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Sequential Sharing Circles as a qualitative decolonizing approach to explore the experiences of Manitoba's urban Indigenous population living with Type II diabetes mellitus, obesity, and bariatric surgery

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Sequential Sharing Circles as a qualitative decolonizing approach to explore the experiences of Manitoba's urban Indigenous population living with Type II diabetes mellitus, obesity, and bariatric surgery

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Abstract

Introduction: The body of literature on outcomes for Indigenous patients undergoing bariatric surgery is scarce. The purpose of this study is to employ a decolonizing methodology of sharing circles and individual interviews guided by an Indigenous Elder to explore the perspectives and experiences of urban Indigenous Manitobans with respect to type 2 diabetes mellitus (T2DM), obesity and bariatric surgery. This research will identify themes related to cultural and traditional practices that may be incorporated into the perioperative bariatric surgery experience.

Methods and analysis: Indigenous adults living in an urban center (Winnipeg, Manitoba Canada), who are obese (BMI >35) and have T2DM will partake in Sequential Sharing Circles (SSC's), a novel method for qualitative analysis. SSCs support Indigenous ways of knowing and sharing information and represent a culturally appropriate approach to Indigenous health research. Format and content was developed in consultation with an Indigenous Advisory group. Three groups will be investigated: 1) those who have had bariatric surgery 2) those on the wait list for bariatric surgery and 3) those not associated with the bariatric surgery program. Each group will be comprised of 4-8 participants.

SSCs will be consistent in format using semi-structured questions led by an Indigenous Elder. Individual interviews facilitated by the Elder and another member of the research team will be available. SSC and interview content will be audiotaped and transcribed. Transcripts will be coded using Dedoose Software and analyzed to identify emerging patterns and themes using a constructive grounded theory approach.

Ethics and dissemination: Ethics approval was provided by the University of Manitoba Health Research Ethics Board. Findings will be disseminated in peer reviewed scientific journals, at obesity and Indigenous health conferences and through a knowledge sharing ceremony with study participants. Results will also inform program development at Manitoba's Centre for Metabolic and Bariatric Surgery Program.

Strengths and Limitations:

- This study is the first of its kind in Canada to utilize the culturally relevant Sequential Sharing Circle method of data collection to identify new knowledge about the experiences and perspectives of an urban Indigenous population living with T2DM and obesity in relation to bariatric surgery.
- The application of member checking and Dedoose coding in the methodology will improve data credibility and transferability.
- This research is responsive to the one of the goals of the Truth and Reconciliation Commission of Canada's Calls to Action: to increase research in Indigenous populations in order to identify and eliminate gaps in health outcomes.
- Recruitment for the study will be self-referral which may exclude the views and opinions of some eligible participants.

- The sample size in each of the focus groups is small therefore the findings will require further study in the future.

Introduction

Obesity and type 2 diabetes mellitus (T2DM) are growing global health concerns associated with significant morbidity, mortality and health care expenditures[1]. Obesity increases the risk for insulin resistance, T2DM, cardiovascular disease, and all-cause mortality[2]. Canada's Indigenous population bears a disproportionate burden of T2DM; lifetime risk of T2DM at age 20 is significantly higher in First Nations populations compared to non-First Nation populations[1, 3, 4, 5]. Manitoba's Indigenous population is the highest of all provinces in Canada (13%). Indigenous social determinants of health contribute to the higher rates of chronic disease and health inequity for Indigenous people[6]. In order to better serve this community and close the gap in access to healthcare, more research needs to be conducted.

Bariatric surgery is an effective treatment for improvement of T2DM in obese patients[7]. Several randomized control trials demonstrated the superiority of bariatric surgery for weight loss and remission of T2DM and metabolic syndrome when compared to medical therapy[7-19]. One study in Australian Indigenous populations demonstrated 66% diabetes remission following gastric banding and the procedure was feasible and acceptable to the patient population[19].

The Canadian Diabetes Association concluded, "More diabetes intervention research in Indigenous communities is strongly recommended. We believe that research into diabetes and obesity-related chronic disease in Indigenous communities in Canada is wholly insufficient and fails to reflect the need for reducing the gross inequality that exists between Indigenous and non-Indigenous Canadians"[20]. The Truth and Reconciliation Commission of Canada's[21] calls for research (action), done in consultation with Indigenous peoples, that identifies and closes the gaps in health outcomes between Indigenous and non-Indigenous communities, focusing on chronic diseases and appropriate health services (Call to Action #19), as well as for "those who can effect change within the Canadian health-care system to recognize the value of Aboriginal healing practices and use them in the treatment of Aboriginal patients in collaboration with Aboriginal healers and Elders where requested by Aboriginal patients"[21].

Sequential focus groups (SFG), described by Jacklin et al as "a series of semi-structured interviews with a consistent small group of people coming together to gain deep insight into a topic by exploring questions about an issue with each other and a group facilitator over an established period of time"[22], has been reported as an innovative method for investigating type 2 diabetes care experiences of rural and urban Indigenous peoples living in three Canadian provinces. This method permits investigation in sufficient depth to build collective narratives while honouring the oral tradition of storytelling in Indigenous culture[23]. Compared to a single session, repeated focus group sessions with the same participants builds trust, provides more time for stories to be shared, while also allowing for more in-depth exploration of people's experiences and member checking.

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In many Canadian Indigenous contexts, sharing circles are often referred to as traditional forms of consultation and healing where a sacred object (often a feather) is passed around turn-by-turn to all those present in the circle and everyone has a chance to speak and share what is on their mind and heart about a topic [24]. Sharing Circles are typically opened with a smudging ceremony – the burning of sage or sweetgrass to cleanse the mind and heart – and are often facilitated by a respected Indigenous Elder. As each participant respectfully listens to each other during these circles, they are encouraged by the Elder to be actively present; hearing the story, reflecting on it, examining the context in which it is told, understanding the obstacles to being that it presents, and then to identify with and see one’s self through the story. Through its structure and nature, the sharing circle forges powerful relationships among the story being shared, the story tellers, and the listeners or audience. It is a particular style of narrative performance, speech act, and mode of storytelling that builds upon a safe space to allow reflections on the relationships between self and others in ways that reaffirm positive shared aspects of identity, culture, healing, and wellness [24].

Member checking is a technique used by facilitators to present research findings and interpretations from past group discussions to obtain feedback and check for accuracy. The technique supports participant reflection on the material presented and provides an opportunity for participants to discuss their thoughts and feelings about the information and to inform further group discussion[25]. It has been reported that this process achieves greater depth of patient perspective and experiences, while ensuring optimal accuracy of interpretation of the findings. This approach aligns well with the goal to include Indigenous patients’ voices in the development of the Centre for Metabolic and Bariatric Surgery (CMBS) program planning and delivery as well as to assist in developing a more patient-centered approach to future Indigenous research projects.

Objectives

The purpose of this study is to employ a decolonizing methodology of Sequential Sharing Circles (SSCs) and individual interviews to explore the perspectives and experiences of urban Indigenous Manitobans living with type 2 diabetes mellitus (T2DM) and obesity, and their experiences with bariatric surgery.

Methods and analysis

The research team has created and maintained a collaborative partnership with Indigenous healers, researchers, physicians and Elders over a period of two years. Consultation with the University of Manitoba Ongomiizwin- Indigenous Institute of Health and Healing has informed and guided the development of this research to ensure design and implementation are culturally sensitive and appropriate to foster participant safety, trust, respect and empowerment. This study will use a decolonizing approach in the form of Sequential Sharing Circles (SSCs) as well as individual interviews to gain insight in sufficient depth to describe collective narratives that can inform culturally safe patient centered care and bariatric surgery program delivery.

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4 The sample will consist of three unique groups, (n=4-8/group) of Indigenous participants
5 living with T2DM and obesity (BMI >35, <55) who will participate in two SSCs. All participants
6 will be adults (>18 years old) and will have self-identified as Indigenous at Manitoba's Centre
7 for Metabolic and Bariatric Surgery (CMBS) and a diabetes treatment clinic. Potential
8 participants for each group will be asked for their permission to be contacted about the research,
9 screened according to the eligibility criteria, contacted and informed about the study to determine
10 interest, and individually consented prior to participating in the study. Participants will also be
11 offered individual interviews as part of the study. They will also be offered individual interviews
12 alone if they prefer not to participate in a Sharing Circle (group) setting.

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14 The Sharing Circles will be conducted approximately 6-8 weeks apart. Participants will
15 be recruited from three pools: (1) post-operative bariatric surgery patients (using the database of
16 Manitobans who have had bariatric surgery); (2) pre-operative bariatric surgery patients (from
17 the current Manitoba bariatric surgery waitlist); (3) urban patients who are not involved in the
18 bariatric surgery program. The final group will be recruited with the help of community contacts
19 such as Indigenous diabetes educators, Indigenous community Elders, and family physicians.

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21 The SSCs will be conducted in a culturally safe and welcoming site, Migizii Agamik
22 (Bald Eagle Lodge) at the University of Manitoba. Each will be facilitated by Gramma Geraldine
23 Shingoose, an Indigenous Elder. All processes will be informed in close collaboration with
24 Ongomiizwin-Health Research and collaborative partners. A light, T2DM (and when required,
25 bariatric surgery patient) appropriate, nutritious meal (feast) will be provided prior to the Sharing
26 Circle session. Each Sharing Circle will begin with a smudging ceremony and will include
27 teachings related to knowledge creation during the Sharing Circle, the sacred nature of the
28 experiences shared (confidentiality) and ownership of the knowledge created by the group.
29 Ceremonial tobacco will be gifted to the Elder for sharing her knowledge and guiding the
30 development and implementation of the Sharing Circles.

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33 Individual interviews will be offered to all sharing circle participants as an opportunity
34 for further in-depth exploration of the main study themes. The interviews will be facilitated by
35 the same Indigenous Elder and will also use a visual life storyboard to facilitate exploration of
36 the individual patient journey with obesity and T2DM.

37 38 39 **Sample size**

40 A formal sample size calculation was not conducted due to the qualitative design.
41 Instead, group size was determined in collaboration with the Elder as well as from the published
42 literature for similar sharing circle and focus group research by Jacklin et al[6].

43 44 45 **Recruitment**

46 Participants in the three study groups will be recruited from clinical settings in two
47 hospitals in Winnipeg Manitoba, Canada. The process for recruitment and screening for
48 eligibility in both group (1) The Centre for Metabolic and Bariatric Surgery Program (CMBS)
49 Post-Operative Bariatric Surgery Urban Indigenous T2DM Participant Group and group (2) The
50 CMBS Pre-Operative Bariatric Surgery Urban Indigenous T2DM Patient Group has been
51 facilitated as a result of the program, located at Victoria General Hospital recently having
52 completed a mass mail out of Permission to be Contacted for Future Research (PTC) and
53

Community-Membership (CM) forms to all current and wait list CMBS patients (N>2,300 patients).

Participants for group (1) the CMBS post-operative bariatric surgery group, will be identified from the list of those patients who provided their permission to be contacted for future research per the PTC and CM documents, self-identified as Indigenous, had a diagnosis of type II diabetes mellitus prior to surgery, and who have had bariatric surgery. Screening to confirm patient eligibility will be done through review of CMBS patient paper charts and/or the CMBS electronic database. Participants eligible for group (2) the CMBS Pre-operative bariatric surgery urban Indigenous T2DM group will have provided their permission to be contacted for future research as above, have self-identified as Indigenous, have a diagnosis of type II diabetes mellitus, and are currently on the wait list for bariatric surgery.

In order to recruit individuals for group (3), the non-bariatric surgery informed urban Indigenous T2DM patient group, poster advertising and collaboration with health care professionals at the endocrinology clinic at Manitoba's largest hospital, the Health Sciences Center will be used. Patients who have been diagnosed with T2DM, referred to an endocrinologist for diabetes management/treatment and self-identify as Indigenous, will be eligible to participate in this group. A diabetes educator or office assistant will provide patients who are attending their first appointment, who are obese and have T2DM with the Permission to Contact for a Research Study Form. There will also be study information posters displayed in the waiting area and clinic/treatment room to permit patients to inquire about the study recruitment. Individuals completing the form, who self-identify as Indigenous, are obese and have T2DM will be contacted to provide further details about the study and to have any questions about the study addressed. A member of the research team (either the research assistant or the surgery resident involved with the study) will contact patients who have met eligibility requirements. Standardized telephone and email recruitment scripts have been developed and reflect the information contained in the Informed Consent Form(s).

Data Collection

Each Sharing Circle will be two to three hours in duration and will be audio recorded and transcribed. Individual interviews will be approximately one hour in duration.

At the conclusion of each Sharing Circle, the group will be asked to provide collective consent for the knowledge created during the Sharing Circle to be shared for research purposes. Each Sharing Circle will be led by an Indigenous Elder who will utilize semi-structured questions to guide the discussion. The format will include questions that will be presented to each group and questions tailored specifically to the experiences of each unique group. The Sharing Circles that are second in the sequence (conducted approximately 6 to 8 weeks after the first) will include member-checking to ensure interpretation of the discussion from the first sharing circle in the sequence appropriately reflects the groups' experiences and contributions and to verify culturally appropriate interpretation of the discussion and themes identified.

Each participant will be assigned a unique identification number and will be identified solely by this number on transcripts of the Sharing Circles, therefore maintaining individual anonymity.

Data Analysis

Content of each Sharing Circle and individual interview will be recorded. Recorded Sharing Circle and individual interview information will be transcribed and analyzed using Dedoose Software to code for emerging patterns and themes related to each topic addressed. At least two researchers will code the transcripts using Dedoose, with one having experience in Indigenous qualitative research methodology. This will ensure Indigenous knowledge, experience, and understanding is represented within the coding process. Dedoose software will be used to establish word frequencies for themes emerging from the Sharing Circle discussion as well as those created by the research team, and from relevant literature. A thematic analysis framework following constructivist grounded theory will be used to categorize experiences[26]. This approach will facilitate exploration of shared experiences and common themes related to the study-specific topics (e.g. barriers to diabetes care). The themes and coding structures will be compared among researchers. Data interpretation will be conducted based on the analysis by all members of the research team as well as participants (through member checking and the knowledge sharing meetings).

Patient and Public Involvement

Patients will first be involved in the research at the first Sharing Circle of Group #1 (post-operative patients). Feedback provided during the second Sharing Circle with the group will allow patients to directly contribute to the research questions and outcomes. The insight patients provide regarding their experiences throughout the bariatric surgery journey will allow for the development of new research questions throughout the study. An indigenous advisory group consisting of Indigenous Elders, physicians and researchers were consulted throughout the design of this study to capture patient voices from their direct experiences. This project aims to address the Truth and Reconciliation Commission of Canada's call to action #19[21]. The recruitment process and study conduct will not include patient or public involvement. Potential emotional risks of patient involvement in this study were carefully assessed with professional mental health resources available following each Sharing Circle and individual interview. The main results from this study are intended to be disseminated to sharing circle participants and patient and public involvement will be sought in the development of appropriate methods of dissemination to the community, in addition to those outlined by the research team. During knowledge sharing meetings after study data analysis is complete, patients will be asked to assess the burden of study involvement and will also directly contribute suggestions for how research questions and study involvement can be improved for future groups.

Participant Feedback

Feedback about the research findings will be provided to participants via member checking and a knowledge sharing meeting for each Sharing Circle group. Member checking will be conducted by Elder Shingoose and implemented during the second Sharing Circle of each group as well as at the knowledge sharing meeting to be held once research findings are ready to be shared. Member checking is an evidence-based process/technique for establishing credibility. To be most effective, member checking is embedded throughout the research process and involves research findings being "played back" to participants to check for perceived accuracy and reactions. At the beginning of the second Sharing Circle, the Elder facilitating the discussion will present summarized findings from the first Sharing Circle. She will encourage participants

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3 to reflect on their thoughts and feelings regarding the information shared in the previous Sharing
4 Circle, elicit their feedback, and check for accuracy.
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6 7 **Compensation**

8 Transportation to and from the Sharing Circle venue will be offered by the researchers at
9 no cost to participants if required. Alternatively, parking and/or transit fees to attend the sharing
10 circles will be reimbursed.

11 A forty-dollar honorarium will be gifted to each participant at each Sharing Circle they
12 participate in as well as a twenty-dollar honorarium for the individual interview. In this way,
13 reimbursement fairly compensates participants for the time and shared experiences they provide
14 but is not contingent upon participation in the entire study.
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16 17 18 **Risks/Benefits**

19 The potential exists for patients participating in the Sharing Circles and/or individual
20 interview to experience strong emotions and emotional discomfort related to past harms and
21 previous trauma related to their experiences with obesity, diabetes, their health care interactions,
22 and cultural-specific past and current harms (residential schools, racisms, discrimination).
23 Although the scripts developed to lead the Sharing Circles are quite broad and not considered
24 high risk for eliciting severe negative emotions, discussion of sensitive topics and issues could
25 occur and may elicit distressing and uncomfortable emotions. There is the potential that the
26 Sharing Circle discussions could elicit responses of anxiety, depression, and post-traumatic
27 stress. We have ensured mental health resources and support services contact information and
28 ongoing support from the Indigenous Elder is available to participants experiencing this. There is
29 no published literature regarding percentages to assist in quantifying the potential risk.
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33 Participants may or may not benefit from participating in the study. Some research has
34 shown participation in Sharing Circles (such as those planned in this study) facilitates comfort
35 and camaraderie among participants by supporting insightful discussions based on shared lived
36 experiences. Sharing Circle participation supports self and group reflection within a safe
37 environment. Positive impact on the healing process and patient empowerment has also been
38 reported in the literature as potential participant experiences.
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41 **Ethics and dissemination**

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43 This study received ethical approval from the University of Manitoba Health Research
44 Ethics Board [HS22910 (H2019:237)], while ethics approval is pending from the Victoria
45 General Hospital and Health Science Center for this component of the study. This study will
46 result in new knowledge and will be used to enhance patient care for Indigenous persons within
47 the Manitoba Centre for Metabolic and Bariatric Surgery program. Findings of this research
48 study will be disseminated through publication in peer reviewed scientific journals, presentation
49 at conferences and education sessions for healthcare professionals and included in the knowledge
50 sharing session with study participants. With the help of Indigenous physicians and Elders, we
51 hope to disseminate the knowledge created to the Indigenous community. Additionally, the
52 findings are anticipated to be relevant to the general population and as such, sharing the results in
53 mainstream media publications may be considered.
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Conclusion

Using a qualitative decolonizing research approach with the implementation of SSCs with semi structured questions to gain insight in sufficient depth to describe the collective narratives, the study will contribute new knowledge to the limited body of scientific evidence that exists on bariatric surgery program delivery- including access, barriers, experiences and outcomes of urban Indigenous peoples in Manitoba. This qualitative methodology is congruent with the Truth and Reconciliation Commission of Canada's call to action #19[21]. Effective treatment strategies that are culturally sensitive, address access barriers, and encourage positive, empowering interactions with health care providers are poised to significantly impact future health care delivery and patient outcomes for Indigenous peoples. We hope to identify reasons for differences in health outcomes that currently exist between Indigenous and non-Indigenous patients living with obesity and T2DM in Manitoba. Engaging Indigenous community members, leaders and participants to inform, own and control the research ensures that Indigenous knowledge is honored and protected.

It is anticipated the research findings will provide a conduit that promotes understanding of the collective historical and personal experiences, including culturally unsafe health care experienced by Indigenous patients as it is becoming increasingly apparent that the interactions Indigenous patients have with their health care providers and their ability to actively engage with their T2DM care plans are influenced by both[6]. Sharing circles have vast potential to unearth knowledge and ideas from the Indigenous community that can be implemented by physicians and caregivers in the health care system to provide improved patient-centered care.

Author's contribution

KH, MZ, MF, GS, AFW, AH, and AV contributed to the conception and study design. KH, MZ, MF, GS, AFW, and FD are involved in study implementation. All authors were involved in the protocol manuscript writing. All authors provided final approval of the manuscript.

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Competing interests statement

There are no conflicts of interest to report.

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For peer review only

Supplementary Table 1: COREQ checklist

Domain 1: Research team and reflexivity		Location in manuscript (Section, page no.)
Personal Characteristics		
1. Interviewer/facilitator Which author/s conducted the interview or focus group	GS will conduct the Sharing Circles and individual interviews	Methods and analysis, page 5
2. Credentials What were the researcher's credentials? E.g. PhD, MD	GS - Indigenous Elder KH - MD, MSc, FRCSC, FACS	Title Page, page 1
3. Occupation What was their occupation at the time of the study?	GS – Indigenous Elder; Lecturer in the Department of Community Health Sciences at the University of Manitoba KH – Assistant Professor in the Department of General Surgery at the University of Manitoba and a full-time General Surgeon	Methods and analysis, page 5
4. Gender Was the researcher male or female?	Female	-
5. Experience and training What experience or training did the researcher have?	GS has previous Elder research facilitation experience. KH has an MSc and is the General Surgery Research Director at the University of Manitoba.	-
Relationship with participants		
6. Relationship established Was a relationship established prior to study commencement?	No	-
7. Participant knowledge of the interviewer What did the participants know about the researcher? E.g. personal goals, reasons for doing the research	Participants were briefed on the purpose of the study by a member of the research team that was not the principal	Methods and analysis, page 5

	investigator or the interviewer. Participants reviewed the informed consent form prior to giving written informed consent to be involved in the study.	
8. Interviewer characteristics What characteristics were reported about the interviewer/facilitator? E.g. Bias, assumptions, reasons and interests in the research topic	GS is an Indigenous Elder and MZ is a surgical resident working on this project as part of her Master's thesis (MSc).	Methods and analysis, page 5
Domain 2: study design		
Theoretical framework		
9. Methodological orientation and theory What methodological orientation was stated to underpin the study? E.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	Constructive grounded theory with thematic coding analysis	Methods and analysis, page 7
Participant selection		
10. Sampling How were participants selected? E.g. purposive, convenience, consecutive, snowball	Participants will be selected from the CMBS program (Groups #1 and #2; post-operative and wait list, respectively) and from the community (patients attending endocrinology clinic; Group #3)	Methods and analysis, page 6
11. Method of approach How were participants approached? E.g. face-to-face, telephone, mail, email	Telephone call or email; depending on patient preference	Methods and analysis, page 6
12. Sample size How many participants were in the study?	Three groups of 4-8 participants	Methods and analysis, page 5
13. Non-participation How many people refused to participate or dropped out? Reasons?	To be determined	-
Setting		
14. Setting of data collection Where was the data collected? E.g. home, clinic, workplace	Data collection will take place at a non-clinical location, Migizii Agamik	Methods and analysis, page 5

	Bald Eagle Lodge at University of Manitoba	
15. Presence of non-participants Was anyone else present besides the participants and researchers?	No	-
16. Description of sample What are the important characteristics of the sample? E.g. demographic data, date	Self-identify as urban Indigenous, living with T2DM, obese (BMI >35)	Methods and analysis, page 5
Data collection		
17. Interview guide Were questions, prompts, guides, provided by the authors? Was it pilot tested?	Sharing Circles and individual interviews are of semi-structured format with questions and prompts being developed in conjunction with and provided to GS.	Methods and analysis, page 6
18. Repeat interviews Were repeat interviews carried out? If yes, how many?	Each study group will participate in two Sharing Circles, separated by 6-8 weeks	Methods and analysis, page 5
19. Audio/visual recording Did the research use audio or visual recording to collect the data?	The semi-structured sharing circles and individual interviews will be audio recorded	Methods and analysis, page 6
20. Field notes Were field notes made during and/or after the interview or focus group?	To be determined	-
21. Duration What was the duration of the interviews or focus group?	2-3 hours in duration for each Sharing Circle, 1 hour for individual interview	Methods and analysis, page 6
22. Data saturation Was data saturation discussed?	No	-
23. Transcripts returned Were transcripts returned to participants for comment and/or correction?	Member checking will involve participant access to transcripts from Sharing Circles and individual interviews	Methods and analysis, page 7
Domain 3: analysis and findings		
Data analysis		
24. Number of data coders	Two, with one having	Methods and

How many data coders coded the data?	experience with Indigenous qualitative research methodology	analysis, page 7
25. Description of the coding tree Did authors provide a description of the coding tree?	No	-
26. Derivation of themes Were themes identified in advance or derived from the data?	Themes will be derived from the audio recorded data from Sharing Circles and individual interviews	Methods and analysis, page 7
27. Software What software, if applicable, was used to manage the data?	Dedoose Software	Methods and analysis, page 7
28. Participant checking Did participants provide feedback on the findings?	Findings from the first Sharing Circle will be discussed with participants at the beginning of the second Sharing Circle in order to determine that the themes and findings are accurate representations of what was shared (member checking). Feedback will be encouraged and used to develop questions for future groups. A knowledge sharing meeting will occur following the second sharing circle following completion of data analysis in order to present findings to participants and check for accuracy.	Methods and analysis, page 7
Reporting		
29. Quotations presented Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? E.g. participant number	Yes, audio recordings will be transcribed and participant statements will be directly quoted	Methods and analysis, page 6

	and anonymized in the transcripts using unique non-identifying numbers for each participant.	
30. Data and findings consistent Was there consistency between the data presented and the findings?	Data findings to be determined	-
31. Clarity of major themes Were major themes clearly presented in the findings?	Major themes to be determined	-
32. Clarity of minor themes Is there a description of diverse cases or discussion of minor themes?	Minor themes to be determined	-

BMJ Open

Decolonizing qualitative research to explore the experiences of Manitoba's urban Indigenous population living with Type II diabetes mellitus, obesity, and bariatric surgery

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4 1 **Decolonizing qualitative research to explore the experiences of**
5 2 **Manitoba's urban Indigenous population living with Type II**
6 3 **diabetes mellitus, obesity, and bariatric surgery**
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1 Abstract

2 **Introduction:** Obesity and type 2 diabetes mellitus (T2DM) are growing global health concerns
3 associated with significant morbidity, mortality, and health care expenditures. Due to histories of
4 colonization and contemporary marginalization, Canada's Indigenous populations are
5 disproportionately burdened by obesity, T2DM, and many other chronic illnesses. Culturally
6 appropriate research on experiences and outcomes of Indigenous patients undergoing bariatric
7 surgery in Canada is scarce. This qualitative study will use a decolonizing approach guided by an
8 Indigenous Elder to explore the perspectives and experiences of urban Indigenous Manitobans
9 with respect to T2DM, obesity, and bariatric surgery. This knowledge will guide the
10 development and implementation of culturally sensitive bariatric care.

11 **Methods and analysis:** Sequential Sharing Circles (SSCs) and semi-structured conversational
12 interviews that have been purposefully designed to be culturally relevant with the guidance of an
13 Indigenous Elder and Advisory Group (IAG) will be carried out in Winnipeg, Manitoba, Canada.
14 Indigenous adults who are obese (BMI >35), have T2DM and live in an urban center will be
15 recruited. Three groups will be investigated: 1) those who have had bariatric surgery; 2) those on
16 the wait list for bariatric surgery; and 3) those not associated with a bariatric surgery program.
17 Each group of 10-12 participants will be guided through a semi-structured script led by an
18 Indigenous Elder. Elder-facilitated conversational interviews will also be completed following
19 the SSCs. All content will be audio recorded and transcribed. Thematic analysis will be used to
20 identify emerging patterns using a Constructive Grounded Theory approach.

21 **Ethics and dissemination:** This study has received ethical approval from the University of
22 Manitoba Health Research Ethics Board. Findings will inform the development and
23 implementation of culturally sensitive programs at Manitoba's Centre for Metabolic and
24 Bariatric Surgery. Results will be disseminated in peer reviewed scientific journals, at obesity
25 and Indigenous health conferences, and through knowledge sharing ceremonies.

26 Strengths and Limitations:

- 27 • This will be the first Canadian study to utilize a culturally relevant, decolonizing
28 Sequential Sharing Circle data collection method to gain knowledge of the experiences
29 and perspectives of an urban Indigenous population living with obesity and T2DM with
30 reference to bariatric surgery.
- 31 • Through the use of culturally appropriate research methods designed in consultation with
32 an Indigenous Elder and community advisory group, this research will respond to the
33 Truth and Reconciliation Commission of Canada: Calls to Action #19 to improve
34 meaningful research engagement with Indigenous peoples and health outcomes.
- 35 • The application of member checking and Dedoose coding in the methodology will
36 improve data credibility and transferability.
- 37 • Recruitment for the study will involve self-identification as Indigenous and self-referral
38 which may exclude the views and opinions of some eligible participants.

- Sequential Sharing Circle size is small. Future studies with larger samples can increase qualitative rigour and authenticity of the findings.

Introduction

Obesity and type 2 diabetes mellitus (T2DM) are growing global health concerns associated with significant morbidity, mortality, and health care expenditures [1]. Obesity increases the risk for insulin resistance, T2DM, cardiovascular disease, and all-cause mortality [2]. Due to histories of colonization, ongoing impacts of systemic racism, and oppressive governmental policies, contemporary inequities in the social determinants of health among Canada's Indigenous populations, including First Nations, Inuit and Métis, contribute to high rates of chronic disease, obesity, and T2DM [3-7]. Indeed, diabetes incidence in Indigenous peoples is 3 to 5 times the national average [8]. In order to better serve First Nation, Inuit, and Métis peoples and close the gaps in health outcomes and access to healthcare services, more culturally sensitive research is needed.

Previous research suggests that bariatric surgery is an effective treatment for improvement of T2DM in obese patients [9]. Several randomized control trials, for example, demonstrated that bariatric surgery is effective for weight loss and remission of T2DM and metabolic syndrome when compared to medical therapy alone in the overall population [9-20]. A study with Australian Indigenous populations demonstrated a 66% diabetes remission rate following gastric banding [21]. Although literature relating to Canada's Indigenous bariatric surgery population is scarce, available research suggests that surgery is safe and effective, and this patient group may respond better to the intervention based on higher resolution rates of obesity-related comorbidities [7]. Yet, research on bariatric surgery program delivery, including access, barriers, experiences and outcomes of urban Indigenous peoples is limited, especially that which involves a decolonizing, culturally grounded and sensitive methodological approach.

The Truth and Reconciliation Commission (TRC) of Canada implores that research be done in consultation with Indigenous peoples to identify and close the gaps in Indigenous health inequities, with focus on specific indicators including chronic diseases and appropriate, culturally sensitive health services [22, p. 2-3]. Additionally, Canadian health-care system practitioners are called to recognize the value of, and increase use of Indigenous healing practices, in collaboration with Indigenous Healers and Elders in the treatment of Indigenous patients [22, p. 3]. Decolonizing research approaches with Indigenous participation—that which is culturally sensitive, led by local knowledge, histories, worldviews, and perspectives—could significantly inform changes to healthcare systems that would positively impact current health inequities and wellness outcomes [8, 23].

One decolonizing approach employed in Canadian Indigenous research contexts involves “sharing circles” understood as a sacred ceremony where Elders function as the spiritual leaders or guides [24-27]. These typically involve a sacred object (often a feather) being passed around turn-by-turn to all those present in the circle where everyone has a chance to speak and share their knowledge and experiences [25, 28]. Sharing circles are also typically opened with a smudging ceremony—the burning of medicines like sage or sweetgrass to cleanse the mind and heart—facilitated by a respected Elder or Knowledge Keeper. Like focus groups, sharing circles in research contexts often involve a series of in-depth conversations with a group of people coming together to explore questions about an issue with each other over a set period of time [27,

29]. Unlike focus groups, however, sharing circles are approached in a sacred and spiritual manner facilitated by the smudging of medicines, sacred objects, and Elder guidance [28]. The open conversational style and environment also builds collective narratives while honouring oral traditions of storytelling in Indigenous cultures [25, 30]. As each person listens to each other they are often encouraged by the Elder to be actively present; hear the story, reflect on it, examine the context in which it is told, and then to identify with and see one's self through the story. Through its structure and sacred nature, sharing circles can forge powerful relationships among the story being shared, the story tellers, and the listeners or audience. It is a particular style of narrative and storytelling that builds upon a safe space to allow reflections on the relationships between self and others in ways that reaffirm positive shared aspects of identity, culture, healing, and wellness [28]. Like sequential focus groups (SFG), in comparison with a single session, repeated sequential sharing circle sessions with the same individuals can build further trust and provide more time for stories to be shared [29].

A one-on-one "conversational" interview method is another decolonizing research approach that is inherently relational and "aligns with an Indigenous worldview that honours orality as a means of transmitting knowledge" [25, p. 43]. Moreover, this decolonizing approach to qualitative interview research is capable of breaking down power hierarchies that can exist between researchers and participants and enables both parties to engage in examining their experiences in the context of life, culture, society, and institutions in ways that challenge dominant perspectives [24]. Although similar to sharing circles described previously, these conversational style interviews typically occur with smaller numbers, perhaps two or three, and are often focused on one person's experience in more detail. Although employed in other research contexts [25], decolonizing methods of sharing circles and "conversational" interviews have not been effectively adapted and utilized in clinical health research with Indigenous populations, especially research involving bariatric surgery program delivery.

The primary objective of this study is to utilize decolonizing Sequential Sharing Circles (SSCs) along with semi-structured "conversational" interviews to explore the perspectives and experiences of urban Indigenous Manitobans living with T2DM and obesity, in the context of bariatric surgery. In doing so, this study will contribute new knowledge to the limited body of scientific knowledge that exists on bariatric surgery program delivery, including access, barriers, experiences, and outcomes for urban Indigenous peoples in Manitoba. At the same time, this study will advance effective treatment strategies that are culturally sensitive while encouraging positive, empowering interactions with researchers and health care providers. Overall, by better understanding experiences of Indigenous patients living with obesity and T2DM in Manitoba in the contexts of bariatric surgery, this research can significantly impact and improve future health care delivery and patient outcomes [31].

Methods

Research Context and Framework

The Canadian province of Manitoba has one of the largest Indigenous populations in Canada (13.4%), and Winnipeg's Indigenous population is the highest of any urban center [32, 33]. The research team has created and maintains collaborative partnerships with Indigenous Healers, researchers, physicians, and Elders. Consultation with the University of Manitoba

1 Ongomiizwin- Indigenous Institute of Health and Healing has informed and guided the
2 development of this research to ensure design and implementation are culturally sensitive and
3 appropriate to foster participant safety, trust, respect, and empowerment [34]. In this way, a
4 “two-eyed seeing” framework will be adopted throughout, where Indigenous and non-indigenous
5 worldviews or ways of seeing the world are blended and will work together during all stages of
6 the research [35, 36].

7 8 **Participants**

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10 Participants will be adults who have self-identified as Indigenous at Manitoba’s Centre
11 for Metabolic and Bariatric Surgery (CMBS) or a diabetes treatment clinic. All self-identifying
12 participants will have previously consented to be contacted regarding research opportunities.
13 Purposeful sampling will be used to screen potential participants for eligibility. The sample
14 population will consist of three groups: (1) post-operative bariatric surgery patients, identified
15 using the database of Manitobans who have had bariatric surgery; (2) pre-operative bariatric
16 surgery patients currently on the Manitoba bariatric surgery waitlist; (3) urban patients who are
17 not involved in the bariatric surgery program, recruited with the help of community contacts
18 such as Indigenous diabetes educators, Indigenous community Elders, and family physicians. All
19 participants will participate in two sharing circles, conducted approximately 6-8 weeks apart and
20 one conversational interview.

21 Inclusion criteria are defined as patients aged 18 years or older, of Indigenous ethnicity
22 (First Nations, Métis, Inuit) with a BMI of >35 and with diagnosis of T2DM, who live in
23 Winnipeg. Those who meet the eligibility criteria will be contacted and informed about the study
24 to determine interest and individually consented prior to participation.

25 26 **Sample size**

27
28 Group size will be determined based on descriptions in the literature for similar research
29 by Jacklin et al [29] and Whitty-Rogers et al [27] and in consultation with the Elder. Given the
30 important role the Elder holds during the sharing circles, it is ultimately their decision as to the
31 number of participants they will accept in each circle, although early conversations have
32 suggested 10-12 per group should be adequate. When determining group size, Elders consider
33 their gifts, teachings, and comfort guiding various group sizes. If the topic to be discussed is of a
34 more sensitive nature and could potentially trigger participants, the Elder may choose to limit
35 group size to allow more time for teachings and ceremony in a healing centered approach [28].

36 37 **Recruitment**

38
39 Participants will be purposefully recruited from clinical settings in Winnipeg Manitoba,
40 Canada. The process for screening for eligibility and recruitment to participate in either group (1)
41 post-operative group or group (2) pre-operative group will be facilitated through the CMBS
42 program, located at the Victoria General Hospital. The CMBS recently completed a mass mail
43 out of Permission to be Contacted for Future Research (PTC) and Community-Membership
44 (CM) forms to all current and wait list CMBS patients (N>2,300 patients).

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Those patients who provide their permission to be contacted for research will be screened. The three different participant groups and process for screening/recruitment are: (1) *Post-operative group*: Participants for the post-operative bariatric surgery group will be determined using the database information and screened from the list of those patients who provided their permission to be contacted for future research, who self-identified as Indigenous, who had a previous diagnosis of T2DM prior to surgery, and who have had bariatric surgery; (2) *Pre-operative group*: The CMBS Permission to be Contacted for Research (PTC) and Community Membership (CM) list (described above) will be used to identify/screen participants for this group. Those CMBS patients who provided their permission to be contacted for future research, self-identified as Indigenous, have a diagnosis of T2DM and are currently on the wait list for bariatric surgery will be eligible to participate in the study as part of this group; patient eligibility in groups 1 and 2 will be confirmed through review of CMBS charts and/or the CMBS electronic database; and (3) *The non-bariatric surgery informed group* requires recruitment outside of the CMBS. Patients who have a diagnosis of T2DM, have been referred to an endocrinologist at the Health Sciences Centre for diabetes management/treatment, and self-identify as Indigenous are eligible to participate in this group. A diabetes educator or office assistant will provide patients attending their first appointment, who are obese, and have T2DM with a Permission to Contact for a Research Study form. Study information posters will be posted in the waiting area and clinic treatment room to facilitate patient inquiry about the study. Those completing the form who self-identify as Indigenous, are obese, and have T2DM will be contacted by a member of the research team to provide further details about the study and answer any questions the patient may have.

Standardized telephone and email recruitment scripts have been developed and reflect the information contained in the Informed Consent Form.

26 **Ethics and Consent**

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After meeting eligibility and inclusion criteria and expressing interest in participating in the study, potential participants will meet with a member of the research team, be provided with an overview of the study, review the informed consent form and have the opportunity to ask questions. The Informed Consent Form outlines the purpose and methodology of the study as well as the ethical safeguards regarding data protection and privacy. Every effort will be made to ensure complete understanding of the study requirements, potential risks and voluntary nature of participation. Written consent will be obtained from the potential participant prior to their involvement in any study related activity. Each participant will be assigned a unique identification number and will be identified solely by this number on transcripts of the sharing circles, to ensure individual anonymity.

This study has received ethical approval from the University of Manitoba Health Research Ethics Board [HS22910 (H2019:237)] and the Victoria General Hospital with Health Science Center ethical approval pending. No Sharing Circle screening or recruitment will be done until ethics approval is received.

Sharing circle and “conversational” interviews could potentially elicit responses of anxiety, depression, and post-traumatic stress. Professional mental health resources will be made available to all participants following each sharing circle and individual interview. Some research suggests that participation in sharing circles facilitates comfort and camaraderie among participants by supporting insightful discussions based on shared lived experiences [26-28]. A

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3 1 forty-dollar honorarium will be gifted to each participant for each sharing circle participated in.
4 2 A twenty-dollar honorarium will be provided for an individual interview.
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4 **Data Generation Procedures**

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6 The Sequential Sharing Circles (SSCs) will be conducted in a culturally safe, sensitive,
7 and welcoming site, *Migizii Agamik* (Bald Eagle Lodge) at the University of Manitoba. Each
8 sharing circle will be two to three hours in duration. Individual “conversational” interviews will
9 be approximately one hour in length. The sharing circles and interviews will be facilitated by
10 Gramma Geraldine Shingoose, a local Indigenous Elder. Ceremonial tobacco will be gifted to the
11 Elder for sharing her knowledge and guiding the development and implementation of the SSCs.
12 A light, T2DM (and when required, bariatric surgery patient) appropriate, nutritious meal (feast)
13 will be provided prior to the sharing circles sessions. Each sharing circle will begin with a
14 smudging ceremony and will include teachings related to knowledge creation during the Sharing
15 Circle, the sacred nature of the experiences shared (confidentiality), and ownership of the
16 knowledge created by the group. Content of each sharing circle and individual interview will be
17 audio recorded and transcribed.

18 Elder Shingoose will guide the discussion using semi-structured questions
19 (Supplementary File 1). The format includes open-ended questions presented to all groups as
20 well as questions suited to each group’s position in the bariatric surgery journey. The sharing
21 circles that are second in the sequence will include member-checking procedures [24]. This will
22 ensure the interpretation of the discussion from the group’s first session reflects participants’
23 experiences and contributions in order to verify the interpretation and themes identified are
24 culturally appropriate.

25 Individual “conversational” interviews with each sharing circle participant will be
26 conducted following the SSCs to provide an opportunity for further in-depth exploration of the
27 main study themes and individual narratives [25] (Supplementary File 2). These interviews will
28 also be facilitated by Elder Shingoose and will involve a visual Life Story Board (LSB) to
29 facilitate a deeper conversation and exploration of patients’ journeys with obesity and T2DM
30 [37].
31

32 **Data Analysis**

33

34 Transcripts from SSCs and individual interviews will be analyzed for emerging patterns
35 and themes utilizing constructivist grounded theory strategy [38]. This approach will facilitate
36 exploration of both common and differing experiences related to study-specific topics such as
37 barriers to diabetes care. A secondary analysis of the data will involve comparing and contrasting
38 themes across the three groups. This in-depth interpretation of the data will allow for conclusions
39 to be drawn about aspects of bariatric and T2DM healthcare that can be improved for Indigenous
40 patients and direct the focus of future research. The qualitative data management software
41 system Dedoose Version 8.3.17 (2020) will be used to facilitate data analysis. A minimum of
42 two researchers will code the transcripts to ensure rigour and confirmability [39]. One
43 Indigenous researcher will have experience in Indigenous qualitative research methodology to
44 ensure Indigenous knowledge, experience, and understanding, as well as a “two-eyed seeing”
45 framework, is employed and represented within the coding process [35, 36]. The themes and
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1 coding structures identified will also be compared among the other members of the researcher
2 team to enhance dependability and credibility [39].

3 Feedback about the research findings will be provided to participants via member
4 checking and a knowledge sharing meeting for each sharing circle. Member checking is a
5 technique used by facilitators to present research findings and interpretations from past group
6 discussion to obtain feedback and check for authenticity [29]. Member checking provides an
7 opportunity for participants to discuss their thoughts and feelings about the information and to
8 inform further group discussions or interviews. At the beginning of each group's second sharing
9 circle, Elder Shingoose will present summarized preliminary findings from the first sharing
10 circle. Participants will then be encouraged to reflect on their thoughts and feelings regarding the
11 information shared, and provide feedback to ensure accuracy and confirmability.

12 13 **Patient and Public Involvement**

14
15 This project aims to address the Truth and Reconciliation Commission of Canada: Calls
16 to Action [22] and acknowledges many Indigenous people have experienced previous trauma or
17 past harm. An Indigenous advisory group consisting of Indigenous Elders, physicians and
18 researchers were consulted in the design of this study to ensure patient voices from their direct
19 experiences were captured following a “two-eyed seeing” approach [35-36]. The interview
20 question scripts in this research were developed in consultation with Indigenous Healers and
21 Elders and are deliberately broad to address experiences of Indigenous patients in a culturally
22 appropriate way.

23 The recruitment process will not include patient or public involvement. Results from this
24 study will be disseminated to participants at a knowledge sharing meeting and their input will be
25 sought to identify appropriate methods of sharing the knowledge gained to the broader
26 community. Participants will have the opportunity to contribute suggestions for how future
27 research is conducted.

28 29 **Dissemination**

30 The knowledge gained from the results of this study will be used to develop and
31 implement culturally sensitive patient care programs for Indigenous persons within the Manitoba
32 Centre for Metabolic and Bariatric Surgery program. Findings will be disseminated through
33 publication in open access peer reviewed scientific journals, presentation at conferences and
34 education sessions for healthcare professionals and included in a knowledge sharing session with
35 study participants. The IAG will guide community dissemination of findings. Additionally, the
36 findings are anticipated to be relevant to the general Canadian and Indigenous populations and as
37 such, sharing the results in mainstream media publications will also be considered.

38 39 **Conclusion**

40 This qualitative decolonizing research approach utilizing SSCs and individual
41 “conversational” interviews will contribute new knowledge to the limited body of scientific
42 evidence that exists on bariatric surgery program delivery- including access, barriers,
43 experiences and outcomes of urban Indigenous peoples in Manitoba. This study is congruent
44 with the Truth and Reconciliation Commission of Canada: Calls to Action #19 [22]. Effective

1 treatment strategies that are culturally sensitive, address access barriers, and encourage positive,
2 empowering interactions with health care providers are needed to impact future health care
3 delivery and patient outcomes for Indigenous peoples.

4 The findings of this study will provide a conduit that promotes understanding of the
5 collective historical and personal experiences, including culturally unsafe health care
6 experienced by Indigenous patients as it is becoming increasingly apparent that the interactions
7 Indigenous patients have with their health care providers and their ability to actively engage with
8 their T2DM care plans are influenced by both [31]. Sharing circles and “conversational”
9 interview methodology have vast potential to generate knowledge and ideas from the Indigenous
10 community that can be implemented by physicians and caregivers in the health care system to
11 provide improved patient-centered care. A “two-eyed seeing” framework also ensures
12 Indigenous knowledge, perspectives, and values are upheld and maintained throughout the
13 duration of the research project.

15 **Author’s contribution**

16 KH, MZ, MF, GS, AFW, AH, and AV contributed to the conception and study design. KH, MZ,
17 MF, GS, AFW, and FD are involved in study implementation. All authors were involved in the
18 protocol manuscript writing. All authors provided final approval of the manuscript.

19 **Funding statement**

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22 **Competing interests statement**

23 There are no conflicts of interest to report.

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Sequential Sharing circles as a decolonized approach to investigate the experiences of Manitoba's urban Indigenous population living with obesity and type II diabetes mellitus and awareness of bariatric surgery

Group #1: Post-Operative Bariatric Surgery Patients

Sharing Circle Script for Session #1 (of 2) - Semi-Structured Discussion Questions:

Traditional Territories Acknowledgement:

The University of Manitoba campuses are located on original lands of Anishinaabeg, Cree, Oji-Cree, Dakota, and Dene peoples, and on the homeland of the Métis Nation. The Winnipeg Regional Health Authority acknowledges that it provides health services in facilities located on the original lands of Treaty 1 and on the homelands of the Metis Nation. WRHA respects that the First Nation treaties were made on these territories and acknowledge the harms and mistakes of the past and present, and we dedicate ourselves to collaborate and move forward in partnership with First Nation, Metis and Inuit people in the spirit of reconciliation.

Sharing Circle members are asked to keep the information provided in the groups confidential. If there is information you would like to add that you did not have time to share or that is sensitive and you prefer sharing individually, you are encouraged to ask for an individual interview with one of the researchers who is bound by confidentiality.

It is possible that talking about your experiences as an Indigenous person living with obesity and T2DM may be upsetting, emotional, and/or stressful for you. You do not have to answer any question that makes you feel uncomfortable or that you find too upsetting. Should you need any additional help or support, contact information and assistance is available to you.

Before we get started, is there any one who practices with traditional medicines or smudge?

If at any point during the evening you would like the use of traditional medicines, smudge, or if you need time with our Elder after the sharing circle, please let us know and we would be glad to provide that for you.

1. As an Indigenous person, what was it like to struggle with obesity and type II diabetes mellitus prior to bariatric surgery?

Prompts:	Mind
	Body
	Spirit

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8 2. What empowered or inspired you to take care of your health with bariatric surgery?

9 Prompts: Community
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11 Elders/Traditional medicines and Sacred Ceremonies/Prayer
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13 Faith-based clergy/Sacraments/Prayer
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15 Family
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17 Friends
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19 Health care providers (doctors, Nurses)
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21 Other? (identify)
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27 3. What challenges did you face in order to be approved for bariatric surgery?

28 Prompts: smoking, impact of residential schools

29 a. Do you feel any were specific to being Indigenous?

30 b. What help would you have liked to have had?

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35 *****BREAK*****

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37 4. Did the bariatric surgery diet affect your ability to participate in traditional/Indigenous practices and ceremonies?

38 a. In what ways? (positive and/or negative)

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41 5. Would you like your health care providers (family doctors, medical specialists, nurses, dietitians, psychologists) to inquire about whether you used traditional medicines, ceremonies, and/or faith-based practices in your daily life?
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Sharing Circle Script for Session #2 (of 2) - Semi-Structured Discussion Questions:

Traditional Territories Acknowledgement:

The University of Manitoba campuses are located on original lands of Anishinaabeg, Cree, Oji-Cree, Dakota, and Dene peoples, and on the homeland of the Métis Nation. The Winnipeg Regional Health Authority acknowledges that it provides health services in facilities located on the original lands of Treaty 1 and on the homelands of the Metis Nation. WRHA respects that the First Nation treaties were made on these territories and acknowledge the harms and mistakes of the past and present, and we dedicate ourselves to collaborate and move forward in partnership with First Nation, Metis and Inuit people in the spirit of reconciliation.

Sharing Circle members are asked to keep the information provided in the groups confidential. If there is information you would like to add that you did not have time to share or that is sensitive and you prefer sharing individually, you are encouraged to ask for an individual interview with one of the researchers who is bound by confidentiality.

It is possible that talking about your experiences as an Indigenous person living with obesity and T2DM may be upsetting, emotional, and/or stressful for you. You do not have to answer any question that makes you feel uncomfortable or that you find too upsetting. Should you need any additional help or support, contact information and assistance is available to you.

Member Checking: this part of Group #1's Sharing Circle Session #2 will involve the sharing of the findings (themes and ideas) from the analysis of Sharing Circle Session #1 and discussing whether they correctly reflect the group's discussion from that session.

If at any point during the evening you would like the use of traditional medicines, smudge, or if you need time with our Elder after the sharing circle, please let us know and we would be glad to provide that for you.

1. Do the research findings presented about our first Sharing Circle discussion capture the essence of what you were trying to convey?

a. What needs to be changed, added or clarified?

2. What empowers or inspires you regarding your health after bariatric surgery?

Prompts: Community
 Elders/Traditional medicines and Sacred Ceremonies/Prayer
 Faith-based clergy/Sacraments/Prayer
 Family

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3 Friends

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5 Health care providers (doctors, Nurses)

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7 Other? (identify)

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11
12 3. Do you think you receive culturally appropriate care from your health care providers? Are there ways
13 to improve?
14

15 *****BREAK*****

16
17 4. What should ~~doctors and your~~ health care teams take into consideration when providing care to
18 Indigenous patients who live with obesity and diabetes, and who are seeking bariatric surgery?
19

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23 5. What advice would you give to Indigenous people who are thinking about bariatric surgery?
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27 6. Is there anything else you would like to share about your experience with diabetes and/or bariatric
28 surgery?
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33 NOTE: Results of the analysis of Sharing Circle #1 (Sessions #1 and #2) data for emergent themes and
34 topics will inform development of some of the open-ended semi-structured discussion questions for
35 Sharing Circles #2 and #3.
36



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Individual Interview – Semi-Structured Discussion Questions

Study Title: Sequential Sharing Circles as a decolonized approach to investigate the experiences of Manitoba's urban Indigenous population living with obesity and type II diabetes mellitus and awareness of bariatric surgery

Group #1: Post-Operative Bariatric Surgery Patients

Thank you for agreeing to help us with this project.

It is possible that talking about your experiences as an Indigenous person living with obesity and T2DM may be upsetting, emotional, and/or stressful for you. You do not have to answer any question that makes you feel uncomfortable or that you find too upsetting. Should you need any additional help or support, contact information and assistance is available to you.

The interview should take approximately 30-45 minutes. We are able to extend this if needed.

1. Is there anything further you would like to share from the first sharing circle meeting?

2. At this time I would like to introduce you to what is called a Life Story Board (LSB). We will use this to illustrate your thoughts and feelings as we continue the interview. There are 3 aspects of life that are represented by the LSB; self (yellow), family (green) and community (blue). There is also a timeline drawn in red, which can be helpful when trying to organize your thoughts.

- a. Before you had bariatric surgery how long had you struggled with your weight?
- b. What empowered or inspired you on your own healing journey?
- c. Have cultural or spiritual practices such as traditional or religious ceremony been a part of your life? How has that changed since your bariatric surgery?
- d. Can you describe your relationships with yourself, family, community, spirituality, nature, elders etc.
 - i. Before you made the decision to pursue bariatric surgery?
 - ii. During the process?
 - iii. Since surgery?

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3 e. Do you have a support system to help with your healing journey? If so, what or who
4 would you say it is that supports you? Can you share a story about your support system
5 and how it may have changed during your experience with bariatric surgery?
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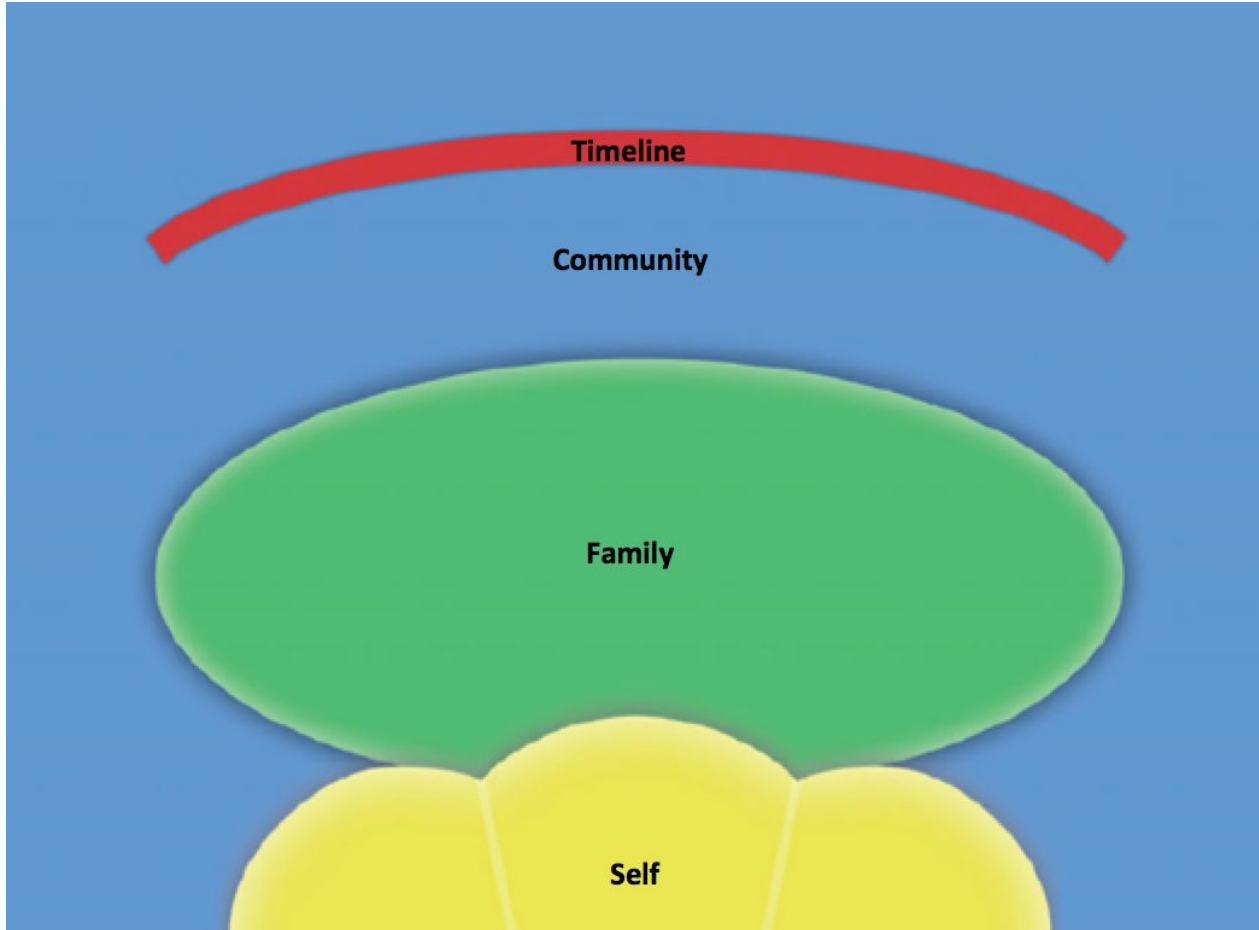
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8 3. Please tell us what aspects of your experience through bariatric surgery you found most
9 challenging. What aspects were the most positive?

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11 4. Can you share with us a story about your experiences in clinic? Did you feel comfortable and
12 safe in the space there? How did you feel in your interactions or relationships with clinic staff?
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14 5. What do you feel may support other Indigenous patients more on their healing journey and in
15 clinic?
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17 Thank you for meeting with us today.
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Supplementary Table 1: COREQ checklist

Domain 1: Research team and reflexivity		Location in manuscript (Section, page no.)
Personal Characteristics		
1. Interviewer/facilitator Which author/s conducted the interview or focus group	GS will conduct the Sharing Circles and individual interviews	Methods, page 7
2. Credentials What were the researcher's credentials? E.g. PhD, MD	GS - Indigenous Elder KH - MD, MSc, FRCSC, FACS	Title Page, page 1
3. Occupation What was their occupation at the time of the study?	GS – Indigenous Elder; Lecturer in the Department of Community Health Sciences at the University of Manitoba KH – Assistant Professor in the Department of General Surgery at the University of Manitoba and a full-time General Surgeon	Methods, page 7
4. Gender Was the researcher male or female?	Female	-
5. Experience and training What experience or training did the researcher have?	GS has previous Elder research facilitation experience. KH has an MSc and is the General Surgery Research Director at the University of Manitoba.	-
Relationship with participants		
6. Relationship established Was a relationship established prior to study commencement?	No	-
7. Participant knowledge of the interviewer What did the participants know about the researcher? E.g. personal goals, reasons for doing the research	Participants were briefed on the purpose of the study by a member of the research team that was not the principal	Methods, page 6

	investigator or the interviewer. Participants reviewed the informed consent form prior to giving written informed consent to be involved in the study.	
8. Interviewer characteristics What characteristics were reported about the interviewer/facilitator? E.g. Bias, assumptions, reasons and interests in the research topic	GS is an Indigenous Elder and MZ is a surgical resident working on this project as part of her Master's thesis (MSc).	Methods, page 5
Domain 2: study design		
Theoretical framework		
9. Methodological orientation and theory What methodological orientation was stated to underpin the study? E.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	Constructive grounded theory with thematic coding analysis	Methods, page 7
Participant selection		
10. Sampling How were participants selected? E.g. purposive, convenience, consecutive, snowball	Participants will be purposefully selected from the CMBS program (Groups #1 and #2; post-operative and wait list, respectively) and from the community (patients attending endocrinology clinic; Group #3)	Methods, page 5-6
11. Method of approach How were participants approached? E.g. face-to-face, telephone, mail, email	Telephone call or email; depending on patient preference	Methods, page 6
12. Sample size How many participants were in the study?	Three groups of 10-12 participants	Methods, page 5
13. Non-participation How many people refused to participate or dropped out? Reasons?	To be determined	-
Setting		
14. Setting of data collection Where was the data collected? E.g. home, clinic, workplace	Data collection will take place at a non-clinical location, Migizii Agamik	Methods, page 7

	Bald Eagle Lodge at University of Manitoba	
15. Presence of non-participants Was anyone else present besides the participants and researchers?	No	-
16. Description of sample What are the important characteristics of the sample? E.g. demographic data, date	Self-identify as urban Indigenous, living with T2DM, obese (BMI >35)	Methods, page 5
Data collection		
17. Interview guide Were questions, prompts, guides, provided by the authors? Was it pilot tested?	Sharing Circles and individual interviews are of semi-structured format with questions and prompts being developed in conjunction with and provided to GS.	Methods, page 7
18. Repeat interviews Were repeat interviews carried out? If yes, how many?	Each study group will participate in two Sharing Circles, separated by 6-8 weeks	Methods, page 5
19. Audio/visual recording Did the research use audio or visual recording to collect the data?	The semi-structured sharing circles and individual interviews will be audio recorded	Methods, page 7
20. Field notes Were field notes made during and/or after the interview or focus group?	To be determined	-
21. Duration What was the duration of the interviews or focus group?	2-3 hours in duration for each Sharing Circle, 1 hour for individual interview	Methods, page 7
22. Data saturation Was data saturation discussed?	No	-
23. Transcripts returned Were transcripts returned to participants for comment and/or correction?	Member checking will involve participant access to transcripts from Sharing Circles and individual interviews	Methods, page 8
Domain 3: analysis and findings		
Data analysis		
24. Number of data coders	Two, with one having	Methods, page 7

How many data coders coded the data?	experience with Indigenous qualitative research methodology	
25. Description of the coding tree Did authors provide a description of the coding tree?	No	-
26. Derivation of themes Were themes identified in advance or derived from the data?	Themes will be derived from the audio recorded data from Sharing Circles and individual interviews	Methods, page 7
27. Software What software, if applicable, was used to manage the data?	Dedoose Software Version 8.3.17	Methods, page 7
28. Participant checking Did participants provide feedback on the findings?	Findings from the first Sharing Circle will be discussed with participants at the beginning of the second Sharing Circle in order to determine that the themes and findings are accurate representations of what was shared (member checking). Feedback will be encouraged and used to develop questions for future groups. A knowledge sharing meeting will occur following the second sharing circle following completion of data analysis in order to present findings to participants and check for accuracy.	Methods, page 7
Reporting		
29. Quotations presented Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? E.g. participant number	Yes, audio recordings will be transcribed and participant statements will be directly quoted	Methods, page 7

	and anonymized in the transcripts using unique non-identifying numbers for each participant.	
30. Data and findings consistent Was there consistency between the data presented and the findings?	Data findings to be determined	-
31. Clarity of major themes Were major themes clearly presented in the findings?	Major themes to be determined	-
32. Clarity of minor themes Is there a description of diverse cases or discussion of minor themes?	Minor themes to be determined	-

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Decolonizing qualitative research to explore the experiences of Manitoba's urban Indigenous population living with Type II diabetes mellitus, obesity, and bariatric surgery

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Decolonizing qualitative research to explore the experiences of Manitoba's urban Indigenous population living with Type II diabetes mellitus, obesity, and bariatric surgery

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1 Abstract

2 **Introduction:** Obesity and type 2 diabetes mellitus (T2DM) are growing global health concerns
3 associated with significant morbidity, mortality, and health care expenditures. Due to histories of
4 colonization and contemporary marginalization, Canada's Indigenous populations are
5 disproportionately burdened by obesity, T2DM, and many other chronic illnesses. Culturally
6 appropriate research on experiences and outcomes of Indigenous patients undergoing bariatric
7 surgery in Canada is scarce. This qualitative study protocol will use a decolonizing approach
8 guided by an Indigenous Elder to explore the perspectives and experiences of urban Indigenous
9 Manitobans with respect to T2DM, obesity, and bariatric surgery. This knowledge will guide the
10 development and implementation of culturally sensitive bariatric care.

11 **Methods and analysis:** Sequential Sharing Circles (SSCs) and semi-structured conversational
12 interviews that have been purposefully designed to be culturally relevant with the guidance of an
13 Indigenous Elder and Advisory Group (IAG) will be carried out in Winnipeg, Manitoba, Canada.
14 Indigenous adults who are obese (BMI >35), have T2DM and live in an urban center will be
15 recruited. Three groups will be investigated: 1) those who have had bariatric surgery; 2) those on
16 the wait list for bariatric surgery; and 3) those not associated with a bariatric surgery program.
17 Each group of 10-12 participants will be guided through a semi-structured script led by an
18 Indigenous Elder. Elder-facilitated conversational interviews will also be completed following
19 the SSCs. All content will be audio recorded and transcribed. Thematic analysis will be used to
20 identify emerging patterns using a Constructive Grounded Theory approach.

21 **Ethics and dissemination:** This study has received ethical approval from the University of
22 Manitoba Health Research Ethics Board. Findings will inform the development and
23 implementation of culturally sensitive programs at Manitoba's Centre for Metabolic and
24 Bariatric Surgery. Results will be disseminated in peer reviewed scientific journals, at obesity
25 and Indigenous health conferences, and knowledge sharing ceremonies.

26 Strengths and Limitations:

- 27 • This will be the first Canadian study to utilize a culturally relevant, decolonizing
28 Sequential Sharing Circle data collection method to gain knowledge of the experiences
29 and perspectives of an urban Indigenous population living with obesity and T2DM with
30 reference to bariatric surgery.
- 31 • Through the use of culturally appropriate research methods designed in consultation with
32 an Indigenous Elder and community advisory group, this research will respond to the
33 Truth and Reconciliation Commission of Canada: Calls to Action #19 to improve
34 meaningful research engagement with Indigenous peoples and health outcomes.
- 35 • The application of member checking and Dedoose coding in the methodology will
36 improve data credibility and transferability.
- 37 • Recruitment for the study will involve self-identification as Indigenous and self-referral
38 which may exclude the views and opinions of some eligible participants.

- Sequential Sharing Circle size is small. Future studies with larger samples can increase qualitative rigour and authenticity of the findings.

Introduction

The purpose of outlining this project protocol prior to the study being completed is to highlight our innovative and purposefully designed decolonizing qualitative research to explore the experiences of Manitoba's urban Indigenous populations living with Type II diabetes mellitus, obesity, and bariatric surgery. Obesity and type 2 diabetes mellitus (T2DM) are growing global health concerns associated with significant morbidity, mortality, and health care expenditures [1]. Obesity increases the risk for insulin resistance, T2DM, cardiovascular disease, and all-cause mortality [2]. Due to histories of colonization, ongoing impacts of systemic racism, and oppressive governmental policies, contemporary inequities in the social determinants of health among Canada's Indigenous populations, including First Nations, Inuit and Métis, contribute to high rates of chronic disease, obesity, and T2DM [3-7]. Indeed, diabetes incidence in Indigenous peoples is 3 to 5 times the national average [8]. In order to better serve First Nation, Inuit, and Métis peoples and close the gaps in health outcomes and access to healthcare services, more culturally sensitive and appropriate research is needed. This protocol is one example of how decolonizing research in these areas can occur.

Previous research suggests that bariatric surgery is an effective treatment for improvement of T2DM in obese patients [9]. Several randomized control trials, for example, demonstrated that bariatric surgery is effective for weight loss and remission of T2DM and metabolic syndrome when compared to medical therapy alone in the overall population [9-20]. A study with Australian Indigenous populations demonstrated a 66% diabetes remission rate following gastric banding [21]. Although literature relating to Canada's Indigenous bariatric surgery population is scarce, available research suggests that surgery is safe and effective, and this patient group may respond better to the intervention based on higher resolution rates of obesity-related comorbidities [7]. Yet, research on bariatric surgery program delivery, including access, barriers, experiences and outcomes of urban Indigenous peoples is limited, especially that which involves a decolonizing, culturally grounded and sensitive methodological approach.

The Truth and Reconciliation Commission (TRC) of Canada implores that research be done in consultation with Indigenous peoples to identify and close the gaps in Indigenous health inequities, with focus on specific indicators including chronic diseases and appropriate, culturally sensitive health services [22, p. 2-3]. Additionally, Canadian health-care system practitioners are called to recognize the value of, and increase use of Indigenous healing practices, in collaboration with Indigenous Healers and Elders in the treatment of Indigenous patients [22, p. 3]. Decolonizing research approaches with Indigenous participation—that which is culturally sensitive, led by local knowledge, histories, worldviews, and perspectives—could significantly inform changes to healthcare systems that would positively impact current health inequities and wellness outcomes [8, 23].

One decolonizing approach employed in Canadian Indigenous research contexts involves “sharing circles” understood as a sacred ceremony where Elders function as the spiritual leaders or guides [24-27]. These typically involve a sacred object (often a feather) being passed around turn-by-turn to all those present in the circle where everyone has a chance to speak and share their knowledge and experiences [25, 28]. Sharing circles are also typically opened with a

1 smudging ceremony—the burning of medicines like sage or sweetgrass to cleanse the mind and
2 heart—facilitated by a respected Elder or Knowledge Keeper. Like focus groups, sharing circles
3 in research contexts often involve a series of in-depth conversations with a group of people
4 coming together to explore questions about an issue with each other over a set period of time [27,
5 29]. Unlike focus groups, however, sharing circles are approached in a sacred and spiritual
6 manner facilitated by the smudging of medicines, sacred objects, and Elder guidance [28]. The
7 open conversational style and environment also builds collective narratives while honouring oral
8 traditions of storytelling in Indigenous cultures [25, 30]. As each person listens to each other
9 they are often encouraged by the Elder to be actively present; hear the story, reflect on it,
10 examine the context in which it is told, and then to identify with and see one’s self through the
11 story. Through its structure and sacred nature, sharing circles can forge powerful relationships
12 among the story being shared, the story tellers, and the listeners or audience. It is a particular
13 style of narrative and storytelling that builds upon a safe space to allow reflections on the
14 relationships between self and others in ways that reaffirm positive shared aspects of identity,
15 culture, healing, and wellness [28]. Like sequential focus groups (SFG), in comparison with a
16 single session, repeated sequential sharing circle sessions with the same individuals can build
17 further trust and provide more time for stories to be shared [29].

18 A one-on-one “conversational” interview method is another decolonizing research
19 approach that is inherently relational and “aligns with an Indigenous worldview that honours
20 orality as a means of transmitting knowledge” [25, p. 43]. Moreover, this decolonizing approach
21 to qualitative interview research is capable of breaking down power hierarchies that can exist
22 between researchers and participants and enables both parties to engage in examining their
23 experiences in the context of life, culture, society, and institutions in ways that challenge
24 dominant perspectives [24]. Although similar to sharing circles described previously, these
25 conversational style interviews typically occur with smaller numbers, perhaps two or three, and
26 are often focused on one person’s experience in more detail. Although employed in other
27 research contexts [25], decolonizing methods of sharing circles and “conversational” interviews
28 have not been effectively adapted and utilized in clinical health research with Indigenous
29 populations, especially research involving bariatric surgery program delivery.

30 The primary objective of this study protocol is to utilize decolonizing Sequential Sharing
31 Circles (SSCs) along with semi-structured “conversational” interviews to explore the
32 perspectives and experiences of urban Indigenous Manitobans living with T2DM and obesity, in
33 the context of bariatric surgery. In doing so, this study will contribute new insights to the limited
34 body of scientific knowledge that exists on bariatric surgery program delivery, including access,
35 barriers, experiences, and outcomes for urban Indigenous peoples in Manitoba. At the same time,
36 this study will advance effective treatment strategies that are culturally sensitive while
37 encouraging positive, empowering interactions with researchers and health care providers.
38 Overall, by better understanding experiences of Indigenous patients living with obesity and
39 T2DM in Manitoba in the contexts of bariatric surgery, this research can significantly impact and
40 improve future health care delivery and patient outcomes [31]. By outlining this project protocol,
41 we hope to inspire similar studies in Canada or globally to replicate or disprove the findings
42 which will encourage more critical and constructive dialogue about and further culturally
43 sensitive research on Type II diabetes mellitus, obesity, and bariatric surgery with Indigenous
44 populations.

1 Methods

2 **Research Context and Framework**

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The Canadian province of Manitoba has one of the largest Indigenous populations in Canada (13.4%), and Winnipeg's Indigenous population is the highest of any urban center [32, 33]. The research team has created and maintains collaborative partnerships with Indigenous Healers, researchers, physicians, and Elders. Consultation with the University of Manitoba Ongomiizwin- Indigenous Institute of Health and Healing has informed and guided the development of this research to ensure design and implementation are culturally sensitive and appropriate to foster participant safety, trust, respect, and empowerment [34]. In this way, a "two-eyed seeing" framework will be adopted throughout, where Indigenous and non-Indigenous worldviews or ways of seeing the world are blended and will work together during all stages of the research [35, 36].

16 **Participants**

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Participants will be adults who have self-identified as Indigenous at Manitoba's Centre for Metabolic and Bariatric Surgery (CMBS) or a diabetes treatment clinic. All self-identifying participants will have previously consented to be contacted regarding research opportunities. Purposeful sampling will be used to screen potential participants for eligibility. The sample population will consist of three groups: (1) post-operative bariatric surgery patients, identified using the database of Manitobans who have had bariatric surgery; (2) pre-operative bariatric surgery patients currently on the Manitoba bariatric surgery waitlist; (3) urban patients who are not involved in the bariatric surgery program, recruited with the help of community contacts such as Indigenous diabetes educators, Indigenous community Elders, and family physicians. All participants will participate in two sharing circles, conducted approximately 6-8 weeks apart and one conversational interview.

Inclusion criteria are defined as patients aged 18 years or older, of Indigenous ethnicity (First Nations, Métis, Inuit) with a BMI of >35 and with diagnosis of T2DM, who live in Winnipeg. Those who meet the eligibility criteria will be contacted and informed about the study to determine interest and individually consented prior to participation.

34 **Sample size**

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Group size will be determined based on descriptions in the literature for similar research by Jacklin et al [29] and Whitty-Rogers et al [27] and in consultation with the Elder. Given the important role the Elder holds during the sharing circles, it is ultimately their decision as to the number of participants they will accept in each circle, although early conversations have suggested 10-12 per group should be adequate. When determining group size, Elders consider their gifts, teachings, and comfort guiding various group sizes. If the topic to be discussed is of a more sensitive nature and could potentially trigger participants, the Elder may choose to limit group size to allow more time for teachings and ceremony in a healing centered approach [28].

Recruitment

Participants will be purposefully recruited from clinical settings in Winnipeg Manitoba, Canada. The process for screening for eligibility and recruitment to participate in either group (1) post-operative group or group (2) pre-operative group will be facilitated through the CMBS program, located at the Victoria General Hospital. The CMBS recently completed a mass mail out of Permission to be Contacted for Future Research (PTC) and Community-Membership (CM) forms to all current and wait list CMBS patients (N>2,300 patients).

Those patients who provide their permission to be contacted for research will be screened. The three different participant groups and process for screening/recruitment are: (1) *Post-operative group*: Participants for the post-operative bariatric surgery group will be determined using the database information and screened from the list of those patients who provided their permission to be contacted for future research, who self-identified as Indigenous, who had a previous diagnosis of T2DM prior to surgery, and who have had bariatric surgery; (2) *Pre-operative group*: The CMBS Permission to be Contacted for Research (PTC) and Community Membership (CM) list (described above) will be used to identify/screen participants for this group. Those CMBS patients who provided their permission to be contacted for future research, self-identified as Indigenous, have a diagnosis of T2DM and are currently on the wait list for bariatric surgery will be eligible to participate in the study as part of this group; patient eligibility in groups 1 and 2 will be confirmed through review of CMBS charts and/or the CMBS electronic database; and (3) *The non-bariatric surgery informed group* requires recruitment outside of the CMBS. Patients who have a diagnosis of T2DM, have been referred to an endocrinologist at the Health Sciences Centre for diabetes management/treatment, and self-identify as Indigenous are eligible to participate in this group. A diabetes educator or office assistant will provide patients attending their first appointment, who are obese, and have T2DM with a Permission to Contact for a Research Study form. Study information posters will be posted in the waiting area and clinic treatment room to facilitate patient inquiry about the study. Those completing the form who self-identify as Indigenous, are obese, and have T2DM will be contacted by a member of the research team to provide further details about the study and answer any questions the patient may have.

Standardized telephone and email recruitment scripts have been developed and reflect the information contained in the Informed Consent Form.

Ethics and Consent

After meeting eligibility and inclusion criteria and expressing interest in participating in the study, potential participants will meet with a member of the research team, be provided with an overview of the study, review the informed consent form and have the opportunity to ask questions. The Informed Consent Form outlines the purpose and methodology of the study as well as the ethical safeguards regarding data protection and privacy. Every effort will be made to ensure complete understanding of the study requirements, potential risks and voluntary nature of participation. Written consent will be obtained from the potential participant prior to their involvement in any study related activity. Each participant will be assigned a unique identification number and will be identified solely by this number on transcripts of the sharing circles, to ensure individual anonymity.

1 This study has received ethical approval from the University of Manitoba Health
2 Research Ethics Board [HS22910 (H2019:237)], the Victoria General Hospital and the Health
3 Science Center.

4 Sharing circle and “conversational” interviews could potentially elicit responses of
5 anxiety, depression, and post-traumatic stress. Professional mental health resources will be made
6 available to all participants following each sharing circle and individual interview. Some
7 research suggests that participation in sharing circles facilitates comfort and camaraderie among
8 participants by supporting insightful discussions based on shared lived experiences [26-28]. A
9 forty-dollar honorarium will be gifted to each participant for each sharing circle participated in.
10 A twenty-dollar honorarium will be provided for an individual interview.

11 **Data Generation Procedures**

12 The Sequential Sharing Circles (SSCs) will be conducted in a culturally safe, sensitive,
13 and welcoming site, *Migizii Agamik* (Bald Eagle Lodge) at the University of Manitoba. Each
14 sharing circle will be two to three hours in duration. Individual “conversational” interviews will
15 be approximately one hour in length. The sharing circles and interviews will be facilitated by
16 Gramma Geraldine Shingoose, a local Indigenous Elder. Ceremonial tobacco will be gifted to the
17 Elder for sharing her knowledge and guiding the development and implementation of the SSCs.
18 A light, T2DM (and when required, bariatric surgery patient) appropriate, nutritious meal (feast)
19 will be provided prior to the sharing circles sessions. Each sharing circle will begin with a
20 smudging ceremony and will include teachings related to knowledge creation during the Sharing
21 Circle, the sacred nature of the experiences shared (confidentiality), and ownership of the
22 knowledge created by the group. Content of each sharing circle and individual interview will be
23 audio recorded and transcribed.

24 Elder Shingoose will guide the discussion using semi-structured questions
25 (Supplementary File 1). The format includes open-ended questions presented to all groups as
26 well as questions suited to each group’s position in the bariatric surgery journey. The sharing
27 circles that are second in the sequence will include member-checking procedures [24]. This will
28 ensure the interpretation of the discussion from the group’s first session reflects participants’
29 experiences and contributions in order to verify the interpretation and themes identified are
30 culturally appropriate.

31 Individual “conversational” interviews with each sharing circle participant will be
32 conducted following the SSCs to provide an opportunity for further in-depth exploration of the
33 main study themes and individual narratives [25] (Supplementary File 2). These interviews will
34 also be facilitated by Elder Shingoose and will involve a visual Life Story Board (LSB) to
35 facilitate a deeper conversation and exploration of patients’ journeys with obesity and T2DM
36 [37].

37 **Data Analysis**

38 Transcripts from SSCs and individual interviews will be analyzed for emerging patterns
39 and themes utilizing constructivist grounded theory strategy [38]. This approach will facilitate
40 exploration of both common and differing experiences related to study-specific topics such as
41 barriers to diabetes care. A secondary analysis of the data will involve comparing and contrasting

1 themes across the three groups. This in-depth interpretation of the data will allow for conclusions
2 to be drawn about aspects of bariatric and T2DM healthcare that can be improved for Indigenous
3 patients and direct the focus of future research. The qualitative data management software
4 system Dedoose Version 8.3.17 (2020) will be used to facilitate data analysis. A minimum of
5 two researchers will code the transcripts to ensure rigour and confirmability [39]. One
6 Indigenous researcher will have experience in Indigenous qualitative research methodology to
7 ensure Indigenous knowledge, experience, and understanding, as well as a “two-eyed seeing”
8 framework, is employed and represented within the coding process [35, 36]. The themes and
9 coding structures identified will also be compared among the other members of the researcher
10 team to enhance dependability and credibility [39].

11 Feedback about the research findings will be provided to participants via member
12 checking and a knowledge sharing meeting for each sharing circle. Member checking is a
13 technique used by facilitators to present research findings and interpretations from past group
14 discussion to obtain feedback and check for authenticity [29]. Member checking provides an
15 opportunity for participants to discuss their thoughts and feelings about the information and to
16 inform further group discussions or interviews. At the beginning of each group’s second sharing
17 circle, Elder Shingoose will present summarized preliminary findings from the first sharing
18 circle. Participants will then be encouraged to reflect on their thoughts and feelings regarding the
19 information shared, and provide feedback to ensure accuracy and confirmability.

20 21 **Patient and Public Involvement**

22
23 This project aims to address the Truth and Reconciliation Commission of Canada: Calls
24 to Action [22] and acknowledges many Indigenous people have experienced previous trauma or
25 past harm. An Indigenous advisory group consisting of Indigenous Elders, physicians and
26 researchers were consulted in the design of this study to ensure patient voices from their direct
27 experiences were captured following a “two-eyed seeing” approach [35-36]. The interview
28 question scripts in this research were developed in consultation with Indigenous Healers and
29 Elders and are deliberately broad to address experiences of Indigenous patients in a culturally
30 appropriate way.

31 The recruitment process will not include patient or public involvement. Results from this
32 study will be disseminated to participants at a knowledge sharing meeting and their input will be
33 sought to identify appropriate methods of sharing the knowledge gained to the broader
34 community. Participants will have the opportunity to contribute suggestions for how future
35 research is conducted.

36 37 **Dissemination**

38 The knowledge gained from the results of this study will be used to develop and
39 implement culturally sensitive patient care programs for Indigenous persons within the Manitoba
40 Centre for Metabolic and Bariatric Surgery program. Findings will be disseminated through
41 publication in open access peer reviewed scientific journals, presentation at conferences and
42 education sessions for healthcare professionals and included in a knowledge sharing session with
43 study participants. The IAG will guide community dissemination of findings. Additionally, the
44 findings are anticipated to be relevant to the general Canadian and Indigenous populations and as
45 such, sharing the results in mainstream media publications will also be considered.

1 **Conclusion**

2 The purpose of outlining this project protocol prior to the study being completed is to
3 highlight for readers our innovative and purposefully designed Indigenous decolonizing research
4 with Indigenous participants to address the multifaceted aspects and experiences of bariatric
5 surgery in a culturally appropriate way. We hope to inspire similar studies across Canada and
6 elsewhere that can replicate or advance the findings which will encourage more dialogue about
7 and further Indigenous and culturally sensitive research projects with bariatric care/ surgery
8 populations. Additionally, outlining the novel methodology of our approach facilitates
9 publication of our study results, demonstrates the methodology has been carefully developed,
10 described in detail and peer-reviewed, enhances the transparency of our research, prevents
11 potential selective publication and reporting of research outcomes, and helps patients and the
12 general public know what research is being planned.

13 This qualitative decolonizing research approach utilizing SSCs and individual
14 “conversational” interviews will contribute new knowledge to the limited body of scientific
15 evidence that exists on bariatric surgery program delivery- including access, barriers,
16 experiences and outcomes of urban Indigenous peoples in Manitoba. This study is congruent
17 with the Truth and Reconciliation Commission of Canada: Calls to Action #19 [22]. Effective
18 treatment strategies that are culturally sensitive, address access barriers, and encourage positive,
19 empowering interactions with health care providers are needed to impact future health care
20 delivery and patient outcomes for Indigenous peoples.

21 The findings of this study will provide a conduit that promotes understanding of the
22 collective historical and personal experiences, including culturally unsafe health care
23 experienced by Indigenous patients as it is becoming increasingly apparent that the interactions
24 Indigenous patients have with their health care providers and their ability to actively engage with
25 their T2DM care plans are influenced by both [31]. Sharing circles and “conversational”
26 interview methodology have vast potential to generate knowledge and ideas from the Indigenous
27 community that can be implemented by physicians and caregivers in the health care system to
28 provide improved patient-centered care. A “two-eyed seeing” framework also ensures
29 Indigenous knowledge, perspectives, and values are upheld and maintained throughout the
30 duration of the research project.

32 **Author’s contribution**

33 KH, MZ, MF, GS, AFW, AH, and AV contributed to the conception and study design. KH, MZ,
34 MF, GS, AFW, and FD are involved in study implementation. All authors were involved in the
35 protocol manuscript writing. All authors provided final approval of the manuscript.

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40 Manitoba, Canada [grant number 320019].

1 Competing interests statement

2 There are no conflicts of interest to report.

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For peer review only

Sequential Sharing circles as a decolonized approach to investigate the experiences of Manitoba's urban Indigenous population living with obesity and type II diabetes mellitus and awareness of bariatric surgery

Group #1: Post-Operative Bariatric Surgery Patients

Sharing Circle Script for Session #1 (of 2) - Semi-Structured Discussion Questions:

Traditional Territories Acknowledgement:

The University of Manitoba campuses are located on original lands of Anishinaabeg, Cree, Oji-Cree, Dakota, and Dene peoples, and on the homeland of the Métis Nation. The Winnipeg Regional Health Authority acknowledges that it provides health services in facilities located on the original lands of Treaty 1 and on the homelands of the Metis Nation. WRHA respects that the First Nation treaties were made on these territories and acknowledge the harms and mistakes of the past and present, and we dedicate ourselves to collaborate and move forward in partnership with First Nation, Metis and Inuit people in the spirit of reconciliation.

Sharing Circle members are asked to keep the information provided in the groups confidential. If there is information you would like to add that you did not have time to share or that is sensitive and you prefer sharing individually, you are encouraged to ask for an individual interview with one of the researchers who is bound by confidentiality.

It is possible that talking about your experiences as an Indigenous person living with obesity and T2DM may be upsetting, emotional, and/or stressful for you. You do not have to answer any question that makes you feel uncomfortable or that you find too upsetting. Should you need any additional help or support, contact information and assistance is available to you.

Before we get started, is there anyone who practices with traditional medicines or smudge?

If at any point during the evening you would like the use of traditional medicines, smudge, or if you need time with our Elder after the sharing circle, please let us know and we would be glad to provide that for you.

1. As an Indigenous person, what was it like to struggle with obesity and type II diabetes mellitus prior to bariatric surgery?

Prompts: Mind
 Body
 Spirit

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8 2. What empowered or inspired you to take care of your health with bariatric surgery?

9 Prompts: Community
10
11 Elders/Traditional medicines and Sacred Ceremonies/Prayer
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13 Faith-based clergy/Sacraments/Prayer
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15 Family
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17 Friends
18
19 Health care providers (doctors, Nurses)
20
21 Other? (identify)
22
23
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25
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27 3. What challenges did you face in order to be approved for bariatric surgery?

28 Prompts: smoking, impact of residential schools

- 29
30 a. Do you feel any were specific to being Indigenous?
31
32 b. What help would you have liked to have had?
33
34

35 *****BREAK*****
36

37 4. Did the bariatric surgery diet affect your ability to participate in traditional/Indigenous practices and
38 ceremonies?
39

- 40 a. In what ways? (positive and/or negative)
41
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45 5. Would you like your health care providers (family doctors, medical specialists, nurses, dietitians,
46 psychologists) to inquire about whether you used traditional medicines, ceremonies, and/or faith-based
47 practices in your daily life?
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Sharing Circle Script for Session #2 (of 2) - Semi-Structured Discussion Questions:

Traditional Territories Acknowledgement:

The University of Manitoba campuses are located on original lands of Anishinaabeg, Cree, Oji-Cree, Dakota, and Dene peoples, and on the homeland of the Métis Nation. The Winnipeg Regional Health Authority acknowledges that it provides health services in facilities located on the original lands of Treaty 1 and on the homelands of the Metis Nation. WRHA respects that the First Nation treaties were made on these territories and acknowledge the harms and mistakes of the past and present, and we dedicate ourselves to collaborate and move forward in partnership with First Nation, Metis and Inuit people in the spirit of reconciliation.

Sharing Circle members are asked to keep the information provided in the groups confidential. If there is information you would like to add that you did not have time to share or that is sensitive and you prefer sharing individually, you are encouraged to ask for an individual interview with one of the researchers who is bound by confidentiality.

It is possible that talking about your experiences as an Indigenous person living with obesity and T2DM may be upsetting, emotional, and/or stressful for you. You do not have to answer any question that makes you feel uncomfortable or that you find too upsetting. Should you need any additional help or support, contact information and assistance is available to you.

Member Checking: this part of Group #1's Sharing Circle Session #2 will involve the sharing of the findings (themes and ideas) from the analysis of Sharing Circle Session #1 and discussing whether they correctly reflect the group's discussion from that session.

If at any point during the evening you would like the use of traditional medicines, smudge, or if you need time with our Elder after the sharing circle, please let us know and we would be glad to provide that for you.

1. Do the research findings presented about our first Sharing Circle discussion capture the essence of what you were trying to convey?

a. What needs to be changed, added or clarified?

2. What empowers or inspires you regarding your health after bariatric surgery?

Prompts: Community
 Elders/Traditional medicines and Sacred Ceremonies/Prayer
 Faith-based clergy/Sacraments/Prayer
 Family

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3 Friends

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5 Health care providers (doctors, Nurses)

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7 Other? (identify)

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11
12 3. Do you think you receive culturally appropriate care from your health care providers? Are there ways
13 to improve?
14

15 *****BREAK*****

16
17 4. What should ~~doctors and your~~ health care teams take into consideration when providing care to
18 Indigenous patients who live with obesity and diabetes, and who are seeking bariatric surgery?
19

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21
22
23 5. What advice would you give to Indigenous people who are thinking about bariatric surgery?
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27 6. Is there anything else you would like to share about your experience with diabetes and/or bariatric
28 surgery?
29

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33 NOTE: Results of the analysis of Sharing Circle #1 (Sessions #1 and #2) data for emergent themes and
34 topics will inform development of some of the open-ended semi-structured discussion questions for
35 Sharing Circles #2 and #3.
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Rady Faculty of
Health Sciences



University
of Manitoba



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Individual Interview – Semi-Structured Discussion Questions

Study Title: Sequential Sharing Circles as a decolonized approach to investigate the experiences of Manitoba's urban Indigenous population living with obesity and type II diabetes mellitus and awareness of bariatric surgery

Group #1: Post-Operative Bariatric Surgery Patients

Thank you for agreeing to help us with this project.

It is possible that talking about your experiences as an Indigenous person living with obesity and T2DM may be upsetting, emotional, and/or stressful for you. You do not have to answer any question that makes you feel uncomfortable or that you find too upsetting. Should you need any additional help or support, contact information and assistance is available to you.

The interview should take approximately 30-45 minutes. We are able to extend this if needed.

1. Is there anything further you would like to share from the first sharing circle meeting?

2. At this time I would like to introduce you to what is called a Life Story Board (LSB). We will use this to illustrate your thoughts and feelings as we continue the interview. There are 3 aspects of life that are represented by the LSB; self (yellow), family (green) and community (blue). There is also a timeline drawn in red, which can be helpful when trying to organize your thoughts.

- a. Before you had bariatric surgery how long had you struggled with your weight?
- b. What empowered or inspired you on your own healing journey?
- c. Have cultural or spiritual practices such as traditional or religious ceremony been a part of your life? How has that changed since your bariatric surgery?
- d. Can you describe your relationships with yourself, family, community, spirituality, nature, elders etc.
 - i. Before you made the decision to pursue bariatric surgery?
 - ii. During the process?
 - iii. Since surgery?

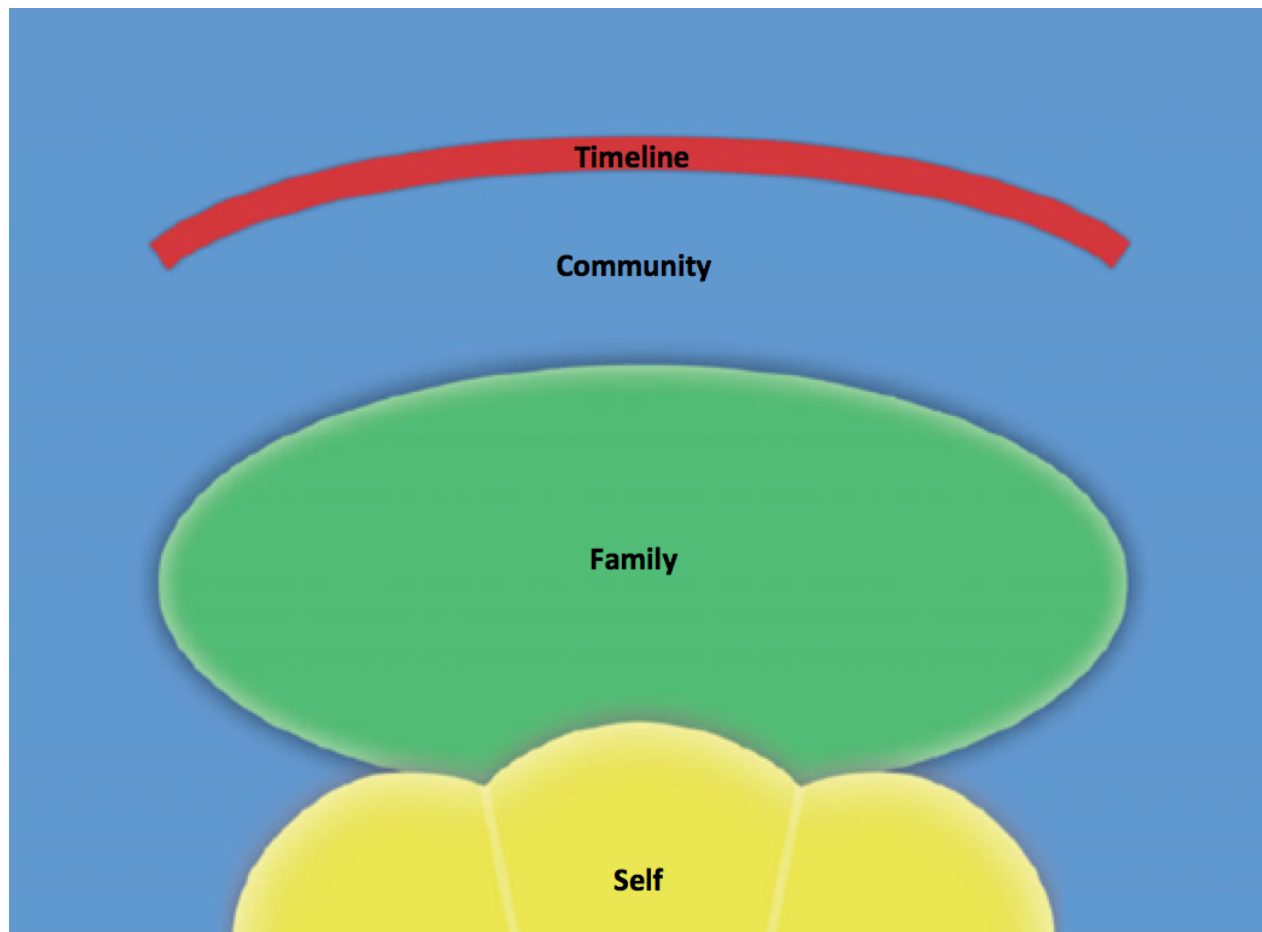
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3 e. Do you have a support system to help with your healing journey? If so, what or who
4 would you say it is that supports you? Can you share a story about your support system
5 and how it may have changed during your experience with bariatric surgery?
6

7
8 3. Please tell us what aspects of your experience through bariatric surgery you found most
9 challenging. What aspects were the most positive?

10
11 4. Can you share with us a story about your experiences in clinic? Did you feel comfortable and
12 safe in the space there? How did you feel in your interactions or relationships with clinic staff?
13

14 5. What do you feel may support other Indigenous patients more on their healing journey and in
15 clinic?
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17 Thank you for meeting with us today.
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Supplementary Table 1: COREQ checklist

Domain 1: Research team and reflexivity		Location in manuscript (Section, page no.)
Personal Characteristics		
1. Interviewer/facilitator Which author/s conducted the interview or focus group	GS will conduct the Sharing Circles and individual interviews	Methods, page 7
2. Credentials What were the researcher's credentials? E.g. PhD, MD	GS - Indigenous Elder KH - MD, MSc, FRCSC, FACS	Title Page, page 1
3. Occupation What was their occupation at the time of the study?	GS – Indigenous Elder; Lecturer in the Department of Community Health Sciences at the University of Manitoba KH – Assistant Professor in the Department of General Surgery at the University of Manitoba and a full-time General Surgeon	Methods, page 7
4. Gender Was the researcher male or female?	Female	-
5. Experience and training What experience or training did the researcher have?	GS has previous Elder research facilitation experience. KH has an MSc and is the General Surgery Research Director at the University of Manitoba.	-
Relationship with participants		
6. Relationship established Was a relationship established prior to study commencement?	No	-
7. Participant knowledge of the interviewer What did the participants know about the researcher? E.g. personal goals, reasons for doing the research	Participants were briefed on the purpose of the study by a member of the research team that was not the principal	Methods, page 6

	investigator or the interviewer. Participants reviewed the informed consent form prior to giving written informed consent to be involved in the study.	
8. Interviewer characteristics What characteristics were reported about the interviewer/facilitator? E.g. Bias, assumptions, reasons and interests in the research topic	GS is an Indigenous Elder and MZ is a surgical resident working on this project as part of her Master's thesis (MSc).	Methods, page 5
Domain 2: study design		
Theoretical framework		
9. Methodological orientation and theory What methodological orientation was stated to underpin the study? E.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	Constructive grounded theory with thematic coding analysis	Methods, page 7
Participant selection		
10. Sampling How were participants selected? E.g. purposive, convenience, consecutive, snowball	Participants will be purposefully selected from the CMBS program (Groups #1 and #2; post-operative and wait list, respectively) and from the community (patients attending endocrinology clinic; Group #3)	Methods, page 5-6
11. Method of approach How were participants approached? E.g. face-to-face, telephone, mail, email	Telephone call or email; depending on patient preference	Methods, page 6
12. Sample size How many participants were in the study?	Three groups of 10-12 participants	Methods, page 5
13. Non-participation How many people refused to participate or dropped out? Reasons?	To be determined	-
Setting		
14. Setting of data collection Where was the data collected? E.g. home, clinic, workplace	Data collection will take place at a non-clinical location, Migizii Agamik	Methods, page 7

	Bald Eagle Lodge at University of Manitoba	
15. Presence of non-participants Was anyone else present besides the participants and researchers?	No	-
16. Description of sample What are the important characteristics of the sample? E.g. demographic data, date	Self-identify as urban Indigenous, living with T2DM, obese (BMI >35)	Methods, page 5
Data collection		
17. Interview guide Were questions, prompts, guides, provided by the authors? Was it pilot tested?	Sharing Circles and individual interviews are of semi-structured format with questions and prompts being developed in conjunction with and provided to GS.	Methods, page 7
18. Repeat interviews Were repeat interviews carried out? If yes, how many?	Each study group will participate in two Sharing Circles, separated by 6-8 weeks	Methods, page 5
19. Audio/visual recording Did the research use audio or visual recording to collect the data?	The semi-structured sharing circles and individual interviews will be audio recorded	Methods, page 7
20. Field notes Were field notes made during and/or after the interview or focus group?	To be determined	-
21. Duration What was the duration of the interviews or focus group?	2-3 hours in duration for each Sharing Circle, 1 hour for individual interview	Methods, page 7
22. Data saturation Was data saturation discussed?	No	-
23. Transcripts returned Were transcripts returned to participants for comment and/or correction?	Member checking will involve participant access to transcripts from Sharing Circles and individual interviews	Methods, page 8
Domain 3: analysis and findings		
Data analysis		
24. Number of data coders	Two, with one having	Methods, page 7

How many data coders coded the data?	experience with Indigenous qualitative research methodology	
25. Description of the coding tree Did authors provide a description of the coding tree?	No	-
26. Derivation of themes Were themes identified in advance or derived from the data?	Themes will be derived from the audio recorded data from Sharing Circles and individual interviews	Methods, page 7
27. Software What software, if applicable, was used to manage the data?	Dedoose Software Version 8.3.17	Methods, page 7
28. Participant checking Did participants provide feedback on the findings?	Findings from the first Sharing Circle will be discussed with participants at the beginning of the second Sharing Circle in order to determine that the themes and findings are accurate representations of what was shared (member checking). Feedback will be encouraged and used to develop questions for future groups. A knowledge sharing meeting will occur following the second sharing circle following completion of data analysis in order to present findings to participants and check for accuracy.	Methods, page 7
Reporting		
29. Quotations presented Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? E.g. participant number	Yes, audio recordings will be transcribed and participant statements will be directly quoted	Methods, page 7

	and anonymized in the transcripts using unique non-identifying numbers for each participant.	
30. Data and findings consistent Was there consistency between the data presented and the findings?	Data findings to be determined	-
31. Clarity of major themes Were major themes clearly presented in the findings?	Major themes to be determined	-
32. Clarity of minor themes Is there a description of diverse cases or discussion of minor themes?	Minor themes to be determined	-

BMJ Open

Decolonizing qualitative research to explore the experiences of Manitoba's urban Indigenous population living with Type II diabetes mellitus, obesity, and bariatric surgery

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Primary Subject Heading:	Surgery
Secondary Subject Heading:	Qualitative research
Keywords:	QUALITATIVE RESEARCH, General diabetes < DIABETES & ENDOCRINOLOGY, SURGERY

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Decolonizing qualitative research to explore the experiences of Manitoba's urban Indigenous population living with Type II diabetes mellitus, obesity, and bariatric surgery

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1 Abstract

2 **Introduction:** Obesity and type 2 diabetes mellitus (T2DM) are growing global health concerns
3 associated with significant morbidity, mortality, and health care expenditures. Due to histories of
4 colonization and contemporary marginalization, Canada's Indigenous populations are
5 disproportionately burdened by obesity, T2DM, and many other chronic illnesses. Culturally
6 appropriate research on experiences and outcomes of Indigenous patients undergoing bariatric
7 surgery in Canada is scarce. This qualitative study protocol will use a decolonizing approach
8 guided by an Indigenous Elder to explore the perspectives and experiences of urban Indigenous
9 Manitobans with respect to T2DM, obesity, and bariatric surgery. This knowledge will guide the
10 development and implementation of culturally sensitive bariatric care.

11 **Methods and analysis:** Sequential Sharing Circles (SSCs) and semi-structured conversational
12 interviews that have been purposefully designed to be culturally relevant with the guidance of an
13 Indigenous Elder and Advisory Group (IAG) will be carried out in Winnipeg, Manitoba, Canada.
14 Indigenous adults who are obese (BMI >35), have T2DM and live in an urban center will be
15 recruited. Three groups will be investigated: 1) those who have had bariatric surgery; 2) those on
16 the wait list for bariatric surgery; and 3) those not associated with a bariatric surgery program.
17 Each group of 10-12 participants will be guided through a semi-structured script led by an
18 Indigenous Elder. Elder-facilitated conversational interviews will also be completed following
19 the SSCs. All content will be audio recorded and transcribed. Thematic analysis will be used to
20 identify emerging patterns using a Constructive Grounded Theory approach.

21 **Ethics and dissemination:** This study has received ethical approval from the University of
22 Manitoba Health Research Ethics Board. Findings will inform the development and
23 implementation of culturally sensitive programs at Manitoba's Centre for Metabolic and
24 Bariatric Surgery. Results will be disseminated in peer reviewed scientific journals, at obesity
25 and Indigenous health conferences, and knowledge sharing ceremonies.

26 Strengths and Limitations:

- 27 • This will be the first Canadian study to utilize a culturally relevant, decolonizing
28 Sequential Sharing Circle data collection method to gain knowledge of the experiences
29 and perspectives of an urban Indigenous population living with obesity and T2DM with
30 reference to bariatric surgery.
- 31 • Through the use of culturally appropriate research methods designed in consultation with
32 an Indigenous Elder and community advisory group, this research will respond to the
33 Truth and Reconciliation Commission of Canada: Calls to Action #19 to improve
34 meaningful research engagement with Indigenous peoples and health outcomes.
- 35 • The application of member checking and Dedoose coding in the methodology will
36 improve data credibility and transferability.
- 37 • Recruitment for the study will involve self-identification as Indigenous and self-referral
38 which may exclude the views and opinions of some eligible participants.

- Sequential Sharing Circle size is small. Future studies with larger samples can increase qualitative rigour and authenticity of the findings.

Introduction

The purpose of outlining this project protocol prior to the study being completed is to highlight our innovative and purposefully designed decolonizing qualitative research to explore the experiences of Manitoba's urban Indigenous populations living with Type II diabetes mellitus, obesity, and bariatric surgery. Obesity and type 2 diabetes mellitus (T2DM) are growing global health concerns associated with significant morbidity, mortality, and health care expenditures [1]. Obesity increases the risk for insulin resistance, T2DM, cardiovascular disease, and all-cause mortality [2]. Due to histories of colonization, ongoing impacts of systemic racism, and oppressive governmental policies, contemporary inequities in the social determinants of health among Canada's Indigenous populations, including First Nations, Inuit and Métis, contribute to high rates of chronic disease, obesity, and T2DM [3-7]. Indeed, diabetes incidence in Indigenous peoples is 3 to 5 times the national average [8]. In order to better serve First Nation, Inuit, and Métis peoples and close the gaps in health outcomes and access to healthcare services, more culturally sensitive and appropriate research is needed. This protocol is one example of how decolonizing research in these areas can occur.

Previous research suggests that bariatric surgery is an effective treatment for improvement of T2DM in obese patients [9]. Several randomized control trials, for example, demonstrated that bariatric surgery is effective for weight loss and remission of T2DM and metabolic syndrome when compared to medical therapy alone in the overall population [9-20]. A study with Australian Indigenous populations demonstrated a 66% diabetes remission rate following gastric banding [21]. Although literature relating to Canada's Indigenous bariatric surgery population is scarce, available research suggests that surgery is safe and effective, and this patient group may respond better to the intervention based on higher resolution rates of obesity-related comorbidities [7]. Yet, research on bariatric surgery program delivery, including access, barriers, experiences and outcomes of urban Indigenous peoples is limited, especially that which involves a decolonizing, culturally grounded and sensitive methodological approach.

The Truth and Reconciliation Commission (TRC) of Canada implores that research be done in consultation with Indigenous peoples to identify and close the gaps in Indigenous health inequities, with focus on specific indicators including chronic diseases and appropriate, culturally sensitive health services [22, p. 2-3]. Additionally, Canadian health-care system practitioners are called to recognize the value of, and increase use of Indigenous healing practices, in collaboration with Indigenous Healers and Elders in the treatment of Indigenous patients [22, p. 3]. Decolonizing research approaches with Indigenous participation—that which is culturally sensitive, led by local knowledge, histories, worldviews, and perspectives—could significantly inform changes to healthcare systems that would positively impact current health inequities and wellness outcomes [8, 23].

One decolonizing approach employed in Canadian Indigenous research contexts involves “sharing circles” understood as a sacred ceremony where Elders function as the spiritual leaders or guides [24-27]. These typically involve a sacred object (often a feather) being passed around turn-by-turn to all those present in the circle where everyone has a chance to speak and share their knowledge and experiences [25, 28]. Sharing circles are also typically opened with a

1 smudging ceremony—the burning of medicines like sage or sweetgrass to cleanse the mind and
2 heart—facilitated by a respected Elder or Knowledge Keeper. Like focus groups, sharing circles
3 in research contexts often involve a series of in-depth conversations with a group of people
4 coming together to explore questions about an issue with each other over a set period of time [27,
5 29]. Unlike focus groups, however, sharing circles are approached in a sacred and spiritual
6 manner facilitated by the smudging of medicines, sacred objects, and Elder guidance [28]. The
7 open conversational style and environment also builds collective narratives while honouring oral
8 traditions of storytelling in Indigenous cultures [25, 30]. As each person listens to each other
9 they are often encouraged by the Elder to be actively present; hear the story, reflect on it,
10 examine the context in which it is told, and then to identify with and see one’s self through the
11 story. Through its structure and sacred nature, sharing circles can forge powerful relationships
12 among the story being shared, the story tellers, and the listeners or audience. It is a particular
13 style of narrative and storytelling that builds upon a safe space to allow reflections on the
14 relationships between self and others in ways that reaffirm positive shared aspects of identity,
15 culture, healing, and wellness [28]. Like sequential focus groups (SFG), in comparison with a
16 single session, repeated sequential sharing circle sessions with the same individuals can build
17 further trust and provide more time for stories to be shared [29].

18 A one-on-one “conversational” interview method is another decolonizing research
19 approach that is inherently relational and “aligns with an Indigenous worldview that honours
20 orality as a means of transmitting knowledge” [25, p. 43]. Moreover, this decolonizing approach
21 to qualitative interview research is capable of breaking down power hierarchies that can exist
22 between researchers and participants and enables both parties to engage in examining their
23 experiences in the context of life, culture, society, and institutions in ways that challenge
24 dominant perspectives [24]. Although similar to sharing circles described previously, these
25 conversational style interviews typically occur with smaller numbers, perhaps two or three, and
26 are often focused on one person’s experience in more detail. Although employed in other
27 research contexts [25], decolonizing methods of sharing circles and “conversational” interviews
28 have not been effectively adapted and utilized in clinical health research with Indigenous
29 populations, especially research involving bariatric surgery program delivery.

30 The primary objective of this study protocol is to utilize decolonizing Sequential Sharing
31 Circles (SSCs) along with semi-structured “conversational” interviews to explore the
32 perspectives and experiences of urban Indigenous Manitobans living with T2DM and obesity, in
33 the context of bariatric surgery. In doing so, this study will contribute new insights to the limited
34 body of scientific knowledge that exists on bariatric surgery program delivery, including access,
35 barriers, experiences, and outcomes for urban Indigenous peoples in Manitoba. At the same time,
36 this study will advance effective treatment strategies that are culturally sensitive while
37 encouraging positive, empowering interactions with researchers and health care providers.
38 Overall, by better understanding experiences of Indigenous patients living with obesity and
39 T2DM in Manitoba in the contexts of bariatric surgery, this research can significantly impact and
40 improve future health care delivery and patient outcomes [31]. By outlining this project protocol,
41 we hope to inspire similar studies in Canada or globally to replicate or disprove the findings
42 which will encourage more critical and constructive dialogue about and further culturally
43 sensitive research on Type II diabetes mellitus, obesity, and bariatric surgery with Indigenous
44 populations.

1 **Methods**

2 **Research Context and Framework**

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The Canadian province of Manitoba has one of the largest Indigenous populations in Canada (13.4%), and Winnipeg's Indigenous population is the highest of any urban center [32, 33]. The research team has created and maintains collaborative partnerships with Indigenous Healers, researchers, physicians, and Elders. Consultation with the University of Manitoba Ongomiizwin- Indigenous Institute of Health and Healing has informed and guided the development of this research to ensure design and implementation are culturally sensitive and appropriate to foster participant safety, trust, respect, and empowerment [34]. In this way, a "two-eyed seeing" framework will be adopted throughout, where Indigenous and non-Indigenous worldviews or ways of seeing the world are blended and will work together during all stages of the research [35, 36].

16 **Participants**

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Participants will be adults who have self-identified as Indigenous at Manitoba's Centre for Metabolic and Bariatric Surgery (CMBS) or a diabetes treatment clinic. All self-identifying participants will have previously consented to be contacted regarding research opportunities. Purposeful sampling will be used to screen potential participants for eligibility. The sample population will consist of three groups: (1) post-operative bariatric surgery patients, identified using the database of Manitobans who have had bariatric surgery; (2) pre-operative bariatric surgery patients currently on the Manitoba bariatric surgery waitlist; (3) urban patients who are not involved in the bariatric surgery program, recruited with the help of community contacts such as Indigenous diabetes educators, Indigenous community Elders, and family physicians. All participants will participate in two sharing circles, conducted approximately 6-8 weeks apart and one conversational interview.

Inclusion criteria are defined as patients aged 18 years or older, of Indigenous ethnicity (First Nations, Métis, Inuit) with a BMI of >35 and with diagnosis of T2DM, who live in Winnipeg. Those who meet the eligibility criteria will be contacted and informed about the study to determine interest and individually consented prior to participation.

34 **Sample size**

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Group size will be determined based on descriptions in the literature for similar research by Jacklin et al [29] and Whitty-Rogers et al [27] and in consultation with the Elder. Given the important role the Elder holds during the sharing circles, it is ultimately their decision as to the number of participants they will accept in each circle, although early conversations have suggested 10-12 per group should be adequate. When determining group size, Elders consider their gifts, teachings, and comfort guiding various group sizes. If the topic to be discussed is of a more sensitive nature and could potentially trigger participants, the Elder may choose to limit group size to allow more time for teachings and ceremony in a healing centered approach [28].

Recruitment

Participants will be purposefully recruited from clinical settings in Winnipeg Manitoba, Canada. The process for screening for eligibility and recruitment to participate in either group (1) post-operative group or group (2) pre-operative group will be facilitated through the CMBS program, located at the Victoria General Hospital. The CMBS recently completed a mass mail out of Permission to be Contacted for Future Research (PTC) and Community-Membership (CM) forms to all current and wait list CMBS patients (N>2,300 patients).

Those patients who provide their permission to be contacted for research will be screened. The three different participant groups and process for screening/recruitment are: (1) *Post-operative group*: Participants for the post-operative bariatric surgery group will be determined using the database information and screened from the list of those patients who provided their permission to be contacted for future research, who self-identified as Indigenous, who had a previous diagnosis of T2DM prior to surgery, and who have had bariatric surgery; (2) *Pre-operative group*: The CMBS Permission to be Contacted for Research (PTC) and Community Membership (CM) list (described above) will be used to identify/screen participants for this group. Those CMBS patients who provided their permission to be contacted for future research, self-identified as Indigenous, have a diagnosis of T2DM and are currently on the wait list for bariatric surgery will be eligible to participate in the study as part of this group; patient eligibility in groups 1 and 2 will be confirmed through review of CMBS charts and/or the CMBS electronic database; and (3) *The non-bariatric surgery informed group* requires recruitment outside of the CMBS. Patients who have a diagnosis of T2DM, have been referred to an endocrinologist at the Health Sciences Centre for diabetes management/treatment, and self-identify as Indigenous are eligible to participate in this group. A diabetes educator or office assistant will provide patients attending their first appointment, who are obese, and have T2DM with a Permission to Contact for a Research Study form. Study information posters will be posted in the waiting area and clinic treatment room to facilitate patient inquiry about the study. Those completing the form who self-identify as Indigenous, are obese, and have T2DM will be contacted by a member of the research team to provide further details about the study and answer any questions the patient may have.

Standardized telephone and email recruitment scripts have been developed and reflect the information contained in the Informed Consent Form.

Data Generation Procedures

The Sequential Sharing Circles (SSCs) will be conducted in a culturally safe, sensitive, and welcoming site, *Migizii Agamik* (Bald Eagle Lodge) at the University of Manitoba. Each sharing circle will be two to three hours in duration. Individual “conversational” interviews will be approximately one hour in length. The sharing circles and interviews will be facilitated by Gramma Geraldine Shingoose, a local Indigenous Elder. Ceremonial tobacco will be gifted to the Elder for sharing her knowledge and guiding the development and implementation of the SSCs. A light, T2DM (and when required, bariatric surgery patient) appropriate, nutritious meal (feast) will be provided prior to the sharing circles sessions. Each sharing circle will begin with a smudging ceremony and will include teachings related to knowledge creation during the Sharing Circle, the sacred nature of the experiences shared (confidentiality), and ownership of the

1 knowledge created by the group. Content of each sharing circle and individual interview will be
2 audio recorded and transcribed.

3 Elder Shingoose will guide the discussion using semi-structured questions
4 (Supplementary File 1). The format includes open-ended questions presented to all groups as
5 well as questions suited to each group's position in the bariatric surgery journey. The sharing
6 circles that are second in the sequence will include member-checking procedures [24]. This will
7 ensure the interpretation of the discussion from the group's first session reflects participants'
8 experiences and contributions in order to verify the interpretation and themes identified are
9 culturally appropriate.

10 Individual "conversational" interviews with each sharing circle participant will be
11 conducted following the SSCs to provide an opportunity for further in-depth exploration of the
12 main study themes and individual narratives [25] (Supplementary File 2). These interviews will
13 also be facilitated by Elder Shingoose and will involve a visual Life Story Board (LSB) to
14 facilitate a deeper conversation and exploration of patients' journeys with obesity and T2DM
15 [37].

16 **Data Analysis**

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19 Transcripts from SSCs and individual interviews will be analyzed for emerging patterns
20 and themes utilizing constructivist grounded theory strategy [38]. This approach will facilitate
21 exploration of both common and differing experiences related to study-specific topics such as
22 barriers to diabetes care. A secondary analysis of the data will involve comparing and contrasting
23 themes across the three groups. This in-depth interpretation of the data will allow for conclusions
24 to be drawn about aspects of bariatric and T2DM healthcare that can be improved for Indigenous
25 patients and direct the focus of future research. The qualitative data management software
26 system Dedoose Version 8.3.17 (2020) will be used to facilitate data analysis. A minimum of
27 two researchers will code the transcripts to ensure rigour and confirmability [39]. One
28 Indigenous researcher will have experience in Indigenous qualitative research methodology to
29 ensure Indigenous knowledge, experience, and understanding, as well as a "two-eyed seeing"
30 framework, is employed and represented within the coding process [35, 36]. The themes and
31 coding structures identified will also be compared among the other members of the researcher
32 team to enhance dependability and credibility [39].

33 Feedback about the research findings will be provided to participants via member
34 checking and a knowledge sharing meeting for each sharing circle. Member checking is a
35 technique used by facilitators to present research findings and interpretations from past group
36 discussion to obtain feedback and check for authenticity [29]. Member checking provides an
37 opportunity for participants to discuss their thoughts and feelings about the information and to
38 inform further group discussions or interviews. At the beginning of each group's second sharing
39 circle, Elder Shingoose will present summarized preliminary findings from the first sharing
40 circle. Participants will then be encouraged to reflect on their thoughts and feelings regarding the
41 information shared, and provide feedback to ensure accuracy and confirmability.

Patient and Public Involvement

This project aims to address the Truth and Reconciliation Commission of Canada: Calls to Action [22] and acknowledges many Indigenous people have experienced previous trauma or past harm. An Indigenous advisory group consisting of Indigenous Elders, physicians and researchers were consulted in the design of this study to ensure patient voices from their direct experiences were captured following a “two-eyed seeing” approach [35-36]. The interview question scripts in this research were developed in consultation with Indigenous Healers and Elders and are deliberately broad to address experiences of Indigenous patients in a culturally appropriate way.

The recruitment process will not include patient or public involvement. Results from this study will be disseminated to participants at a knowledge sharing meeting and their input will be sought to identify appropriate methods of sharing the knowledge gained to the broader community. Participants will have the opportunity to contribute suggestions for how future research is conducted.

Ethics and Dissemination

After meeting eligibility and inclusion criteria and expressing interest in participating in the study, potential participants will meet with a member of the research team, be provided with an overview of the study, review the informed consent form and have the opportunity to ask questions. The Informed Consent Form outlines the purpose and methodology of the study as well as the ethical safeguards regarding data protection and privacy. Every effort will be made to ensure complete understanding of the study requirements, potential risks and voluntary nature of participation. Written consent will be obtained from the potential participant prior to their involvement in any study related activity. Each participant will be assigned a unique identification number and will be identified solely by this number on transcripts of the sharing circles, to ensure individual anonymity.

This study has received ethical approval from the University of Manitoba Health Research Ethics Board [HS22910 (H2019:237)], the Victoria General Hospital and the Health Science Center.

Sharing circle and “conversational” interviews could potentially elicit responses of anxiety, depression, and post-traumatic stress. Professional mental health resources will be made available to all participants following each sharing circle and individual interview. Some research suggests that participation in sharing circles facilitates comfort and camaraderie among participants by supporting insightful discussions based on shared lived experiences [26-28]. A forty-dollar honorarium will be gifted to each participant for each sharing circle participated in. A twenty-dollar honorarium will be provided for an individual interview.

The knowledge gained from the results of this study will be used to develop and implement culturally sensitive patient care programs for Indigenous persons within the Manitoba Centre for Metabolic and Bariatric Surgery program. Findings will be disseminated through publication in open access peer reviewed scientific journals, presentation at conferences and education sessions for healthcare professionals and included in a knowledge sharing session with study participants. The IAG will guide community dissemination of findings. Additionally, the findings are anticipated to be relevant to the general Canadian and Indigenous populations and as such, sharing the results in mainstream media publications will also be considered.

1 Deidentified participant data and trends from this study will be
2 available upon reasonable request following data collection and
3 analysis.

4 **Discussion**

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6 The purpose of outlining this project protocol prior to the study being completed is to
7 highlight for readers our innovative and purposefully designed Indigenous decolonizing research
8 with Indigenous participants to address the multifaceted aspects and experiences of bariatric
9 surgery in a culturally appropriate way. We hope to inspire similar studies across Canada and
10 elsewhere that can replicate or advance the findings which will encourage more dialogue about
11 and further Indigenous and culturally sensitive research projects with bariatric care/ surgery
12 populations. Additionally, outlining the novel methodology of our approach facilitates
13 publication of our study results, demonstrates the methodology has been carefully developed,
14 described in detail and peer-reviewed, enhances the transparency of our research, prevents
15 potential selective publication and reporting of research outcomes, and helps patients and the
16 general public know what research is being planned.

17 This qualitative decolonizing research approach utilizing SSCs and individual
18 “conversational” interviews will contribute new knowledge to the limited body of scientific
19 evidence that exists on bariatric surgery program delivery- including access, barriers,
20 experiences and outcomes of urban Indigenous peoples in Manitoba. This study is congruent
21 with the Truth and Reconciliation Commission of Canada: Calls to Action #19 [22]. Effective
22 treatment strategies that are culturally sensitive, address access barriers, and encourage positive,
23 empowering interactions with health care providers are needed to impact future health care
24 delivery and patient outcomes for Indigenous peoples.

25 The findings of this study will provide a conduit that promotes understanding of the
26 collective historical and personal experiences, including culturally unsafe health care
27 experienced by Indigenous patients as it is becoming increasingly apparent that the interactions
28 Indigenous patients have with their health care providers and their ability to actively engage with
29 their T2DM care plans are influenced by both [31]. Sharing circles and “conversational”
30 interview methodology have vast potential to generate knowledge and ideas from the Indigenous
31 community that can be implemented by physicians and caregivers in the health care system to
32 provide improved patient-centered care. A “two-eyed seeing” framework also ensures
33 Indigenous knowledge, perspectives, and values are upheld and maintained throughout the
34 duration of the research project.

35 36 **Author’s contribution**

37 KH, MZ, MF, GS, AFW, AH, and AV contributed to the conception and study design. KH, MZ,
38 MF, GS, AFW, and FD are involved in study implementation. All authors were involved in the
39 protocol manuscript writing. All authors provided final approval of the manuscript.

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9 6 **Competing interests statement**

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11 7 There are no conflicts of interest to report.
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For peer review only

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Sequential Sharing circles as a decolonized approach to investigate the experiences of Manitoba's urban Indigenous population living with obesity and type II diabetes mellitus and awareness of bariatric surgery

Group #1: Post-Operative Bariatric Surgery Patients

Sharing Circle Script for Session #1 (of 2) - Semi-Structured Discussion Questions:

Traditional Territories Acknowledgement:

The University of Manitoba campuses are located on original lands of Anishinaabeg, Cree, Oji-Cree, Dakota, and Dene peoples, and on the homeland of the Métis Nation. The Winnipeg Regional Health Authority acknowledges that it provides health services in facilities located on the original lands of Treaty 1 and on the homelands of the Metis Nation. WRHA respects that the First Nation treaties were made on these territories and acknowledge the harms and mistakes of the past and present, and we dedicate ourselves to collaborate and move forward in partnership with First Nation, Metis and Inuit people in the spirit of reconciliation.

Sharing Circle members are asked to keep the information provided in the groups confidential. If there is information you would like to add that you did not have time to share or that is sensitive and you prefer sharing individually, you are encouraged to ask for an individual interview with one of the researchers who is bound by confidentiality.

It is possible that talking about your experiences as an Indigenous person living with obesity and T2DM may be upsetting, emotional, and/or stressful for you. You do not have to answer any question that makes you feel uncomfortable or that you find too upsetting. Should you need any additional help or support, contact information and assistance is available to you.

Before we get started, is there anyone who practices with traditional medicines or smudge?

If at any point during the evening you would like the use of traditional medicines, smudge, or if you need time with our Elder after the sharing circle, please let us know and we would be glad to provide that for you.

1. As an Indigenous person, what was it like to struggle with obesity and type II diabetes mellitus prior to bariatric surgery?

Prompts: Mind
 Body
 Spirit

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8 2. What empowered or inspired you to take care of your health with bariatric surgery?

9 Prompts: Community
10
11 Elders/Traditional medicines and Sacred Ceremonies/Prayer
12
13 Faith-based clergy/Sacraments/Prayer
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15 Family
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17 Friends
18
19 Health care providers (doctors, Nurses)
20
21 Other? (identify)
22
23
24
25
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27 3. What challenges did you face in order to be approved for bariatric surgery?

28 Prompts: smoking, impact of residential schools

- 29
30 a. Do you feel any were specific to being Indigenous?
31
32 b. What help would you have liked to have had?
33
34

35 *****BREAK*****
36

37 4. Did the bariatric surgery diet affect your ability to participate in traditional/Indigenous practices and
38 ceremonies?
39

- 40 a. In what ways? (positive and/or negative)
41
42
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44

45 5. Would you like your health care providers (family doctors, medical specialists, nurses, dietitians,
46 psychologists) to inquire about whether you used traditional medicines, ceremonies, and/or faith-based
47 practices in your daily life?
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Sharing Circle Script for Session #2 (of 2) - Semi-Structured Discussion Questions:

Traditional Territories Acknowledgement:

The University of Manitoba campuses are located on original lands of Anishinaabeg, Cree, Oji-Cree, Dakota, and Dene peoples, and on the homeland of the Métis Nation. The Winnipeg Regional Health Authority acknowledges that it provides health services in facilities located on the original lands of Treaty 1 and on the homelands of the Metis Nation. WRHA respects that the First Nation treaties were made on these territories and acknowledge the harms and mistakes of the past and present, and we dedicate ourselves to collaborate and move forward in partnership with First Nation, Metis and Inuit people in the spirit of reconciliation.

Sharing Circle members are asked to keep the information provided in the groups confidential. If there is information you would like to add that you did not have time to share or that is sensitive and you prefer sharing individually, you are encouraged to ask for an individual interview with one of the researchers who is bound by confidentiality.

It is possible that talking about your experiences as an Indigenous person living with obesity and T2DM may be upsetting, emotional, and/or stressful for you. You do not have to answer any question that makes you feel uncomfortable or that you find too upsetting. Should you need any additional help or support, contact information and assistance is available to you.

Member Checking: this part of Group #1's Sharing Circle Session #2 will involve the sharing of the findings (themes and ideas) from the analysis of Sharing Circle Session #1 and discussing whether they correctly reflect the group's discussion from that session.

If at any point during the evening you would like the use of traditional medicines, smudge, or if you need time with our Elder after the sharing circle, please let us know and we would be glad to provide that for you.

1. Do the research findings presented about our first Sharing Circle discussion capture the essence of what you were trying to convey?

a. What needs to be changed, added or clarified?

2. What empowers or inspires you regarding your health after bariatric surgery?

Prompts: Community
 Elders/Traditional medicines and Sacred Ceremonies/Prayer
 Faith-based clergy/Sacraments/Prayer
 Family

1
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3 Friends

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5 Health care providers (doctors, Nurses)

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7 Other? (identify)

8
9
10
11
12 3. Do you think you receive culturally appropriate care from your health care providers? Are there ways
13 to improve?
14

15 *****BREAK*****

16
17 4. What should ~~doctors and your~~ health care teams take into consideration when providing care to
18 Indigenous patients who live with obesity and diabetes, and who are seeking bariatric surgery?
19

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21
22
23 5. What advice would you give to Indigenous people who are thinking about bariatric surgery?
24

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26
27 6. Is there anything else you would like to share about your experience with diabetes and/or bariatric
28 surgery?
29

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33 NOTE: Results of the analysis of Sharing Circle #1 (Sessions #1 and #2) data for emergent themes and
34 topics will inform development of some of the open-ended semi-structured discussion questions for
35 Sharing Circles #2 and #3.
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Individual Interview – Semi-Structured Discussion Questions

Study Title: Sequential Sharing Circles as a decolonized approach to investigate the experiences of Manitoba's urban Indigenous population living with obesity and type II diabetes mellitus and awareness of bariatric surgery

Group #1: Post-Operative Bariatric Surgery Patients

Thank you for agreeing to help us with this project.

It is possible that talking about your experiences as an Indigenous person living with obesity and T2DM may be upsetting, emotional, and/or stressful for you. You do not have to answer any question that makes you feel uncomfortable or that you find too upsetting. Should you need any additional help or support, contact information and assistance is available to you.

The interview should take approximately 30-45 minutes. We are able to extend this if needed.

1. Is there anything further you would like to share from the first sharing circle meeting?

2. At this time I would like to introduce you to what is called a Life Story Board (LSB). We will use this to illustrate your thoughts and feelings as we continue the interview. There are 3 aspects of life that are represented by the LSB; self (yellow), family (green) and community (blue). There is also a timeline drawn in red, which can be helpful when trying to organize your thoughts.

- a. Before you had bariatric surgery how long had you struggled with your weight?
- b. What empowered or inspired you on your own healing journey?
- c. Have cultural or spiritual practices such as traditional or religious ceremony been a part of your life? How has that changed since your bariatric surgery?
- d. Can you describe your relationships with yourself, family, community, spirituality, nature, elders etc.
 - i. Before you made the decision to pursue bariatric surgery?
 - ii. During the process?
 - iii. Since surgery?

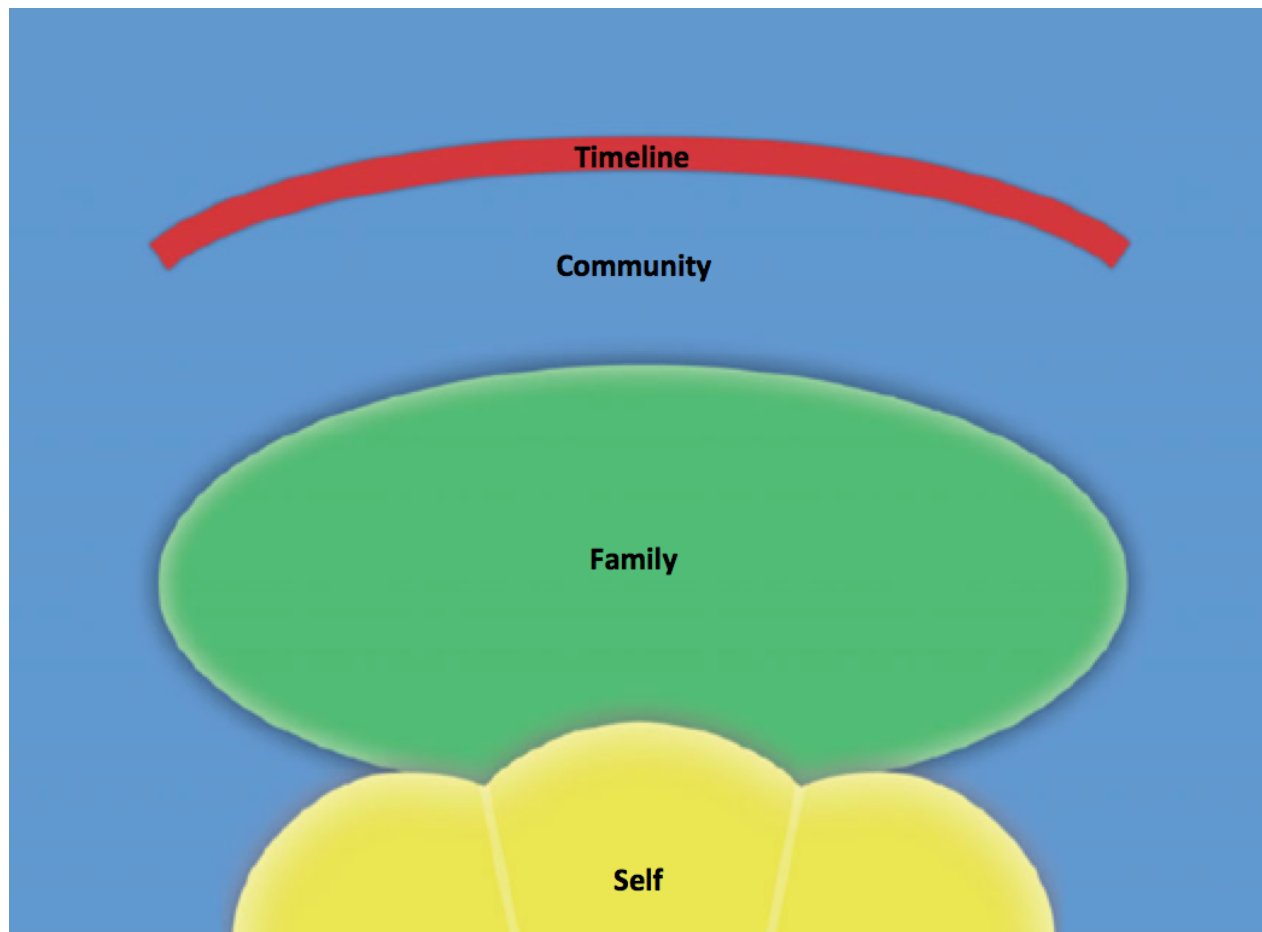
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3 e. Do you have a support system to help with your healing journey? If so, what or who
4 would you say it is that supports you? Can you share a story about your support system
5 and how it may have changed during your experience with bariatric surgery?
6

7
8 3. Please tell us what aspects of your experience through bariatric surgery you found most
9 challenging. What aspects were the most positive?

10
11 4. Can you share with us a story about your experiences in clinic? Did you feel comfortable and
12 safe in the space there? How did you feel in your interactions or relationships with clinic staff?
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14 5. What do you feel may support other Indigenous patients more on their healing journey and in
15 clinic?
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17 Thank you for meeting with us today.
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Supplementary Table 1: COREQ checklist

Domain 1: Research team and reflexivity		Location in manuscript (Section, page no.)
Personal Characteristics		
1. Interviewer/facilitator Which author/s conducted the interview or focus group	GS will conduct the Sharing Circles and individual interviews	Methods, page 7
2. Credentials What were the researcher's credentials? E.g. PhD, MD	GS - Indigenous Elder KH - MD, MSc, FRCSC, FACS	Title Page, page 1
3. Occupation What was their occupation at the time of the study?	GS – Indigenous Elder; Lecturer in the Department of Community Health Sciences at the University of Manitoba KH – Assistant Professor in the Department of General Surgery at the University of Manitoba and a full-time General Surgeon	Methods, page 7
4. Gender Was the researcher male or female?	Female	-
5. Experience and training What experience or training did the researcher have?	GS has previous Elder research facilitation experience. KH has an MSc and is the General Surgery Research Director at the University of Manitoba.	-
Relationship with participants		
6. Relationship established Was a relationship established prior to study commencement?	No	-
7. Participant knowledge of the interviewer What did the participants know about the researcher? E.g. personal goals, reasons for doing the research	Participants were briefed on the purpose of the study by a member of the research team that was not the principal	Methods, page 6

	investigator or the interviewer. Participants reviewed the informed consent form prior to giving written informed consent to be involved in the study.	
8. Interviewer characteristics What characteristics were reported about the interviewer/facilitator? E.g. Bias, assumptions, reasons and interests in the research topic	GS is an Indigenous Elder and MZ is a surgical resident working on this project as part of her Master's thesis (MSc).	Methods, page 5
Domain 2: study design		
Theoretical framework		
9. Methodological orientation and theory What methodological orientation was stated to underpin the study? E.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	Constructive grounded theory with thematic coding analysis	Methods, page 7
Participant selection		
10. Sampling How were participants selected? E.g. purposive, convenience, consecutive, snowball	Participants will be purposefully selected from the CMBS program (Groups #1 and #2; post-operative and wait list, respectively) and from the community (patients attending endocrinology clinic; Group #3)	Methods, page 5-6
11. Method of approach How were participants approached? E.g. face-to-face, telephone, mail, email	Telephone call or email; depending on patient preference	Methods, page 6
12. Sample size How many participants were in the study?	Three groups of 10-12 participants	Methods, page 5
13. Non-participation How many people refused to participate or dropped out? Reasons?	To be determined	-
Setting		
14. Setting of data collection Where was the data collected? E.g. home, clinic, workplace	Data collection will take place at a non-clinical location, Migizii Agamik	Methods, page 7

	Bald Eagle Lodge at University of Manitoba	
15. Presence of non-participants Was anyone else present besides the participants and researchers?	No	-
16. Description of sample What are the important characteristics of the sample? E.g. demographic data, date	Self-identify as urban Indigenous, living with T2DM, obese (BMI >35)	Methods, page 5
Data collection		
17. Interview guide Were questions, prompts, guides, provided by the authors? Was it pilot tested?	Sharing Circles and individual interviews are of semi-structured format with questions and prompts being developed in conjunction with and provided to GS.	Methods, page 7
18. Repeat interviews Were repeat interviews carried out? If yes, how many?	Each study group will participate in two Sharing Circles, separated by 6-8 weeks	Methods, page 5
19. Audio/visual recording Did the research use audio or visual recording to collect the data?	The semi-structured sharing circles and individual interviews will be audio recorded	Methods, page 7
20. Field notes Were field notes made during and/or after the interview or focus group?	To be determined	-
21. Duration What was the duration of the interviews or focus group?	2-3 hours in duration for each Sharing Circle, 1 hour for individual interview	Methods, page 7
22. Data saturation Was data saturation discussed?	No	-
23. Transcripts returned Were transcripts returned to participants for comment and/or correction?	Member checking will involve participant access to transcripts from Sharing Circles and individual interviews	Methods, page 8
Domain 3: analysis and findings		
Data analysis		
24. Number of data coders	Two, with one having	Methods, page 7

How many data coders coded the data?	experience with Indigenous qualitative research methodology	
25. Description of the coding tree Did authors provide a description of the coding tree?	No	-
26. Derivation of themes Were themes identified in advance or derived from the data?	Themes will be derived from the audio recorded data from Sharing Circles and individual interviews	Methods, page 7
27. Software What software, if applicable, was used to manage the data?	Dedoose Software Version 8.3.17	Methods, page 7
28. Participant checking Did participants provide feedback on the findings?	Findings from the first Sharing Circle will be discussed with participants at the beginning of the second Sharing Circle in order to determine that the themes and findings are accurate representations of what was shared (member checking). Feedback will be encouraged and used to develop questions for future groups. A knowledge sharing meeting will occur following the second sharing circle following completion of data analysis in order to present findings to participants and check for accuracy.	Methods, page 7
Reporting		
29. Quotations presented Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? E.g. participant number	Yes, audio recordings will be transcribed and participant statements will be directly quoted	Methods, page 7

	and anonymized in the transcripts using unique non-identifying numbers for each participant.	
30. Data and findings consistent Was there consistency between the data presented and the findings?	Data findings to be determined	-
31. Clarity of major themes Were major themes clearly presented in the findings?	Major themes to be determined	-
32. Clarity of minor themes Is there a description of diverse cases or discussion of minor themes?	Minor themes to be determined	-