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Intersectoral health intervention to improve the life trajectory of people living with obesity: An environmental scan protocol.

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ABSTRACT

Introduction: Obesity, a complex chronic disease, is on the rise, leading to increased mortality, morbidity, and societal challenges. This study explores intersectoral interventions focusing on the needs of People Living with Obesity (PLO).

Methods: An environmental scan of published and unpublished literature will be conducted using MEDLINE, EMBASE, CINAHL, and specialized websites. To be included, citations must describe or evaluate an intersectoral intervention for PLO developed in primary care or community settings. Title and abstract, full-text screening and extraction will be completed by two independent reviewers. Discrepancies will be resolved through consensus. Data such as study and intervention characteristics will be extracted using a customized extraction template on Covidence. The findings will be synthesized in a table.

Discussion: Findings from this study will guide intervention design and enhance intersectoral collaboration in primary care and community settings. A multidisciplinary group, including clinicians and a patient partner, will be consulted throughout the process. Despite the challenges of defining intersectoral collaboration and limited data on obesity as a chronic disease, this study is foundational for developing effective intersectoral interventions for PLO.

Ethics and dissemination: Ethics approval is not required. Findings will be disseminated through presentations at relevant conferences and other knowledge translation activities and published in a peer-reviewed journal.

ARTICLE SUMMARY

STRENGTHS AND LIMITATIONS OF THIS STUDY

- While there are currently no systematic methods for conducting environmental scans, we follow an established methodology to conduct literature reviews.
- A multidisciplinary stakeholder group including clinicians, managers and patient-partners will be consulted throughout the environmental scan process.
- Although there is a comprehensive search strategy, the variety of terms used to define intersectoral collaboration may limit the assessment of other relevant studies.
- Obesity has only recently gained recognition as a chronic disease, which may limit the available data on intersectoral interventions. To address this, our search strategy will encompass a broad range of literature.

INTRODUCTION

Obesity is a complex and multifactorial chronic disease with a gradually increasing prevalence.(1–3) In Canada, the prevalence has tripled since 1985, affecting 26.8% of Canadian adults (7.3 million), surpassing diabetes (9,4%) and hypertension (22.6%).(4–6) Obesity is defined as an excess and/or dysfunctional adiposity in the body.(1) Body mass index or the ratio of weight to height squared,(7) and the Edmonton Obesity Staging System (staging tools),(8) are easily measurable and are the main parameters used to estimate the risks associated with obesity. However, these parameters are increasingly controversial in the literature since it does not consider a person's total or regional adiposity.(9,10) Abdominal and visceral adiposity are terms introduced into the literature to assess the health risks of the distribution of adiposity in the body.(1,11) People living with obesity (PLO) have increased mortality risk, higher morbidity, reduced life expectancy, and diminished quality of life.(12–15). For instance, obesity puts individuals at risk for conditions such as hypertension, coronary artery disease, obstructive sleep apnea, type 2 diabetes, osteoarthritis, and certain cancers among others.(1,16) In addition to comorbidities, many PLO experience weight-related prejudices, stigmatization, and discrimination, impacting their health and leading to healthcare avoidance and inequitable treatment.(17,18)

Despite the recognition of obesity as a chronic disease, health care is still often medico-centric.(17) Indeed, different factors, such as genetics, metabolism, behaviour, sociocultural influences, environment, and ethnicity, can contribute to obesity.(1,19) The healthcare system only contributes to 20% of a person's health and alone is insufficient to support PLO.(20) Beyond medical care, an integrated approach, adopting a systemic versus problem-focused lens is needed; considering different etiological factors and intervention points across the care continuum that can range from lifestyle interventions (such as access to healthy food, green spaces, and community networks) to bariatric surgery.(21–23) Thus, intersectoral interventions accounting for all health-social determinants would reduce the health inequities experienced by PLO.(24,25)

The World Health Organization introduced the concept of intersectoral action for health in 1997 as "a recognized relationship between one or more parts of the health sector and parts of another sector that has been formed to address an issue to achieve health outcomes (or intermediate health outcomes) more efficiently, effectively, or sustainably than could be achieved by the health sector alone.".(26) The literature emphasizes the importance of developing intersectoral interventions for

PLOs but few health interventions encompass specific strategies to engage stakeholders such as clinicians, managers, policy makers, community members, and patients from different sectors actively.(17)

To effectively leverage available resources and expertise to improve health outcomes of PLO in Quebec, the OBESITY-INTER-COLLAB project was created. The OBESITY-INTER-COLLAB project is a participatory research project conducted in co-governance with a citizen partner (LB) and a primary care researcher clinician (GL) to propose an innovative organizational approach to the health care and services currently offered to PLO in Quebec (Canada). The aim of this project is to co-construct an intersectoral community of practice dedicated to PLO, using a participatory research approach focused on their needs. The first step in achieving this goal is to conduct an environmental scan to model human and organizational resources for and with PLO to understand the "what better" and the "how," i.e. the models of intersectoral interventions that exist for and with PLOs in the literature, and how the resources and participants involved in these interventions are mobilized to create tangible effects on all the health determinants of PLOs. The results from the environmental scan will inform participants in the community of practice about interventions currently in place to support PLO and help them in implementing innovative interventions in their territories.

METHODS

Environmental scans are a structured information-gathering methodology around a subject used in the healthcare sector to synthesize evidence for program information, policy development and identifying service gaps.(27,28) While environmental scans are increasingly recognized in research for investigating health issues, there is currently no universally accepted standard methodology for conducting this method.(29,30) The methodological framework for environmental scans usually encompasses gathering information from multiple sources which improves the validity of the conclusions by lowering biases. This environmental scan will use data collection by reviewing published and grey literature regarding intersectoral health interventions targeting people living with obesity. Thus, the scan will follow four steps based on Arksey and O'Malley's methodological framework: (1) search strategies and data sources, (2) selection process, (3) data extraction, and (4) data synthesis.

The environmental scan centers on the following question:

"What intersectoral health interventions have been developed within the community and primary care settings for people living with obesity?"

1. Search strategies and data sources

a. Academic literature

An experienced research librarian (BN) designed the academic literature search strategy using medical subject headings and keywords. The different search terms cover the themes of intersectoral intervention and obesity. The following electronic databases will be searched: MEDLINE (Ovid), CINAHL (EBSCOhost), and Web of Science. The search in bibliographic databases will be limited to adults. Only literature published in English or French between 2006 and 2024 will be considered, given that obesity was recognized as a chronic disease in the 2006 Canadian clinical practice guidelines on the management and prevention of obesity. In CINAHL, we will use the limits "exclude Medline records" and "peer reviewed." Another senior information specialist, using the PRESS Checklist, will peer-review the Medline search strategy before execution. If required, the authors of the identified studies and reports will be contacted to acquire any missing information. The search strategy is reported in the Electronic Supplementary Material Appendix 1.

b. Grey literature

The grey literature search aims to gather all relevant documents, webpages, blogs, news sites, and other online resources that may not be included in the published literature. It will include search engines and preselected specific websites. The search strategy for this grey literature review will be discussed with an experienced research librarian (FB) and based on a grey literature guideline.(31)

The grey literature search will use the following keywords: intervention/ action/ approach, intersectoral/collaborative/community/participative, obesity, citizens/user. Searches will be carried out on sites in English and French. Only the first 50 results will be considered to ensure a comprehensive search. First, the metasearch engine Etools.ch will be used for a unique search on Google (Google.com, Mountain View, CA, USA) and Qwant (Qwant.com, France). It will also be used to search government websites (for example .org, .qc.ca, etc.) in all the commonwealth

countries. Specialized public health grey literature resources such as Tagpacker and all relevant webpages from the organizations listed in Electronic Supplementary Material Appendix 2 will be consulted. The preselected website comprise a list of relevant websites encountered during discussions, research, and knowledge gathering within the team. The process will be recorded in tables.

2. Selection process

Following the search, the results will be imported into Endnote™, a software for managing bibliographic references, to remove duplicates. The database will then be transferred to Covidence web application for the screening process.(32) Eligible literature will be screened using titles and abstracts, followed by a full-text review of selected sources. Two reviewers will independently assess all sources for inclusion according to predetermined criteria outlined in Table 1. It will be categorized as included or excluded at each analysis stage. Any discrepancies between reviewers will be resolved through discussion with a third reviewer. Inter-rater reliability will be assessed to evaluate the validity of the selection process. Before the initial review, a sample of 50 study abstracts will be used to test the inclusion and exclusion criteria. This process aims to confirm the robustness and specificity of our selection criteria in identifying relevant literature. Reasons for exclusion during full-text review will be documented.(33)

Table 1: Eligibility criteria

	Inclusion	**Exclusion**
Population	General population (over 18 years) living with obesity.	Children Pregnant women and post-partum
Intervention	Collaboration between the health sector and other sectors (intersectoral) Based in the community setting or primary care (e.g., pharmacy, outpatient clinic in the community, academic centers…) or related to bariatric surgery Focused on obesity or its complications	Absence of intersectoral collaboration Other setting (e.g., acute care, paediatric care, urgent care, palliative care…) Focused on other diseases

Context	The eleven high-income countries of the Commonwealth Fund: Australia, Canada, England, France, Germany, Netherlands, New Zealand, Norway, Sweden, Switzerland, United States	Other countries.
Outcome	Aims to support and/or improve the health and well-being of PLOs	-
Study type	Reviews, commentaries, qualitative studies, quantitative studies, observational studies, cross-sectional studies…	Thesis, dissertations, conference abstracts, editorials, technical manuals, and study protocols …

Commonwealth Fund's international health policy surveys were used to select countries, ensuring the inclusion of countries with healthcare systems comparable to the Canadian system.(34,35)

3. Data extraction

Data extraction will be performed on included citations and reports after the selection process. Information to be extracted encompasses source details and intervention characteristics, including the level of action, target population, and involved actors. A comprehensive list of characteristics is outlined in Table 2. Two reviewers will independently extract data from all included citations, with any discrepancies resolved through discussion within the research team. To ensure the precision of the process, the data extraction form will be piloted on a sample of 10 citations and adjusted as needed.

Table 2: Data extraction form

Characteristics	**Details**
Source	Authors
	Year of publication
	Type of document
	Country of publication
	Aim of the study

	Study design
Definition	Definition of intersectoral collaboration
	Definition of obesity
Characteristics of the intervention	Name
	Description
	Sectors/setting involved
	Target population
	Geographical region
	Aim of the intervention
	Stage (Feasability, implementation, evaluation ...)
	Actors and their function
	Social determinants of health addressed
	Type of interaction (Cooperation, collaboration, merging ...) (36)
	Outcomes
	Tools and/or frameworks used

4. Data synthesis

The results will be reported using a PRISMA 2020 flow diagram presenting the screening process, including the number of citations identified, duplicates removed, studies screened, excluded, and full texts included with reasons for exclusion.(37) The characteristics of the included interventions will be summarized in a table and classified according to four social determinants of health in the County Health Rankings' model of health: socio-economic factors, physical environment, health care and health behaviours.(19)

Furthermore, the environmental scan results will be used to explore how to implement a health intervention involving the community and the health system (i.e. the How?) for and with people living with obesity to facilitate the implementation of the intersectoral obesity community of practice. Finally, findings will be synthesized as a report to inform participants in the community of practice about existing interventions comprehensively and synthetically for key data. A knowledge broker will be called to help find the right format to engage all participants in this process.

ETHICS AND DISSEMINATION

Ethics approval is unnecessary for this review, as it involves reviewing and collecting data from published and/or publicly available sources. The review started in May 2024 and is projected to be completed by December 2024, with dissemination planned through peer-reviewed publications and presentations to key stakeholders.

DISCUSSION

The environmental scan will identify potential intersectoral interventions for PLO. It aims to explore the characteristics of these types of interventions, including factors that contribute to their implementation and delivery, and knowledge gaps. The results of this scan may inform the design of intersectoral interventions to support PLO and nourish interaction in an intersectoral group/community.

Environmental scan is a methodological approach from the business sectors to inform strategic decision-making, which has been widely adopted in the healthcare sector.(38) However, it still lacks a consistent definition and a methodological guide to conduct this type of research in the literature.(39) Thus, the environmental scan will include both published and unpublished literature to ensure comprehensiveness but will be limited to publications in French and English. Intersectorality is a relatively new approach that can be defined in various ways. Although there was a comprehensive search strategy, the various terms used to define intersectoral collaboration may limit the assessment of relevant citations. Additionally, obesity has only recently been acknowledged as a chronic disease, which may potentially limit the scope of available data.

Nevertheless, this study is the first step in establishing a practical base to help the project team develop an intervention for and with PLO that supports their overall health and well-being.

PATIENT AND PUBLIC INVOLVEMENT

A patient-partner (LB) is included in our team and will be involved throughout the review process. She will be consulted from protocol development to dissemination and will also contribute as a reviewer.

FOOTNOTES

Géraldine Layani, Anne Schweitzer, Sopie Marielle Yapi, Thameya Balasingam, Laurence Berthelet, Megane Pierre, Alexandre Tremblay, Nadia Sourial, Antoine Boivin, Maxime Sasseville, Jean-Baptiste Gartner, André Coté, Frédérique Bergeron, Lily Lessard, Brigitte Vachon

Author Contributions: GL conceived of the idea, developed the research question and study methods, and contributed meaningfully to the drafting and editing; SMY and AS aided significantly in developing the study methods and contributed meaningfully to the drafting, editing and formatting of the manuscript; TB, LB, MP, AT, NS, AB, MS, JBG, AC, FB, LL and BV aided in developing the research question and study methods, contributed meaningfully to the editing of the manuscript. All authors approved the final manuscript.

Competing interests: No competing interests to declare.

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Provenance and peer review: Not commissioned; externally peer reviewed.

Data sharing statement: No data are available.

Note: In the text, the use of the term people living with obesity (PLO) is in no way intended to be discriminatory or stigmatizing.

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Draft search strategy - Medline (Ovid)

#	Search strategy
1	Intersectoral collaboration/ OR Interprofessional relations/ OR Interdisciplinary communication/ OR Interdepartmental relations/ OR Interinstitutional relations/ OR Cooperative Behavior/
2	(intersector* or inter-sector* or multisector* or multi-sector* or cross-sector* or "Health in all policies" or hiap).ti,kf,kw. or (intersector* or inter-sector* or multisector* or multi-sector* or cross-sector* or "Health in all policies" or hiap).ab. /freq=2
3	(interprofession* or inter profession* or interdisciplinar* or inter disciplinar* or interdepartment* or inter department* or interinstitution* or inter institution* or interagenc* or inter-agenc* or multidisciplinar* or multi disciplinar* or cross-disciplinar*).ti,kf,kw. or (interprofession* or inter profession* or interdisciplinar* or inter disciplinar* or interdepartment* or inter department* or interinstitution* or inter institution* or interagenc* or inter-agenc* or multidisciplinar* or multi disciplinar* or cross-disciplinar*).ab. /freq=2
4	((collaborati* or cooperati* or holistic or coordinat* or integrat* or comprehensive* or collectiv*) adj2 (approach* or intervention* or engag* or relation* or communicat*)).ti,kf,kw. or ((collaborati* or cooperati* or holistic or coordinat* or integrat* or comprehensive* or collectiv*) adj2 (approach* or intervention* or engag* or relation* or communicat*)).ab. /freq=2
5	(partnering or partnership* or coalition* or alliance*).ti,kf,kw. or (partnering or partnership* or coalition* or alliance*).ab. /freq=2
6	Delivery of Health Care, Integrated/
7	(integrated adj3 (care or healthcare or delivery or framework*)).tw,kf,kw.
8	(clinical adj3 community).tw,kf,kw.
9	Chronic Care Model.tw,kf,kw.
10	or/1-9
11	*obesity/ or *obesity hypoventilation syndrome/ or *obesity, abdominal/ or *obesity, maternal/ or *obesity, metabolically benign/ or *obesity, morbid/
12	obesity.ti,kf,kw. or obesity.ab. /freq=3

13	(obese adj2 (patient* or population or adult* or men or women or male* or female*)).ti,kf,kw.
14	11 OR 12 OR 13
15	10 AND 14
16	(newborn* or new-born* or neonat* or neo-nat* or infan* or child or children* or childhood* or adolesc* or paediatr* or pediatr* or baby* or babies* or toddler* or kid or kids or boy* or girl* or juvenile* or teen* or youth* or pubescen* or preadolesc* or prepubesc* or preteen or tween).ti,kf,jw. not (adult* or elder or elders or elderly* or middle-age*).ti,kf.
17	15 not 16
18	limit 17 to yr=2006-2024

Table: List of organisations

Type of organisation	List of organisations
Public Organisation	- Obésité Canada - Obesity society (USA) - Obesity action coalition (USA) - Centres Spécialisés en Obésité (CSO-France) - GPSobésité (France) - Australian and New-Zealand Metabolic and Obesity Surgery Society (ANZOSS-NZ and Australia) - Centres spécialisés en chirurgie bariatrique (Québec) - Canadian obesity clinic locator (Canada) - Centdegré (Québec) - Vitam (Québec)
Private organisation	- Compagnies pharmaceutiques: novonordisk, bausch and health - Cliniques privées en obésité
Public health organisations	- Institut National d'Excellence en Santé et Services Sociaux (INESSS-Québec) - Institut National de Santé Publique du Québec (INSPQ-Québec) - Agence de la santé publique Canada - Organisation Mondiale de la Santé (OMS) - Haute Autorité de Santé (HAS-France) - Canadian task forces - United States task forces (USA)

Research websites	- Australian and New Zealand Obesity Society (ANZOS-Autralie et NZ) - TRIP medical database - Institut National d'Information sur la santé (ICIS-Canada) - National Institutes of Health (NIH-USA) - National Health Services (NHS-UK) - National health and medical research (Australia) - Center for Disease Control and prevention (CDC-USA) - Institut National de la Santé Et de la Recherche Médicale (INSERM-France)
Associations	- Partnership overweight (Nederland - https://www.partnerschapovergewicht.nl/contact/) - STOP Alliance against obesity (USA) - Ligue contre l'obésité (France) - Groupe de Réflexion sur l'Obésité et le Surpoids (GROS-France) - Association Française d'Études et de Recherche en Obésité (AFÉRO-France) - Conseil Nationale des Associations d'Obèses (CNAO-France) - Equilibre (Québec) - Arrimage (Québec)
Others	- https://catalogue.santecom.qc.ca - https://tagpacker.com/user/INSPQ-documentation - Database web of science

BMJ Open

Identifying characteristics of intersectoral health interventions between the primary care and community settings for people living with obesity: An environmental scan protocol.

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Identifying characteristics of intersectoral health interventions between the primary care and community settings for people living with obesity: An environmental scan protocol.

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ABSTRACT

Introduction: Obesity, a complex chronic disease, is on the rise, leading to increased mortality, morbidity, and societal challenges. This study explores intersectoral interventions focusing on the needs of People Living with Obesity (PLO).

Methods and analysis: An environmental scan of published and unpublished literature will be conducted using MEDLINE, EMBASE, CINAHL, and specialized websites. To be included, citations must describe or evaluate an intersectoral intervention for PLO developed in primary care or community settings. Title and abstract, full-text screening and extraction will be completed by two independent reviewers. Discrepancies will be resolved through consensus. Data such as study and intervention characteristics will be extracted using a customized extraction template on Covidence and synthesized in a table. Findings from this study will guide intervention design and enhance intersectoral collaboration in primary care and community settings. A multidisciplinary group, including clinicians and two patient partners, will be consulted throughout the process. Despite the challenges of defining intersectoral collaboration and limited data on obesity as a chronic disease, this study is foundational for developing effective intersectoral interventions for PLO.

Ethics and dissemination: Ethics approval is not required. Findings will be disseminated through presentations at relevant conferences and other knowledge translation activities and published in a peer-reviewed journal.

ARTICLE SUMMARY

STRENGTHS AND LIMITATIONS OF THIS STUDY

- While there are currently no systematic methods for conducting environmental scans, we follow an established methodology to conduct literature reviews.
- A multidisciplinary stakeholder group, including clinicians, managers and patient partners will be consulted throughout the environmental scan process.
- Although there is a comprehensive search strategy, the variety of terms used to define intersectoral collaboration may limit the assessment of other relevant studies.
- The recent recognition of obesity as a chronic disease may limit available data on intersectoral interventions, prompting our search strategy to encompass a broad range of literature.

INTRODUCTION

Obesity is a complex and multifactorial chronic disease with a gradually increasing prevalence.[1-3] In Canada, the prevalence has tripled since 1985, affecting 26.8% of Canadian adults (7.3 million), surpassing diabetes (9,4%) and hypertension (22.6%).[4-6] Obesity is defined as an excess and/or dysfunctional adiposity in the body.[1] Body mass index,[7] and the Edmonton Obesity Staging System (staging tools),[8] are the main parameters used to estimate the risks associated with obesity. However, these parameters are increasingly controversial in the literature since it does not consider a person's total or regional adiposity.[9,10] Abdominal and visceral adiposity are terms introduced into the literature to assess the health risks of the distribution of adiposity in the body.[1,11] People living with obesity (PLO) have increased mortality risk, higher morbidity, reduced life expectancy, and diminished quality of life.[12-15] For instance, obesity puts individuals at risk for conditions such as hypertension, coronary artery disease, obstructive sleep apnea, type 2 diabetes, osteoarthritis, and certain cancers among others.[1,16] In addition to comorbidities, many PLO experience weight-related prejudices, stigmatization, and discrimination, impacting their health and leading them to avoid healthcare and receive inequitable treatment.[17,18]

Despite the recognition of obesity as a chronic disease, health care is still often medico-centric.[17] Indeed, different factors, such as genetics, metabolism, behaviour, sociocultural influences, environment, and ethnicity, can contribute to obesity.[1,19] The healthcare system only contributes to 20% of a person's health and alone is insufficient to support PLO.[20] Considering different etiological factors, an integrated, systemic versus a problem-focused approach is needed. This approach supports interventions across the care continuum that can range from lifestyle interventions (such as access to healthy food, green spaces, and community networks) to bariatric surgery.[21-23] Thus, intersectoral interventions accounting for all determinants of a person's health (socio-economic, genetic, environmental, bio-medical) would reduce the health inequities experienced by PLO.[24,25]

The World Health Organization introduced the concept of intersectoral action for health in 1997 as "a recognized relationship between one or more parts of the health sector and parts of another sector that has been formed to address an issue to achieve health outcomes (or intermediate health outcomes) more efficiently, effectively, or sustainably than could be achieved by the health sector alone.".[26] The literature emphasizes the importance of developing intersectoral interventions for

PLOs but few health interventions encompass specific strategies to engage stakeholders such as clinicians, managers, policy makers, community members, and patients from different sectors actively.[17]

To effectively leverage available resources and expertise to improve health outcomes of PLO in Quebec, the OBESITY-INTER-COLLAB project was created. The OBESITY-INTER-COLLAB project is a participatory research project conducted in co-governance with a citizen partner (LB) and a primary care researcher clinician (GL) to propose an innovative organizational approach to the health care and services currently offered to PLO in Quebec (Canada). The aim of this project is to co-construct an intersectoral learning community dedicated to PLO, using a participatory research approach focused on their needs. The first step in achieving this goal is to conduct an environmental scan to model human and organizational resources for and with PLO. This will allow us to understand the models of intersectoral interventions that exist for and with PLOs in the literature, and how the resources and participants involved in these interventions are mobilized to create tangible effects on all the health determinants of PLOs. The results from the environmental scan will inform participants in the community of practice about interventions currently in place to support PLO and help them implement innovative interventions in their territories.

METHODS

Environmental scans are a structured information-gathering methodology around a subject used in the healthcare sector to synthesize evidence for program information, policy development and identifying service gaps.[27,28] While environmental scans are increasingly recognized in research for investigating health issues, there is currently no universally accepted standard methodology for conducting this method.[29,30] The methodological framework for environmental scans usually encompasses gathering information from multiple sources which improves the validity of the conclusions by lowering biases. This environmental scan will use data collection by reviewing published and grey literature regarding intersectoral health interventions targeting people living with obesity. Thus, the scan will follow four steps based on Arksey and O'Malley's methodological framework: (1) search strategies and data sources, (2) selection process, (3) data extraction, and (4) data synthesis.

The environmental scan centers on the following question:

"What intersectoral health interventions have been developed within the community and primary care settings for people living with obesity?"

1. Search strategies and data sources

a. Academic literature

An experienced research librarian (BN) designed the academic literature search strategy using medical subject headings and keywords. The different search terms cover the themes of intersectoral intervention and obesity. The following electronic databases will be searched: MEDLINE (Ovid), CINAHL (EBSCOhost), and Web of Science. The search in bibliographic databases will be limited to adults. Only literature published in English or French between 01 January 2006 and 15 April 2024 will be considered, given that obesity was recognized as a chronic disease in the 2006 Canadian clinical practice guidelines on managing and preventing obesity.[31] In CINAHL, we will use the limits "exclude Medline records" and "peer-reviewed." Another senior information specialist, using the PRESS Checklist, will peer-review the Medline search strategy before execution. If required, the authors of the identified studies and reports will be contacted to acquire any missing information. The search strategy is reported in the Electronic Supplementary Material Appendix 1.

b. Grey literature

The grey literature search aims to gather all relevant documents, webpages, blogs, news sites, and other online resources that may not be included in the published literature. It will include search engines and preselected specific websites. The search strategy for this grey literature review will be discussed with an experienced research librarian (FB) and will be based on a grey literature guideline.[32]

The grey literature search will use the following keywords: intervention/ action/ approach, intersectoral/collaborative/community/participative, obesity, citizens/user. Searches will be carried out on sites in English and French. As per the librarian's suggestion, only the first 50 results will be considered to ensure a comprehensive search and reach a saturation point.[33]

Indeed, since the relevance algorithm diminishes beyond the first few results and preliminary tests indicated that beyond the first 50, nothing relevant seemed to emerge, the limit of 50 will be applied.[33] First, the metasearch engine Etools.ch will be used for a unique search on Google

(Google.com, Mountain View, CA, USA) and Qwant (Qwant.com, France). It will also be used to search government websites (for example, .org, .qc.ca, etc.) in all the commonwealth countries. Specialized public health grey literature resources such as Tagpacker and all relevant webpages from the organizations listed in Electronic Supplementary Material Appendix 2 will be consulted. The preselected website comprises a list of relevant websites encountered during discussions, research, and knowledge gathering within the team. The process will be recorded in tables.

2. Selection process

Following the search, the results from the academic search will be imported into Endnote™, a software for managing bibliographic references, to remove duplicates. The database will then be transferred to the Covidence web application for the screening process.[34] Eligible literature will be screened using titles and abstracts, followed by a full-text review of selected sources. Eligible sites identified from the grey literature search will be exported to an Excel sheet. Two reviewers will independently assess all sources for inclusion according to predetermined criteria outlined in Table 1. It will be categorized as included or excluded at each analysis stage. Any discrepancies between reviewers will be resolved through discussion with a third reviewer. Inter-rater reliability will be assessed to evaluate the validity of the selection process. Before the initial review, a sample of 50 study abstracts will be used to test the inclusion and exclusion criteria. This process aims to confirm the robustness and specificity of our selection criteria in identifying relevant literature. Reasons for exclusion during full-text review will be documented.[35]

Table 1: Eligibility criteria

	Inclusion	**Exclusion**
Population	General population (over 18 years) living with obesity	Children Pregnant women and post-partum
Intervention	Collaboration between the health sector and other sectors (intersectoral) Based in the community setting or primary care (e.g., pharmacy, outpatient clinic in	Absence of intersectoral collaboration Other setting (e.g., acute care, paediatric care, urgent care, palliative care…)

	the community, academic centers…) or related to bariatric surgery Focused on obesity or its complications	Focused on other diseases
Context	The eleven high-income countries of the Commonwealth Fund: Australia, Canada, England, France, Germany, Netherlands, New Zealand, Norway, Sweden, Switzerland, United States	Other countries
Outcome	Aims to support and/or improve the health and well-being of PLOs	-
Study type	Reviews, commentaries, qualitative studies, quantitative studies, observational studies, cross-sectional studies…	Thesis, dissertations, conference abstracts, editorials, technical manuals, and study protocols …

Commonwealth Fund's international health policy surveys were used to select countries, ensuring the inclusion of countries with healthcare systems comparable to the Canadian system.[36,37]

3. Data extraction

Data extraction will be performed on included citations and reports after the selection process. Information to be extracted encompasses source details and intervention characteristics, including the level of action, target population, and involved actors. A comprehensive list of characteristics is outlined in Table 2. Two reviewers will independently extract data from all included citations, with any discrepancies resolved through discussion within the research team. To ensure the precision of the process, the data extraction form will be piloted on a sample of 10 citations and adjusted as needed.

Table 2: Data extraction form

Characteristics	**Details**
Source	Authors
	Year of publication
	Type of document

	Country of publication
	Aim of the study
	Study design
Definition	Definition of intersectoral collaboration
	Definition of obesity
Characteristics of the intervention	Name
	Description
	Sectors/setting involved
	Target population
	Geographical region
	Aim of the intervention
	Stage (Feasibility, implementation, evaluation ...)
	Actors and their function
	Social determinants of health addressed
	Type of interaction (Cooperation, collaboration, merging ...)[38]
	Outcomes (structure, process and outcomes indicators)
	Tools and/or frameworks used

4. Data synthesis

The results will be reported using a PRISMA 2020 flow diagram presenting the screening process, including the number of citations identified, duplicates removed, studies screened, excluded, and full texts included with reasons for exclusion.[39] The characteristics of the included interventions will be summarized in a table and classified according to four social determinants of health in the County Health Rankings' model of health: socio-economic factors, physical environment, health care and health behaviours.[19]

Furthermore, the environmental scan results will be used to explore how to implement a health intervention involving the community and the health system (i.e. the How?) for and with people living with obesity to facilitate the implementation of the intersectoral obesity community of practice. Finally, findings will be synthesized as a report to inform participants in the community of practice about existing interventions comprehensively and synthetically for key data. A

knowledge broker will be called to help find the right format to engage all participants in this process. The review started in May 2024 and is projected to be completed by March 2025.

ETHICS AND DISSEMINATION

Ethics approval is unnecessary for this review, as it involves reviewing and collecting data from published and/or publicly available sources. Dissemination of the results is planned through peer-reviewed publications and presentations to key stakeholders.

DISCUSSION/CONCLUSION

The environmental scan will identify potential intersectoral interventions for PLO. It aims to explore the characteristics of these types of interventions, including factors that contribute to their implementation and delivery, as well as knowledge gaps. The results of this scan may inform us on the actors needed to create an intersectoral collaboration and give information on their potential interaction, communes' values, and definitions. Therefore, it will help us design an intervention that responds to the needs of PLO. Environmental scan is a methodological approach from the business sectors to inform strategic decision-making, which has been widely adopted in the healthcare sector.[40] However, it still lacks a consistent definition and a methodological guide to conduct this type of research in the literature.[41] Thus, the environmental scan will include both published and unpublished literature to ensure comprehensiveness but will be limited to publications in French and English. Challenges encountered with grey literature, such as the difficulty accessing the information in a reproducible way, doing its inventory, and evaluating the information, will be mitigated with double screening. However, the information collected in the grey literature search is complementary to that collected from traditional databases. Intersectorality is a relatively new approach that can be defined in various ways. Although there was a comprehensive search strategy, the various terms used to define intersectoral collaboration may limit the assessment of relevant citations. Additionally, obesity has only recently been acknowledged as a chronic disease, which may potentially limit the scope of available data.

Nevertheless, this study is the first step in establishing a practical base to help the project team develop an intervention for and with PLO that supports their overall health and well-being.

PATIENT AND PUBLIC INVOLVEMENT

Our team includes two patient-partners LB and MT who will be involved throughout the review process and will be consulted from protocol development to dissemination. LB will also contribute as a reviewer.

FOOTNOTES

Géraldine Layani, Anne Schweitzer, Sopie Marielle Yapi, Thameya Balasingam, Laurence Berthelet, Megane Pierre, Alexandre Tremblay, Nadia Sourial, Antoine Boivin, Maxime Sasseville, Jean-Baptiste Gartner, André Coté, Frédérique Bergeron, Lily Lessard, Brigitte Vachon

Author Contributions: GL conceived of the idea, developed the research question and study methods, and contributed meaningfully to the drafting and editing; SMY and AS aided significantly in developing the study methods and contributed meaningfully to the drafting, editing and formatting of the manuscript; TB, LB, MP, AT, NS, AB, MS, JBG, AC, FB, LL and BV aided in developing the research question and study methods, contributed meaningfully to the editing of the manuscript. GL is the guarantor of this manuscript. All authors approved the final manuscript.

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Note: In the text, the use of the term people living with obesity (PLO) is in no way intended to be discriminatory or stigmatizing.

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Draft search strategy - Medline (Ovid)

#	Search strategy
1	Intersectoral collaboration/ OR Interprofessional relations/ OR Interdisciplinary communication/ OR Interdepartmental relations/ OR Interinstitutional relations/ OR Cooperative Behavior/
2	(intersector* or inter-sector* or multisector* or multi-sector* or cross-sector* or "Health in all policies" or hiap).ti,kf,kw. or (intersector* or inter-sector* or multisector* or multi-sector* or cross-sector* or "Health in all policies" or hiap).ab. /freq=2
3	(interprofession* or inter profession* or interdisciplinar* or inter disciplinar* or interdepartment* or inter department* or interinstitution* or inter institution* or interagenc* or inter-agenc* or multidisciplinar* or multi disciplinar* or cross-disciplinar*).ti,kf,kw. or (interprofession* or inter profession* or interdisciplinar* or inter disciplinar* or interdepartment* or inter department* or interinstitution* or inter institution* or interagenc* or inter-agenc* or multidisciplinar* or multi disciplinar* or cross-disciplinar*).ab. /freq=2
4	((collaborati* or cooperati* or holistic or coordinat* or integrat* or comprehensive* or collectiv*) adj2 (approach* or intervention* or engag* or relation* or communicat*)).ti,kf,kw. or ((collaborati* or cooperati* or holistic or coordinat* or integrat* or comprehensive* or collectiv*) adj2 (approach* or intervention* or engag* or relation* or communicat*)).ab. /freq=2
5	(partnering or partnership* or coalition* or alliance*).ti,kf,kw. or (partnering or partnership* or coalition* or alliance*).ab. /freq=2
6	Delivery of Health Care, Integrated/
7	(integrated adj3 (care or healthcare or delivery or framework*)).tw,kf,kw.
8	(clinical adj3 community).tw,kf,kw.
9	Chronic Care Model.tw,kf,kw.
10	or/1-9
11	*obesity/ or *obesity hypoventilation syndrome/ or *obesity, abdominal/ or *obesity, maternal/ or *obesity, metabolically benign/ or *obesity, morbid/
12	obesity.ti,kf,kw. or obesity.ab. /freq=3

13	(obese adj2 (patient* or population or adult* or men or women or male* or female*)).ti,kf,kw.
14	11 OR 12 OR 13
15	10 AND 14
16	(newborn* or new-born* or neonat* or neo-nat* or infan* or child or children* or childhood* or adolesc* or paediatr* or pediatr* or baby* or babies* or toddler* or kid or kids or boy* or girl* or juvenile* or teen* or youth* or pubescen* or preadolesc* or prepubesc* or preteen or tween).ti,kf,jw. not (adult* or elder or elders or elderly* or middle-age*).ti,kf.
17	15 not 16
18	limit 17 to yr=2006-2024

Table: List of organisations

Type of organisation	List of organisations
Public Organisation	- Obésité Canada - Obesity society (USA) - Obesity action coalition (USA) - Centres Spécialisés en Obésité (CSO-France) - GPSobésité (France) - Australian and New-Zealand Metabolic and Obesity Surgery Society (ANZOSS-NZ and Australia) - Centres spécialisés en chirurgie bariatrique (Québec) - Canadian obesity clinic locator (Canada) - Centdegré (Québec) - Vitam (Québec)
Private organisation	- Compagnies pharmaceutiques: novonordisk, bausch and health - Cliniques privées en obésité
Public health organisations	- Institut National d'Excellence en Santé et Services Sociaux (INESSS-Québec) - Institut National de Santé Publique du Québec (INSPQ-Québec) - Agence de la santé publique Canada - Organisation Mondiale de la Santé (OMS) - Haute Autorité de Santé (HAS-France) - Canadian task forces - United States task forces (USA)

Research websites	- Australian and New Zealand Obesity Society (ANZOS-Autralie et NZ) - TRIP medical database - Institut National d'Information sur la santé (ICIS-Canada) - National Institutes of Health (NIH-USA) - National Health Services (NHS-UK) - National health and medical research (Australia) - Center for Disease Control and prevention (CDC-USA) - Institut National de la Santé Et de la Recherche Médicale (INSERM-France)
Associations	- Partnership overweight (Nederland - https://www.partnerschapovergewicht.nl/contact/) - STOP Alliance against obesity (USA) - Ligue contre l'obésité (France) - Groupe de Réflexion sur l'Obésité et le Surpoids (GROS-France) - Association Française d'Études et de Recherche en Obésité (AFÉRO-France) - Conseil Nationale des Associations d'Obèses (CNAO-France) - Equilibre (Québec) - Arrimage (Québec)
Others	- https://catalogue.santecom.qc.ca - https://tagpacker.com/user/INSPQ-documentation - Database web of science