life can increase the risk of dementia<sup>64</sup> or frailty.<sup>65</sup> Conversely, life satisfaction may prevent a decline in some measures of cognition.<sup>66</sup> In 2019, there were approximately 57 million people (all ages) living with dementia globally;<sup>67</sup> this number is projected to rise to 152.8 million people by 2050.<sup>67</sup> Cognitive function and unmet social needs may be related, possibly due to the consequences of negative environmental factors, such as food insecurity or fewer neighbourhood resources.<sup>68</sup> Further, a decline in cognition can challenge

functional independence and completion of simple daily tasks.

These factors, at a minimum, should be considered when co-creating an action plan to address unmet needs. In an ideal situation, it would be beneficial to see if social participation (as an aim of social prescribing) could mitigate the risks for cognitive decline. Some social prescribing activities, such as arts- and museum-based programs, may encourage concurrent cognitive and physical activities, which when combined in other research has been effective at promoting cognitive health.<sup>69</sup> Taken together, better understanding a person’s cognition could assist when connecting them with a link worker, introducing community resources and services, and determining the effectiveness of the social prescription.

The NHS Social Prescribing Common Outcomes Framework highlights collecting



information on volunteers,<sup>14</sup> but there were fewer evaluations of the impact or effect of family caregivers, volunteers and volunteer organizations,<sup>41,54,56</sup> despite their being mentioned in many primary studies.<sup>32,38,41,52,54,56,57,61</sup> Despite the important contribution of volunteers personally and economically,<sup>70</sup> there are fewer published studies for volunteering and social prescribing; when they are available, they are focussed on volunteering as a “prescription.”<sup>71,72</sup>

There were also few mentions of family caregivers in primary studies,<sup>54,56</sup> who play an essential role in providing supportive care. At a personal and societal level, the costs of family caregiving are high. There is the likelihood of caregivers experiencing high risk of physical and mental health challenges resulting in reduced quality of life.<sup>73</sup> Further, in 2017, a report from the Canadian Imperial Bank of Commerce (CIBC) estimated caregiving costs Canadians CAD 33 billion annually for direct and indirect costs, such as out of pocket expenses (including paying for other providers) and time away from work; most affected are women and people with lower income.<sup>74</sup> Given the benefits of volunteers and family caregivers at a personal and societal level, it is important to support, tailor, track and evaluate this important contribution to health and social models of care.

Social prescribing has a central theme of connection, for people with unmet social needs, family members, volunteers, providers and community organizations. The creation and sustainment of relationships between and across interested parties depends on effective communication and trust,<sup>22</sup> among other factors. There are relational strategies and techniques to build intra- and interpersonal trust of people, providers and implementation teams,<sup>75</sup> which can be used to generate effective changes in the adoption and sustainability of programs or clinical practices.<sup>76</sup> We did not locate outcomes on relationships, but may have missed these data because the information is available in the unpublished literature or in studies using different methods. Future research could consider measurement of the development, strength and sustainability of relationships for people receiving social prescribing, and for people who deliver, manage and make decisions for its delivery across the continuum of care and sectors.

## **Strengths and limitations**

This work has many strengths to contribute to the science and practice of social prescribing. Despite the comprehensive approach in this synthesis, we recognize several limitations. First, we made the decision to include only peer-reviewed studies that described their program as “social prescribing.” Social prescribing is a relatively new care model, but similar programs have existed for decades. However, using this criterion means we excluded studies that align with this model but do not call themselves social prescribing. Conversely, it could also mean we included studies that called their program social prescribing when it may not have been as closely aligned to the definition that is now published.<sup>3</sup> In the recent social prescribing mapping review, the authors noted the challenges with screening studies to determine if the intervention was social prescribing.<sup>12</sup> In our previous reviews<sup>8,9</sup> we had a similar experience, and thus decided to only include studies described as social prescribing.

Second, we only included peer-reviewed studies when searching for outcomes. We made this decision because many systematic reviews noted data were missing across studies (Table 1), and we wanted to compare reporting in the peer-reviewed primary studies, which may be more likely to follow research reporting guidelines. We acknowledge this means we may have missed other outcomes, especially as there are many social prescribing studies published in the grey literature.

Third, we only included outcomes that were captured using quantitative strategies, and we may have missed information that was obtained via interviews and focus groups. Despite the important and rich data obtained through these methods, our findings may not have changed substantially, as studies in the current review included outcomes from almost all taxonomy domains. Nonetheless, concepts such as social connectedness may be better explored through qualitative methods, to better understand the effect of a complex intervention such as social prescribing. Our work highlights what is or could be measured—it does not limit how the outcome or domain should be measured.

Fourth, our work is only descriptive and does not provide any information as to which outcomes should or should not be included in evaluating social prescribing

interventions. This was intentional, because determining the scope and priorities of future evaluation should be a collaborative process based on needs, preferences and supporting information, which together with interested parties (such as people, families, providers and decision makers) can be used to advance the science and practice of social prescribing.

## **Conclusion**

We recognize it is impossible to measure everything in one study, but a core set of outcomes would benefit the field. Although the NHS has already provided outcomes to include in social prescribing evaluations,<sup>14</sup> there remains the need to expand the list, standardize what and how we measure outcomes, and provide more information when describing people and processes for social prescribing. Specifically, consideration should be given to equity-considered guidelines such as PROGRESS-Plus<sup>21</sup> to describe communities and people receiving and delivering social prescribing. It is also important to provide more information on unintended outcomes and the rationale and instrument measurement properties (reliability, responsiveness and validity, at a minimum).<sup>77</sup> As there is now an international definition of social prescribing,<sup>3</sup> it is important to use it to guide interventions and how they align (or do not). The current work is intended to prompt interest and action in the continued development of the science and practice underpinning social prescribing.

## **Acknowledgements**

Professor Ashe gratefully acknowledges the support of the Canada Research Chairs Program. Dr. Chudyk acknowledges the support from the Canadian Institutes of Health Research through the Patient-Oriented Research Awards – Transition to Leadership Stream, Phase 2 Award. Dr. Esfandiari acknowledges the postdoctoral fellowship provided by the Edwin S.H. Leong Centre for Healthy Aging.

## **Funding**

We gratefully acknowledge funding for this project from The University of British Columbia Health Innovation Funding Investment Award and Social Sciences and Humanities Research Council.

## **Conflicts of interest**

The authors declare no conflicts of interest.



## Authors' contributions and statement

MCA, EE—conceptualization.

MCA, IKS, HA, AC, EE—methodology, formal analysis.

MCA, IKS—writing—original draft.

MCA, IKS, HA, AC, EE—writing—review and editing.

MCA, IKS—visualization.

All authors read and agreed to the published version of the manuscript.

The content and views expressed in this article are those of the authors and do not necessarily reflect those of the Government of Canada.

## References

1. Oster C, Skelton C, Leibbrandt R, Hines S, Bonevski B. Models of social prescribing to address non-medical needs in adults: a scoping review. *BMC Health Serv Res.* 2023;23:642. <https://doi.org/10.1186/s12913-023-09650-x>
2. Morse DF, Sandhu S, Mulligan K, et al. Global developments in social prescribing. *BMJ Glob Health.* 2022; 7(5):e008524. <https://doi.org/10.1136/bmjgh-2022-008524>
3. Muhl C, Mulligan K, Bayoumi I, Ashcroft R, Godfrey C. Establishing internationally accepted conceptual and operational definitions of social prescribing through expert consensus: a Delphi study protocol. *BMJ Open.* 2023;13(7):e070184. <https://doi.org/10.1136/bmjopen-2022-070184>
4. Carter N, Valaitis RK, Lam A, Feather J, Nicholl J, Cleghorn L. Navigation delivery models and roles of navigators in primary care: a scoping literature review. *BMC Health Serv Res.* 2018;18:96. <https://doi.org/10.1186/s12913-018-2889-0>
5. Kettle VE, Madigan CD, Coombe A, et al. Effectiveness of physical activity interventions delivered or prompted by health professionals in primary care settings: systematic review and meta-analysis of randomised controlled trials. *BMJ.* 2022;376:e068465. <https://doi.org/10.1136/bmj-2021-068465>
6. Dunphy K, Baker FA, Dumaresq E, et al. Creative arts interventions to address depression in older adults: a systematic review of outcomes, processes, and mechanisms. *Front Psychol.* 2018;9:2655. <https://doi.org/10.3389/fpsyg.2018.02655>
7. Thomson LJ, Lockyer B, Camic PM and Chatterjee HJ. Effects of a museum-based social prescription intervention on quantitative measures of psychological wellbeing in older adults. *Perspect Pub Health.* 2018;138(1):28-38. <https://doi.org/10.1177/1757913917737563>
8. Percival A, Newton C, Mulligan K, Petrella RJ, Ashe MC. Systematic review of social prescribing and older adults: where to from here? *Fam Med Community Health.* 2022;10(Suppl 1):e001829. <https://doi.org/10.1136/fmch-2022-001829>
9. Grover S, Sandhu P, Nijjar GS, et al. Older adults and social prescribing experience, outcomes, and processes: a meta-aggregation systematic review. *Public Health.* 2023;218:197-207. <https://doi.org/10.1016/j.puhe.2023.02.016>
10. Bickerdike L, Booth A, Wilson PM, Farley K, Wright K. Social prescribing: less rhetoric and more reality. A systematic review of the evidence. *BMJ Open.* 2017;7:e013384. <https://doi.org/10.1136/bmjopen-2016-013384>
11. Polley M, Whiteside J, Elnaschie S and Fixsen A. What does successful social prescribing look like? Mapping meaningful outcomes. London (UK): University of Westminster; 2019. 61 p.
12. Sonke J, Manhas N, Belden C, et al. Social prescribing outcomes: a mapping review of the evidence from 13 countries to identify key common outcomes. *Front Med (Lausanne).* 2023; 10:1266429. <https://doi.org/10.3389/fmed.2023.1266429>
13. Dodd S, Clarke M, Becker L, Mavergames C, Fish R, Williamson PR. A taxonomy has been developed for outcomes in medical research to help improve knowledge discovery. *J Clin Epidemiol.* 2018;96:84-92. <https://doi.org/10.1016/j.jclinepi.2017.12.020>
14. National Health Service (NHS). Social prescribing and community-based support: summary guide. London (UK): NHS England; 2021. Available from: <https://www.england.nhs.uk/wp-content/uploads/2020/06/social-prescribing-summary-guide-updated-june-20.pdf>
15. Esfandiari E, Chudyk AM, Grover S, et al. Social Prescribing Outcomes for Trials (SPOT): protocol for a modified Delphi study on core outcomes. *PLoS One.* 2023;18:e0285182. <https://doi.org/10.1371/journal.pone.0285182>
16. Ashe MC, Esfandiari E, Mulligan K, Chudyk AC. Core outcome set protocol: Social Prescribing Outcomes for Trials (SPOT) [Internet]. Liverpool (UK): COMET Initiative; 2022 [cited 2023 Dec 8]. Available from: <https://www.comet-initiative.org/Studies/Details/2364>.
17. Page MJ, McKenzie JE, Bossuyt PM, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *Int J Surgery.* 2021; 88:105906. <https://doi.org/10.1016/j.ijsu.2021.105906>
18. Aromataris E, Fernandez R, Godfrey CM, et al. Summarizing systematic reviews: methodological development, conduct and reporting of an umbrella review approach. *Int J Evid Based Healthc.* 2015;13:132-40. <https://doi.org/10.1097/XEB.0000000000000055>
19. Page MJ, Shamseer L and Tricco AC. Registration of systematic reviews in PROSPERO: 30,000 records and counting. *Syst Rev.* 2018;7:32. <https://doi.org/10.1186/s13643-018-0699-4>
20. Butcher NJ, Monsour A, Mew EJ, et al. Guidelines for reporting outcomes in trial reports: the CONSORT-Outcomes 2022 extension. *JAMA.* 2022;328:2252-64. <https://doi.org/10.1001/jama.2022.1022>

21. Cochrane Methods Group. PROGRESS-Plus [Internet]. London (UK): Cochrane; 2022 [cited 2021 Aug 30]. Available from: <https://methods.cochrane.org/equity/projects/evidence-equity/progress-plus>
22. Pescheny JV, Pappas Y, Randhawa G. Facilitators and barriers of implementing and delivering social prescribing services: a systematic review. *BMC Health Serv Res*. 2018;18:86. <https://doi.org/10.1186/s12913-018-2893-4>
23. Cooper M, Avery L, Scott J, et al. Effectiveness and active ingredients of social prescribing interventions targeting mental health: a systematic review. *BMJ Open*. 2022;12:e060214. <https://doi.org/10.1136/bmjopen-2021-060214>
24. Reinhardt GY, Vidovic D, Hammerton C. Understanding loneliness: a systematic review of the impact of social prescribing initiatives on loneliness. *Perspect Public Health*. 2021;141:204-13. <https://doi.org/10.1177/1757913920967040>
25. Thomas G, Lynch M, Spencer LH. A systematic review to examine the evidence in developing social prescribing interventions that apply a co-productive, co-designed approach to improve well-being outcomes in a community setting. *Int J Environ Res Public Health*. 2021;18(8):3896. <https://doi.org/10.3390/ijerph18083896>
26. Vidovic D, Reinhardt GY, Hammerton C. Can social prescribing foster individual and community well-being? A systematic review of the evidence. *Int J Environ Res Public Health*. 2021;18(10):5276. <https://doi.org/10.3390/ijerph18105276>
27. Napierala H, Krüger K, Kuschick D, Heintze C, Hermann WJ, Holzinger F. Social prescribing: systematic review of the effectiveness of psychosocial community referral interventions in primary care. *Int J Integr Care*. 2022;22:11. <https://doi.org/10.5334/ijic.6472>
28. Kiely B, Croke A, O'Shea M, et al. Effect of social prescribing link workers on health outcomes and costs for adults in primary care and community settings: a systematic review. *BMJ Open*. 2022;12:e062951. <https://doi.org/10.1136/bmjopen-2022-062951>
29. Costa A, Sousa CJ, Seabra PRC, et al. Effectiveness of social prescribing programs in the primary health-care context: a systematic literature review. *Sustainability*. 2021;13(5):2731. <https://doi.org/10.3390/su13052731>
30. Aggar C, Caruana T, Thomas T, Baker JR. Social prescribing as an intervention for people with work-related injuries and psychosocial difficulties in Australia. *Adv Health Behav*. 2020;3:101-10. <https://doi.org/10.25082/AHB.2020.01.001>
31. Aggar C, Thomas T, Gordon C, Bloomfield J, Baker J. Social prescribing for individuals living with mental illness in an Australian community setting: a pilot study. *Community Ment Health J*. 2021;57:189-95. <https://doi.org/10.1007/s10597-020-00631-6>
32. Poulos RG, Marwood S, Harkin D, et al. Arts on prescription for community-dwelling older people with a range of health and wellness needs. *Health Soc Care Community*. 2019;27(2):483-92. <https://doi.org/10.1111/hsc.12669>
33. Kim JE, Lee YL, Chung MA, et al. Effects of social prescribing pilot project for the elderly in rural area of South Korea during COVID-19 pandemic. *Health Sci Rep*. 2021;4:e320. <https://doi.org/10.1002/hsr2.320>
34. Crone DM, O'Connell EE, Tyson PJ, Clark-Stone F, Opher S, James DV. "Art Lift" intervention to improve mental well-being: an observational study from U.K. general practice. *Int J Ment Health Nurs*. 2013;22(3):279-86. <https://doi.org/10.1111/j.1447-0349.2012.00862.x>
35. Crone DM, Sumner RC, Baker CM, Loughren EA, Hughes S, James DV. 'Artlift' arts-on-referral intervention in UK primary care: updated findings from an ongoing observational study. *Eur J Public Health*. 2018;28(3):404-9. <https://doi.org/10.1093/eurpub/cky021>
36. Sumner RC, Crone DM, Baker C, Hughes S, Loughren EA, James DV. Factors associated with attendance, engagement and wellbeing change in an arts on prescription intervention. *J Public Health*. 2020;42(1):e89-e95. <https://doi.org/10.1093/pubmed/fdz032>
37. Sumner RC, Crone DM, Hughes S, James DV. Arts on prescription: observed changes in anxiety, depression, and well-being across referral cycles. *Public Health*. 2021;192:49-55. <https://doi.org/10.1016/j.puhe.2020.12.008>
38. Thomson LJ, Morse N, Elsdon E, Chatterjee HJ. Art, nature and mental health: assessing the biopsychosocial effects of a 'creative green prescription' museum programme involving horticulture, artmaking and collections. *Perspect Public Health*. 2020;140(5):277-85. <https://doi.org/10.1177/1757913920910443>
39. Kellezi B, Wakefield JR, Stevenson C, et al. The social cure of social prescribing: a mixed-methods study on the benefits of social connectedness on quality and effectiveness of care provision. *BMJ Open*. 2019;9(11):e033137. <https://doi.org/10.1136/bmjopen-2019-033137>
40. Wakefield JR, Kellezi B, Stevenson C, et al. Social prescribing as 'social cure': a longitudinal study of the health benefits of social connectedness within a social prescribing pathway. *J Health Psychol*. 2022;27(2):386-96. <https://doi.org/10.1177/1359105320944991>
41. Foster A, Thompson J, Holding E, et al. Impact of social prescribing to address loneliness: a mixed methods evaluation of a national social prescribing programme. *Health Soc Care Community*. 2021;29(5):1439-49. <https://doi.org/10.1111/hsc.13200>
42. Holt NJ. Tracking momentary experience in the evaluation of arts-on-prescription services: using mood changes during art workshops to predict global wellbeing change. *Perspect Public Health*. 2020;140(5):270-6. <https://doi.org/10.1177/1757913920913060>
43. van de Venter E, Buller AM. Arts on referral interventions: a mixed-methods study investigating factors associated with differential changes in mental well-being. *J Public Health*. 2015;37(1):143-50. <https://doi.org/10.1093/pubmed/dfu028>

44. Elston J, Gradinger F, Asthana S, et al. Does a social prescribing 'holistic' link-worker for older people with complex, multimorbidity improve well-being and frailty and reduce health and social care use and costs? A 12-month before-and-after evaluation. *Prim Health Care Res Dev*. 2019;20:e135. <https://doi.org/10.1017/S1463423619000598>
45. Morton L, Ferguson M, Baty F. Improving wellbeing and self-efficacy by social prescription. *Public Health*. 2015;129(3):286-9. <https://doi.org/10.1016/j.puhe.2014.12.011>
46. Pescheny JV, Gunn LH, Randhawa G, Pappas Y. The impact of the Luton social prescribing programme on energy expenditure: a quantitative before-and-after study. *BMJ Open*. 2019;9(6):e026862. <https://doi.org/10.1136/bmjopen-2018-026862>
47. Woodall J, Trigwell J, Bunyan AM, et al. Understanding the effectiveness and mechanisms of a social prescribing service: a mixed method analysis. *BMC Health Serv Res*. 2018;18(1):604. <https://doi.org/10.1186/s12913-018-3437-7>
48. Grayer J, Cape J, Orpwood L, Leibowitz J, Buszewicz M. Facilitating access to voluntary and community services for patients with psychosocial problems: a before-after evaluation. *BMC Fam Pract*. 2008;9:27. <https://doi.org/10.1186/1471-2296-9-27>
49. Loftus AM, McCauley F, McCarron MO. Impact of social prescribing on general practice workload and poly-pharmacy. *Public Health*. 2017;148:96-101. <https://doi.org/10.1016/j.puhe.2017.03.010>
50. Mercer SW, Fitzpatrick B, Grant L, et al. Effectiveness of community-links practitioners in areas of high socioeconomic deprivation. *Ann Fam Med*. 2019;17(6):518-25. <https://doi.org/10.1370/afm.2429>
51. Vogelpoel N, Jarrold K. Social prescription and the role of participatory arts programmes for older people with sensory impairments. *J Integr Care (Brighton)*. 2014;22:39-50. <https://doi.org/10.1108/JICA-01-2014-0002>
52. Carnes D, Sohanpal R, Frostick C, et al. The impact of a social prescribing service on patients in primary care: a mixed methods evaluation. *BMC Health Serv Res*. 2017;17(1):835. <https://doi.org/10.1186/s12913-017-2778-y>
53. Bird EL, Biddle MSY, Powell JE. General practice referral of 'at risk' populations to community leisure services: applying the RE-AIM framework to evaluate the impact of a community-based physical activity programme for inactive adults with long-term conditions. *BMC Public Health*. 2019;19(1):1308. <https://doi.org/10.1186/s12889-019-7701-5>
54. Giebel C, Morley N, Komuravelli A. A socially prescribed community service for people living with dementia and family carers and its long-term effects on well-being. *Health Soc Care Community*. 2021;29(6):1852-7. <https://doi.org/10.1111/hsc.13297>
55. Howarth M, Griffiths A, da Silva A, Green R. Social prescribing: a 'natural' community-based solution. *Br J Community Nurs*. 2020;25(6):294-8. <https://doi.org/10.12968/bjcn.2020.25.6.294>
56. Jones C, Hartfiel N, Brocklehurst P, Lynch M, Edwards RT. Social return on investment analysis of the health precinct community hub for chronic conditions. *Int J Environ Res Public Health*. 2020;17(14):5249. <https://doi.org/10.3390/ijerph17145249>
57. Jones M, Kimberlee R, Deave T, Evans S. The role of community centre-based arts, leisure and social activities in promoting adult well-being and healthy lifestyles. *Int J Environ Res Public Health*. 2013;10(5):1948-62. <https://doi.org/10.3390/ijerph10051948>
58. Kimberlee R. What is the value of social prescribing? *Adv Soc Sci Res J*. 2016;3(3). <https://doi.org/10.14738/assrj.33.1889>
59. Maughan DL, Patel A, Parveen T, et al. Primary-care-based social prescribing for mental health: an analysis of financial and environmental sustainability. *Prim Health Care Res Dev*. 2016;17(2):114-21. <https://doi.org/10.1017/S1463423615000328>
60. Pescheny JV, Gunn LH, Pappas Y, Randhawa G. The impact of the Luton social prescribing programme on mental well-being: a quantitative before-and-after study. *J Public Health*. 2021;43(1):e69-e76. <https://doi.org/10.1093/pubmed/fdz155>
61. Swift M. People powered primary care: learning from Halton. *J Integr Care (Brighton)*. 2017;25(3):162-73. <https://doi.org/10.1108/jica-12-2016-0050>
62. Kim JY, Park JH, Lee JJ, et al. Standardization of the Korean version of the geriatric depression scale: reliability, validity, and factor structure. *Psychiatry Investig*. 2008;5(4):232-8. <https://doi.org/10.4306/pi.2008.5.4.232>
63. Tennant R, Hiller L, Fishwick R, et al. The Warwick-Edinburgh Mental Well-being Scale (WEMWBS): development and UK validation. *Health Qual Life Outcomes*. 2007;5:63. <https://doi.org/10.1186/1477-7525-5-63>
64. Nicolas C, Sarang K, Kaarin JA. Dementia risk estimates associated with measures of depression: a systematic review and meta-analysis. *BMJ Open*. 2015;5(12):e008853. <https://doi.org/10.1136/bmjopen-2015-008853>
65. Soysal P, Veronese N, Thompson T, et al. Relationship between depression and frailty in older adults: a systematic review and meta-analysis. *Ageing Res Rev*. 2017;36:78-87. <https://doi.org/10.1016/j.arr.2017.03.005>
66. Zainal NH, Newman MG. Life satisfaction prevents decline in working memory, spatial cognition, and processing speed: latent change score analyses across 23 years. *Eur Psychiatry*. 2022;65(1):e27. <https://doi.org/10.1192/j.eurpsy.2022.19>
67. Global Burden of Disease Dementia Forecasting Collaborators. Estimation of the global prevalence of dementia in 2019 and forecasted prevalence in 2050: an analysis for the Global Burden of Disease Study 2019. *Lancet Public Health*. 2022;7(2):e105-e125. [https://doi.org/10.1016/S2468-2667\(21\)00249-8](https://doi.org/10.1016/S2468-2667(21)00249-8)



68. Majoka MA, Schimming C. Effect of social determinants of health on cognition and risk of Alzheimer disease and related dementias. *Clin Ther.* 2021; 43(6):922-9. <https://doi.org/10.1016/j.clinthera.2021.05.005>
69. Gavelin HM, Dong C, Minkov R, et al. Combined physical and cognitive training for older adults with and without cognitive impairment: a systematic review and network meta-analysis of randomized controlled trials. *Ageing Res Rev.* 2021;66:101232. <https://doi.org/10.1016/j.arr.2020.101232>
70. The Conference Board of Canada. The value of volunteering in Canada. Ottawa (ON): Conference Board of Canada; 2018. 16 p. Available from: [https://volunteer.ca/vdemo/Campaigns\\_DOCS/Value%20of%20Volunteering%20in%20Canada%20Conf%20Board%20Final%20Report%20EN.pdf](https://volunteer.ca/vdemo/Campaigns_DOCS/Value%20of%20Volunteering%20in%20Canada%20Conf%20Board%20Final%20Report%20EN.pdf)
71. Turk A, Tierney S, Wong G, Todd J, Chatterjee HJ, Mahtani KR. Self-growth, wellbeing and volunteering - implications for social prescribing: a qualitative study. *SSM - Qual Res Health.* 2022;2:100061. <https://doi.org/10.1016/j.ssmqr.2022.100061>
72. Tierney S, Mahtani KR, Wong G, et al. The role of volunteering in supporting well-being - what might this mean for social prescribing? A best-fit framework synthesis of qualitative research. *Health Soc Care Community.* 2022;30(2):e325-e346. <https://doi.org/10.1111/hsc.13516>
73. Rigby H, Gubitz G, Phillips S. A systematic review of caregiver burden following stroke. *Int J Stroke.* 2009; 4(4):285-92. <https://doi.org/10.1111/j.1747-4949.2009.00289.x>
74. Tal B, Mendes R. Who cares: the economics of caring for aging parents. ["In Focus" newsletter.] Toronto (ON): CIBC; 2017. 3 p. Available from: <https://www.cibc.com/content/dam/pwm-public-assets/documents/pdfs/insights/who-cares-the-economics-of-caring-for-aging-parents-in-focus-en.pdf>
75. Metz A, Jensen T, Farley A, Boaz A, Bartley L, Villodas M. Building trusting relationships to support implementation: a proposed theoretical model. *Front Health Serv.* 2022;2:894599. <https://doi.org/10.3389/frhs.2022.894599>
76. Metz A, Jensen T, Farley A, Boaz A. Is implementation research out of step with implementation practice? Pathways to effective implementation support over the last decade. *Implement Res Pract.* 2022;3:26334895221105585. <https://doi.org/10.1177/26334895221105585>
77. Roach K. Measurement of health outcomes: reliability, validity and responsiveness. *JPO: J Prosthet Orthot.* 2006;18(6):P8-P12. <https://doi.org/10.1097/00008526-200601001-00003>
78. Brooke P, Bullock R. Validation of a 6 item cognitive impairment test with a view to primary care usage. *Int J Geriatr Psychiatry.* 1999;14(11):936-40.
79. Bayliss EA, Ellis JL, Steiner JF. Seniors' self-reported multimorbidity captured biopsychosocial factors not incorporated into two other data-based morbidity measures. *J Clin Epidemiol.* 2009;62(5):550-7.e1. <https://doi.org/10.1016/j.jclinepi.2008.05.002>
80. Trauer T, Tobias G, Slade M. Development and evaluation of a patient-rated version of the Camberwell Assessment of Need Short Appraisal Schedule (CANSAS-P). *Community Ment Health J.* 2008;44(2):113-24. <https://doi.org/10.1007/s10597-007-9101-z>
81. Campaign to End Loneliness. Measuring your impact on loneliness in later life. London (UK): Campaign to End Loneliness; 2015. 40 p. Available from: <https://www.campaigntoendloneliness.org/wp-content/uploads/Loneliness-Measurement-Guidance1.pdf>
82. Smith ML, Chen E, Lau CA, Davis D, Simmons JW, Merianos AL. Effectiveness of chronic disease self-management education (CDSME) programs to reduce loneliness. *Chronic Illn.* 2022;19(3):646-64. <https://doi.org/10.1177/17423953221113604>
83. Radloff LS. The CES-D Scale: a self-report depression scale for research in the general population. *Appl Psychol Meas.* 1977;1(3):385-401. <https://doi.org/10.1177/014662167700100306>
84. Lewinsohn PM, Seeley JR, Roberts RE, Allen NB. Center for Epidemiologic Studies Depression Scale (CES-D) as a screening instrument for depression among community-residing older adults. *Psychol Aging.* 1997;12(2):277-87. <https://doi.org/10.1037/0882-7974.12.2.277>
85. Larsen DL, Attkisson CC, Hargreaves WA, Nguyen TD. Assessment of client/patient satisfaction: development of a general scale. *Eval Program Plann.* 1979;2(3):197-207. [https://doi.org/10.1016/0149-7189\(79\)90094-6](https://doi.org/10.1016/0149-7189(79)90094-6)
86. Evans C, Connell J, Barkham M, et al. Towards a standardised brief outcome measure: psychometric properties and utility of the CORE-OM. *Br J Psychiatry.* 2002;180:51-60. <https://doi.org/10.1192/bjp.180.1.51>
87. Rabin R, de Charro F. EQ-5D: a measure of health status from the EuroQol Group. *Ann Med.* 2001;33(5):337-43. <https://doi.org/10.3109/07853890109002087>
88. Feng YS, Kohlmann T, Janssen MF, Buchholz I. Psychometric properties of the EQ-5D-5L: a systematic review of the literature. *Qual Life Res.* 2021; 30(3):647-73. <https://doi.org/10.1007/s11136-020-02688-y>
89. Spitzer RL, Kroenke K, Williams JB, Löwe B. A brief measure for assessing generalized anxiety disorder: the GAD-7. *Arch Intern Med.* 2006;166(10):1092-7. <https://doi.org/10.1001/archinte.166.10.1092>
90. Goldberg DP, Gater R, Sartorius N, et al. The validity of two versions of the GHQ in the WHO study of mental illness in general health care. *Psychol Med.* 1997;27(1):191-7. <https://doi.org/10.1017/s0033291796004242>
91. Anjara SG, Bonetto C, Van Bortel T, Brayne C. Using the GHQ-12 to screen for mental health problems among primary care patients: psychometrics and practical considerations. *Int J Ment Health Syst.* 2020;14:62. <https://doi.org/10.1186/s13033-020-00397-0>

92. Wareham NJ, Jakes RW, Rennie KL, et al. Validity and repeatability of a simple index derived from the short physical activity questionnaire used in the European Prospective Investigation into Cancer and Nutrition (EPIC) study. *Public Health Nutr.* 2003;6(4):407-13. <https://doi.org/10.1079/PHN2002439>
93. Schwarzer R, Jerusalem M. Generalized Self-Efficacy scale. In: Weinman J, Wright S, Johnston M, editors. *Measures in health psychology: a user's portfolio. Causal and control beliefs.* Windsor (UK): NFER-NELSON; 1995:35-37.
94. Kim JE, Jiang YH, Dee V. Psychometric properties of General Self-Efficacy (GSE) Scale Korean Version for older Korean immigrants with diabetes: a cross-sectional study in the United States. *Nurs Rep.* 2023;13(2):844-54. <https://doi.org/10.3390/nursrep13020074>
95. Zigmond AS, Snaith RP. The Hospital Anxiety and Depression Scale. *Acta Psychiatr Scand.* 1983;67(6):361-70. <https://doi.org/10.1111/j.1600-0447.1983.tb09716.x>
96. Bjelland I, Dahl AA, Haug TT, Neckelmann D. The validity of the Hospital Anxiety and Depression Scale. An updated literature review. *J Psychosom Res.* 2002;52(2):69-77. [https://doi.org/10.1016/s0022-3999\(01\)00296-3](https://doi.org/10.1016/s0022-3999(01)00296-3)
97. Coast J, Flynn T, Sutton E, et al. Investigating Choice Experiments for Preferences of Older People (ICEPOP): evaluative spaces in health economics. *J Health Serv Res Policy.* 2008;13(Suppl 3):31-7. <https://doi.org/10.1258/jhsrp.2008.008024>
98. Mitchell PM, Al-Janabi H, Byford S, et al. Assessing the validity of the ICECAP-A capability measure for adults with depression. *BMC Psychiatry.* 2017;17(1):46. <https://doi.org/10.1186/s12888-017-1211-8>
99. Al-Janabi H, Flynn TN, Peters TJ, Bryan S, Coast J. Test-retest reliability of capability measurement in the UK general population. *Health Econ.* 2015;24(5):625-30. <https://doi.org/10.1002/hec.3100>
100. Craig CL, Marshall AL, Sjöström M, et al. International physical activity questionnaire: 12-country reliability and validity. *Med Sci Sports Exerc.* 2003;35(8):1381-95. <https://doi.org/10.1249/01.Mss.0000078924.61453.Fb>
101. Andrews G, Slade T. Interpreting scores on the Kessler Psychological Distress Scale (K10). *Aust N Z J Public Health.* 2001;25(6):494-7. <https://doi.org/10.1111/j.1467-842x.2001.tb00310.x>
102. Kang I-W, Beom I-G, Cho J-Y, Son H-R. Accuracy of Korean-Mini-Mental Status Examination based on Seoul Neuro-Psychological Screening Battery II Results. *Korean J Fam Med.* 2016;37(3):177-81. <https://doi.org/10.4082/kjfm.2016.37.3.177>
103. Paterson C, Britten N. In pursuit of patient-centred outcomes: a qualitative evaluation of the 'Measure Yourself Medical Outcome Profile'. *J Health Serv Res Policy.* 2000;5(1):27-36. <https://doi.org/10.1177/135581960000500108>
104. Thomson LJ, Chatterjee HJ. Measuring the impact of museum activities on well-being: developing the Museum Well-being Measures Toolkit. *Mus Manag Curator.* 2015;30(1):44-62. <https://doi.org/10.1080/09647775.2015.1008390>
105. Thomson LJ, Chatterjee HJ. Assessing well-being outcomes for arts and heritage activities: development of a Museum Well-being Measures Toolkit. *J Appl Arts Health.* 2014;5: 29-50. <https://doi.org/10.1386/jaah.5.1.29.1>
106. Hibbard JH, Stockard J, Mahoney ER, Tusler M. Development of the Patient Activation Measure (PAM): conceptualizing and measuring activation in patients and consumers. *Health Serv Res.* 2004;39(4 Pt 1):1005-26. <https://doi.org/10.1111/j.1475-6773.2004.00269.x>
107. Kroenke K, Spitzer RL, Williams JB. The PHQ-9: validity of a brief depression severity measure. *J Gen Intern Med.* 2001;16(9):606-13. <https://doi.org/10.1046/j.1525-1497.2001.016009606.x>
108. Kroenke K, Strine TW, Spitzer RL, Williams JB, Berry JT, Mokdad AH. The PHQ-8 as a measure of current depression in the general population. *J Affect Disord.* 2009;114(1-3):163-73. <https://doi.org/10.1016/j.jad.2008.06.026>
109. Razykov I, Ziegelstein RC, Whooley MA, Thombs BD. The PHQ-9 versus the PHQ-8—Is item 9 useful for assessing suicide risk in coronary artery disease patients? Data from the Heart and Soul Study. *J Psychosom Res.* 2012;73(3):163-8. <https://doi.org/10.1016/j.jpsychores.2012.06.001>
110. Church S, Rogers E, Rockwood K, Theou O. A scoping review of the Clinical Frailty Scale. *BMC Geriatr.* 2020;20:393. <https://doi.org/10.1186/s12877-020-01801-7>
111. Stille K, Temmel N, Hepp J, Herget-Rosenthal S. Validation of the Clinical Frailty Scale for retrospective use in acute care. *Eur Geriatr Med.* 2020;11(6):1009-15. <https://doi.org/10.1007/s41999-020-00370-7>
112. Sinclair SJ, Blais MA, Gansler DA, Sandberg E, Bistis K, LoCicero A. Psychometric properties of the Rosenberg Self-Esteem Scale: overall and across demographic groups living within the United States. *Eval Health Prof.* 2010;33(1):56-80. <https://doi.org/10.1177/0163278709356187>
113. Lee K. An item response theory analysis of Rosenberg Self-Esteem among older Korean adults. *Curr Psychol.* 2022;42:28984-93. <https://doi.org/10.1007/s12144-022-03946-7>
114. Wilhelm P, Schoebi D. Assessing mood in daily life. *Eur J Psychol Assess.* 2007;23(4):258-67. <https://doi.org/10.1027/1015-5759.23.4.258>
115. Cho S, Yoo Y. The effects of participation in social activity on life satisfaction in low-income aged people living alone: focusing on the mediating effects of loneliness. *Korean J Gerontol Soc Welf.* 2016;71(4):35-59. <https://doi.org/10.21194/kjgsw.71.4.201612.35>



- 
116. Haslam SA, O'Brien A, Jetten J, Vormedal K, Penna S. Taking the strain: social identity, social support, and the experience of stress. *Br J Soc Psychol.* 2005;44(Pt 3):355-70. <https://doi.org/10.1348/014466605X37468>
  117. Russell D, Peplau LA, Ferguson ML. Developing a measure of loneliness. *J Pers Assess.* 1978;42(3):290-4. [https://doi.org/10.1207/s15327752jpa4203\\_11](https://doi.org/10.1207/s15327752jpa4203_11)
  118. Hays RD, DiMatteo MR. A short-form measure of loneliness. *J Pers Assess.* 1987;51(1):69-81. [https://doi.org/10.1207/s15327752jpa5101\\_6](https://doi.org/10.1207/s15327752jpa5101_6)
  119. Shah N, Cader M, Andrews B, McCabe R, Stewart-Brown S. Short Warwick-Edinburgh Mental Well-being Scale (SWEMWBS): performance in a clinical sample in relation to PHQ-9 and GAD-7. *Health Qual Life Outcomes.* 2021;19(1):260. <https://doi.org/10.1186/s12955-021-01882-x>
  120. MacKeith J. The development of the Outcomes Star: a participatory approach to assessment and outcome measurement. *Housing Care Support.* 2011; 14(3):98-106. <https://doi.org/10.1108/14608791111199778>
  121. Good A, Lamont E. Outcomes Star psychometric factsheet: Well-being Star. Brighton (UK): Triangle Consulting Social Enterprise; 2018. Available from: [http://www.outcomesstar.org.uk/wp-content/uploads/OS-Psychometric-Factsheet\\_Well-being-Star.pdf](http://www.outcomesstar.org.uk/wp-content/uploads/OS-Psychometric-Factsheet_Well-being-Star.pdf)
  122. Triangle Consulting Social Enterprise Ltd. Outcomes Star™ Psychometric Factsheet: Well-being Star™. Brighton (UK): Triangle Consulting Social Enterprise; 2018. Available from [https://www.outcomesstar.org.uk/wp-content/uploads/OS-Psychometric-Factsheet\\_Well-being-Star-1.pdf](https://www.outcomesstar.org.uk/wp-content/uploads/OS-Psychometric-Factsheet_Well-being-Star-1.pdf)
  123. The WHOQOL Group. Development of the World Health Organization WHOQOL-BREF Quality of Life Assessment. *Psychol Med.* 1998;28(3): 551-58. <https://doi.org/10.1017/S0033291798006667>
  124. Mundt JC, Marks IM, Shear MK, Greist JM. The Work and Social Adjustment Scale: a simple measure of impairment in functioning. *Br J Psychiatry.* 2002; 180:461-64. <https://doi.org/10.1192/bjp.180.5.461>

## Original qualitative research

# How does fresh food prescribing fit into the social service landscape? A qualitative study in Ontario, Canada

Laura Jane Brubacher, PhD (1); Matthew Little, PhD (2); Abby Richter, RD, MAN (3,4); Warren Dodd, PhD (1)

This article has been peer reviewed.

Research article by Brubacher LJ et al.  
in the HPCDP Journal  
licensed under a [Creative Commons Attribution 4.0 International License](#)

### Abstract

**Introduction:** Food prescription programs are part of the broader social prescribing movement as an approach to address food insecurity and suboptimal diet in health care settings. These programs exist amid other social services, including income-based supports and food assistance programs; however, evaluations of the interactions between these programs and pre-existing services and supports are limited. This study was embedded within a larger evaluation of the 52-week Fresh Food Prescription (FFRx) program (April 2021–October 2022); the objective of this study was to examine how program participation influenced individuals' interactions with existing income-based supports and food assistance programs.

**Methods:** This study was conducted in Guelph, Ontario, Canada. One-to-one (n = 23) and follow-up (n = 10) interviews were conducted to explore participants' experiences with the program. Qualitative data were analyzed thematically using a constant comparative analysis.

**Results:** Participants described their experience with FFRx in relation to existing income-based supports and food assistance programs. FFRx reportedly extended income support further to cover living expenses, allowed participants to divert income to other necessities, and reduced the sacrifices required to meet basic needs. FFRx lessened the frequency of accessing other food assistance programs. Aspects of FFRx's design (e.g. food delivery) shaped participant preferences in favour of FFRx over other food supports.

**Conclusion:** As food prescribing and other social prescribing programs continue to expand, there is a need to evaluate how these initiatives interact with pre-existing services and supports and shape the broader social service landscape.

**Keywords:** *food prescribing, social services, food insecurity, food access programs, qualitative research*

### Introduction

Food prescription programs have emerged within the broader social prescribing movement as one approach to address food insecurity and suboptimal diet by leveraging patient-provider interactions in health care settings.<sup>1,2</sup> Through food prescription programs, primary care providers often identify eligible patients, and

then prescribe healthy foods that are subsidized or no-cost. Eligibility in food prescription programs is typically dependent on individual patients concurrently experiencing food insecurity and diet-related chronic disease.<sup>3</sup> In many cases, healthy food is made available through credit or vouchers that are redeemable for various food items. Many food prescription programs offer complementary supports including

### Highlights

- This study examined how a food prescription program interacts with pre-existing services.
- Participants shared experiences with the program as related to other income-based supports and food assistance programs.
- For income-based supports: the Fresh Food Prescription (FFRx) program enabled participants to extend income further, divert it to other necessities and reduce income-related sacrifices.
- For food assistance programs: FFRx reduced frequency of accessing other food programs and was the preferred choice due to the program's design (e.g. accessibility, food quality, delivery).
- As food and social prescribing initiatives expand, evaluations must consider how these programs interact with and influence the broader social service landscape.

access to a nutritionist or dietitian and support surrounding food literacy.<sup>4</sup> Previous evaluations of food prescription programs have shown that program participation is associated with improved fruit and vegetable consumption, in addition to reductions in household food insecurity.<sup>5-8</sup>

### Author references:

1. School of Public Health Sciences, University of Waterloo, Waterloo, Ontario, Canada
2. School of Public Health and Social Policy, University of Victoria, Victoria, British Columbia, Canada
3. Guelph Community Health Centre, Guelph, Ontario, Canada
4. The SEED, Guelph, Ontario, Canada

**Correspondence:** Warren Dodd, University of Waterloo, 200 University Avenue West, Waterloo, ON N2L 3G1; Tel: (519) 888-4567, ext. 46856; Email: [wadd@uwaterloo.ca](mailto:wadd@uwaterloo.ca)



There is broad recognition that low income is a primary driver of food insecurity, and that without addressing inadequate income among participants of food prescription programs, the long-term benefits of these programs may be limited.<sup>9</sup> Despite these criticisms, food prescription programs are receiving increasing public and political support, contributing to interest and enthusiasm in initiating new programs across communities in North America.<sup>3</sup> In many communities, food prescription programs represent a new food support program amid a broader social welfare landscape that includes a mix of existing social services, which includes both income-based supports and food assistance programs. Due to the eligibility criteria associated with many food prescription programs, individuals who access them may also access or be eligible for a range of other social and food assistance programs and services in their community.

While previous evaluations of food prescribing programs have focussed on participant experiences and outcomes associated with the programs themselves,<sup>4</sup> few evaluations have considered how food prescribing programs interact with other (and often pre-existing) income-based supports and food assistance programs. More specifically, and in light of the criticisms of food prescription programs, it is important to consider whether, and if so, how, participation in a food prescription program may influence relationships with and use of other income-based supports and food assistance programs.

This study was embedded within an evaluation of the 52-week Fresh Food Prescription program in Guelph, Ontario, Canada. The objective of the current study was to examine how participation in a food prescription program influenced relationships, attitudes and use of existing income-based supports and food assistance programs among participants. Overall, our aim was to highlight how participation in a new food prescription program may have implications for how participants interact with other social services. Insights from this study may be relevant to other social prescribing initiatives, as it is important to assess the growth and expansion of these initiatives within their broader social welfare landscape.

## Methods

### Ethics approval

This study received ethics approval through the University of Waterloo (Certificate #:

44233), University of Guelph (Certificate #: 19-06-040) and University of Victoria (Certificate #: 21-0060) research ethics boards.

### Study context

This study was conducted in Guelph, Ontario, Canada. Data from 2017 to 2018 indicate that 13.9% of households in Guelph were food-insecure, which was higher than provincial (13.3%) and national (12.7%) averages during that same period.<sup>10</sup> Numerous food assistance programs exist in Guelph, including a food bank, community food pantries and nonprofit organizations that provide emergency food access (e.g. Hope House, The Salvation Army).<sup>11-13</sup> Food-insecure households are sometimes eligible for provincial social assistance, including the Ontario Disability Support Program (ODSP) and Ontario Works (OW).<sup>14,15</sup> Both programs provide monthly income support payments to residents of Ontario who are experiencing financial insecurity. Payment amount is determined by living situation (e.g. family size, medical needs) and includes a shelter allowance and money for basic needs such as food.

This study was part of a larger evaluation of the 52-week Fresh Food Prescription (FFRx) program, conducted in partnership with The SEED (<https://theseedguelph.ca/>). The SEED is a food access program of the Guelph Community Health Centre (CHC) that is dedicated to addressing food insecurity and creating food systems change in Wellington County. Participants were referred to the FFRx program by their health care provider at the CHC, then screened for eligibility. To be eligible, participants had to be classified as food-insecure (as per a one-item food security screener derived from the Household Food Security Survey Module<sup>16</sup>) and have one or more diet-related health outcomes.

Participants who were then enrolled in the program received a food “prescription” in the form of a voucher, which was redeemable through The SEED’s online grocery store. The voucher amount was determined by household size (\$10 per person per household—to a maximum of \$50—per week for 52 weeks). Vouchers could be redeemed for fresh fruits and vegetables as well as other grocery items (e.g. dairy products, pantry items) available from the online store. Food options were largely consistent from week to week, though some specialty items were added

on a weekly basis. Participants also had the option to phone-in orders to The SEED customer service team, available throughout the program period (interpretation services were also available), or to order in-person at Guelph CHC.

Rolling enrolment into the program began in April 2021, with the last participants completing the 52-week program in October 2022. A total of 62 individuals agreed to participate in the FFRx program over this time period, five of whom dropped out over the course of the program (two moved away from the area; one felt they no longer required the food support; two felt the program did not meet their needs). Over 88% of the value of the vouchers was redeemed by the remaining 57 participants. Following October 2022, the program was briefly “paused” until March 2023, when additional funding was available. During the time period of the program (2021–2022), COVID-19 pandemic restrictions, combined with rising inflation and an increasingly severe housing crisis, were the backdrop to the financial and food access challenges participants experienced.

### Data collection

Between July and September 2022, and as each FFRx participant was nearing the end of their participation in the program, all participants remaining in the program at endline (n = 57) were invited to complete a one-to-one, semistructured interview. In total, 23 participants were successfully recruited for this study in-person or by phone. Reasons for nonparticipation in an interview included time constraints, lack of interest and the presence of complex mental health needs. For convenience, most interviews were conducted on the telephone (n = 18), with the exception of a few interviews that were conducted in-person (n = 5). Interviews focussed broadly on participants’ experiences with FFRx.

Additionally, follow-up interviews were conducted from May to July 2023 with information-rich participants (e.g. those who combined FFRx with other social services and food assistance programs; n = 10). These participants were identified and recruited by those who conducted the initial interviews and thus had insight as to which participants accessed multiple services or programs. Follow-up interviews were conducted at the Guelph CHC,

at participants' homes, or on the telephone, based on participant preference and convenience. These interviews focussed on how participants used FFRx in combination with other social services and food assistance programs and their perception of the food prescribing program in relation to these other programs (interview guides are available on request from the authors).

For all interviews, participants more comfortable in a language other than English were provided with interpretation. To complement the qualitative data, select data on participants' sociodemographic characteristics and social services use were extracted from baseline surveys that were part of broader evaluation activities.

Participants provided informed, verbal consent to participate. All interviews were audio-recorded and manually transcribed verbatim. Upon completion of interviews, participants received a \$30 gift card to The SEED's online grocery store.

### Data analysis

Basic descriptive statistics were calculated from survey responses to summarize interview participants' sociodemographic data and use of social services. Qualitative data were analyzed thematically using a constant comparative analysis.<sup>17</sup> Initial open coding was conducted, followed by inductive line-by-line coding. Analyses integrated both initial and follow-up data from interview transcripts. NVivo software Release 1.7.1 (QSR International, Burlington, MA, US) was used for organization and retrieval of codes and coded excerpts. Codes were expanded, merged, consolidated iteratively and developed into a parsimonious codebook that fit the data.<sup>18</sup> In some instances, individual quotations have been attributed to specific respondents coded as P01, P02 ... P23.

## Results

### Participant characteristics

Participants were aged 34 to 74 years. Among those interviewed, seven participants (30.4%) were receiving ODSP (Table 1). Just over a third of participants (39.3%) used both ODSP and other food assistance programs (i.e. food bank) in the past year.

**TABLE 1**  
Descriptive characteristics of interview participants (n = 23)

| Characteristic  | No. (%), proportion, or mean (95% CI) |
|---|---------------------------------------|
| <b>Gender</b>   |                                       |
| Man   | 7 (30.4)                              |
| Woman   | 16 (69.6)                             |
| <b>Mean age at enrolment (years)</b>                                  | 53 (47.3, 58.7)                       |
| <b>Age group at enrolment (years)</b>                                 |                                       |
| 20–39   | 5 (21.7)                              |
| 40–59   | 10 (43.5)                             |
| 60+   | 8 (34.8)                              |
| <b>Ethnicity</b>  |                                       |
| White   | 10 (43.5)                             |
| Black   | 2 (8.7)                               |
| Indigenous to Turtle Island   | 1 (4.3)                               |
| Asian (including Arabic, East Asian, South Asian and Southeast Asian) | 7 (30.4)                              |
| Latin American  | 1 (4.3)                               |
| Chose not to respond  | 2 (8.7)                               |
| <b>Mean household size (number of individuals)</b>                    | 3.7 (2.6, 4.7)                        |
| <b>Household size group (number of individuals)</b>                   |                                       |
| 1–2   | 9 (39.1)                              |
| 3–4   | 8 (34.8)                              |
| 5–6   | 3 (13.0)                              |
| 7+  | 3 (13.0)                              |
| <b>Household income group (CAD)</b>                                   |                                       |
| 0–19 999  | 13 (56.5)                             |
| 20 000–39 999   | 7 (30.4)                              |
| 40 000+   | 2 (8.7)                               |
| Don't know/prefer not to answer                                       | 1 (4.3)                               |
| <b>Receiving Ontario Disability Support Program</b>                   |                                       |
| Yes   | 7 (30.4)                              |
| No  | 16 (69.6)                             |
| <b>Place where most foods are purchased</b>                           |                                       |
| Grocery store   | 19 (82.6)                             |
| Farmer's market   | 0 (0)                                 |
| Food bank   | 3 (13.0)                              |
| The SEED  | 1 (4.3)                               |
| <b>Mean value of vouchers redeemed (CAD)</b>                          | 1549 (1187, 1912)                     |
| <b>Proportion of vouchers redeemed</b>                                | 93.8%                                 |

**Abbreviations:** CAD, Canadian dollars; CI, confidence interval.



## *The Fresh Food Prescription program in relation to income-based supports*

### **Extending government-funded, income-based supports: “A bit of relief”**

In the context of rising food and rental costs, participants shared that government-funded, income-based supports (e.g. OW and ODSP) were often insufficient to meet their needs (P03, P08, P09, P10, P12, P16, P17). The Fresh Food Prescription program was reported, in broad terms, to extend the money participants have for expenses and provide “a bit of relief” (P17). As one participant shared, “We don’t get very much for ODSP ... FFRx gives me a little bit more money. I don’t have to pay for veggies and that, so I can support me and [my daughters]” (P03).

Another participant echoed, “[FFRx] has helped our grocery bill a lot, especially now with prices going so high” (P13). Common among participants was the need to prioritize which expenses to cover first with government-funded income support. Typically, this support was used to first pay rent and utility bills, with a small amount left for purchasing food: “[I use ODSP for] bills and rent and whatnot. So, all the things that have to be taken care of, [then] the leftovers is food” (P17). Two other participants also reported that FFRx helped them augment their income support: “[FFRx helped] to stretch a bit more ... I was able to extend everything” (P08); and “[It helped me] catch up on bills and stuff that I’ve been behind on” (P09). As one participant noted, the savings from FFRx were a helpful “supplement” when unexpected bills emerged (P16).

Furthermore, two participants noted the usefulness of FFRx in facilitating the ability to plan meals and budget expenses. As stated by one participant in relation to meal planning, “I knew, ‘I can take this \$50 and spend it on this to get more meat from the grocery store, and get whatever vegetables I can grab from The SEED’” (P08). In the words of another participant: “[FFRx] helps to stay on target with your money. And you can plan your meals better knowing that you’re going to have money for that food and you can get the right nutrients at the right times” (P16). Most participants emphasized the financial challenges they experienced when FFRx was briefly paused, as funding ended, especially because they were accustomed to budgeting for expenses differently when receiving food from FFRx.

### **Diverting government-funded income support elsewhere: “I’m saving that money for something else I needed”**

Similarly, participants reported that using FFRx to purchase healthy food enabled them to divert income from other sources (e.g. OW, ODSP) elsewhere. For many participants, income was diverted toward other necessities: “The money I [was] supposed to spend for groceries, it’s in my pockets. I’m saving that money for something else I needed” (P19). For example, by redeeming FFRx vouchers for fresh produce, participants could use other income to purchase meat (P04, P08, P20), or shoes or other clothing (P16, P19, P20). One participant was using the income FFRx freed up to pay for medical-related expenses, including her daughter’s transportation (via Uber) to school—as she had a serious injury and was unable to walk—as well as diabetes-related medication and supplies (metformin, needles) that were previously covered by her husband’s insurance before he was laid off (P20).

Others were able to divert income to leisure otherwise beyond their financial means, which may be important to other aspects of well-being:

I have a little bit [of] extra money. Not a whole lot, but that little bit extra. We can spend time together, maybe go to Timmy’s [Tim Horton’s restaurant chain] or something. We couldn’t do that before because it’s pretty strapped on ODSP (P03).

Similarly, another participant was emotional when sharing that she was able to take her son to a trampoline park with the extra savings, “and it was a good feeling that he doesn’t have to miss out on stuff ... he deserves that. You know, he hasn’t had a whole lot growing up” (P17).

### **Reducing income-related compromises, trade-offs and sacrifices: “I was limiting my stuff. At least I can afford it now”**

With the financial savings created by FFRx, participants explained that they reduced some of the compromises, trade-offs and sacrifices they were accustomed to making, even while accessing other income support programs:

I’m under the ODSP program. This program helps me to eat more healthy and is actually very helpful so I can buy the fruits I want. And everything is [getting] expensive. I was limiting my stuff. At least I can afford it now (P10).

Prior to FFRx or during the program “pause,” one participant stated, “I bought [fresh food] for my son, but I didn’t buy for myself. There was enough for one, but not for two” (P17); another said, “I was skipping meals or skipping my fruits for the day” (P10). Moreover, a few participants’ responses suggested that expectations related to food, and experiences of compromise, changed with FFRx. For example, in reference to the pause in the FFRx program, one participant shared:

Because I didn’t have any access to the vegetables [prior to FFRx], I didn’t realize how much I missed them. When I had to introduce it into my weekly budget [when FFRx was paused], I’m thinking, “Oh my gosh, it’s either I buy this or buy this” (P03).

It was clear from the discussion among some participants with children that expectations around food are distinct from other types of expenses, and particularly challenging to navigate with children’s needs when income is stretched:

Kids don’t understand the prices either, up [or] down. They don’t care [if] you can afford it or not. As parents, you have to provide for their needs, right? They start crying, “Give me food.” And I think they have a right to ask. But it’s hard ... without clothes, you can manage. If you [cannot] go on vacation, you can tell them like, “No, we cannot afford it. Just be patient.” But for the food, you cannot say, “Okay, stay hungry. Maybe tomorrow we can give you something” (P04).

Overall, amid the landscape of government-funded income supports, food prescribing enabled participants to extend income support to cover basic expenses more adequately; divert income to other necessities beyond rent and bills; and reduce the trade-offs and sacrifices they were accustomed to making, given the insufficiency of government income support and a rising cost of living.

## *The Fresh Food Prescription program in relation to other food assistance programs*

### **Using food assistance programs in combination: “I use them in conjunction, but I don’t use them as often”**

In interviews, 13 people stated they did not access any other food assistance programs, such as the food bank, community food pantries or food assistance programs



offered by nonprofit organizations, irrespective of FFRx (two were ineligible due to household income; two were unaware of other supports; two previously used supports and stopped; and seven were aware of supports but had never used them). Among interviewees, two mentioned using the food bank with the same frequency as they did prior to FFRx to access food items not available through FFRx, such as pantry products (P09, P20). Six interviewees said their frequency of accessing these other food assistance programs had changed since participating in FFRx, including two who had not used other supports at all since FFRx participation (P18, P22).

For most participants, FFRx did not fully replace other food assistance programs, but it did shift the frequency with which users accessed them and how they prioritized these programs (P03, P08, P10, P16). The food bank was described as supplementary in relation to FFRx: “I still use them in conjunction, but I don’t use them as often ... instead of [other programs] being the main source, FFRx is my main source now” (P16). Food banks were used “more so just to put extras in the house” (P08). One participant noted, “I used to go [to the food bank] a few times a year. But since this program started, I’ve maybe used it one or two times. That’s it. For extra stuff” (P10).

Similarly, other participants used food assistance programs in combination with FFRx to fill gaps in the program. For instance, other supports provided hygiene products or pet food not accessible through FFRx (P08) and more variety of canned food and pantry items (P03, P08, P09, P10). As one participant described, they use “the combination of everything ... different places offer different things” (P03). They went on to share what combining supports looks like in practice:

First I figure out with [FFRx]. I see what I have in my fridge. I kind of plan out what I need ... then I just sort of do it week by week. If I’m short and I can maybe get it at the food bank, then I go there. Because most of the places, you can use once a month. So I kind of stagger it so there’s always food in the house for everybody, which sometimes, without those services, I wouldn’t be able to do that (P03).

For those participants previously accessing other food assistance programs, enrolment in FFRx shifted their interactions with those services, typically toward reduced usage. Many participants made decisions to engage first with FFRx and considered other supports as supplementary, while a few participants used them equally in combination to meet diverse food needs.

#### **Facilitating access to fresh fruits and vegetables: “It allows me to get fruit”**

Participants described why FFRx was largely considered their first choice within the landscape of food assistance programs, prompting them to engage differently with other services. For many participants, the FFRx program facilitated access to fresh produce they would not otherwise be able to afford amid other expenses (P03, P04, P08, P09, P10, P12, P21). As one participant shared, “It allows me to get fruit... [Before FFRx] I’d just eat fast food or something of that nature. Processed food. So [FFRx] really was beneficial and it was much healthier” (P21). Similarly, a participant using ODSP income support explained, “You have to stretch your budget, so you’re not going to buy fresh vegetables and that. You’re going to [buy] the cheaper stuff, which is not good for you” (P03). FFRx therefore enabled participants to access healthier foods.

In comparison to other food assistance programs, FFRx was appreciated by many participants for the higher overall quality and freshness of food they could access (P01, P15, P16, P20). For example, one participant characterized the food they receive at the food bank this way:

[The food bank provides] more than enough to keep you alive for the month, and there is a lot of frozen things ... the food bank gives you staples that have a longer shelf life and you won’t starve. But FFRx is offering you all of the fresh fruits and vegetables (P17).

Two participants with particular health challenges (e.g. kidney issues, digestive problems) specifically noted the high salt and sugar content of boxed and canned food typically offered by other food assistance programs and expressed their appreciation for fresh produce from FFRx (P01, P20). Others noted receiving expired food (P18, P20) and produce of lesser quality (P03, P08, P09) at the food bank.

Additionally, the FFRx program facilitated physical access to food (via home delivery). This was reportedly a significant convenience that saved participants transportation money and time (P03, P05, P08, P10, P15), especially—as one participant noted—when living in an area without nearby grocery stores (P15). Two participants specifically mentioned they do not drive a car, so transportation was a notable barrier to other food assistance programs (P10, P16). Moreover, in response to the question of how FFRx helped financially, a participant stated:

I knew the food was there guaranteed. I didn’t have to drive around to different grocery stores shopping for deals. There was no waste of time, no wasted mental energy, no anxiety building in between—“who’s going to have a sale and who’s not?”—the food was always there ... [if] you can’t take the bus and you can’t afford a taxi, [delivery] takes a lot of stress off my head (P17).

Accessibility vis-à-vis delivery had implications for mental and physical wellness. For example, participants with agoraphobia and other complex mental health challenges echoed the benefits of home delivery, especially in comparison to the triggering social environment of some food assistance locations (P09, P16). As well, participants with complex physical health challenges also noted the significant benefit of delivery (P08, P12, P20).

Finally, participants spoke to the accessibility of FFRx (e.g. no proof of income required) as distinct from other food assistance programs. Some participants described feeling ineligible for food bank support (P04, P17, P18) or being deterred by needing to show documentation of income (P10, P16). In one participant’s words, “If you’re hungry, it should never be a ‘no’ [from a food program]” (P21).

As participants illustrated, aspects of the FFRx program design (i.e. quality of food, delivery), as well as the program’s provision of fresh produce, which was otherwise less accessible when reliant on government income support, influenced participants’ perceptions of FFRx as the first choice amid the broader food assistance landscape.

#### **Communicating dignity and care: “It just makes you feel that you are treated as human”**

The FFRx program was perceived as a food assistance program amid the broader

landscape that implicitly communicates dignity through the structure and operations of the program. In part, the experience of dignity for participants was linked to the flexibility of the program and the way it allowed for choice (P10, P12). Other programs were noted to have limited options that “[are] prepared for your family” (P20)—where “you sort of have to take whatever they have” (P03), “it’s whatever they have on hand” (P16), and “they’re just throwing a box at you, saying ‘there you go’” (P08). As expressed by one participant in relation to other food programs and making decisions about service use, “I don’t find things that I need, so I just rather prefer not going” (P05).

The ability to choose one’s food basket with FFRx was described as particularly important by participants who were newcomers to Canada. In reference to canned food from other programs, participants shared, “In our culture, we are not using that much. So that’s why I don’t want to use [those programs] because I don’t want to waste the food I’m receiving” (P20). Similarly, referring to the choice of fresh produce from FFRx, one participant said, “I know what to cook or what not. I’m not forced to do this or that ... it’s not changing my cultural way of eating or cooking” (P04). The fact that they were allowed this kind of choice was an important factor in individuals’ decision-making regarding food assistance program use.

Food delivery also communicated dignity to participants and was emphasized as a key distinction of FFRx among the broader service landscape: “It just makes you feel that you are treated as human, because they take the extra step to deliver all that to your home, to your doorstep ... I just feel with The SEED program, there’s so much dignity and self-esteem” (P15). This was in contrast to other food assistance programs that required being present in a physical or social environment that was uncomfortable for some participants and associated with negative experiences (P08, P09, P15).

Moreover, the fact “... that you’re actually buying [food]” (P08; i.e. with a voucher), “you’re purchasing, you don’t feel like you’re receiving for free” (P10) was another operational feature of the FFRx program that communicated dignity in relation to other food assistance programs in which an individual is only a recipient. Finally, it

was noted that FFRx communicated care for individuals receiving food, particularly through the caring demeanour of program staff and the personal connection and lack of judgment participants felt from staff (P03, P16). As one participant expressed:

The [staff are] so friendly. They don’t make you feel like you’re beneath them. And I think that’s why a lot of people don’t seek out the help, because they feel that people are going to judge them, but [FFRx staff] don’t, and that’s what makes it feel okay about using the services (P03).

Decision-making and engagement with food assistance programs was notably complex and, as illustrated, informed by participants’ experiences of dignity and care through the program’s design and staffing, as well as participants’ reflections on how they were perceived by others within a given service or support.

Overall, participation in the FFRx program did not explicitly change attitudes towards or ability to access other food assistance programs so much as it enabled participants to change their relationship to other programs (i.e. reduce frequency of access or prioritize certain food items when accessing other programs). Their attitudes towards FFRx were expressly positive in relation to other food assistance programs, with the exception of challenges related to the program’s long-term sustainability, the shelf-life of fruits and vegetables at times, and the desire for continued expansion of the types of products offered beyond fresh produce. Aspects of the program’s design and implementation (e.g. accessibility, degree of choice of products, delivery, quality of staff interactions) made FFRx the preferred choice among all interviewed participants in relation to other food assistance programs, and consequently shifted their engagement with those services (Figure 1).

## Discussion

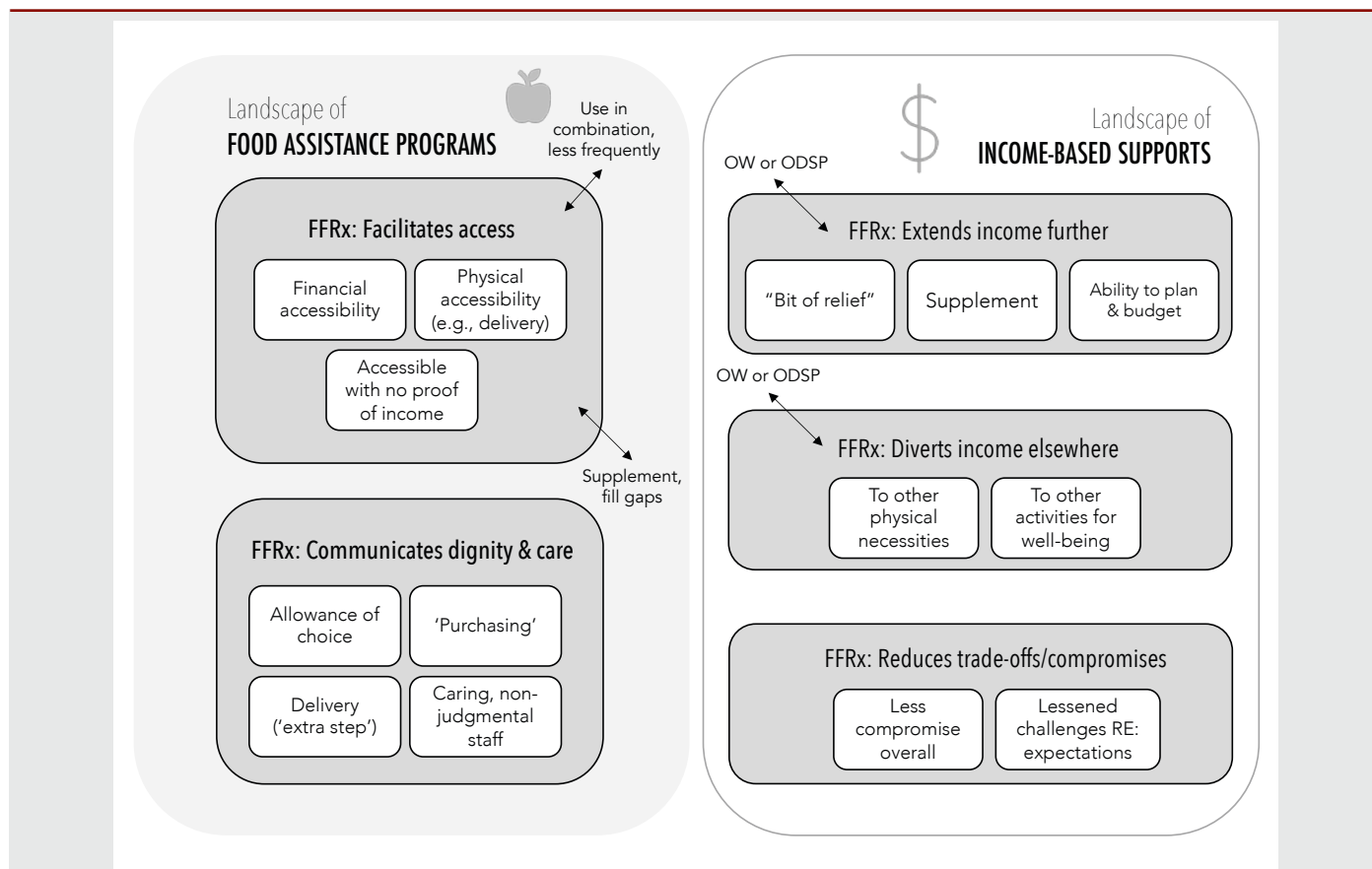
With growing interest in social prescribing, and food prescribing more specifically, a need exists for ongoing evaluation of these programs within the broader social service landscape. Few studies to date have examined the impact of food prescribing with this broader lens,<sup>19</sup> a gap which our study aimed to address.

Our findings add to the growing evidence that food prescribing can facilitate increased access to fresh fruits and vegetables for income-insecure individuals,<sup>2,7</sup> allow for autonomy over food choices, and provide a sense of dignity and care that can differ from other food assistance programs.<sup>20-22</sup> Many study participants exchanged one form of “go-to” support in favour of FFRx and reduced usage of other food assistance programs. Food prescribing was not simply another support to layer on, but an initiative that also shaped participants’ decisions regarding other services. Importantly, these findings underscore that the introduction of a food prescribing program can affect the level of interaction with other supports—that when creating a new program within a complex web of existing income-based supports and food assistance programs, individuals may make choices to engage differently with pre-existing programs. As has been discussed elsewhere,<sup>23,24</sup> decision-making regarding social service usage is complex, informed by individuals’ experiences with and attitudes toward a given service, among many other motivations, priorities and considerations.

These findings also have wider implications for social prescribing. New social prescribing initiatives do not emerge in isolation, but within a complex landscape of social services inclusive of income-based supports and food assistance programs. Thus, there is a need to evaluate how these new initiatives will shape individuals’ decision-making, behaviours, and interaction with other services and supports, and more fundamentally influence the broader social service landscape.

One of the pressing critiques of food prescription programs is their inability to address the root cause of food insecurity—financial insecurity—and the assertion that resources would be more aptly directed towards income support, a living wage and broader systems-level change.<sup>9,25</sup> We add to this discourse evidence of the benefits of these programs beyond the financial, such as the time-saving value of the FFRx program, as well as the experience of dignity and care in the provision of support. These findings relate to program design and highlight opportunities for future food prescription programs to critically assess the ways in which their programs can enhance nonmonetary benefits to participants. It may also complicate the “cash versus food” debate within

**FIGURE 1**  
Visual synthesis of qualitative findings



**Abbreviations:** FFRx, Fresh Food Prescription; ODSP, Ontario Disability Support Program; OW, Ontario Works.

**Note:** The Fresh Food Prescription (FFRx) program interacts with the broader social service landscape of both food assistance programs and income-based supports. FFRx is used in combination with other food assistance programs and is perceived as a service within the broader landscape that is accessible and communicates dignity and care. FFRx extends government-funded income further to cover living expenses; enables participants to divert income to other needs; and allows participants to reduce the trade-offs and compromises they make with respect to basic needs.

food prescribing<sup>26</sup> by pointing to the more nuanced benefits of these programs that factor into individuals' engagement with and experiences of alternative services and supports.

Moreover, in relation to income security, FFRx participants reported being able to extend income support towards expenses such as rent and utility bills, divert income to other necessities such as clothing and uninsured medications, and more adequately cover basic needs rather than making difficult sacrifices and trade-offs. These findings align with that of other food prescription initiatives<sup>7,23</sup> and also point to the ability of a food prescribing program to provide more space in a household's discretionary budget.<sup>27,28</sup>

Thus, despite not squarely addressing the underlying determinants of food insecurity,<sup>9</sup> participation in FFRx enabled a range of benefits related to income supports and

financial security. Further research is needed to examine the longer-term impacts of participation in a food prescription program on financial security and in relationship to other income-based supports and services. Additionally, research is also needed to examine cost-effectiveness of food prescribing programs, recognizing the administrative costs associated with the high degree of support required (e.g. food delivery, in the case of FFRx; program staffing; and health care provider ["prescriber"] time).<sup>26</sup> A recent review did not highlight delivery as a common feature of food prescribing programs.<sup>2</sup> More research is required to evaluate the sustainability implications of delivery, specifically, while also considering the value of this program feature to participants, as outlined in our findings.

### Strengths and limitations

This study provides an in-depth examination of participant experiences with fresh

food prescribing; however, it is limited to the perspectives of participants within one food prescribing program in Ontario, Canada, with access to particular income-based supports and food assistance programs. Further evaluations are needed that consider the interactions among food prescribing programs and their broader social services context. Indeed, the FFRx program was a pilot intervention within this broader social services landscape and was intended to contribute to a growing number of initiatives that aim to address food insecurity using different means.

Additionally, there is the possibility of selection bias among our study participants. Those willing to participate may already have been more engaged with FFRx and, therefore, more likely to speak positively about the program. Moreover, the majority of study participants identified as women (n = 16; 69.6%). While this may reflect to some degree the often-gendered



role of women in food provision, this high proportion of women in our study limited the breadth of perspectives we may have heard from men or gender-diverse individuals. It is possible that gender could influence people's decision-making as to what services to use and in what combination, as well as awareness of food prescribing in relation to other services and supports. Similarly, identifying as a person of a racialized group may also shape decision-making and awareness related to service use and food prescription program experience, though we did not specifically examine this within our study. These are areas for future research that would expand the current scope of available food prescribing evaluations.

## Conclusion

This study provides insight into how participation in a food prescribing program (FFRx) influenced individuals' interactions with other income-based supports and food assistance programs. FFRx enabled participants using income-based supports to more adequately cover living expenses, afford other necessities and reduce financial sacrifices. Utilizing FFRx shifted participants' frequency of using other food assistance programs, as food prescribing was the preferred choice due to the program's design and participants' experience of dignity with the support. Overall, findings from this study may be useful for other social prescribing initiatives by highlighting the value of particular program characteristics (e.g. delivery, quality of products, customizability, choice) and the need to consider the broader social services landscape, and the interaction between services, in the evaluation of new social prescribing initiatives.

## Acknowledgements

The authors wish to express gratitude to the FFRx participants, who generously shared their perspectives and experiences with the program for this study. Funding for the FFRx research project was received from the Sprott Foundation, the McConnell Foundation, Kindred Credit Union, The City of Guelph Community Fund, MAZON Canada, a Mitacs Accelerate Grant (no. IT26188), and a Canadian Institutes of Health Research Planning and Dissemination Grant (no. 478709). Laura Jane Brubacher receives funding from a Social Sciences and Humanities Research Council of Canada Postdoctoral Fellowship Award. Matthew

Little receives funding from a Michael Smith Health Research BC Scholar Award.

## Conflicts of interest

The authors declare no conflicts of interest.

## Authors' contributions and statement

LJB—conceptualization, methodology, formal analysis, writing—original draft.

ML—conceptualization, funding acquisition, writing—review and editing.

AR—conceptualization, funding acquisition, project administration, writing—review and editing.

WD—conceptualization, funding acquisition, writing—review and editing.

The content and views expressed in this article are those of the authors and do not necessarily reflect those of the Government of Canada.

## References

1. Bhat S, Coyle DH, Trieu K, et al. Healthy food prescription programs and their impact on dietary behavior and cardiometabolic risk factors: a systematic review and meta-analysis. *Adv Nutr*. 2021;12(5):1944-56. <https://doi.org/10.1093/advances/nmab039>
2. Little M, Rosa E, Heasley C, Asif A, Dodd W, Richter A. Promoting healthy food access and nutrition in primary care: a systematic scoping review of food prescription programs. *Am J Health Promot*. 2022;36(3):518-36. <https://doi.org/10.1177/08901171211056584>
3. Downer S, Berkowitz SA, Harlan TS, Olstad DL, Mozaffarian D. Food is medicine: actions to integrate food and nutrition into healthcare. *BMJ*. 2020;369:m2482. <https://doi.org/10.1136/bmj.m2482>
4. Cafer A, Rosenthal M, Smith P, et al. Examining the context, logistics, and outcomes of food prescription programs: a scoping review. *Res Soc Adm Pharm*. 2023;19(1):57-68. <https://doi.org/10.1016/j.sapharm.2022.09.007>
5. Aiyer JN, Raber M, Bello RS, et al. A pilot food prescription program promotes

produce intake and decreases food insecurity. *Transl Behav Med*. 2019;9(5):922-30. <https://doi.org/10.1093/tbm/ibz112>

6. Jones LJ, VanWassenhove-Paetzold J, Thomas K, et al. Impact of a fruit and vegetable prescription program on health outcomes and behaviors in young Navajo children. *Curr Dev Nutr*. 2020;4(8):nzaa109. <https://doi.org/10.1093/cdn/nzaa109>
7. Heasley C, Clayton B, Muileboom J, et al. "I was eating more fruits and veggies than I have in years": a mixed methods evaluation of a fresh food prescription intervention. *Arch Public Health*. 2021;79:135. <https://doi.org/10.1186/s13690-021-00657-6>
8. Ridberg RA, Bell JF, Merritt KE, Harris DM, Young HM, Tancredi DJ. A pediatric fruit and vegetable prescription program increases food security in low-income households. *J Nutr Educ Behav*. 2019;51(2):224-30. <https://doi.org/10.1016/j.jneb.2018.08.003>
9. Tarasuk V, McIntyre L. Reconsidering food prescription programs in relation to household food insecurity. *J Nutr*. 2022;152(11):2315-6. <https://doi.org/10.1093/jn/nxac175>
10. Tarasuk V, Mitchell A. Household food insecurity in Canada, 2017-18. Toronto (ON): PROOF—Food Insecurity Policy Research; 2020. 27 p. Available from: <https://proof.utoronto.ca/wp-content/uploads/2020/03/Household-Food-Insecurity-in-Canada-2017-2018-Full-Reportpdf.pdf>
11. Guelph & Wellington Task Force for Poverty Elimination. Guelph-Wellington food access guide. Guelph (ON): Guelph & Wellington Task Force for Poverty Elimination; 2019. 36 p. Available from: <https://www.ugdsb.ca/willow/wp-content/uploads/sites/9/2019/12/2019-Food-Access-Guide-FINAL.pdf>
12. Guelph & Wellington Task Force for Poverty Elimination. COVID-19 resource: Guelph emergency food access. Guelph (ON): Guelph & Wellington Task Force for Poverty Elimination; 2022. 3 p. Available from: <https://www.gwpoverity.ca/wp-content/uploads/2022/01/COVID-19-Guelph-Food-Access-January-2022-update.pdf>

13. Dodd W, Nelson E. Shifting discourse and practice on food banks: insights from a community–university partnership. *VOLUNTAS Int J Volunt Nonprofit Organ.* 2020;31(5):881-93. <https://doi.org/10.1007/s11266-018-0012-0>
14. Ministry of Children, Community and Social Services. Chapter 3, Section 3.09: Ontario Disability Support Program. In: Office of the Auditor General of Ontario. Annual report 2019. Vol 1. Toronto (ON): Queen’s Printer for Ontario; 2019:512-73. Available from: [https://www.auditor.on.ca/en/content/annualreports/arreports/en19/v1\\_309en19.pdf](https://www.auditor.on.ca/en/content/annualreports/arreports/en19/v1_309en19.pdf)
15. The Corporation of the County of Wellington. 2019 Ontario Works caseload profile. Guelph (ON): The Corporation of the County of Wellington; 2020. 20 p. Available from: <https://www.wellington.ca/en/social-services/resources/2019-Ontario-Works-Caseload.pdf>
16. Health Canada. Canadian Community Health Survey, cycle 2.2, nutrition (2004): income-related household food security in Canada—Appendix A: Household Food Security Survey Module (HFSSM) [Internet]. Ottawa (ON): Government of Canada; [modified 2008 Jan 7; cited 2024 Feb 23]. Available from: <https://www.canada.ca/en/health-canada/services/food-nutrition/food-nutrition-surveillance/health-nutrition-surveys/canadian-community-health-survey-cchs/canadian-community-health-survey-cycle-2-2-nutrition-2004-income-related-household-food-security-canada-health-canada-2007.html#appa>
17. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol.* 2006;3(2):77-101. <https://doi.org/10.1191/1478088706qp063oa>
18. DeCuir-Gunby JT, Marshall PL, McCulloch AW. Developing and using a codebook for the analysis of interview data: an example from a professional development research project. *Field methods.* 2011;23(2):136-55. <https://doi.org/10.1177/1525822X10388468>
19. McWhorter JW, Aiyer JN, Ranjit N, et al. Perspectives of health care staff on predictors of success in a food prescription program: a qualitative study. [Research brief.] *Prev Chronic Dis.* 2023;20:220178. <https://doi.org/10.5888/pcd20.220178>
20. Johnson JK, Vingilis E, Terry AL. Patients’ experiences with a community fruit and vegetable box program prescribed by their health provider. *BMC Public Health.* 2023;23(1):869. <https://doi.org/10.1186/s12889-023-15685-w>
21. Schlosser AV, Smith S, Joshi K, Thornton A, Trapl ES, Bolen S. “You guys really care about me...”: a qualitative exploration of a produce prescription program in safety net clinics. *J Gen Intern Med.* 2019;34(11):2567-74. <https://doi.org/10.1007/s11606-019-05326-7>
22. Pollard CM, Booth S. Food insecurity and hunger in rich countries—it is time for action against inequality. *Int J Environ Res Public Health.* 2019;16(10):1804. <https://doi.org/10.3390/ijerph16101804>
23. Zimmer R, Strahley A, Weiss J, et al. Exploring perceptions of a fresh food prescription program during COVID-19. *Int J Environ Res Public Health.* 2022;19(17):10725. <https://doi.org/10.3390/ijerph191710725>
24. Schlosser AV, Joshi K, Smith S, Thornton A, Bolen SD, Trapl ES. “The coupons and stuff just made it possible”: economic constraints and patient experiences of a produce prescription program. *Transl Behav Med.* 2019;9(5):875-83. <https://doi.org/10.1093/tbm/ibz086>
25. Barnidge EK, Stenmark SH, DeBor M, Seligman HK. The right to food: building upon “food is medicine.” *Am J Prev Med.* 2020;59(4):611-4. <https://doi.org/10.1016/j.amepre.2020.04.011>
26. Little M, Dodd W, Brubacher LJ, Richter A. Food prescribing in Canada: evidence, critiques and opportunities. *Health Promot Chronic Dis Prev Can.* 2024;44(6):279-83. <https://doi.org/10.24095/hpcdp.44.6.04>
27. PROOF: Food Insecurity Policy Research. The spending patterns of food insecure households [Fact sheet]. May 2018. 1 p. Available from: <https://proof.utoronto.ca/wp-content/uploads/2018/05/spending-patterns.pdf>
28. Fafard St-Germain A-A, Tarasuk V. Prioritization of the essentials in the spending patterns of Canadian households experiencing food insecurity. *Public Health Nutr.* 2018;21(11):2065-78. <https://doi.org/10.1017/S1368980018000472>



## Commentary

# Food prescribing in Canada: evidence, critiques and opportunities

Matthew Little, PhD (1); Warren Dodd, PhD (2); Laura Jane Brubacher, PhD (2); Abby Richter, RD, MAN (3,4)

Commentary by Little M et al.  
in the HPCDP Journal  
licensed under a [Creative Commons Attribution 4.0 International License](#)

### Abstract

**Introduction:** There is growing interest in food prescriptions, which leverage health care settings to provide patients access to healthy foods through vouchers or food boxes. In this commentary, we draw on our experiences and interest in food prescribing to provide a summary of the current evidence on this intervention model and critically assess its limitations and opportunities.

**Rationale:** Food insecurity is an important determinant of health and is associated with compromised dietary adequacy, higher rates of chronic diseases, and higher health service utilization and costs. Aligning with recent discourse on social prescribing and “food is medicine” approaches, food prescribing can empower health care providers to link patients with supports to improve food access and limit barriers to healthy diets. Food prescribing has been shown to improve fruit and vegetable intake and household food insecurity, although impacts on health outcomes are inconclusive. Research on food prescribing in the Canadian context is limited and there is a need to establish evidence of effectiveness and best practices.

**Conclusion:** As food prescribing continues to gain traction in Canada, there is a need to assess the effectiveness, cost-efficiency, limitations and potential paternalism of this intervention model. Further, it is necessary to assess how food prescribing fits into broader social welfare systems that aim to address the underlying determinants of food insecurity.

**Keywords:** *food prescribing, food insecurity, dietary adequacy, chronic disease prevention, chronic disease management, food is medicine, social prescribing*

### Introduction

Food insecurity is a public health crisis in Canada. A wide body of literature links household food insecurity, defined as inadequate or insecure access to food due to financial constraints,<sup>1</sup> to compromised dietary adequacy,<sup>2</sup> higher rates of chronic diseases and infections,<sup>3</sup> poorer mental health<sup>4</sup> and premature mortality.<sup>5</sup> Further, household food insecurity is associated with higher health service utilization and costs.<sup>1</sup> Food insecurity is therefore an

important social determinant of health that must be urgently addressed through poverty alleviation and public health measures.

There is growing interest in leveraging primary health care settings to provide patients with better access to healthy foods to simultaneously address food insecurity and improve nutritional adequacy and health. “Food prescriptions” are an area of innovation and exploration, whereby health care practitioners identify patients who are food insecure or at risk

### Highlights

- Food prescribing is one of several “food is medicine” approaches that leverage health care interactions to address food insecurity and improve nutrition among patients.
- Food prescribing has been shown to improve fruit and vegetable intake and household food insecurity.
- There is a need to critically evaluate the effectiveness and cost-efficiency of food prescribing relative to other health care, public health and social welfare programs.

of diet-related chronic diseases and provide them access to subsidized or free healthy foods.<sup>6</sup> Food prescriptions align with recent calls for social prescribing, in which health care providers connect patients directly to nonclinical services to address social determinants of health and improve health and well-being.<sup>7</sup> Food prescribing is one of several “food is medicine” approaches, alongside medically tailored meals and groceries.<sup>8</sup>

Food prescribing programs and research have rapidly gained popularity in the United States, driven by the 2018 Farm Bill, a federal bill that included USD 25 million of funding to implement and evaluate fruit and vegetable prescribing in

### Author references:

1. School of Public Health and Social Policy, University of Victoria, Victoria, British Columbia, Canada
2. School of Public Health Sciences, University of Waterloo, Waterloo, Ontario, Canada
3. Guelph Community Health Centre, Guelph, Ontario, Canada
4. The SEED, Guelph, Ontario, Canada

**Correspondence:** Matthew Little, HSD 202d, University of Victoria, 3800 Finnerty Rd., Victoria, BC V8P 5C2; Tel: (519) 803-3198; Email: [matthewlittle@uvic.ca](mailto:matthewlittle@uvic.ca)



health care.<sup>9</sup> While the volume of food prescribing programs and research in the Canadian context is substantially lower, food prescribing models have been adopted and evaluated in several settings in Alberta<sup>10</sup> and Ontario.<sup>11-13</sup> Such models have been the subject of much discourse in media, academia and not-for-profits, underscoring the mounting interest in food prescribing.

Our research team has collaborated with the Guelph Community Health Centre (CHC) since 2019 to implement and evaluate multiple phases of a fruit and vegetable prescription program called Fresh Food Prescription (FFRx).<sup>11</sup> Drawing on our direct experience and keen interest in this intervention model, our aim is to provide a critical assessment of food prescribing in Canada.

### **What is the current evidence on food prescribing?**

Food prescribing interventions rely on health care practitioners (e.g. physicians, nurse practitioners and allied health professionals) to identify eligible patients and provide a food prescription, which often includes vouchers redeemable for fruits and vegetables, access to a nutritionist or dietitian, and/or food literacy programming (e.g. nutrition education, pamphlets, cooking classes, etc.).<sup>14</sup> While there have been dozens of recent evaluations of food prescribing programs in the United States, there remains little consensus on impacts and best practices, and evidence in the Canadian context is limited. Many pre-post intervention studies (including ours) report improved fruit and vegetable consumption and reduced household food insecurity among recipients of food prescriptions.<sup>6,14</sup> In one meta-analysis, pooled estimates revealed a 22% increase in fruit and vegetable consumption among recipients.<sup>14</sup> However, evidence for the impacts of food prescribing on patient health outcomes is far less conclusive, with some studies reporting improvements in pre-post blood pressure,<sup>15,16</sup> BMI<sup>17</sup> and HbA1c (among people with diabetes),<sup>18</sup> but many others reporting no measurable health improvements.<sup>19</sup>

Simulation studies suggest that implementing produce prescriptions may generate substantial health gains and be highly cost effective,<sup>20</sup> but no studies have yet examined impacts on real-world health care utilization and spending. Furthermore, the evidence base on food prescribing is

plagued by severe methodological limitations, including small sample sizes; limited intervention duration (usually < 23 weeks); incomplete outcome data; nonvalidated measurement tools; and nonrandomized study designs without a control or comparison group.<sup>6</sup>

### **What is the state of food prescribing in Canada?**

Despite limited evidence, interest in food prescribing is rapidly growing in Canada. Reasons for this sudden attention are multiple. Expansion of food prescribing discourse has paralleled the emergence of social prescribing more broadly. Examples of such initiatives include the Rx: Community pilot project of the Alliance for Healthier Communities (which supported 11 health centres across Ontario in initiating social prescribing projects) and the newly established Canadian Institute for Social Prescribing (CISP), which is anchored by the Canadian Red Cross and acts as a national knowledge-sharing hub.

It is likely that Canadian health care providers, community organizations and researchers have gained inspiration from those in the United States, where an explosion of food prescribing has followed federal government investment since 2018.<sup>9</sup> One can also see the attractiveness of food prescribing as a concept, which proposes a relatively simple solution—grounded in the familiarity and persuasiveness of “doctor’s orders”—to multiple crises, including food insecurity, dietary adequacy, nutrition-related chronic diseases and even planetary health.<sup>21</sup> Support for food prescribing has also been driven by several not-for-profit agencies, including the Maple Leaf Centre for Food Security and Community Food Centres Canada. Despite this momentum, however, action on food prescribing in Canada remains nascent, with only a handful of (often temporary pilot) programs established and very few published research articles<sup>11,13</sup> evaluating the impacts of programs.

### **A critical examination of food prescribing in Canada**

It is likely that food prescribing will continue to gain traction in the Canadian context as funding initiatives and health care–community partnerships emerge from ongoing animated public discourse. As interest builds, it is important to critically examine this intervention strategy and

caution against the too-rapid widespread adoption until evidence of effectiveness and best practices can be established.

First, there is a need for further research on food prescribing in the Canadian context that incorporates large sample sizes, control groups and validated assessments of dietary intake, food security and health.<sup>6,14</sup> Evaluations should also discern which program models (retail grocery vouchers vs. market vouchers vs. food boxes, delivery vs. local pick-up, and co-pay models vs. no-pay models) and which intervention components (subsidized food, nutrition education or dietetic counselling) have the greatest impact on patient outcomes.<sup>22</sup> Researchers should also consider incorporating age and comorbidity subgroups.

Meanwhile, process evaluations should identify how intervention models can be successfully integrated into existing primary care practice across multiple settings (including community health centres, family health teams, hospital and long-term care settings, and student health clinics). Given the administrative burden of food prescribing, it is unclear if this intervention model is more cost-efficient than others in addressing nutrition-related health outcomes. Health economics research is therefore needed to determine the relative efficiencies of various food security and public health nutrition program models, including food prescribing, to reduce health care utilization and spending.

Access to health services, household food insecurity and nutrition-related chronic disease(s) are usually inclusion criteria for enrolment in food prescribing programs.<sup>6,14</sup> It is unsurprising that, when provided with free or subsidized produce, individuals experiencing food insecurity at baseline consume more fruits and vegetables and experience improved food security over the course of a food prescription program.<sup>14</sup> Yet, there is no evidence to suggest that benefits extend beyond the intervention period, as food prescriptions do little to address the underlying causes of food insecurity and dietary adequacy. As stated by Tarasuk and McIntyre, “Unlike policy interventions that reduce ... food insecurity in the population by improving vulnerable households’ abilities to afford food ... food prescription programs circumvent households’ financial constraints with respect to the purchase of food.”<sup>22,p.2315</sup>

Further, such programs may exclude individuals who do not access primary health care, those who are food insecure but not (yet) managing a chronic health condition, and those who are managing diseases that may be associated with food insecurity but not enforced as an inclusion criterion (e.g. mental health conditions). Food prescriptions that provide raw produce may also alienate potential participants with limited access to food preparation space and equipment. Such limitations threaten to exacerbate health inequities faced by populations experiencing food insecurity. Food prescribing therefore does not serve as a population-level solution to food insecurity and should not replace advocacy and policy initiatives that aim to address poverty and other structural determinants of food insecurity.

There is also the question of paternalism. Food prescriptions usually provide food boxes or vouchers that can be spent on eligible healthy foods, serving as a conditional cash transfer but without the freedom of choice to spend funds on whatever is deemed necessary by the recipient (such as housing and other non-food basic necessities). If the health care system can provide food, would it be more dignified to prescribe cash? The “cash versus food” debate has played out in other disciplines,<sup>23</sup> but with the advent of social prescribing, we must assess whether health care interactions are opportunities to provide targeted income support to address the social determinants of health. Preliminary evidence from FFRx suggests that most food prescription recipients preferred food prescriptions to cash, largely due to the quality of the food and the delivery service, which saved participants time and transportation costs. There may be additional benefits of food prescribing compared to income-based supports, including improved food literacy and inter-household food sharing; however, the cash-versus-food question should be investigated further.

A pressing question that has seen little attention is how food prescribing fits into the various income and social support mechanisms that make up current social welfare systems. The failure of income support programs to eliminate poverty in Canada has resulted in a patchwork of programs designed to alleviate the constellation of challenges—from housing vulnerability to food insecurity—faced by

low-income households.<sup>24</sup> Food banks, which are independent, not-for-profit organizations relying on private donations and grants, are the most common model of food assistance in Canada.<sup>25</sup> Food prescribing may address some of the limitations of food banks by leveraging health care interactions to provide targeted food assistance. Preliminary findings from our FFRx study suggest that users preferred food prescribing over food banks due to the convenience, overall food quality and experience of food prescribing as a less stigmatizing form of support.<sup>26</sup>

Moreover, FFRx users accessing income assistance (e.g. Ontario Works or Ontario Disability Support Program) reported that FFRx allowed them to spend cash previously allocated to food on other necessities.<sup>26</sup> However, it remains to be seen if food prescribing is more effective than food banks at addressing longer-term food insecurity and nutrition among recipients and whether food prescribing is preferred to food banks by users more broadly (i.e. beyond our FFRx model that included the convenience of free delivery and online ordering). Further, without a source of sustainable (government) funding, food prescribing risks becoming yet another grant-funded model that is implemented by small networks of providers in an ad hoc and time-limited manner.<sup>24</sup> In line with asset-based approaches to integrated care, there is a need to identify leverage points to build more robust practitioner-community partnerships and promote sustainable resource allocation to ensure the success of food prescribing programs.

An additional finding to emerge from our research is the crucial importance of food prescription program design, including aspects of referral management, accessibility and de-stigmatization. Team-based care approaches and charting for food insecurity in electronic medical records can simplify the process of identifying and referring patients for food prescription programs. Once a food prescription has been provided, the way people use it can vary dramatically depending on the program model. We reported very high voucher redemption rates in the most recent phase of FFRx (participants redeemed over 88% of vouchers, in comparison to 34.5%–59% in most other studies), likely due to the program’s convenience (it included online ordering and free delivery); regular contact with Guelph CHC staff and researchers; and routine efforts to contact disengaged

participants and address accessibility barriers.<sup>6,27</sup> Such findings suggest that food prescribing requires concerted efforts to improve accessibility and provide robust support mechanisms and regular engagement between staff, health care providers and participants to maximize program utilization. These efforts clearly necessitate a high administrative burden and underscore the need to ensure primary care providers and community partners are equipped and adequately resourced before implementing large-scale, sustainable and effective food prescribing interventions in Canada.

## Conclusion

Food prescribing is an innovative intervention model that shows promise for empowering health care providers to simultaneously address food insecurity, dietary adequacy and chronic disease management. As food prescribing gains momentum in Canada, it will be crucial to continue to gather and synthesize emerging evidence. While such programs may have a place in the Canadian health care and social welfare landscape, there is a need to critically evaluate their effectiveness and cost-efficiency relative to other health care, public health and social welfare programs.

## Acknowledgements

Funding for the FFRx research project was received from the Sprott Foundation, the McConnell Foundation, Kindred Credit Union, The City of Guelph Community Fund, MAZON Canada, a Mitacs Accelerate Grant (no. IT26188) and a Canadian Institutes of Health Research Planning and Dissemination Grant (no. 478709). Matthew Little receives funding from a Michael Smith Health Research BC Scholar Award.

## Conflicts of interest

The authors declare no conflicts of interest.

## Authors’ contributions and statement

ML—conceptualization, funding acquisition, writing—original draft; writing—review and editing.

WD—conceptualization, writing—review and editing.



LJB—conceptualization, writing—review and editing.

AR—conceptualization, project administration, writing—review and editing.

The content and views expressed in this article are those of the authors and do not necessarily reflect those of the Government of Canada.

## References

1. Tarasuk V, Cheng J, de Oliveira C, Dachner N, Gundersen C, Kurdyak P. Association between household food insecurity and annual health care costs. *CMAJ*. 2015;187(14):E429-E436. <https://doi.org/10.1503/cmaj.150234>
2. Hutchinson J, Tarasuk V. The relationship between diet quality and the severity of household food insecurity in Canada. *Public Health Nutr*. 2022; 25(4):1013-26. <https://doi.org/10.1017/S1368980021004031>
3. Vozoris NT, Tarasuk VS. Household food insufficiency is associated with poorer health. *J. Nutr*. 2003;133(1): 120-26. <https://doi.org/10.1093/jn/133.1.120>
4. Gregory CA, Coleman-Jensen A. Food insecurity, chronic disease, and health among working-age adults. Washington (DC): US Department of Agriculture; 2017. 2 p.
5. Men F, Gundersen C, Urquia ML, Tarasuk V. Association between household food insecurity and mortality in Canada: a population-based retrospective cohort study. *CMAJ*. 2020;192(3): E53-E60. <https://doi.org/10.1503/cmaj.190385>
6. Little M, Rosa E, Heasley C, Asif A, Dodd W, Richter A. Promoting healthy food access and nutrition in primary care: a systematic scoping review of food prescription programs. *Am J Health Promot*. 2022;36(3):518-36. <https://doi.org/10.1177/08901171211056584>
7. Nowak DA, Mulligan K. Social prescribing: a call to action. *Can Fam Physician*. 2021;67(2):88-91. <https://doi.org/10.46747/cfp.670288>
8. Mozaffarian D, Mande J, Micha R. Food is medicine—the promise and challenges of integrating food and nutrition into health care. *JAMA Intern Med*. 2019;179(6):793-5. <https://doi.org/10.1001/jamainternmed.2019.0184>
9. United States Department of Agriculture (USDA). Gus Schumacher Nutrition Incentive Program (GusNIP). Washington (DC): USDA; 2023 [cited 2023 Apr 14]. Available from: <https://www.nifa.usda.gov/grants/programs/hunger-food-security-programs/gus-schumacher-nutrition-incentive-program>
10. Olstad D, Beall R, Spackman E, et al. Healthy food prescription incentive programme for adults with type 2 diabetes who are experiencing food insecurity: protocol for a randomised controlled trial, modelling and implementation studies. *BMJ Open*. 2022; 12(2):e050006. <https://doi.org/10.1136/bmjopen-2021-050006>
11. Heasley C, Clayton B, Muileboom J, et al. “I was eating more fruits and veggies than I have in years”: a mixed methods evaluation of a fresh food prescription intervention. *Arch Public Health*. 2021;79:135. <https://doi.org/10.1186/s13690-021-00657-6>
12. Foodshare Toronto. Food Rx progress report. Toronto (ON): Foodshare Toronto; 2021. 6 p. Available from: <https://foodshare.net/custom/uploads/2021/08/Food-RX-Progress-Report.pdf>
13. Johnson JK, Vingilis E, Terry AL. Patients’ experiences with a community fruit and vegetable box program prescribed by their health provider. *BMC Public Health*. 2023;23(1):869. <https://doi.org/10.1186/s12889-023-15685-w>
14. Bhat S, Coyle DH, Trieu K, et al. Healthy food prescription programs and their impact on dietary behavior and cardiometabolic risk factors: a systematic review and meta-analysis. *Adv Nutr*. 2021;12(5):1944-56. <https://doi.org/10.1093/advances/nmab039>
15. Wetherill MS, Chancellor McIntosh H, Beachy C, Shadid O. Design and implementation of a clinic-based food pharmacy for food insecure, uninsured patients to support chronic disease self-management. *J Nutr Educ Behav*. 2018;50(9):947-9. <https://doi.org/10.1016/j.jneb.2018.05.014>
16. York B, Kujan M, Conneely C, Glantz N, Kerr D. Farming for Life: pilot assessment of the impact of medical prescriptions for vegetables on health and food security among Latino adults with type 2 diabetes. *Nutr Health*. 2020;26(1):9-12. <https://doi.org/10.1177/0260106019898995>
17. Cavanagh M, Jurkowski J, Bozlak C, Hastings J, Klein A. Veggie Rx: an outcome evaluation of a healthy food incentive programme. *Public Health Nutr*. 2017;20(14):2636-41. <https://doi.org/10.1017/S1368980016002081>
18. Bryce R, Guajardo C, Illaraza D, et al. Participation in a farmers’ market fruit and vegetable prescription program at a federally qualified health center improves hemoglobin A1C in low income uncontrolled diabetics. *Prev Med*. 2017;7:176-9. <https://doi.org/10.1016/j.pmedr.2017.06.006>
19. Hager K, Shi P, Li Z, et al. Evaluation of a produce prescription program for patients with diabetes: a longitudinal analysis of glycemic control. *Diabetes Care*. 2023;46(6):1169-76. <https://doi.org/10.2337/dc22-1645>
20. Wang L, Lauren BN, Hager K, et al. Health and economic impacts of implementing produce prescription programs for diabetes in the United States: a microsimulation study. *J Am Heart Assoc*. 2023;12(15):e029215. <https://doi.org/10.1161/JAHA.122.029215>
21. Adams EL, Figueroa R, White KE, et al. Prioritize “food is medicine” initiatives in the 2023 Farm Bill for Human and Planetary Health. Milwaukee (WI): Society of Behavioral Medicine; 2023. 3 p.
22. Tarasuk V, McIntyre L. Reconsidering food prescription programs in relation to household food insecurity. *J Nutr*. 2022;152(11):2315-16. <https://doi.org/10.1093/jn/nxac175>



- 
23. Gentilini U. The revival of the “cash versus food” debate: new evidence for an old quandary? [Policy research working paper no. 7584.] Washington (DC): World Bank; 2016. Available from: <https://doi.org/10.1596/1813-9450-7584>
  24. Tarasuk V, Davis B. Responses to food insecurity in the changing Canadian welfare state. *J Nutr Educ.* 1996;28(2): 71-5. [https://doi.org/10.1016/S0022-3182\(96\)70029-8](https://doi.org/10.1016/S0022-3182(96)70029-8)
  25. Tarasuk V, Dachner N, Loopstra R. Food banks, welfare, and food insecurity in Canada. *Br Food J.* 2014; 116(9):1405-17. <https://doi.org/10.1108/BFJ-02-2014-0077>
  26. Brubacher LJ, Little M, Richter A, et al. How does fresh food prescribing fit into the social service landscape? A qualitative study in Ontario, Canada. *Health Promot Chronic Dis Prev Can.* 2024;44(6):270-8. <https://doi.org/10.24095/hpcdp.44.6.03>
  27. Little M, Dodd W, Grewal A, Stringer E, Richter A. A 52-week fresh food prescribing program reduces food insecurity and improves fruit and vegetable consumption in Ontario, Canada. *Research Square* [Preprint]. 2023 [cited 2024 Apr 24]. Available from: <https://doi.org/10.21203/rs.3.rs-3084278/v1>

## Commentary

# Nature prescribing: emerging insights about reconciliation-based and culturally inclusive approaches from a tricultural community health centre

Anita Vaillancourt, PhD (1); Rebecca Barnstaple, PhD (2); Natalie Robitaille (2,3); Taylor Williams (2,4)

Commentary by Vaillancourt A et al.  
in the HPCDP Journal  
licensed under a [Creative Commons Attribution 4.0 International License](#)



### Abstract

This commentary highlights the importance of social and nature prescribing programs reflecting culturally diverse perspectives and practices. Creating and holding space for Indigenous and other worldviews should be a key priority of nature prescribing, a relatively recent practice in Canada that recognizes and promotes health benefits associated with engaging in a variety of activities in natural settings. Central to designing and delivering nature prescribing that is culturally inclusive and grounded in fulfilling obligations of reconciliation is recognizing the ongoing dominance of Western worldviews and their associated implications for decolonizing and Indigenizing nature-based programming. Consciously working to expand Western values, with the aim of extending nature prescribing practices beyond mere nature exposure to fostering emotional connections to nature, is a critically important part of the ongoing development of nature-based interventions and nature prescribing.

**Keywords:** *nature prescribing, nature connection, culturally inclusive, decolonization*

### Introduction

The benefits of nature exposure are widely recognized<sup>1</sup> and include a range of positive physical and mental health outcomes such as reductions in stress responses, lowered blood pressure, reduced symptoms of anxiety and depression, and increases in physical activity such as walking.<sup>2,3</sup> Nature prescribing is gaining momentum as a treatment modality for a range of chronic conditions including various mental health issues. Like social prescribing, nature prescription maintains similar objectives, such as reducing chronic disease burdens<sup>1</sup> and redirecting nonmedical issues away from the primary health care system by leveraging social care resources and supports to address non-medical, nonclinical health.<sup>1</sup>

Nature prescriptions are generally provided by a health care or social service provider who recommends a specific period of time for the individual to spend in a natural setting.<sup>4</sup> Following the lead of other nations such as the United Kingdom and, more recently, the United States in their creation of social and nature prescribing programs, Canada has very recently engaged in developing nature prescribing, with most provinces offering programs in various stages of development. Ontario established formal social prescribing initiatives as early as 2018, and nature prescribing in British Columbia commenced in 2020 with the “PaRx” initiative of the BC Parks Foundation, with other provinces following suit; for example, Quebec with Prescri-Nature in 2023.

### Highlights

- Nature prescribing is an increasingly recognized aspect of social prescribing that acknowledges and promotes enhanced health benefits associated with natural settings to address illness and promote health and wellness.
- The Western worldview maintains a narrow view of human relations with nature, consisting of human-centric needs and interests. The limited priority that the Western worldview places on the relationship with nature and the importance of establishing and maintaining nature connection, may limit the potential reach and benefits of nature prescribing.
- Nature prescribing efforts should recognize pre-existing, nature-based approaches such as land-based healing practised by Indigenous people and ensure culturally inclusive design and practices.

Despite the utility of drawing upon established practice and programming from other nations, factors specific to Canada must be recognized in order to appropriately respond to the diverse cultural issues

### Author references:

1. School of Social Work, Faculty of Health and Behavioural Sciences, Lakehead University, Orillia, Ontario, Canada
2. Community Programs and Engagement, Chigamik Community Health Centre, Midland, Ontario, Canada
3. School of Interdisciplinary Science, McMaster University, Hamilton, Ontario, Canada
4. School of Nursing Nipissing University, North Bay, Ontario, Canada

**Correspondence:** Anita Vaillancourt, School of Social Work, Faculty of Health and Behavioural Sciences, Lakehead University, 500 University Avenue, Orillia, ON L3V 0B9; Tel: (705) 330-4008 ext. 2620; Email: [anita.vaillancourt@lakeheadu.ca](mailto:anita.vaillancourt@lakeheadu.ca)

and needs related to social and nature prescribing. Historical and contemporary colonialism that continues to impact and disadvantage Indigenous and other racialized groups manifests in ways that are unique to Canada.

A key issue is the legacy of settler colonialism, a system of colonization in which the colonizers not only settle on the invaded territory permanently, but work to establish themselves as naturalized and the legitimate occupants of the land.<sup>5</sup> This type of colonialism is unique to Turtle Island (North America) and has been deeply damaging to Indigenous Peoples by dispossessing them of their land base and, by extension, disrupting their cultural identities, traditions, languages and spiritual connection to their traditional territories.<sup>5</sup> Assimilation strategies and the resulting dominance of Western worldviews and colonial logics continue to reinforce economic, political, social and health inequities and disadvantages experienced by Indigenous Peoples. These challenges are widely attributed to the disconnection of Indigenous people from their ancestral lands<sup>6</sup> and the ongoing marginalization of Indigenous worldviews within the Western context.<sup>7,8</sup> Acknowledging the historical and ongoing impacts of settler colonization is therefore critical to developing culturally relevant and appropriate nature prescribing programming and practices.

This commentary draws on insights gained from the social and nature prescribing program developed (and practised) at Chigamik Community Health Centre (CHC) alongside a research partnership with Lakehead University. In particular, this discussion identifies several important issues and considerations surrounding design and practice implications for Indigenous people and inclusive nature prescribing. As this program is informed by a unique local context that includes Indigenous participants, practitioners and partners, it has led to the consideration that while Western models of “nature” and “green” prescribing contain elements that may reflect some aspects of Indigenous practices, such as land-based healing, important distinctions remain in terms of terminology, purpose, scope, framing and intent.

Chigamik CHC is a tricultural organization that provides primary and allied health care to Indigenous, Francophone and other

historically marginalized community members of North Simcoe Muskoka, Ontario. In the spring of 2023, Chigamik CHC implemented a novel social prescribing program aimed at supporting better mental health through client-centred co-design and strengthened community supports. Thus far, the focus of nature prescribing at Chigamik has been the facilitation of access to locally identified natural areas through reducing barriers such as membership costs and transportation. Concurrently, Chigamik has expanded land-based healing programs designed for and by First Nation and Métis community members, enhancing capacity through an increase in opportunities, resources and dedicated support staff. The overlap in intent to support holistic health and well-being through client-centred program design has led to considering similarities and differences in these programs and worldviews, and the role a land-based or nature context plays in social prescribing. Situating nature prescribing programs to reflect diverse community voices, we propose that cultural conceptions of “nature” be considered and accounted for in both the language and the type of social prescription, the expected outcomes, and the mechanism of action. Beyond “green and blue [water]” prescribing, much of which has focussed on physical activity and stress reduction, being in nature or with the land also embodies the capacity to function relationally. This occurs as an aspect of identity, and as a profound locus for meaning making and support that may mirror or transcend Western concepts of social connection. These aspects may also foster other benefits such as reductions in isolation and loneliness, elements that are notably the primary outcome measures for Chigamik CHC’s current initiative, which aims to improve mental health through social prescribing. Connectedness to nature has been shown to promote well-being and pro-environmental behaviours that can foster engagement and responsible relations with nature.<sup>9</sup>

### What is nature prescribing?

Nature prescribing is emerging as a significant aspect of social prescribing, with a range of terms and concepts associated with these practices. However, there is not a universal definition,<sup>1</sup> with the result that nature prescribing is often used interchangeably with other terms, such as “green prescribing,” “green social prescribing” and “nature-based social prescribing,” and described as time spent in green

spaces such as parks, grasslands, forests or gardens.<sup>10</sup> Stanhope and Weinstein<sup>11</sup> point out that the lack of specificity and conflation of green prescriptions with nature-based prescribing has led to confusion surrounding meaning, and mistaken attribution of study results in which lifestyle changes such as increased physical activity have been used to support the effectiveness of nature-based activities. In their systematic analysis of human health benefits associated with forest activities, Park et al.<sup>12</sup> identified four types of activities: staying, walking, exercise and indirect exposure. They also specified that forest-based interventions differ from “mere experiences,” as they are intentionally designed by experts to achieve direct health benefits.

Much of the research reported on nature prescribing tends to focus on physical activity and stress reduction occurring in a natural setting, rather than relational aspects or meaning making, reducing nature to a setting for activities that could happen elsewhere, while suggesting that effects may be enhanced by their occurring in an outdoor environment. In their narrative review, Jiminez et al.<sup>13</sup> suggest that potential pathways through which nature may influence health include increased opportunities for social engagement and space for physical activity, removed from harmful effects of air pollution, noise and heat.

Note that the emphasis here is on social engagement between people and does not extend to relations with nature itself. The limited focus on nature connection or relationality reflects constraints within the dominant Western paradigm that may limit the effectiveness of interventions for diverse populations. Congruence of the worldviews underlying nature prescribing program goals, objectives and practices with those of program participants is important to ensure inclusion, but also to ensure respect for other worldviews and as a means to inform and expand Western conceptualizations about nature and associated stewardship responsibilities.

### Land-based healing

In contrast with the Western conceptions of nature and the practice of nature or green prescribing, which focusses on holding wellness activities in natural spaces, with little to no attention to relationality to nature or nature connection, “land-based healing” is widely practised

in Indigenous communities. Land-based healing combines Indigenous knowledge and cultural traditions to help people heal. Land is crucial for cultural preservation and as a place of self-expression and traditional survival. Accordingly, land-based healing programs have become effective therapies for mental health, addiction treatment and complex trauma recovery by reconnecting Indigenous people with their ancestral lands, identities and traditions.<sup>14</sup> In recognition of the impacts of colonization on Indigenous people, steps are taken in land-based healing to identify how an individual's or a community's relationship with the land, self and others has been disrupted and how best to help renew this relationship.

In contrast with green prescriptions that appear to frame nature as an objective site or location for a physical activity that is considered to be the active factor in supporting health, land-based healing takes place on intentionally spiritually cultivated, honoured and respected land.<sup>14</sup> Land-based practices are defined as the profound interconnection between Indigenous epistemology and pedagogy, where the land assumes a pivotal role.<sup>14</sup>

For Indigenous peoples, aspects of the land are seen as fundamental parts of their identity and health.<sup>15-19</sup> The land has a multitude of meanings that incorporate the interconnected physical, symbolic, spiritual and social aspects of their cultures.<sup>19,20</sup> This concept surrounds all elements of the natural realm, encompassing plants, animals, ancestors and spirits, as well as various environmental components such as air, water, earth and minerals.<sup>21</sup> Fostering a reconnection with ancestral territories holds significant relevance in advancing the promotion and intervention efforts aimed at enhancing the mental well-being of Indigenous populations.<sup>22,23</sup> Intrinsic to land-based healing and all relations Indigenous Peoples have with the land is the principle of relational accountability, which acknowledges human beings as part of nature, interdependent with it rather than existing outside of it, with the responsibility to care for all aspects of nature to which we are related.<sup>24</sup>

## What is needed to ensure culturally inclusive, responsive and appropriate nature prescribing?

As a tricultural organization serving community members with diverse and often

intersecting identities, Chigamik CHC aims to adopt and implement a Two-Eyed seeing approach,<sup>25</sup> building on the strengths and perspectives of Indigenous and Western world views. Specific to growing acknowledgement by medical professionals that healing can be facilitated and enhanced through engagement with nature or land, it is imperative that we develop adequate and appropriate terms for what this means from a cultural perspective. Because relationships with nature can take many forms, both named and unspoken, space for discussions that promote nature connections to occur on an individualized basis is required. The ideal form for someone may be related to cultural identity, but it cannot be presumed that this is the sole determining factor.

Fostering a decolonized and Indigenous health equity approach to social and nature prescribing requires an ongoing awareness of the factors that contribute to inequities, including cultural determinants of health that influence engagement in meaningful activities. These factors also impact the likelihood of someone following a social or nature prescription or undertaking a change in behaviour. If the activity proposed is not within an appropriate framework, it is less appealing relevant and will potentially have less impact as a prescription or recommendation. Ensuring nature prescribing is reflective of worldviews is also critical to ensuring congruence between values, intentions and behaviours, which can further play a key role in influencing successful intervention outcomes.<sup>26</sup>

In addition, a commitment to reconciliation as demonstrated through concrete actions toward decolonizing nature prescribing in health care and addressing social determinants of health inequities should be a priority for Canadian organizations. This includes acknowledging factors that can constrain or facilitate access to nature. For example, Chigamik's partner organization in social prescribing, Wye Marsh Wildlife Centre, recently announced free trail access for First Nations, Métis and Inuit people to promote land access.

## Conclusion

The rapidly growing field of social and nature prescribing in Canada requires attention to diverse cultural perspectives as well as a firm commitment to health equity, social justice and reconciliation to

ensure program design and practices reflect diverse local perspectives and needs. Recognizing historical and contemporary colonial relations and incorporating decolonizing and Indigenous strategies within the terminology, program design, implementation and evaluation are also paramount to ensuring nature prescribing practices foster health and wellness benefits across Indigenous and non-Indigenous populations.

## Acknowledgements

No funding sources were received in support of preparing this commentary.

## Conflicts of interest

None of the authors have any conflicts of interest.

## Authors' contributions and statement

AV, RB—conceptualization.

AV, RB—data curation.

AV, RB (equal)—methodology.

AV, RB—project administration.

AV, RB (equal)—resources.

AV (project overall), RB (direct student supervision)—supervision.

AV, RB (equal)—validation.

AV, RB—visualization.

AV, RB, & NR, TW (equal)—writing—original draft.

AV, RB, & NR, TW (equal)—writing—review and editing.

The content and views expressed in this article are those of the authors and do not necessarily reflect those of the Government of Canada.

## References

1. Kondo MC, Oyekanmi KO, Gibson A, South EC, Bocarro J, Hipp JA. Nature prescriptions for health: a review of evidence and research opportunities. *Int J Environ Res Public Health*. 2020; 17(12):4213. <https://doi.org/10.3390/ijerph17124213>



2. Robinson JM, Jorgensen A, Cameron R, Brindley P. Let nature be thy medicine: a socioecological exploration of green prescribing in the UK. *Int J Environ Res Public Health*. 2020; 17(10):3460. <https://doi.org/10.3390/ijerph17103460>
3. Twohig-Bennett C, Jones A. The health benefits of the great outdoors: a systematic review and meta-analysis of greenspace exposure and health outcomes. *Environ Res*. 2018;166:628-37. <https://doi.org/10.1016/j.envres.2018.06.030>
4. Nguyen P-Y, Astell-Burt T, Rahimi-Ardabili H, Feng X. Effect of nature prescriptions on cardiometabolic and mental health, and physical activity: a systematic review. *Lancet Planet Health*. 2023;7(4):e313-e328. [https://doi.org/10.1016/S2542-5196\(23\)00025-6](https://doi.org/10.1016/S2542-5196(23)00025-6)
5. Battell Lowman E, Barker AJ. *Settler: identity and colonialism in 21st century Canada*. Winnipeg (MA): Fernwood Publishing; 2015. 158 p.
6. Manuel A, Derrickson R. *The reconciliation manifesto: recovering the land, rebuilding the economy*. Toronto (ON): James Lorimer; 2017. 312 p.
7. Hart M. Anti-colonial Indigenous social work. In: Sinclair R, Hart MA, Bruyere G, editors. *Wichitowin: Aboriginal social work in Canada*. Winnipeg (MA): Fernwood; 2009:25-41.
8. Little Bear L. Jagged worldviews colliding. In: Battiste M, editor. *Reclaiming Indigenous voice and vision*. Toronto (ON): UBC Press; 2000:77-85.
9. Sandifer P, Sutton-Grier A, Ward B. Exploring connections among nature, biodiversity, ecosystem services, and human health and well-being: opportunities to enhance health and biodiversity conservation. *Ecosyst Serv*. 2015;12:1-15. <https://doi.org/10.1016/j.ecoser.2014.12.007>
10. Wood L, Hooper P, Foster S, Bull F. Public green spaces and positive mental health—investigating the relationship between access, quantity and types of parks and mental well-being. *Health Place* 2017;48:63-71. <https://doi.org/10.1016/j.healthplace.2017.09.002>
11. Stanhope J, Weinstein P. What are green prescriptions? A scoping review. *J Prim Health Care*. 2023;15(2):155-61. <https://doi.org/10.1071/HC23007>
12. Park S, Kim E, Kim G, Kim S, Choi Y, Paek D. What activities in forests are beneficial for human health? A systematic review. *Int J Environ Res Public Health*. 2022;19(5):2692. <https://doi.org/10.3390/ijerph19052692>
13. Jiminez MP, DeVille NV, Elliot EG, et al. Associations between nature exposure and health: a review of evidence. *Int J Environ Res Public Health*. 2021; 18(9):4790. <https://doi.org/10.3390/ijerph18094790>
14. Hanson G. Strong woman's voices: final report Jackson Lake land based healing women's program August–September 2012. In: Dendys J, editor. *Building a path to wellness*. Whitehorse (YK): Kwanlin Dun First Nation; 2012: 1-48.
15. Butcher E, Breheny M. Dependence on place: a source of autonomy in later life for older Māori. *J Aging Stud*. 2016;37:48-58. <https://doi.org/10.1016/j.jaging.2016.02.004>
16. Green B. Culture is treatment. *J Psychosoc Nursing Ment Health Serv*. 2010;48(7):27-34. <https://doi.org/10.3928/02793695-20100504-04>
17. Kant S, Vertinsky I, Zheng B, Smith PM. Social, cultural, and land use determinants of the health and well-being of Aboriginal peoples of Canada: a path analysis. *J Public Health Policy*. 2013;34(3):462-76. <https://doi.org/10.1057/jphp.2013.27>
18. Richmond CA, Ross NA. The determinants of First Nation and Inuit health: a critical population health approach. *Health Place*. 2009;15(2):403-11. <https://doi.org/10.1016/j.healthplace.2008.07.004>
19. Wilson K. Therapeutic landscapes and First Nations peoples: an exploration of culture, health and place. *Health Place*. 2003;9(2):83-93. [https://doi.org/10.1016/s1353-8292\(02\)00016-3](https://doi.org/10.1016/s1353-8292(02)00016-3)
20. Lavalley LF, Poole JM. Beyond recovery: colonization, health and healing for Indigenous people in Canada. *Int J Ment Health Addict [Internet]*. 2010; 8(2):271-81. <https://doi.org/10.1007/s11469-009-9239-8>
21. Redvers J. “The land is a healer”: perspectives on land-based healing from Indigenous practitioners in northern Canada. *Int J Indig Health*. 2020;15(1):90-107. <https://doi.org/10.32799/ijih.v15i1.34046>
22. Kirmayer L, Simpson C, Cargo M. Healing traditions: culture, community and mental health promotion with Canadian Aboriginal Peoples. *Australas Psychiatry*. 2003; Oct;11(1\_suppl):S15-S23. [http://apy.sagepub.com/content/11/1\\_suppl/S15](http://apy.sagepub.com/content/11/1_suppl/S15)
23. Walsh R, Danto D, Sommerfeld J. Land-based intervention: a qualitative study of the knowledge and practices associated with one approach to mental health in a Cree community. *Int J Ment Health Addiction*. 2020; 18(1):207-21. <https://doi.org/10.1007/s11469-018-9996-3>
24. Wilson S. *Research is ceremony: Indigenous research methods*. Black Point (NS): Fernwood; 2008. 144 p.
25. Bartlett Lowman C, Marshall M, Marshall A. Two-eyed seeing and other lessons learned within a co-learning journey of bringing together Indigenous and mainstream knowledges and ways of knowing. *J Environ Studies Sci*. 2012;2(4):331-40. <https://api.semanticscholar.org/CorpusID:144796377>
26. Ajzen I, Fishbein M. The influence of attitudes on behavior. In: Albarracin D, Johnson BT, Zanna MP, editors. *The handbook of attitudes*. Mahwah (NJ): Lawrence Erlbaum Associates; 2005:173-221.

## Commentary

# Building the social prescribing student movement in Canada

Caitlin Muhl, BSc, MPH (1,2); Le-Tien Bhaskar, MPH (1,3); Michelle Ruhigisha, BSc, MPH (1,4); Ellen McGarity-Shiple, MScPT, PhD (1)

### Introduction

Social prescribing is defined as “a means for trusted individuals in clinical and community settings to identify that a person has nonmedical, health-related social needs and to subsequently connect them to non-clinical supports and services within the community by co-producing a social prescription—a nonmedical prescription, to improve health and well-being and to strengthen community connections.”<sup>1,p.9</sup> Globally, there is growing interest in social prescribing as a holistic approach to health and well-being, with almost 30 countries involved in the social prescribing movement.<sup>2</sup> In Canada, great strides are being made in social prescribing research, policy and practice, with all of this work being supported by the Canadian Institute for Social Prescribing.<sup>3</sup>

Alongside the rapid expansion of the social prescribing movement around the world, a global network of student champions has emerged to build the social prescribing student movement. In the United Kingdom (UK), where the social prescribing movement began, students have been heavily involved right from the start. In 2017, the UK National Social Prescribing Student Champion Scheme was established by Dr. Bogdan Chiva Giurca—a medical student at the time—to enable students to get involved in learning about, teaching and promoting social prescribing.<sup>4</sup> Since then, more than 350 student champions have engaged with over 20 000 learners across the UK.<sup>5</sup>

Over the past few years, the social prescribing student movement has expanded to several other countries, including

Australia, Japan, Portugal, Singapore and the United States (US).<sup>6</sup> In 2021, these student groups came together to develop the Social Prescribing International Student Movement Framework, which served as a call to action and a guidebook for student champions across the globe.<sup>6</sup> This framework caught the attention of students in Canada who shared a passion for social prescribing and a desire to bring the social prescribing student movement to this country, which led to the establishment of the Canadian Social Prescribing Student Collective.

In this commentary, we outline the importance of building the social prescribing student movement in Canada, give an overview of the Canadian Social Prescribing Student Collective, provide examples of ways in which students are contributing to social prescribing efforts across the nation, and put out a call to action to advance the social prescribing student movement in this country.

### The importance of building the social prescribing student movement in Canada

Throughout history, students have been a driving force behind social movements.<sup>7</sup> A recent example of this is the critical role that student activists have played in shaping the Black Lives Matter movement.<sup>8</sup> It follows that the social prescribing movement stands to benefit from the power of students to foster social change. Looking at the Canadian context, anecdotal evidence suggests that students are eager to support the movement, and members of the social prescribing community agree

#### Author references:

1. Canadian Social Prescribing Student Collective, Toronto, Ontario, Canada
2. Faculty of Health Sciences, Queen's University, Kingston, Ontario, Canada
3. Department of Health Research Methods, Evidence, and Impact, McMaster University, Hamilton, Ontario, Canada
4. Faculty of Applied Health Sciences, Brock University, St. Catharines, Ontario, Canada

Correspondence: Caitlin Muhl, Queen's University, 99 University Avenue, Kingston, ON K7L 3N6; Email: [caitlin.muhl@queensu.ca](mailto:caitlin.muhl@queensu.ca)

Commentary by Muhl C et al. in the HPCDP Journal licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)



### Highlights

- A global network of student champions has emerged to build the social prescribing student movement, with student groups in seven countries, including Canada.
- The Canadian Social Prescribing Student Collective was established in 2022.
- Much progress has been made in building the social prescribing student movement in Canada, but there is a lot of work to be done, which calls for action by students, staff in health care and community organizations, and faculty and administration at postsecondary institutions.
- Collective efforts to build the social prescribing student movement in this country will not only shape the wider social prescribing movement, but also the future of our health system.

**Keywords:** *social movement, social prescribing, students*

that student involvement in the movement is fundamental to its success.

But this is not only about the impact of students on the movement—this is also about the impact of the movement on students. This is about empowering today's

learners, who will become tomorrow's leaders. With evidence to suggest that up to 50% of primary care visits are for non-medical issues,<sup>9</sup> we must move beyond the biomedical model by shifting care upstream to address the nonmedical factors that determine 80% to 90% of health and well-being.<sup>10-12</sup> The case for this shift has never been clearer given the perfect storm of a pandemic,<sup>13</sup> an aging global population<sup>14</sup> and an estimated global shortage of 18 million health workers (20% of the global workforce) by 2030.<sup>15</sup> In the wise words of Hamaad Khan, a medical student and social prescribing champion in the UK, "We must ask ourselves, where is the health in our health system, and where is the care in our health care?"<sup>16</sup> We are at a crisis point, but there is hope for the future; by instilling the values of social prescribing in our students, we will empower them to create health in our health system and deliver care in our health care. This is what we hope to achieve by building the social prescribing student movement in Canada.

## The Canadian Social Prescribing Student Collective

The Canadian Social Prescribing Student Collective was launched in March 2022. Our mission is to build the social prescribing student movement across Canada. We are guided by our four values: (1) collaborate, (2) educate, (3) advocate and (4) innovate. We have over 350 members, who represent more than 35 postsecondary institutions in British Columbia, Alberta, Saskatchewan, Ontario, Quebec, New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland and Labrador. Our members include undergraduate students, graduate students and college students, with representation from a variety of different programs (i.e. health sciences, kinesiology, medicine, nursing, pharmacy, psychology, public health, social work, etc.).

In addition to our members, we have over 20 academic and community partners. As an online community, we communicate with our members and partners through email, newsletter, Slack, and Zoom meetings, and we engage with the wider social prescribing community through our webpage, our social media accounts, webinars, presentations and conference sessions. We are affiliated with the Canadian Institute for Social Prescribing, which ensures alignment between the social

prescribing student movement and the wider social prescribing movement in Canada.

Our efforts to build the social prescribing student movement span local, national and international levels. Locally, we have chapters at postsecondary institutions. Nationally, we convene through general meetings, as well as through five working groups with specific focus areas: (1) research, (2) policy, (3) practice, (4) knowledge translation and (5) medicine. Internationally, we represent Canada on the Global Social Prescribing Student Council, which brings together the leaders of social prescribing student groups around the world to advance the global social prescribing student movement.

We recently conducted a member experience survey, which revealed that students are benefiting from being involved in our group. When asked about their participation, 82.3% of our members agreed that this group has improved their knowledge of social prescribing, and 88.2% agreed that this group has helped them to connect with other students who are interested in social prescribing. Looking to the future, we hope to expand our efforts, grow our membership, develop a better understanding of the effectiveness of our efforts, and contribute to the social prescribing evidence base by examining relevant areas that have yet to be explored, such as what motivates students to become involved in the social prescribing student movement.

## Student contributions to social prescribing efforts in Canada

Students first became involved in social prescribing efforts in Canada several years before the launch of the Canadian Social Prescribing Student Collective. For example, Canada's first social prescribing pilot (2018–2020) benefited from the support of practicum students.<sup>17</sup> We note that social prescribing programs have been harnessing the potential of students to act as connectors for more than a decade.<sup>18,19</sup> In British Columbia, Basics for Health Society was established in 2012 as a way for health care and community organizations to address patients' social needs through the use of trained student volunteers, who connect patients to community resources.<sup>18</sup> In Ontario, the NORTH (Navigating Ottawa Resources To Improve Health) Clinic, run by medical and law

students at the University of Ottawa, was founded in 2018.<sup>19</sup> Patients with social needs are referred from health care settings to the NORTH Clinic, where trained student volunteers connect the patients to community resources. These programs not only serve to address patients' social needs and improve health equity for underserved communities, but also to enrich the educational experiences of students through experiential learning opportunities.

Since the launch of the Canadian Social Prescribing Student Collective, several student-led initiatives have emerged as a direct result of the student community that has been cultivated. Locally, our Brock University Chapter is collaborating with student health services to implement social prescribing on campus. Elsewhere in Ontario, our University of Toronto Chapter hosted the first social prescribing student conference in the country. Nationally, our research working group is conducting a scoping review on social prescribing and students,<sup>20</sup> and our policy working group recently developed a policy brief to advocate for the importance of social prescribing in supporting student mental health on campus.

Apart from the work that is happening through the Canadian Social Prescribing Student Collective, students are contributing to social prescribing research, policy and practice through various academic pursuits, including thesis work, practicums, traineeships, internships, research assistantships and co-op placements.

For example, practicum students in Ontario at the University of Guelph are working with the social prescribing program at Guelph Community Health Centre; trainees in Quebec at McGill University are supporting efforts to implement social prescribing in primary care clinics; and students across the country are supporting the work that is happening at the Canadian Institute for Social Prescribing through internships and research assistantships.

Additionally, students are supporting the social prescribing movement through paid and unpaid roles that are distinct from, but complementary to, their academic activities. For example, students are coordinating social prescribing programs at organizations such as Fraser Health in British Columbia and the Vanier Social Pediatric Hub in Ontario, and students



across the country are volunteering for programs such as the Canadian Red Cross Friendly Calls Program and the Student–Senior Isolation Prevention Partnership to fulfill social prescriptions for people who are feeling socially isolated and lonely.

All of these experiences allow students to apply what they have learned in the classroom about health promotion, upstream thinking and the power of community.

## A call to action

While it is important to celebrate the progress that has been made in building the social prescribing student movement thus far, there is a lot of work to be done. This is a call to action for students, staff in health care and community organizations, and faculty and administration at postsecondary institutions to support the advancement of the social prescribing student movement in Canada.

**1. We call on students to join the Canadian Social Prescribing Student Collective and to support social prescribing research, policy and practice through academic (i.e. thesis work, practicums, traineeships, internships, research assistantships, co-op placements, etc.) and nonacademic avenues (i.e. paid and unpaid roles).**

You can sign up here: [www.socialprescribing.ca/student-collective](http://www.socialprescribing.ca/student-collective).

**2. We call on staff in health care and community organizations and faculty and administration at postsecondary institutions to connect with us and to increase the level and type of student involvement in social prescribing efforts (e.g. connector role, program development, program evaluation, research) through academic and nonacademic avenues.**

Whether you simply wish to receive our newsletter, or want to explore opportunities for student engagement, you can sign up here: [www.socialprescribing.ca/student-collective](http://www.socialprescribing.ca/student-collective).

**3. We call on faculty and administration at postsecondary institutions to complement our efforts to educate students about social prescribing by integrating this concept into the curriculum for health professional programs (i.e. medicine, nursing, occupational therapy, pharmacy,**

**physiotherapy, social work, etc.) through a combination of didactic teaching and experiential learning opportunities.**

Experiences in other countries reveal that student-led efforts to educate peers about social prescribing need to be supplemented with formal education through a combination of didactic teaching and experiential learning opportunities.<sup>4,21–25</sup>

Together, these actions will help to build the social prescribing student movement, which will not only shape the wider social prescribing movement, but also the future of our health system.

## Acknowledgements

We acknowledge Sonia Hsiung for her mentorship and for providing us with valuable feedback on this commentary. We thank Niloufar Aran for the contributions she made to the Canadian Social Prescribing Student Collective as a Co-Founder and Co-Lead, prior to her departure to study abroad.

## Conflicts of interest

The authors have no conflicts of interest to declare.

## Authors' contributions and statement

CM—conceptualization.

CM—writing—original draft.

CM, LB, MR, EMS—writing—review and editing.

The content and views expressed in this article are those of the authors and do not necessarily reflect those of the Government of Canada.

## References

1. Muhl C, Mulligan K, Bayoumi I, Ashcroft R, Godfrey C. Establishing internationally accepted conceptual and operational definitions of social prescribing through expert consensus: a Delphi study. *BMJ Open*. 2023; 13(7):e070184. <https://doi.org/10.1136/bmjopen-2022-070184>

2. Khan H, Giurca BC, Sanderson J, et al. Social prescribing around the world: a world map of global developments in social prescribing across different health system contexts. London (UK): Global Social Prescribing Alliance; 2023. 57 p. Available from: <https://socialprescribingacademy.org.uk/media/1yeoktid/social-prescribing-around-the-world.pdf>
3. Mulligan K, Hsiung S, Bloch G, et al. Social prescribing in Canada: a tool for integrating health and social care for underserved communities. *Healthc Q*. 2023;25(4):17-22. <https://doi.org/10.12927/hcq.2023.27022>
4. Giurca BC. Social prescribing student champion scheme: a novel peer-assisted-learning approach to teaching social prescribing and social determinants of health. *Educ Prim Care*. 2018;29(5):307-9. <https://doi.org/10.1080/14739879.2018.1483211>
5. U.S. Social Prescribing Student Movement launch webinar [YouTube video]. Cambridge (MA): Harvard Undergraduate Initiative for SP; 2023 Mar 27 [cited 2023 Apr 10]. Available from: [https://www.youtube.com/watch?v=d\\_b-gmH8bk](https://www.youtube.com/watch?v=d_b-gmH8bk)
6. Global Social Prescribing Alliance. Social prescribing: international student movement framework. London (UK): Global Social Prescribing Alliance; 2021. 38 p. Available from: <https://www.gspalliance.com/student-movement-framework>
7. Tucker T, Hilterbrand NJ. Empowering students to fight the power: student engagement in today's social movements. In: Bowhay V, editor. The proper role of higher education in a democratic society [e-book]. Hershey (PA): IGI Global; 2021. 314 p. Available from: <http://services.igi-global.com/resolvedoi/resolve.aspx?doi=10.4018/978-1-7998-7744-8.ch011>
8. Rim C. How student activism shaped the Black Lives Matter movement. *Forbes* [Internet]; 2020 Jun 4 [cited 2023 Apr 10]. Available from: <https://www.forbes.com/sites/christopherrim/2020/06/04/how-student-activism-shaped-the-black-lives-matter-movement/>



9. Malby B, Boyle D, Wildman J, Smith S, Omar SB. The asset-based health inquiry: how best to develop social prescribing? London (UK): London South Bank University; 2019 [cited 2023 Apr 10]. 86 p. Available from: [https://www.lsbu.ac.uk/\\_data/assets/pdf\\_file/0018/251190/lsbu\\_asset-based\\_health\\_inquiry.pdf](https://www.lsbu.ac.uk/_data/assets/pdf_file/0018/251190/lsbu_asset-based_health_inquiry.pdf)
10. Magnan S. Social determinants of health 101 for health care: five plus five. [Discussion paper.] Washington (DC): National Academy of Medicine; 2017. <https://doi.org/10.31478/201710c>
11. National Academies of Sciences, Engineering, and Medicine. Integrating social care into the delivery of health care: moving upstream to improve the nation's health. Washington (DC): The National Academies Press; 2019. 194 p. Available from: <https://www.nationalacademies.org/our-work/integrating-social-needs-care-into-the-delivery-of-health-care-to-improve-the-nations-health>
12. Morse DF, Sandhu S, Mulligan K, et al. Global developments in social prescribing. *BMJ Glob Health*. 2022;7(5):e008524. <https://doi.org/10.1136/bmjgh-2022-008524>
13. World Health Organization (WHO). Coronavirus disease (COVID-19) pandemic [Internet]. Geneva (CH): WHO; 2024 [cited 2024 Mar 5]. Available from: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>
14. World Health Organization (WHO). Ageing and health [Internet]. Geneva (CH): WHO; 2022 [cited 2023 Apr 10]. Available from: <https://www.who.int/news-room/fact-sheets/detail/ageing-and-health>
15. Britnell M. Human: solving the global workforce crisis in healthcare. London (UK): Oxford University Press; 2019. 216 p.
16. Khan H. The Social Prescribing Show 2023 [YouTube video]. Presentation given at: The Social Prescribing Show 2023, Mar 14, 2023; London, UK: 05:09:30. Available from: <https://www.youtube.com/watch?v=nZPtm9Jvv-g>
17. Alliance for Healthier Communities. Rx: Community—social prescribing in Ontario: final report. Toronto (ON): Alliance for Healthier Communities; 2020. 79 p. Available from: [https://cdn.ymaws.com/ahhc.site-ym.com/resource/group/e0802d2e-298a-4d86-8af5-21156f9c057f/rxcommunity\\_final\\_report\\_mar.pdf](https://cdn.ymaws.com/ahhc.site-ym.com/resource/group/e0802d2e-298a-4d86-8af5-21156f9c057f/rxcommunity_final_report_mar.pdf)
18. Basics for Health Society. What we do [Internet]. Vancouver (BC): Basics for Health Society; [date unknown; cited 2023 Apr 10]. Available from: <http://www.basicsforhealthsociety.ca/what-we-do>
19. Talloires Network of Engaged Universities. The NORTH (Navigating Ottawa Resources To Improve Health) clinic, University of Ottawa (Canada) [Internet]. Medford (MA): Talloires Network of Engaged Universities; 2022 [cited 2023 Apr 10]. Available from: <https://talloiresnetwork.tufts.edu/about-the-macjannet-prize/2022-macjannet-prize-winners/north-clinic/>
20. Muhl C, Wadge S, Hussein T. Social prescribing and students: a scoping review protocol. *PLOS ONE*. 2023;18(8):e0289981. <https://doi.org/10.1371/journal.pone.0289981>
21. Lee A, Sundar S. Social prescribing: an essential but neglected component of the undergraduate medical curriculum. *Educ Prim Care*. 2018;29(6):385. <https://doi.org/10.1080/14739879.2018.1514534>
22. Santoni C, Giurca BC, Li TM, et al. Evaluating student perceptions and awareness of social prescribing. *Educ Prim Care*. 2019;30(6):361-7. <https://doi.org/10.1080/14739879.2019.1669223>
23. Mazaheri M, Khorramzadeh M, Rezai-Rad M, et al. Using social prescribing by Iranian medical students: a step towards community-orientation and social determinants of health by revising the health internship curriculum. *BMC Med Educ*. 2022;22(1):661. <https://doi.org/10.1186/s12909-022-03718-8>
24. Chitson S, Wylie A. The impact and potential value for medical students of implementing social prescribing projects in primary care. *Educ Prim Care*. 2020;31(1):57-9. <https://doi.org/10.1080/14739879.2019.1703561>
25. Ward A, Asif A, Cattermole R, et al. Social prescribing by students: the design and delivery of a social prescribing scheme by medical students in general practice. *Educ Prim Care*. 2020;31(5):318-22. <https://doi.org/10.1080/14739879.2020.1799437>

## At-a-glance

# Black-focused social prescribing: the importance of an Afrocentric approach

Sofia Ramirez, BSc, KTPC (1); Natasha Beaudin, BFA (1); Jennifer Rayner, PhD (2); Neil Price, PhD (3); Daniel Townsend, MSc (1)

This article has been peer reviewed.

At-a-glance by Ramirez S et al. in the HPCDP Journal licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)



## Abstract

The Black-Focused Social Prescribing (BFSP) project is a unique initiative by the Alliance for Healthier Communities that intertwines Afrocentric principles with social prescribing. Going beyond conventional social prescribing models, BFSP addresses specific health needs within Black communities. It is rooted in the Alliance Black Health Strategy, advocates for Black health, and is guided by Afrocentric principles. The evaluation framework prioritizes client voices, ensuring cultural safety and, by taking time for trust-building, underscores the importance of an inclusive approach. BFSP holds the potential to foster community trust and engagement, and enhance health outcomes in the Black community.

**Keywords:** Black-focused social prescribing, Afrocentricity, holistic health, anti-Black racism

## Introduction

Social prescribing integrates social and clinical aspects of health, and recognizes the interconnectedness of physical, mental and social well-being. Through social prescribing, a formal referral pathway documented in the client's electronic medical record links them to local, nonclinical services to address issues such as social connectedness, mild depression or anxiety. Social prescribing emphasizes a strengths-based approach to co-creating solutions with clients, as well as regular collection of client self-reported experience measures as meaningful data. While social prescribing is effective in various communities, there is a growing acknowledgement of the necessity for tailored interventions addressing the unique experiences of ethnic and cultural populations.<sup>1</sup> In this article, we delve into the importance of an Afrocentric approach within Black-focused social prescribing (BFSP), emphasizing cultural context and community focus in

improving the health outcomes of Black individuals.

## Rx: Community—Social Prescribing pilot project

The Alliance for Healthier Communities, a network of community-governed, team-based primary health care organizations in Ontario, conducted Rx: Community—Social Prescribing,<sup>2</sup> Canada's first social prescribing research project, from 2018 to 2020. Over 1100 adult clients participated in the pilot at 11 community health centres. Nearly half were aged 61 to 80 years old and over a third identified as non-White. A mixed-methods evaluation was implemented using pre- and post-intervention surveys and focus groups to assess key themes and changes in self-reported health outcomes. Participants reported reduced stress and anxiety, increased self-confidence and purpose, and improved health management skills. The pilot demonstrated improvements in client well-being,

## Highlights

- Social prescribing is a health care approach that connects social and clinical aspects of health.
- Ensuring access to services without discrimination is crucial for improving the health of Black people in Ontario.
- Tailored interventions are increasingly recognized as necessary to address challenges faced by diverse ethnic and cultural groups.
- Black-focused social prescribing, particularly the Afrocentric approach, aims to enhance the health outcomes of Black individuals.
- Evaluating a Black-focused social prescribing program requires time to create a framework and to consider its nuanced aspects.

including perceived decreases in loneliness and mental health, and an increase in participation in social activities. Repeat visits to clinicians also decreased.<sup>2</sup>

## The Black Health Committee and Black Health Strategy

In 2018, Ontario's Black health leaders established the Black Health Committee to leverage their roles in community health

## Author references:

1. Alliance for Healthier Communities, Toronto, Ontario, Canada
2. Centre for Studies in Family Medicine, Faculty of Health Sciences, Western University, London, Ontario, Canada
3. LogicalOutcomes, Toronto, Ontario, Canada

**Correspondence:** Jennifer Rayner, Western University Faculty of Health Sciences, Centre for Studies in Family Medicine, 1465 Richmond Street, London, ON N6A 5B9; Email: [jennifer.rayner@allianceon.org](mailto:jennifer.rayner@allianceon.org)

organizations for enhancing health outcomes among Black communities in Ontario. The Black Health Committee created the Black Health Strategy, an evidence-informed policy framework integral to the vision of advancing Black health. It outlines foundational processes to ensure equitable health standards for Black individuals accessing care in Ontario.

The Black Health Strategy's work informed the BFSP project, recognizing that social prescribing could be a valuable tool to address the unique needs of the Black population by incorporating cultural competence and targeted interventions that consider the historical and systemic factors influencing health and well-being in the Black community.<sup>3</sup>

## Black-focused social prescribing project

Building on the learnings from the pilot and using the Black Health Strategy, the Alliance created the BFSP project. Community health centres (CHCs) with a proven record of supporting Black clients were selected to develop a social prescribing model for clients of all ages grounded in Afrocentric values and principles to provide a framework to spread this work. These CHCs are Black Creek, Rexdale and TAIBU in Toronto, and Somerset West in Ottawa.

### Goals of the project:

The Black-Focused Social Prescribing project charter lists the three main goals of the project:<sup>4</sup>

- (1) to develop a BFSP model based on culturally safe values and principles with data collection and evaluation, in order to understand the processes and impacts;
- (2) to foster multisectoral conversations and innovative partnerships on culturally specific social prescribing; and
- (3) to widen and deepen learning networks and public awareness. This project offers unique insights and deepens the conversation on considerations for cultural safety within social prescribing.

## The Afrocentric perspective

Afrocentricity emphasizes the importance of cultural context and recognizes the values and historical experiences of people of African descent. It acknowledges that these

experiences shape Black communities' unique health needs and concerns.

An Afrocentric approach aims to celebrate and reinforce cultural identity within the Black communities by connecting individuals with culturally relevant resources, activities and support networks. An Afrocentric approach can be used to provide holistic, culturally appropriate health care.<sup>5</sup>

## Traditional knowledge

When creating programming for BFSP in a local community served by a CHC, taking into account the values of the different communities ensures that participants feel and share a sense of belonging. To ensure that programming reflects the local community's cultural values, staff from the CHCs held a peer-led session to learn about Afrocentric perspectives, including the seven principles of Kwanzaa, which are derived from the Swahili language:<sup>6</sup>

- (1) *Umoja* (unity): to strive for unity within family, community, nation and race;
- (2) *Kujichagulia* (self-determination): to define, name, create and speak for ourselves;
- (3) *Ujima* (collective work and responsibility): to build our community together, take on its problems as our own and solve them collectively;
- (4) *Ujamaa* (cooperative economics): to establish and maintain joint businesses, stores and shops for shared prosperity;
- (5) *Nia* (purpose): to make our collective mission the development and restoration of our community's traditional greatness;
- (6) *Kuumba* (creativity): to constantly enhance our community, leaving it more beautiful and beneficial for future generations; and
- (7) *Imani* (faith): to wholeheartedly believe in our people.

Four guiding principles were selected by the BFSP Steering Committee, through peer discussion, to guide the work; therefore unity, purpose, self-determination and creativity are infused in all BFSP work.

## Culture as a social prescription

Culture as a social prescription aims to connect people to the vibrancy and strengths

of their culture and, in doing so, enhance their overall health.

The following are examples of cultural prescriptions:

- Forty-five clients attended the play *Da Kink in My Hair* to foster social connection. The event, including a meal at a Black-owned restaurant, prompted discussions on content and coping strategies. Post-event feedback highlighted the value of Black representation and emphasized the need for more shared Black stories to contribute to community healing.
- TAIBU CHC introduced Kemetic yoga, an African-based movement system designed from African dance and ancestral teachings from the Kemetic people of ancient Egypt.<sup>7</sup> This therapeutic practice was added to their social prescribing programs for Black seniors to provide an Afrocentric option rooted in the mind-body-spirit connection, holistic values and historical experiences of people of African descent. The program manager noted: "This not only nurtures physical health but also fosters a sense of cultural connection and self-awareness. Through social prescribing we have been able to offer our seniors a sense of belonging, enhancing their overall quality of life."<sup>8</sup>

## Working collectively—thinking as a village

Meetings were organized to discuss the evaluation framework and to support implementing the projects. LogicalOutcomes, an evaluation consultancy with a background in community development, also hosted meetings. These discussions centred around Afrocentric principles and the limitations of the Westernized view in capturing spirituality as a determinant of health. Rather than making decisions as individuals, members of the group "think as a village," consulting and collaborating with their colleagues.

Several tools have emerged, including the Wheel of Life,<sup>9</sup> a tailored BFSP version of the client referral form from the pilot that includes eight life domains: spiritual, family, health, finance, career, friends, growth, and social life, plus "other" (if a category needs to be replaced). This tool aids in

identifying and prioritizing relevant client concerns, as well as creating meaningful and affirming social prescriptions. Moreover, Black patients, who have often faced harm in the health care system, find additional benefits in working with Black health care staff with shared lived experiences.

## Evaluation framework

The evaluation framework is rooted in the Afrocentric principles and designed to ensure that client voices and experiences are brought into the centre of the evaluation, data collection, analysis and reporting. The framework, adapted from Hood et al.,<sup>10</sup> is structured using the following criteria:

- (1) History—place, people, program and evaluation's role; traditions, cultural heritage;
- (2) Location—evaluation recognizes intersections (individual, organizational, system levels and cultural context);
- (3) Power—understanding privilege, attention to equity, social justice, disparities;
- (4) Voice—addresses amplified and silenced voices; maps inclusion, exclusion;
- (5) Connection—emphasizes relationships, time, place, universe; considers trust, accountability, responsibility;
- (6) Time—design emphasizes rhythm, pace, scheduling (before, during and after evaluation activities);
- (7) Return—activities, findings that benefit the community;
- (8) Flexibility—openness to change, new information, cultural perspectives; applies to evaluation design, process and products; and
- (9) Reflection—apply evaluation principles, including self-scrutiny.

## Theory of change

A Theory of Change was developed through an extensive consultative process that included representatives from each CHC, Alliance staff and the consulting team. Working from the short-, medium- and long-term outcomes, the Theory of Change (“the Theory”) captures the activities, inputs and outputs that lead to better health outcomes for Black patients (available upon request).

Over the medium term (1–2 years), the aim is to enhance patient well-being by

actions such as strengthening connections to community and traditional knowledge, reducing loneliness and fostering increased self-efficacy; these aims are achieved by improving mental health, trust and spiritual well-being, and by removing barriers to participation. An additional objective is to elevate the role of link workers by building a sense of belonging and ultimately decreasing turnover. The Theory also envisions improved health and well-being for the community and positive reports of health and well-being from clinicians.

In the long term (3–5 years), the Theory anticipates improvements in patient health outcomes, as well as a deepened understanding of Afrocentric service provision. It envisions the embedding of Black-focused social prescribing into the practice at the four participating community health centres.

## Challenges

Committing to an Afrocentric approach, BFSP brings about unique challenges that must be considered in order to build a shared sense of purpose and direction. With extensive participatory processes and consensus-building, significant time and effort were needed to ensure the project was consistent with shared principles. The following challenges were experienced during the early implementation:

- (1) slow decision-making processes;
- (2) challenges reaching an agreement regarding evaluation tools and processes;
- (3) challenges in achieving trust-building and confidence among all key stakeholders;
- (4) understanding local contexts and needs; and
- (5) revising project approaches, documents and plans.

## Conclusion

To develop and deliver effective BFSP, it is crucial to consider carefully the context in which activities take place. This involves dedicating ample time for consultation and consensus-building, and a willingness to adapt to meet the community's specific needs. The consultation and consensus-building process facilitates building evaluation tools rooted in Afrocentric principles, and considers individual and community perspectives.

The success of BFSP hinges on practitioners who deeply understand patient needs, interests, backgrounds and aspirations for improved health. By gaining insights into the Black community's values and beliefs, we can foster trust, promote engagement and maximize overall effectiveness. Clients then feel a greater sense of belonging and are more likely to follow through with the social prescription referral.

In conclusion, an inclusive and culturally sensitive approach to BFSP is vital for its success. By deeply understanding the community's needs and incorporating Afrocentric principles, we can establish a meaningful connection with individuals, promote well-being and positively impact health outcomes.

## Acknowledgements

We are grateful to the Balsam Foundation for funding this work.

## Conflicts of interest

The authors declare they have no conflicts of interest.

## Authors' contributions and statement

SR—conceptualization.

NP, NB—project administration.

JR—supervision.

All authors contributed to analysis and writing.

The content and views expressed in this article are those of the authors and do not necessarily reflect those of the Government of Canada.

## References

1. Gupta AK. Social prescribing in ethnic minority communities. *Br J Gen Pract.* 2021;71(704):109. <https://doi.org/10.3399/bjgp21X715037>
2. Mulligan K, Hsiung S, Bhatti S, Rehel J, Rayner J. Social prescribing in Ontario, final report. Toronto (ON): Alliance for Healthier Communities; 2020. 82 p. Available from: [https://issuu.com/aohc\\_acso/docs/rxcommunity\\_final\\_report\\_mar2020\\_fullweb](https://issuu.com/aohc_acso/docs/rxcommunity_final_report_mar2020_fullweb)



- 
3. Black Health Committee. The Black Health Strategy. Toronto (ON): Alliance for Healthier Communities; 2022. 17 p. Available from: <https://www.allianceon.org/sites/default/files/documents/black-health-strategy-2022-en.pdf>
  4. Alliance for Healthier Communities. Black-Focused Social Prescribing project charter [unpublished]. Toronto (ON): Alliance for Healthier Communities; 2020.
  5. Gebremikael L, Sicchia S, Demi S, Rhoden J. Afrocentric approaches to disrupting anti-Black racism in health care and promoting Black health in Canada. CMAJ. 2022;194(42):E1448-E1450. <https://doi.org/10.1503/cmaj.220456>
  6. Karenga M. Kwanzaa: a celebration of family, community and culture. Los Angeles (CA): University of Sankore Press, 1996. 143 p.
  7. Evans SY. Black women's yoga history: memoirs of inner peace. Albany (NY): State University of New York Press; 2021. 472 p.
  8. Shaw T. (Primary Care Manager, TAIBU Community Health Centre). Verbal communication delivered during interviews conducted by evaluation firm LogicalOutcomes, Fall 2023.
  9. TAIBU Community Health Centre, Black-Focused Social Prescribing Steering Committee. Black Focused Social Prescribing. Toronto (ON): Alliance for Healthier Communities. [date unknown]. 2 p. Available from: [https://www.allianceon.org/sites/default/files/documents/Wheel\\_of\\_Life\\_-\\_print\\_-\\_English.pdf](https://www.allianceon.org/sites/default/files/documents/Wheel_of_Life_-_print_-_English.pdf)
  10. Hood S, Hopson RK, Kirkhart KE. Culturally responsive evaluation. In: Newcomer KE, Hatry HP, Wholey JS, editors. Handbook of practical program evaluation. 4th ed. Hoboken (NJ): Wiley and Sons; 2015:281-317.

## Letter to the Editor

# Nonclinical prescriptions gave me light of hope: perspectives from people with lived experiences

*Myrna Norman, member of the Canadian Institute for Social Prescribing (CISP) Participant Advisory Council*

Dear Editors,

I was diagnosed with frontal temporal dementia (FTD) in 2008. It was such a frightening diagnosis. My doctor said 5 to 8 years was when my “best-before date” was up. I wallowed in self-pity and just falling into a deep chasm of depression. Then came more doctors and more diagnoses: Lewy body dementia; the doctor revoking my driver’s license; then Alzheimer’s; vascular dementia after my stroke; and, most recently, mild cognitive impairment.

My diagnosis meant I face various challenges with day-to-day activities, including difficulties with word finding, lack of focus to read, inability to follow or remember recipes. I have flooded our kitchen floor twice, which required installing new flooring and more. Short-term memory loss was aggravating.

But I did not want to give up. The biggest lightbulb moment was when I discovered *hope*. After almost two years of struggling to come to terms with my diagnosis, I finally discovered that participating in and contributing to supports in my community was key to my health and to lengthening my journey.

No doctor ever said to me, “Be happy,” or “Be hopeful,” or “Live your best life.” But that is exactly what I needed. I believe that I would have been able to find my way out of self-pity and depression much sooner if my doctors had given me the tools and opportunity and I didn’t have to navigate it on my own. And I am aware of many persons diagnosed with FTD who need the extra push now.

That is why I am now an active champion for social prescribing, and I am so delighted for the attention and focus that this is receiving now. We can all use a helping hand to find a purpose and a reason to do better every day. I am living my best life, with hope, and everyone can too. We just need a little help from the doctors and our communities.

Yours sincerely,

Myrna Norman

[Letter to the Editor](#) by Norman M et al.  
in the HPCDP Journal  
licensed under a [Creative Commons  
Attribution 4.0 International License](#)



### Highlights

- A diagnosis of dementia led me to wallow in self-pity and fall into a deep chasm of depression.
- My diagnosis meant I face various challenges with day-to-day activities, including difficulties with word finding, lack of focus to read; I cannot follow or remember recipes.
- The biggest light bulb moment was when I discovered hope.
- Participating in and contributing to supports in my community through social prescribing was key to my health and to lengthening my journey.
- I am living my best life, with hope, and everyone can too. We just need a little help from the doctors and our communities.

**Keywords:** *social prescribing, self-resilience, hope, community support, dementia*

### Author reference:

Canadian Institute for Social Prescribing at the Canadian Red Cross, Mississauga, Ontario, Canada

**Correspondence:** Myrna Norman, Canadian Institute for Social Prescribing at the Canadian Red Cross, 5700 Cancross Court, Mississauga, ON L5R 3E9

## Letter to the Editor

# Patient voice at the core of social prescribing: perspectives from people with lived experiences

*Sudi Barre, member of the Canadian Institute for Social Prescribing (CISP) Participant Advisory Council*

Dear Editors,

As a strong advocate for more equitable patient inclusion in research and the health care ecosystem, I believe that creating space to listen deeply to patient voices and keeping this at the core of social prescribing practice is the key to successful social prescriptions.

Recently, I attended the third annual World Non-Communicable Disease (WNCD) conference, where I was given the opportunity to speak as a person who has personal experience with a noncommunicable disease. The majority of the attendees were doctors, researchers and academics. I was the only patient representative there. To me, social prescribing is a path of self-discovery, healing and empowerment that goes beyond traditional medical care. It makes space for what is critically important to me, which is to allow me and other patient populations to have a shared space in health care, rather than merely being treated as passive recipients of care.

For social prescribing to truly be a person-centred practice that asks, “What matters to you?”, it is critical that our voice, the voice of people with firsthand experiences, continues to be a core part of the design, implementation and evaluation of the social prescribing initiative as the number of social prescribing practices grows in Canada.

I want to urge every social prescribing practitioner and champion to create space that encourages and enables patients to lead in their own care. If we do it in this way, as social prescribing becomes more prevalent and a solid treatment option, it is sure to offer all of us a better and more compassionate future.

Sincerely,

Sudi Barre

[Letter to the Editor](#) by Barre S et al.  
in the HPCDP Journal  
licensed under a [Creative Commons Attribution 4.0 International License](#)



### Highlights

- I believe that creating space to listen deeply to patient voices and keeping this at the core of social prescribing practice is the key to successful social prescriptions.
- Social prescribing is a path of self-discovery, healing and empowerment that goes beyond traditional medical care.
- Social prescribing focusses on “what matters to you.”
- For social prescribing to truly be a person-centred practice, it is important that the voices of people with firsthand experiences continue to be a core part of the design, implementation and evaluation, as the number of social prescribing practices grow in Canada.

**Keywords:** *social prescribing, patient voice, person-centred practice, advocacy*

#### Author reference:

Canadian Institute for Social Prescribing at the Canadian Red Cross, Mississauga, Ontario, Canada

Correspondence: Sudi Barre, Canadian Institute for Social Prescribing at the Canadian Red Cross, 5700 Cancross Court, Mississauga, ON L5R 3E9

## Letter to the Editor

# Social prescribing training for doctors: perspectives from people with lived experiences

*Herb Paquette, member of the Canadian Institute for Social Prescribing (CISP) Participant Advisory Council*

Letter to the Editor by Paquette H et al.  
in the HPCDP Journal  
licensed under a [Creative Commons Attribution 4.0 International License](#)

Dear Editors,

As someone with firsthand experience of how much social prescribing can improve health, I think it is of the utmost importance to move social prescribing forward. To achieve that, doctors need to know the value of this practice, where to direct patients, and how to do it in the easiest, most efficient way. Along the same lines, I believe that education in universities and medical schools is critical, because if students are not aware of social prescribing, they will not practise it or advocate for it.

I was recently visiting my family doctor, as I frequently do. I asked her if the term was familiar. She acknowledged it was, but not part of her practice, because she lacked knowledge of the various agencies and organizations that she might find appropriate to prescribe for her patients. I then asked my hematology doctor if he had ever heard the term. He replied “No,” and volunteered to do some research into it, but made “no promises.”

All this made me wonder if social prescribing was something taught in our medical schools. I did some rudimentary exploration on social prescribing training in medical schools. What my explorations seem to indicate is, it appears that there is not a lot of information on how much medical schools in Ontario might be teaching social prescribing as a form of patient care in the way we define it. As a disabled person, I have firsthand experience with being involved in a not-for-profit and the recipient of social prescribing dedicated to my health issue and my well-being, and there is no question in my mind they kept patients out of hospital beds with their (much) lower-cost service.

If we are to move social prescribing forward in Canada, we need to start at the beginning by having medical schools and relevant ministries of education incorporate social prescribing into the curriculum. The leading medical schools are highly influential, and if they lead by example by incorporating social prescribing into the curriculum, others will follow suit.

If the medical schools would serve as torch bearers for social prescribing, as they do in other countries, perhaps our doctors would learn the value of providing and connecting patients to social support, in terms of both superior health care to patients and decreasing costs.

I wholeheartedly believe that social prescribing is an important aspect of our health care that deserves more attention in family doctors’ and specialists’ offices, in medical school curriculums, in hospitals and in community, so that we can all work together towards building a healthy nation.

Thank you.

Herb Paquette



### Highlights

- To move social prescribing forward, doctors need to know the value of this practice and where to prescribe in an easy way.
- Upon a visit to my physician, I learned that family doctors sometimes lack knowledge of the various agencies and organizations that can provide social prescribing, which is why they are unable to find appropriate social prescriptions for patients.
- My explorations made me realize that medical schools in Ontario might not be teaching social prescribing as a form of patient care in the way we define it.
- If we are to move social prescribing forward in Canada, we need to start at the beginning by having medical schools and relevant ministries of postsecondary education incorporate social prescribing into the curriculum.
- If medical schools would act as torch bearers for social prescribing, perhaps, as they do in other countries, our doctors would learn the value of providing and connecting patients to social support, in terms of both superior health care to patients and decreasing costs.

**Keywords:** *social prescribing, physician training, medical school, advocacy, health care cost reduction, superior health care*

#### Author reference:

Canadian Institute for Social Prescribing at the Canadian Red Cross, Mississauga, Ontario, Canada

**Correspondence:** Herb Paquette, Canadian Institute for Social Prescribing at the Canadian Red Cross, 5700 Cancross Court, Mississauga, ON L5R 3E9



# Call for papers: Generating stronger evidence to inform policy and practice: natural experiments on built environments, health behaviours and chronic diseases

Call for papers in the HPCDP Journal licensed under a [Creative Commons Attribution 4.0 International licence](#)



**Guest editors:** Dr. Stephanie Prince Ware (Public Health Agency of Canada), Dr. Gavin McCormack (University of Calgary)

**HPCDP Journal Editors:** Robert Geneau and Margaret de Groh (Public Health Agency of Canada)

Where we work, learn, play, eat and live has important implications for health. The built environment has been associated with the development of chronic disease, and with health behaviours often seen as critical pathways for this relationship.<sup>1,2</sup> Built environments refer to components of the physical environment that are human-made or human-modified and include structures and buildings, recreation facilities, green spaces and parks, transportation systems and community design.

Natural experiments are interventions that occur without a researcher's ability to manipulate the intervention or exposure to the intervention.<sup>3,4</sup> Natural experiments offer the opportunity to evaluate the effects of "naturally occurring" interventions such as changes to the built environment (e.g. creation of a new bike path, park improvements, infrastructure changes to schools or workplaces, construction of a new recreation facility or grocery store) on health behaviours and chronic disease risk. Natural experiments are often more practical for investigating the health impacts of environmental interventions when compared to traditional experimental studies (e.g. randomized controlled trials). Compared to cross-sectional studies, natural experiments provide a means to generate rigorous evidence to better establish causality, as well as to understand the implementation of interventions in "real-world" scenarios.

This special issue answers the 2017 Canadian Public Health Officer annual report's call to further evaluate the health impacts of community design features in Canada.<sup>5</sup> This special issue resonates with the expanding scholarly and policy-oriented interest in the utility of natural experiments as a critical tool in advancing the body of evidence and for informing interventions to improve public and population health.<sup>6,7</sup> Specifically, the objective of this special issue on natural experiments is to provide timely evidence to further understand the effectiveness of built environment interventions on health behaviours and chronic disease prevention in a Canadian context.

*Health Promotion and Chronic Disease Prevention in Canada: Research, Policy and Practice* is seeking relevant topical research articles that present new findings or synthesize/review existing evidence on natural experiments of the built environment (or related policies) that influence health behaviours with implications for chronic disease prevention in Canada.

Relevant topic areas include, but are not limited to:

- Built environments, including community or neighbourhoods, workplaces, schools, transportation infrastructure, home environments, recreation environments, parks, playgrounds, green spaces, public open spaces, natural environments and seniors' residences.
- All health-related behaviours, including physical activity, sedentary behaviour, sleep, food consumption, smoking and substance use.
- Chronic diseases and health-related outcomes, including body mass index, fitness, blood pressure, blood lipids, blood sugar, injuries, falls, mental health, stress, depression, anxiety, Alzheimer's disease, dementia, obesity, metabolic syndrome, cardiovascular disease, cancer, diabetes and lung disease.

International submissions will be considered if they include Canadian data, results (e.g. as part of multi-country studies or global comparisons) and/or evidence-based discussion of implications for community or population health in Canada.

Consult the Journal's website for information on article types and detailed submission guidelines for authors. Kindly refer to this call for papers in your cover letter.

All manuscripts should be submitted using the Journal's ScholarOne Manuscripts online system. Pre-submission inquiries and questions about suitability or scope can be directed to [HPCDP.Journal-Revue.PSPMC@phac-aspc.gc.ca](mailto:HPCDP.Journal-Revue.PSPMC@phac-aspc.gc.ca).

**Submission deadline: November 30, 2024**

---

## References

1. Sallis JF, Floyd MF, Rodríguez DA, Saelens BE. Role of built environments in physical activity, obesity, and cardiovascular disease. *Circulation*. 2012;125(5):729-37. <https://doi.org/10.1161/CIRCULATIONAHA.110.969022>
2. Frank LD, Iroz-Elardo N, MacLeod KE, Hong A. Pathways from built environment to health: a conceptual framework linking behavior and exposure-based impacts. *J Transp Health*. 2019;12:319-35. <https://doi.org/10.1016/j.jth.2018.11.008>
3. Leatherdale ST. Natural experiment methodology for research: a review of how different methods can support real-world research. *Int J Soc Res Methodol*. 2019;22(1):19-35. <https://doi.org/10.1080/13645579.2018.1488449>
4. Craig P, Cooper C, Gunnell D, et al. Using natural experiments to evaluate population health interventions: new Medical Research Council guidance. *J Epidemiol Community Health*. 2012;66(12):1182-6. <https://doi.org/10.1136/jech-2011-200375>
5. Public Health Agency of Canada. The Chief Public Health Officer's report on the state of public health in Canada 2017: designing healthy living. Ottawa (ON): Public Health Agency of Canada; 2017. Available from: <https://www.canada.ca/en/public-health/services/publications/chief-public-health-officer-reports-state-public-health-canada/2017-designing-healthy-living.html#a8>
6. Ogilvie D, Adams J, Bauman A, et al. Using natural experimental studies to guide public health action: turning the evidence-based medicine paradigm on its head. *J Epidemiol Community Health*. 2020;74(2):203-8. <https://doi.org/10.1136/jech-2019-213085>
7. Craig P, Campbell M, Bauman A, et al. Making better use of natural experimental evaluation in population health. *BMJ*. 2022;379:e070872. <https://doi.org/10.1136/bmj-2022-070872>

## Other PHAC publications

Notice in the HPCDP Journal licensed under a [Creative Commons Attribution 4.0 International License](#)



Researchers from the Public Health Agency of Canada also contribute to work published in other journals and books. Look for the following articles published in 2024:

**Baddeliyanage R, Enns A, VanSteelandt A, Abele B, Kouyoumdjian F, Schleihauf E, Pan S, [...] Rotondo J.** Substance-related acute toxicity deaths by area-based characteristics: a descriptive analysis of a national chart review study of coroner and medical examiner data. *Int J Ment Health Addiction*. 2024. <https://doi.org/10.1007/s11469-024-01259-3>

Kelly SE, Benkhedda K, Brooks SPJ, MacFarlane AJ, **Greene-Finestone L**, Skidmore B, et al. Risk of bias in cross-sectional studies: protocol for a scoping review of concepts and tools. *MethodsX*. 2024;12. <https://doi.org/10.1016/j.mex.2024.102610>

**Khan F**, Coutts SB, Hill MD. Letter by Khan et al. regarding article, “Long-term incidence of ischemic stroke after transient ischemic attack: a nationwide study from 2014 to 2020.” *Circulation*. 2024;149(10):797-8. <https://doi.org/10.1161/CIRCULATIONAHA.123.067840>

Lange S, Kim KV, Lasserre AM, **Orpana H**, Bagge C, Roerecke M, et al. Sex-specific association of alcohol use disorder with suicide mortality: a systematic review and meta-analysis. *JAMA Netw Open*. 2024:E241941. <https://doi.org/10.1001/jamanetworkopen.2024.1941>

Lozano D, Dohoo C, Elfstrom D, Carswell K, **Guthrie JL**. COVID-19 outbreak at a residential apartment building in Northern Ontario, Canada. *Epidemiol Infect*. 2024;152:e53. <https://doi.org/10.1017/S0950268824000256>

MacNeil A, Li G, Gulati I, Taunque A, **Jiang Y, de Groh M**, et al. Depression during the COVID-19 pandemic among older adults with stroke history: findings from the Canadian Longitudinal Study on Aging. *Int J Geriatr Psychiatry*. 2024;39(2):e6062. <https://doi.org/10.1002/gps.6062>

Peng A, Bosco S, Simmons AE, **Tuite AR**, Fisman DN. Impact of community mask mandates on SARS-CoV-2 transmission in Ontario after adjustment for differential testing by age and sex. *PNAS Nexus*. 2024;3(2):pgae065. <https://doi.org/10.1093/pnasnexus/pgae065>

**Rolland-Harris E, Bryan S**, VanTil L. Studying military and veteran health using a life-course approach: lessons learned from a Canadian record linkage study. *J Mil Veteran Fam Health*. 2024;10(1):7-15. <https://doi.org/10.3138/jmvfh-2022-0071>

**Saxena S, Zutrauen S, McFaul SR**. Assault-related traumatic brain injury hospitalizations in Canada from 2010 to 2021: rates, trends and comorbidity. *Inj Epidemiol*. 2024;11(1). <https://doi.org/10.1186/s40621-024-00486-5>

Warkentin MT, Ruan Y, Ellison LF, Billette JM, **Demers A**, Liu F, et al. Progress in site-specific cancer mortality in Canada over the last 70 years. *Sci Rep*. 2024;14(1):5688. <https://doi.org/10.1038/s41598-024-56150-x>

