BMJ Open

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

Journal:	*BMJ Open*
Manuscript ID	bmjopen-2019-036595
Article Type:	Protocol
Date Submitted by the Author:	20-Dec-2019
Complete List of Authors:	Hardy, Krista; University of Manitoba, Department of Surgery Zmudzinski, Marta; University of Manitoba, Department of Surgery Fowler, Melinda; University of Manitoba, Departments of Community Health Sciences and Family Medicine Shingoose, Geraldine; University of Manitoba, Department of Community Health Sciences Fowler-Woods, Amanda; University of Manitoba, Ongomiizwin Indigenous Institute for Health and Healing Daeninck, Felicia; University of Manitoba, Department of Surgery Hatala, Andrew; University of Manitoba, Department of Community Health Sciences Vergis, Ashley; University of Manitoba, Department of Surgery
Keywords:	QUALITATIVE RESEARCH, General diabetes < DIABETES & ENDOCRINOLOGY, SURGERY

I, the Submitting Author has the right to grant and does grant on behalf of all authors of the Work (as defined in the below author licence), an exclusive licence and/or a non-exclusive licence for contributions from authors who are: i) UK Crown employees; ii) where BMJ has agreed a CC-BY licence shall apply, and/or iii) in accordance with the terms applicable for US Federal Government officers or employees acting as part of their official duties; on a worldwide, perpetual, irrevocable, royalty-free basis to BMJ Publishing Group Ltd ("BMJ") its licensees and where the relevant Journal is co-owned by BMJ to the co-owners of the Journal, to publish the Work in this journal and any other BMJ products and to exploit all rights, as set out in our licence.

The Submitting Author accepts and understands that any supply made under these terms is made by BMJ to the Submitting Author unless you are acting as an employee on behalf of your employer or a postgraduate student of an affiliated institution which is paying any applicable article publishing charge ("APC") for Open Access articles. Where the Submitting Author wishes to make the Work available on an Open Access basis (and intends to pay the relevant APC), the terms of reuse of such Open Access shall be governed by a Creative Commons licence – details of these licences and which Creative Commons licence will apply to this Work are set out in our licence referred to above.

Other than as permitted in any relevant BMJ Author's Self Archiving Policies, I confirm this Work has not been accepted for publication elsewhere, is not being considered for publication elsewhere and does not duplicate material already published. I confirm all authors consent to publication of this Work and authorise the granting of this licence.

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

Authors:

*Krista Hardy, MD, MSc, FRCSC, FACS, Department of Surgery, University of Manitoba, Winnipeg, MB, Canada

Marta Zmudzinski, Department of Surgery, University of Manitoba, Winnipeg, MB, Canada

Melinda Fowler, BScN, DC, MD, Departments of Community Health Sciences and Family Medicine, University of Manitoba, Winnipeg, MB, Canada

Geraldine Shingoose, Indigenous Elder, Department of Community Health Sciences, University of Manitoba, Winnipeg, MB, Canada

Amanda Fowler-Woods, MSc, Ongomiizwin Indigenous Institute for Health and Healing, University of Manitoba, Winnipeg, MB, Canada

Felicia Daeninck, Department of Surgery, University of Manitoba, Winnipeg, MB, Canada

Andrew Hatala, PhD, Department of Community Health Sciences, University of Manitoba, Winnipeg, MB, Canada

Ashley Vergis, MMeD, MD, FRCSC, FACS, Department of Surgery, University of Manitoba, Winnipeg, MB, Canada

*Corresponding author:

Krista Hardy, MD, MSC, FRCSC, FACS

St. Boniface General Hospital, 409 Tache Avenue,

Winnipeg, MB, Canada, R2H 2A6,

khardy@sbgh.mb.ca, Phone: (204) 237-2574

Word Count: 3, 370

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.

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.

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

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

The SSCs will be conducted in a culturally safe and welcoming site, Migizii Agamik (Bald Eagle Lodge) at the University of Manitoba. Each will be facilitated by Gramma Geraldine Shingoose, an Indigenous Elder. All processes will be informed in close collaboration with Ongomiizwin-Health Research and collaborative partners. A light, T2DM (and when required, bariatric surgery patient) appropriate, nutritious meal (feast) will be provided prior to the Sharing Circle session. 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 knowledge created by the group. Ceremonial tobacco will be gifted to the Elder for sharing her knowledge and guiding the development and implementation of the Sharing Circles.

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

Sample size

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

Recruitment

Participants in the three study groups will be recruited from clinical settings in two hospitals in Winnipeg Manitoba, Canada. The process for recruitment and screening for eligibility in both group (1) The Centre for Metabolic and Bariatric Surgery Program (CMBS) Post-Operative Bariatric Surgery Urban Indigenous T2DM Participant Group and group (2) The CMBS Pre-Operative Bariatric Surgery Urban Indigenous T2DM Patient Group has been facilitated as a result of the program, located at Victoria General Hospital recently having 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).

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

to reflect on their thoughts and feelings regarding the information shared in the previous Sharing Circle, elicit their feedback, and check for accuracy.

Compensation

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

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

Risks/Benefits

The potential exists for patients participating in the Sharing Circles and/or individual interview to experience strong emotions and emotional discomfort related to past harms and previous trauma related to their experiences with obesity, diabetes, their health care interactions, and cultural-specific past and current harms (residential schools, racisms, discrimination). Although the scripts developed to lead the Sharing Circles are quite broad and not considered high risk for eliciting severe negative emotions, discussion of sensitive topics and issues could occur and may elicit distressing and uncomfortable emotions. There is the potential that the Sharing Circle discussions could elicit responses of anxiety, depression, and post-traumatic stress. We have ensured mental health resources and support services contact information and ongoing support from the Indigenous Elder is available to participants experiencing this. There is no published literature regarding percentages to assist in quantifying the potential risk.

Participants may or may not benefit from participating in the study. Some research has shown participation in Sharing Circles (such as those planned in this study) facilitates comfort and camaraderie among participants by supporting insightful discussions based on shared lived experiences. Sharing Circle participation supports self and group reflection within a safe environment. Positive impact on the healing process and patient empowerment has also been reported in the literature as potential participant experiences.

Ethics and dissemination

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

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.

Funding statement

This work was supported by the University of Manitoba through the Dr. Paul H. Thorlakson Foundation Fund Award and the Department of Surgery GFT grant.

Competing interests statement

There are no conflicts of interest to report.

Full references

1 Statistics Canada. Body composition of Canadian adults, 2009-2011. 2013. http://www.statcan.gc.ca/pub/82-625-x/2012001/article/11708-eng.htm (accessed April 2019)

2 Sharma A, and Lau D. Obesity and type 2 diabetes mellitus. *Can J Diabetes* 2013;37:63–4.

3 Buchwald H, Estok R, Fahrbach K, et al. Weight and type 2 diabetes after bariatric surgery: systematic review and meta-analysis. *Am J Med* 2009;122:248-256.e5. https://doi.org/10.1016/j.amjmed.2008.09.041

4 Rice K, Te Hiwi B, Zwarenstein M, et al. Best practices for the prevention and management of diabetes and obesity-related chronic disease among Indigenous Peoples in Canada: a review. *Can J Diabetes* 2016;40:216–25. https://doi.org/10.1016/j.jcjd.2015.10.007

5 Turin TC, Saad N, Jun M, et al. Lifetime risk of diabetes among First Nations and non-First Nations people. *CMAJ* 2016;188:1147–53. https://doi.org/10.1503/cmaj.150787

6 Jacklin K, Henderson R, Green, M, et al. Health care experiences of Indigenous people living with type 2 diabetes in Canada. *CMAJ* 2017;189:E106-12. https://doi.org/10.1503/cmaj.161098

7 Buchwald H, Estok R, Fahrback K, et al. Weight and type 2 diabetes after bariatric surgery: systematic review and meta-analysis. *Am J Med* 2009;122:248-256. https://doi.org/10.1016/j.amjmed.2008.09.041

8 Ding S, Simonson D, Wewalka M, et al. Adjustable gastric band surgery or medical management in patients with type 2 diabetes: a randomized clinical trial. *J Clin Endocrinol Metab* 2015;100:2546–56. 10.1210/jc.2015-1443

9 Dixon J, O'Brien P, Playfair J, et al. Adjustable gastric banding and conventional therapy of type 2 diabetes: a randomized controlled trial. *JAMA* 2008;299:316-23. doi:10.1001/jama.299.3.316

10 Mingrone G, Panunzi S, De Gaetano A, et al. Bariatric surgery versus conventional medical therapy for type 2 diabetes. *N Engl J Med* 2012;366:1577–85. 10.1056/NEJMoa1200111

11 Schauer P, Bhatt D, Kirwan J, et al. Bariatric surgery versus intensive medical therapy for diabetes--3-year outcomes. *N Engl J Med* 2014;370:2002–13. 10.1056/NEJMoa1401329

12 Gloy V, Briel M, Bhatt D, et al. Bariatric surgery versus non-surgical treatment for obesity: a systematic review and meta-analysis of randomised controlled trials. *BMJ* 2013;347:f5934 10.1136/bmj.f5934.

13 Sanchis P, Frances C, Nicolau J, et al. Cardiovascular risk profile in Mediterranean patients submitted to bariatric surgery and intensive lifestyle intervention: impact of both interventions after 1 year of follow-up. *Obes Surg* 2015;25:97–108. https://doi.org/10.1007/s11695-014-1321-z

14 Panunzi S, Carlsson L, De Gaetano A, et al. Determinants of diabetes remission and glycemic control after bariatric surgery. *Diabetes Care* 2016;39:166–74. https://doi.org/10.2337/dc15-0575

15 Halperin F, Ding S, Simonson D, et al. Roux-en-Y gastric bypass surgery or lifestyle with intensive medical management in patients with type 2 diabetes: feasibility and 1-year results of a randomized clinical trial. *JAMA Surg* 2014;149:716–26. 10.1001/jamasurg.2014.514

16 Ikramuddin S, Korner J, Lee W, et al. Roux-en-Y gastric bypass vs intensive medical management for the control of type 2 diabetes, hypertension, and hyperlipidemia: the Diabetes Surgery Study randomized clinical trial. *JAMA* 2013;309:2240–9. 10.1001/jama.2013.5835

17 Courcoulas A, Goodpaster B, Eagleton J, et al. Surgical vs medical treatments for type 2 diabetes mellitus: a randomized clinical trial. *JAMA Surg* 2014;149:707–15. doi:10.1001/jamasurg.2014.467

18 Courcoulas A, Belle S, Neiberg R, et al. Three-year outcomes of bariatric surgery vs lifestyle intervention for type 2 diabetes mellitus treatment: a randomized clinical trial. *JAMA Surg* 2015;150:931–40. 10.1001/jamasurg.2015.1534

19 O'Brien P, DeWitt D, Laurie C, et al. The effect of weight loss on Indigenous Australians with diabetes: a study of feasibility, acceptability and effectiveness of laparoscopic adjustable gastric banding. *Obes Surg* 2016;26:45–53. https://doi.org/10.1007/s11695-015-1733-4

20 Crowshoe L, Dannenbaum D, Green M, et al. 2018 Clinical practice guidelines: type 2 diabetes and Indigenous Peoples. Diabetes Canada clinical practice guidelines expert Committee. Canadian Diabetes Association. *Can J Diabetes* 2018;42:S296-S306 https://doi.org/10.1016/j.jcjd.2017.10.022

21 Truth and Reconciliation Commission of Canada, 2015. Truth and Reconciliation Commission of Canada: Calls to Action. http://www.trc.ca/websites/trcinstitution/File/2015/Findings/Calls_to_Action_English2.pdf. (accessed May 2019)

22 Jacklin K, Ly A, Calam B, et al. An innovative sequential focus group method for investigating diabetes care experiences with Indigenous Peoples in Canada. *Int J Qual Methods* 2016;1-12. 10.1177/1609406916674965

23 Struthers R, Hodge F, Geishirt-Cantrell B, et al. Participant experience of talking circles on type 2 diabetes in two Northern Plains American Indian tribes. *Qual Health Res* 2003;131:1094–1115. 10.1177/1049732303256357

24 Hart, M. A. Seeking Mino-Pimatisiwin: An aboriginal approach to helping. Halifax, NS: Fernwood 2002.

25 Cho J, and Trent A. Validity in qualitative research revisited. *Qual Res* 2006;6:319–340. https://doi.org/10.1177/1468794106065006

26 Charmaz, K. The power of constructivist grounded theory for critical inquiry. *Qualitative Inquiry* 2017;23:34-45.

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

Journal:	*BMJ Open*
Manuscript ID	bmjopen-2019-036595.R1
Article Type:	Protocol
Date Submitted by the Author:	06-Jul-2020
Complete List of Authors:	Hardy, Krista; University of Manitoba, Department of Surgery Zmudzinski, Marta; University of Manitoba, Department of Surgery Fowler, Melinda; University of Manitoba, Departments of Community Health Sciences and Family Medicine Shingoose, Geraldine; University of Manitoba, Department of Community Health Sciences Fowler-Woods, Amanda; University of Manitoba, Ongomiizwin Indigenous Institute for Health and Healing Daeninck, Felicia; University of Manitoba, Department of Surgery Hatala, Andrew; University of Manitoba, Department of Community Health Sciences Vergis, Ashley; University of Manitoba, Department of Surgery
Primary Subject Heading:	Surgery
Secondary Subject Heading:	Qualitative research
Keywords:	QUALITATIVE RESEARCH, General diabetes < DIABETES & ENDOCRINOLOGY, SURGERY

I, the Submitting Author has the right to grant and does grant on behalf of all authors of the Work (as defined in the below author licence), an exclusive licence and/or a non-exclusive licence for contributions from authors who are: i) UK Crown employees; ii) where BMJ has agreed a CC-BY licence shall apply, and/or iii) in accordance with the terms applicable for US Federal Government officers or employees acting as part of their official duties; on a worldwide, perpetual, irrevocable, royalty-free basis to BMJ Publishing Group Ltd ("BMJ") its licensees and where the relevant Journal is co-owned by BMJ to the co-owners of the Journal, to publish the Work in this journal and any other BMJ products and to exploit all rights, as set out in our licence.

The Submitting Author accepts and understands that any supply made under these terms is made by BMJ to the Submitting Author unless you are acting as an employee on behalf of your employer or a postgraduate student of an affiliated institution which is paying any applicable article publishing charge ("APC") for Open Access articles. Where the Submitting Author wishes to make the Work available on an Open Access basis (and intends to pay the relevant APC), the terms of reuse of such Open Access shall be governed by a Creative Commons licence – details of these licences and which Creative Commons licence will apply to this Work are set out in our licence referred to above.

Other than as permitted in any relevant BMJ Author's Self Archiving Policies, I confirm this Work has not been accepted for publication elsewhere, is not being considered for publication elsewhere and does not duplicate material already published. I confirm all authors consent to publication of this Work and authorise the granting of this licence.

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

Authors:

*Krista Hardy, MD, MSc, FRCSC, FACS, Department of Surgery, University of Manitoba, Winnipeg, MB, Canada

Marta Zmudzinski, BSc, MD, Department of Surgery, University of Manitoba, Winnipeg, MB, Canada

Melinda Fowler-Woods, BScN, DC, MD, Departments of Community Health Sciences and Family Medicine, University of Manitoba, Winnipeg, MB, Canada

Geraldine Shingoose, Indigenous Elder, Department of Community Health Sciences, University of Manitoba, Winnipeg, MB, Canada

Amanda Fowler-Woods, MSc, Ongomiizwin Indigenous Institute for Health and Healing, University of Manitoba, Winnipeg, MB, Canada

Felicia Daeninck, Department of Surgery, University of Manitoba, Winnipeg, MB, Canada

Andrew Hatala, PhD, Department of Community Health Sciences, University of Manitoba, Winnipeg, MB, Canada

Ashley Vergis, MMEd, MD, FRCSC, FACS, Department of Surgery, University of Manitoba, Winnipeg, MB, Canada

*Corresponding author:

Krista Hardy, MD, MSC, FRCSC, FACS

St. Boniface General Hospital, 409 Tache Avenue,

Winnipeg, MB, Canada, R2H 2A6,

khardy@sbgh.mb.ca, Phone: (204) 237-2574

Word Count: 3, 311

Abstract

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

Methods and analysis: Sequential Sharing Circles (SSCs) and semi-structured conversational interviews that have been purposefully designed to be culturally relevant with the guidance of an Indigenous Elder and Advisory Group (IAG) will be carried out in Winnipeg, Manitoba, Canada. Indigenous adults who are obese (BMI >35), have T2DM and live in an urban center will be recruited. 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 a bariatric surgery program. Each group of 10-12 participants will be guided through a semi-structured script led by an Indigenous Elder. Elder-facilitated conversational interviews will also be completed following the SSCs. All content will be audio recorded and transcribed. Thematic analysis will be used to identify emerging patterns using a Constructive Grounded Theory approach.

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

Strengths and Limitations:

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

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].

Participants

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.

Sample size

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 participant 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.

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

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.

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

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

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

Data Analysis

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

coding structures identified will also be compared among the other members of the researcher team to enhance dependability and credibility [39].

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

Dissemination

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.

Conclusion

This qualitative decolonizing research approach utilizing SSCs and individual "conversational" interviews 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 study is congruent with the Truth and Reconciliation Commission of Canada: Calls to Action #19 [22]. Effective

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

The findings of this study 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 [31]. Sharing circles and "conversational" interview methodology have vast potential to generate 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. A "two-eyed seeing" framework also ensures Indigenous knowledge, perspectives, and values are upheld and maintained throughout the duration of the research project.

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.

Funding statement

This work was supported by the University of Manitoba through the Dr. Paul H. Thorlakson Foundation Fund Award and the Department of Surgery GFT grant.

Competing interests statement

There are no conflicts of interest to report.

Full references

1 World Health Organization. Controlling the global obesity epidemic. https://www.who.int/nutrition/topics/obesity/en/ (accessed June 14, 2020).

2 Sharma A, and Lau D. Obesity and type 2 diabetes mellitus. *Can J Diabetes* 2013;37:63-4.

3 Katz A, Kinew KA, Star L et al. 2019. Manitoba Centre for Health Policy. The Health Status of and Access to Healthcare by Registered First Nation Peoples in Manitoba. 2nd Edition. University of Manitoba. (accessed June 14, 2020).

4 Halseth R. 2019. The prevalence of Type 2 diabetes among First Nations and considerations for prevention. Prince George, BC: National Collaborating Centre for Aboriginal Health. https://www.nccih.ca/docs/health/RPT-Diabetes-First-Nations-Halseth-EN.pdf

5 Rice K, Te Hiwi B, Zwarenstein M, et al. Best practices for the prevention and management of diabetes and obesity-related chronic disease among Indigenous Peoples in Canada: a review. *Can J Diabetes* 2016;40:216-25. https://doi.org/10.1016/j.jcjd.2015.10.007

6 Turin TC, Saad N, Jun M, et al. Lifetime risk of diabetes among First Nations and non-First Nations people. *CMAJ* 2016;188:1147-53. https://doi.org/10.1503/cmaj.150787

7 Lovrics O, Doumouras AG, Gmora S, Anvari M. Metabolic outcomes after bariatric surgery for Indigenous patients in Ontario. Surgery for Obesity and Related Diseases. 2019:15:1340-1347.

8 Richmond C.A.M., Cook C. Creating conditions for Canadian aboriginal health equity: the promise of healthy public policy. *Public Health Rev* 2016;37(2). https://doi.org/10.1186/s40985-016-0016-5

9 Sharples AJQ, Mullan M, Hardy K, Vergis A. Effect of Roux-en-Y gastric bypass on pharmacologic dependence in obese patients with type 2 diabetes. *Can J Surg*. 2019;62(4):259-264. doi:10.1503/cjs.005018

10 Ding S, Simonson D, Wewalka M, et al. Adjustable gastric band surgery or medical management in patients with type 2 diabetes:

a randomized clinical trial. *J Clin Endocrinol Metab* 2015;100:2546-56. 10.1210/jc.2015-1443

11 Dixon J, O'Brien P, Playfair J, et al. Adjustable gastric banding and conventional therapy of type 2 diabetes: a randomized controlled trial. *JAMA* 2008;299:316-23. doi:10.1001/jama.299.3.316

12 Mingrone G, Panunzi S, De Gaetano A, et al. Bariatric surgery versus conventional medical therapy for type 2 diabetes. *N Engl J Med* 2012;366:1577-85. 10.1056/NEJMoa1200111

13 Schauer P, Bhatt D, Kirwan J, et al. Bariatric surgery versus intensive medical therapy for diabetes--3-year outcomes. *N Engl J Med* 2014;370:2002-13. 10.1056/NEJMoa1401329

14 Gloy V, Briel M, Bhatt D, et al. Bariatric surgery versus non-surgical treatment for obesity: a systematic review and meta-analysis of randomised controlled trials. *BMJ* 2013;347:f5934 10.1136/bmj.f5934.

15 Sanchis P, Frances C, Nicolau J, et al. Cardiovascular risk profile in Mediterranean patients submitted to bariatric surgery and intensive lifestyle intervention: impact of both interventions after 1 year of follow-up. *Obes Surg* 2015;25:97-108. https://doi.org/10.1007/s11695-014-1321-z

16 Panunzi S, Carlsson L, De Gaetano A, et al. Determinants of diabetes remission and glycemic control after bariatric surgery. *Diabetes Care* 2016;39:166-74. https://doi.org/10.2337/dc15-0575

17 Halperin F, Ding S, Simonson D, et al. Roux-en-Y gastric bypass surgery or lifestyle with intensive medical management in patients with type 2 diabetes: feasibility and 1-year results of a randomized clinical trial. *JAMA Surg* 2014;149:716-26. 10.1001/jamasurg.2014.514

18 Ikramuddin S, Korner J, Lee W, et al. Roux-en-Y gastric bypass vs intensive medical management for the control of type 2 diabetes, hypertension, and hyperlipidemia: the Diabetes Surgery Study randomized clinical trial. *JAMA* 2013;309:2240-9. 10.1001/jama.2013.5835

19 Courcoulas A, Goodpaster B, Eagleton J, et al. Surgical vs medical treatments for type 2 diabetes mellitus: a randomized clinical trial. *JAMA Surg* 2014;149:707-15. doi:10.1001/jamasurg.2014.467

20 Courcoulas A, Belle S, Neiberg R, et al. Three-year outcomes of bariatric surgery vs lifestyle intervention for type 2 diabetes mellitus treatment: a randomized clinical trial. *JAMA Surg* 2015;150:931-40. 10.1001/jamasurg.2015.1534

21 O'Brien P, DeWitt D, Laurie C, et al. The effect of weight loss on Indigenous Australians with diabetes: a study of feasibility, acceptability and effectiveness of laparoscopic adjustable gastric banding. *Obes Surg* 2016;26:45-53. https://doi.org/10.1007/s11695-015-1733-4

22 Truth and Reconciliation Commission of Canada, 2015. Truth and Reconciliation Commission of Canada: Calls to Action. http://www.trc.ca/websites/trcinstitution/File/2015/Findings/Calls_to_Action_English2.pdf. (accessed June 2020)

23 Allen L, Hatala AR, Ijaz S, Courchene D, & Bushie B. Indigenous-led partnerships in Canadian health care. *CMAJ* 2020;192:E208-16. https://doi.org/10.1503/cmaj.190728

24 Kovach, M. 2009. Indigenous Methodologies: Characteristics, Conversations, and Contexts. Toronto, ON: University of Toronto Press.

25 Kovach M. Conversational method in Indigenous research. First Peoples Child & Family Review 2010;5;40-48. Available from: https://fncaringsociety.com/sites/default/files/online-journal/vol5num1/Kovach_pp40.pdf

26 Lavallée, L. "Practical Application of an Indigenous Research Framework and Two Qualitative Indigenous Research Methods: Sharing Circles and Anishinaabe Symbol-based Reflection." *Int J Qual Methods* 2009;8 (1): 21-40. doi:10.1177/160940690900800103.

27 Whitty-Rogers J, Caine V, & Cameron,B. Aboriginal women's experiences with gestational diabetes mellitus: A parti-cipatory study with Mi'kmaq women in Canada. *Adv Nurs Sci* 2016; 39:181-198. doi:10.1097/ANS.0000000000000115

28 Hart MA. Seeking Mino-Pimatisiwin: An aboriginal approach to helping. Halifax, NS: Fernwood 2002.

29 Jacklin K, Ly A, Calam B, et al. An innovative sequential focus group method for investigating diabetes care experiences with Indigenous Peoples in Canada. *Int J Qual Methods* 2016;1-12. 10.1177/1609406916674965

30 Struthers R, Hodge F, Geishirt-Cantrell B, et al. Participant experience of talking circles on type 2 diabetes in two Northern Plains American Indian tribes. *Qual Health Res* 2003;131:1094-1115. 10.1177/1049732303256357

31 Jacklin K, Henderson R, Green, M, et al. Health care experiences of Indigenous people living with type 2 diabetes in Canada. *CMAJ* 2017;189:E106-12. https://doi.org/10.1503/cmaj.161098

32 Batal M, Decelles S. A Scoping Review of Obesity among Indigenous Peoples in Canada. *J Obes* 2019 :9741090 doi:10.1155/2019/9741090

33 Statistics Canada. National Indigenous Peoples Day… by the numbers. [updated: 2018 July 5] https://www.statcan.gc.ca/eng/dai/smr08/2018/smr08_225_2018 (accessed June 17, 2020)

34 Framework for Research Engagement with First Nation, Metis, and Inuit Peoples. University of Manitoba. https://umanitoba.ca/faculties/health_sciences/medicine/media/UofM_Framework_Report_web.pdf (accessed June 26, 2020)

35 Forbes A, Ritchie S, Walker J, & Young N. (2020). Applications of Two-Eyed Seeing in primary research focused on Indigenous health: A Scoping Review. *Int J Qual Methods* 2020;19:1-18.

36 Martin DH. Two-Eyed Seeing: A framework for understanding Indigenous and non-Indigenous approaches to Indigenous health research. *CJNR* 2012;44(2):20–42.

37 Chase R, Mignone J, & Diffey L. Life Story Board: A tool in the prevention of domestic violence. *Pimatisiwin*, 2010;8(2):145-154.

38 Charmaz K. The power of constructivist grounded theory for critical inquiry. *Qual Inq* 2017;23:34-45.

39 Ryan F, Coughlan M, Cronin P. Step-by-step guide to critiquing research. Part 2: qualitative research. *Br J Nurs* 2007;16(2):738-744.

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

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

Prompts: Community

Elders/Traditional medicines and Sacred Ceremonies/Prayer

Faith-based clergy/Sacraments/Prayer

Family

Friends

Health care providers (doctors, Nurses)

Other? (identify)

3. What challenges did you face in order to be approved for bariatric surgery?

Prompts: smoking, impact of residential schools

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

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

********BREAK*********

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

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

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?

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

Friends

Health care providers (doctors, Nurses)

Other? (identify)

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

**********BREAK**********

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

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

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

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

Health Sciences Centre Winnipeg | University of Manitoba | Rady Faculty of Health Sciences | Hôpital St-Boniface Hospital
Department of Surgery | 3rd Floor Z Block | 409 Tache Avenue | Winnipeg, Manitoba

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?

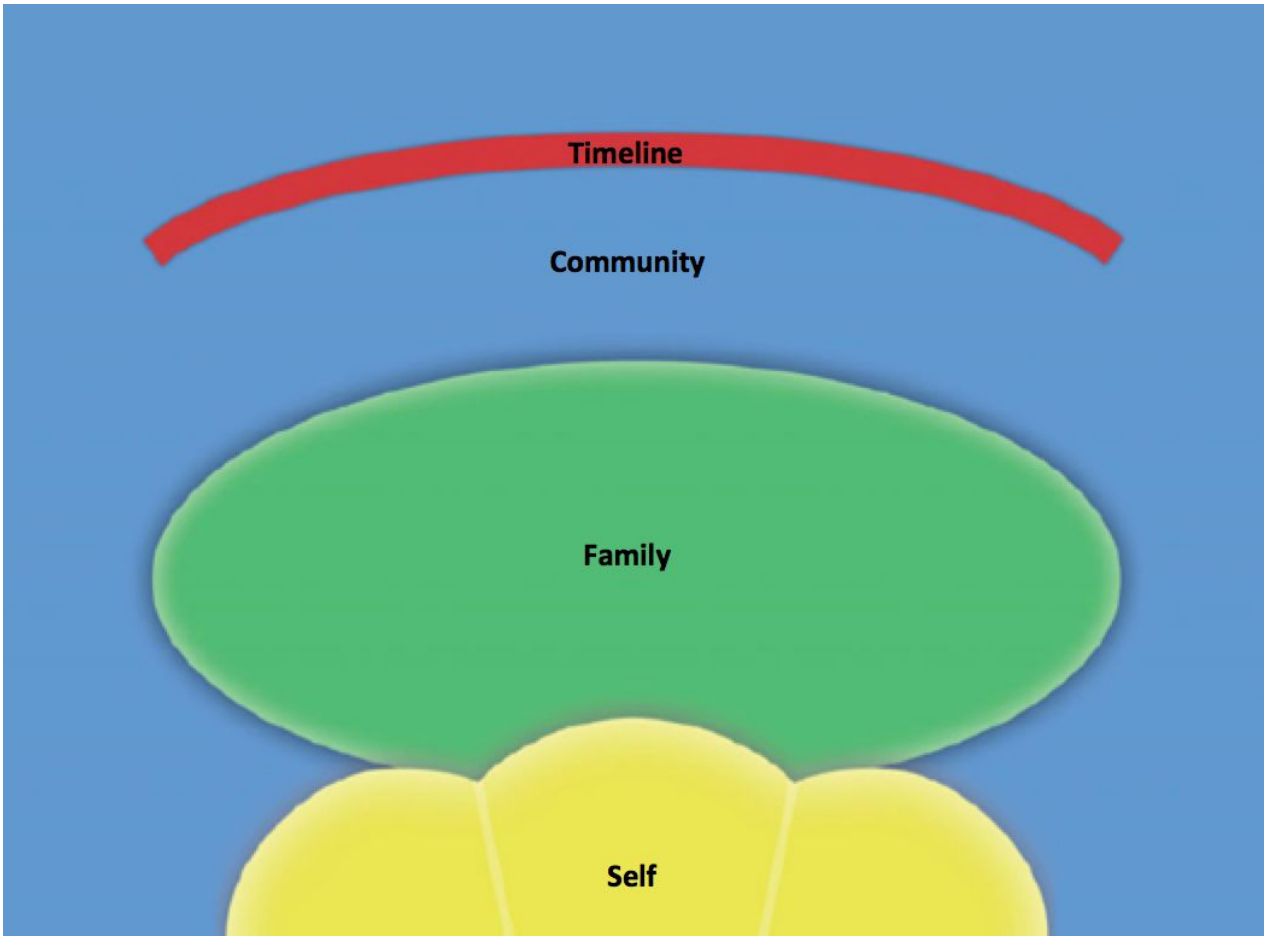
e. Do you have a support system to help with your healing journey? If so, what or who would you say it is that supports you? Can you share a story about your support system and how it may have changed during your experience with bariatric surgery?

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

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

5. What do you feel may support other Indigenous patients more on their healing journey and in clinic?

Thank you for meeting with us today.



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

Journal:	*BMJ Open*
Manuscript ID	bmjopen-2019-036595.R2
Article Type:	Protocol
Date Submitted by the Author:	20-Aug-2020
Complete List of Authors:	Hardy, Krista; University of Manitoba, Department of Surgery Zmudzinski, Marta; University of Manitoba, Department of Surgery Fowler, Melinda; University of Manitoba, Departments of Community Health Sciences and Family Medicine Shingoose, Geraldine; University of Manitoba, Department of Community Health Sciences Fowler-Woods, Amanda; University of Manitoba, Ongomiizwin Indigenous Institute for Health and Healing Daeninck, Felicia; University of Manitoba, Department of Surgery Hatala, Andrew; University of Manitoba, Department of Community Health Sciences Vergis, Ashley; University of Manitoba, Department of Surgery
Primary Subject Heading:	Surgery
Secondary Subject Heading:	Qualitative research
Keywords:	QUALITATIVE RESEARCH, General diabetes < DIABETES & ENDOCRINOLOGY, SURGERY

I, the Submitting Author has the right to grant and does grant on behalf of all authors of the Work (as defined in the below author licence), an exclusive licence and/or a non-exclusive licence for contributions from authors who are: i) UK Crown employees; ii) where BMJ has agreed a CC-BY licence shall apply, and/or iii) in accordance with the terms applicable for US Federal Government officers or employees acting as part of their official duties; on a worldwide, perpetual, irrevocable, royalty-free basis to BMJ Publishing Group Ltd ("BMJ") its licensees and where the relevant Journal is co-owned by BMJ to the co-owners of the Journal, to publish the Work in this journal and any other BMJ products and to exploit all rights, as set out in our licence.

The Submitting Author accepts and understands that any supply made under these terms is made by BMJ to the Submitting Author unless you are acting as an employee on behalf of your employer or a postgraduate student of an affiliated institution which is paying any applicable article publishing charge ("APC") for Open Access articles. Where the Submitting Author wishes to make the Work available on an Open Access basis (and intends to pay the relevant APC), the terms of reuse of such Open Access shall be governed by a Creative Commons licence – details of these licences and which Creative Commons licence will apply to this Work are set out in our licence referred to above.

Other than as permitted in any relevant BMJ Author's Self Archiving Policies, I confirm this Work has not been accepted for publication elsewhere, is not being considered for publication elsewhere and does not duplicate material already published. I confirm all authors consent to publication of this Work and authorise the granting of this licence.

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

Authors:

*Krista Hardy, MD, MSc, FRCSC, FACS, Department of Surgery, University of Manitoba, Winnipeg, MB, Canada

Marta Zmudzinski, BSc, MD, Department of Surgery, University of Manitoba, Winnipeg, MB, Canada

Melinda Fowler-Woods, BScN, DC, MD, Departments of Community Health Sciences and Family Medicine, University of Manitoba, Winnipeg, MB, Canada

Geraldine Shingoose, Indigenous Elder, Department of Community Health Sciences, University of Manitoba, Winnipeg, MB, Canada

Amanda Fowler-Woods, MSc, Ongomiizwin Indigenous Institute for Health and Healing, University of Manitoba, Winnipeg, MB, Canada

Felicia Daeninck, Department of Surgery, University of Manitoba, Winnipeg, MB, Canada

Andrew Hatala, PhD, Department of Community Health Sciences, University of Manitoba, Winnipeg, MB, Canada

Ashley Vergis, MMEd, MD, FRCSC, FACS, Department of Surgery, University of Manitoba, Winnipeg, MB, Canada

*Corresponding author:

Krista Hardy, MD, MSC, FRCSC, FACS

St. Boniface General Hospital, 409 Tache Avenue,

Winnipeg, MB, Canada, R2H 2A6,

khardy@sbgh.mb.ca, Phone: (204) 237-2574

Word Count: 3, 535

Abstract

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

Methods and analysis: Sequential Sharing Circles (SSCs) and semi-structured conversational interviews that have been purposefully designed to be culturally relevant with the guidance of an Indigenous Elder and Advisory Group (IAG) will be carried out in Winnipeg, Manitoba, Canada. Indigenous adults who are obese (BMI >35), have T2DM and live in an urban center will be recruited. 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 a bariatric surgery program. Each group of 10-12 participants will be guided through a semi-structured script led by an Indigenous Elder. Elder-facilitated conversational interviews will also be completed following the SSCs. All content will be audio recorded and transcribed. Thematic analysis will be used to identify emerging patterns using a Constructive Grounded Theory approach.

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

Strengths and Limitations:

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

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 protocol 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 insights 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]. By outlining this project protocol, we hope to inspire similar studies in Canada or globally to replicate or disprove the findings which will encourage more critical and constructive dialogue about and further culturally sensitive research on Type II diabetes mellitus, obesity, and bariatric surgery with Indigenous populations.

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 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].

Participants

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.

Sample size

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 participant 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.

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.

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

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

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

Data Analysis

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

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

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

Dissemination

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.

Conclusion

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

This qualitative decolonizing research approach utilizing SSCs and individual "conversational" interviews 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 study is congruent with the Truth and Reconciliation Commission of Canada: Calls to Action #19 [22]. Effective treatment strategies that are culturally sensitive, address access barriers, and encourage positive, empowering interactions with health care providers are needed to impact future health care delivery and patient outcomes for Indigenous peoples.

The findings of this study 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 [31]. Sharing circles and "conversational" interview methodology have vast potential to generate 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. A "two-eyed seeing" framework also ensures Indigenous knowledge, perspectives, and values are upheld and maintained throughout the duration of the research project.

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.

Funding statement

This work is supported by the University of Manitoba Dr. Paul H.T Thorlakson Foundation Fund [grant number 322080] and a Department of Surgery GFT Surgeons Research Grant from clinical earnings of GFT surgeons at the University of Manitoba, Winnipeg, Manitoba, Canada [grant number 320019].

Competing interests statement

There are no conflicts of interest to report.

Full references

1 World Health Organization. Controlling the global obesity epidemic. https://www.who.int/nutrition/topics/obesity/en/ (accessed June 14, 2020).

2 Sharma A, and Lau D. Obesity and type 2 diabetes mellitus. *Can J Diabetes* 2013;37:63-4.

3 Katz A, Kinew KA, Star L et al. 2019. Manitoba Centre for Health Policy. The Health Status of and Access to Healthcare by Registered First Nation Peoples in Manitoba. 2nd Edition. University of Manitoba. (accessed June 14, 2020).

4 Halseth R. 2019. The prevalence of Type 2 diabetes among First Nations and considerations for prevention. Prince George, BC: National Collaborating Centre for Aboriginal Health. https://www.nccih.ca/docs/health/RPT-Diabetes-First-Nations-Halseth-EN.pdf

5 Rice K, Te Hiwi B, Zwarenstein M, et al. Best practices for the prevention and management of diabetes and obesity-related chronic disease among Indigenous Peoples in Canada: a review. *Can J Diabetes* 2016;40:216-25. https://doi.org/10.1016/j.jcjd.2015.10.007

6 Turin TC, Saad N, Jun M, et al. Lifetime risk of diabetes among First Nations and non-First Nations people. *CMAJ* 2016;188:1147-53. https://doi.org/10.1503/cmaj.150787

7 Lovrics O, Doumouras AG, Gmora S, Anvari M. Metabolic outcomes after bariatric surgery for Indigenous patients in Ontario. Surgery for Obesity and Related Diseases. 2019:15:1340-1347.

8 Richmond C.A.M., Cook C. Creating conditions for Canadian aboriginal health equity: the promise of healthy public policy. *Public Health Rev* 2016;37(2). https://doi.org/10.1186/s40985-016-0016-5

9 Sharples AJQ, Mullan M, Hardy K, Vergis A. Effect of Roux-en-Y gastric bypass on pharmacologic dependence in obese patients

with type 2 diabetes. *Can J Surg*. 2019;62(4):259-264. doi:10.1503/cjs.005018

10 Ding S, Simonson D, Wewalka M, et al. Adjustable gastric band surgery or medical management in patients with type 2 diabetes: a randomized clinical trial. *J Clin Endocrinol Metab* 2015;100:2546-56. 10.1210/jc.2015-1443

11 Dixon J, O'Brien P, Playfair J, et al. Adjustable gastric banding and conventional therapy of type 2 diabetes: a randomized controlled trial. *JAMA* 2008;299:316-23. doi:10.1001/jama.299.3.316

12 Mingrone G, Panunzi S, De Gaetano A, et al. Bariatric surgery versus conventional medical therapy for type 2 diabetes. *N Engl J Med* 2012;366:1577-85. 10.1056/NEJMoa1200111

13 Schauer P, Bhatt D, Kirwan J, et al. Bariatric surgery versus intensive medical therapy for diabetes--3-year outcomes. *N Engl J Med* 2014;370:2002-13. 10.1056/NEJMoa1401329

14 Gloy V, Briel M, Bhatt D, et al. Bariatric surgery versus non-surgical treatment for obesity: a systematic review and meta-analysis of randomised controlled trials. *BMJ* 2013;347:f5934 10.1136/bmj.f5934.

15 Sanchis P, Frances C, Nicolau J, et al. Cardiovascular risk profile in Mediterranean patients submitted to bariatric surgery and intensive lifestyle intervention: impact of both interventions after 1 year of follow-up. *Obes Surg* 2015;25:97-108. https://doi.org/10.1007/s11695-014-1321-z

16 Panunzi S, Carlsson L, De Gaetano A, et al. Determinants of diabetes remission and glycemic control after bariatric surgery. *Diabetes Care* 2016;39:166-74. https://doi.org/10.2337/dc15-0575

17 Halperin F, Ding S, Simonson D, et al. Roux-en-Y gastric bypass surgery or lifestyle with intensive medical management in patients with type 2 diabetes: feasibility and 1-year results of a randomized clinical trial. *JAMA Surg* 2014;149:716-26. 10.1001/jamasurg.2014.514

18 Ikramuddin S, Korner J, Lee W, et al. Roux-en-Y gastric bypass vs intensive medical management for the control of type 2 diabetes, hypertension, and hyperlipidemia: the Diabetes Surgery Study randomized clinical trial. *JAMA* 2013;309:2240-9. 10.1001/jama.2013.5835

19 Courcoulas A, Goodpaster B, Eagleton J, et al. Surgical vs medical treatments for type 2 diabetes mellitus: a randomized clinical trial. *JAMA Surg* 2014;149:707-15. doi:10.1001/jamasurg.2014.467

20 Courcoulas A, Belle S, Neiberg R, et al. Three-year outcomes of bariatric surgery vs lifestyle intervention for type 2 diabetes mellitus treatment: a randomized clinical trial. *JAMA Surg* 2015;150:931-40. 10.1001/jamasurg.2015.1534

21 O'Brien P, DeWitt D, Laurie C, et al. The effect of weight loss on Indigenous Australians with diabetes: a study of feasibility, acceptability and effectiveness of laparoscopic adjustable gastric banding. *Obes Surg* 2016;26:45-53. https://doi.org/10.1007/s11695-015-1733-4

22 Truth and Reconciliation Commission of Canada, 2015. Truth and Reconciliation Commission of Canada: Calls to Action. http://www.trc.ca/websites/trcinstitution/File/2015/Findings/Calls_to_Action_English2.pdf. (accessed June 2020)

23 Allen L, Hatala AR, Ijaz S, Courchene D, & Bushie B. Indigenous-led partnerships in Canadian health care. *CMAJ* 2020;192:E208-16. https://doi.org/10.1503/cmaj.190728

24 Kovach, M. 2009. Indigenous Methodologies: Characteristics, Conversations, and Contexts. Toronto, ON: University of Toronto Press.

25 Kovach M. Conversational method in Indigenous research. First Peoples Child & Family Review 2010;5;40-48. Available from: https://fncaringsociety.com/sites/default/files/online-journal/vol5num1/Kovach_pp40.pdf

26 Lavallée, L. "Practical Application of an Indigenous Research Framework and Two Qualitative Indigenous Research Methods: Sharing Circles and Anishinaabe Symbol-based Reflection." *Int J Qual Methods* 2009;8 (1): 21-40. doi:10.1177/160940690900800103.

27 Whitty-Rogers J, Caine V, & Cameron,B. Aboriginal women's experiences with gestational diabetes mellitus: A parti-cipatory study with Mi'kmaq women in Canada. *Adv Nurs Sci* 2016; 39:181-198. doi:10.1097/ANS.0000000000000115

28 Hart MA. Seeking Mino-Pimatisiwin: An aboriginal approach to helping. Halifax, NS: Fernwood 2002.

29 Jacklin K, Ly A, Calam B, et al. An innovative sequential focus group method for investigating diabetes care experiences with Indigenous Peoples in Canada. *Int J Qual Methods* 2016;1-12. 10.1177/1609406916674965

30 Struthers R, Hodge F, Geishirt-Cantrell B, et al. Participant experience of talking circles on type 2 diabetes in two Northern Plains American Indian tribes. *Qual Health Res* 2003;131:1094-1115. 10.1177/1049732303256357

31 Jacklin K, Henderson R, Green, M, et al. Health care experiences of Indigenous people living with type 2 diabetes in Canada. *CMAJ* 2017;189:E106-12. https://doi.org/10.1503/cmaj.161098

32 Batal M, Decelles S. A Scoping Review of Obesity among Indigenous Peoples in Canada. *J Obes* 2019 :9741090 doi:10.1155/2019/9741090

33 Statistics Canada. National Indigenous Peoples Day… by the numbers. [updated: 2018 July 5] https://www.statcan.gc.ca/eng/dai/smr08/2018/smr08_225_2018 (accessed June 17, 2020)

34 Framework for Research Engagement with First Nation, Metis, and Inuit Peoples. University of Manitoba. https://umanitoba.ca/faculties/health_sciences/medicine/media/UofM_Framework_Report_web.pdf (accessed June 26, 2020)

35 Forbes A, Ritchie S, Walker J, & Young N. (2020). Applications of Two-Eyed Seeing in primary research focused on Indigenous health: A Scoping Review. *Int J Qual Methods* 2020;19:1-18.

36 Martin DH. Two-Eyed Seeing: A framework for understanding Indigenous and non-Indigenous approaches to Indigenous health research. *CJNR* 2012;44(2):20–42.

37 Chase R, Mignone J, & Diffey L. Life Story Board: A tool in the prevention of domestic violence. *Pimatisiwin*, 2010;8(2):145-154.

38 Charmaz K. The power of constructivist grounded theory for critical inquiry. *Qual Inq* 2017;23:34-45.

39 Ryan F, Coughlan M, Cronin P. Step-by-step guide to critiquing research. Part 2: qualitative research. *Br J Nurs* 2007;16(2):738-744.

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

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

Prompts: Community

Elders/Traditional medicines and Sacred Ceremonies/Prayer

Faith-based clergy/Sacraments/Prayer

Family

Friends

Health care providers (doctors, Nurses)

Other? (identify)

3. What challenges did you face in order to be approved for bariatric surgery?

Prompts: smoking, impact of residential schools

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

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

********BREAK*********

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

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

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?

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

Friends

Health care providers (doctors, Nurses)

Other? (identify)

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

**********BREAK**********

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

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

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

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

Health Sciences Centre Winnipeg | Rady Faculty of Health Sciences | University of Manitoba | Hôpital St-Boniface Hospital

Department of Surgery | 3rd Floor Z Block | 409 Tache Avenue | Winnipeg, Manitoba

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?

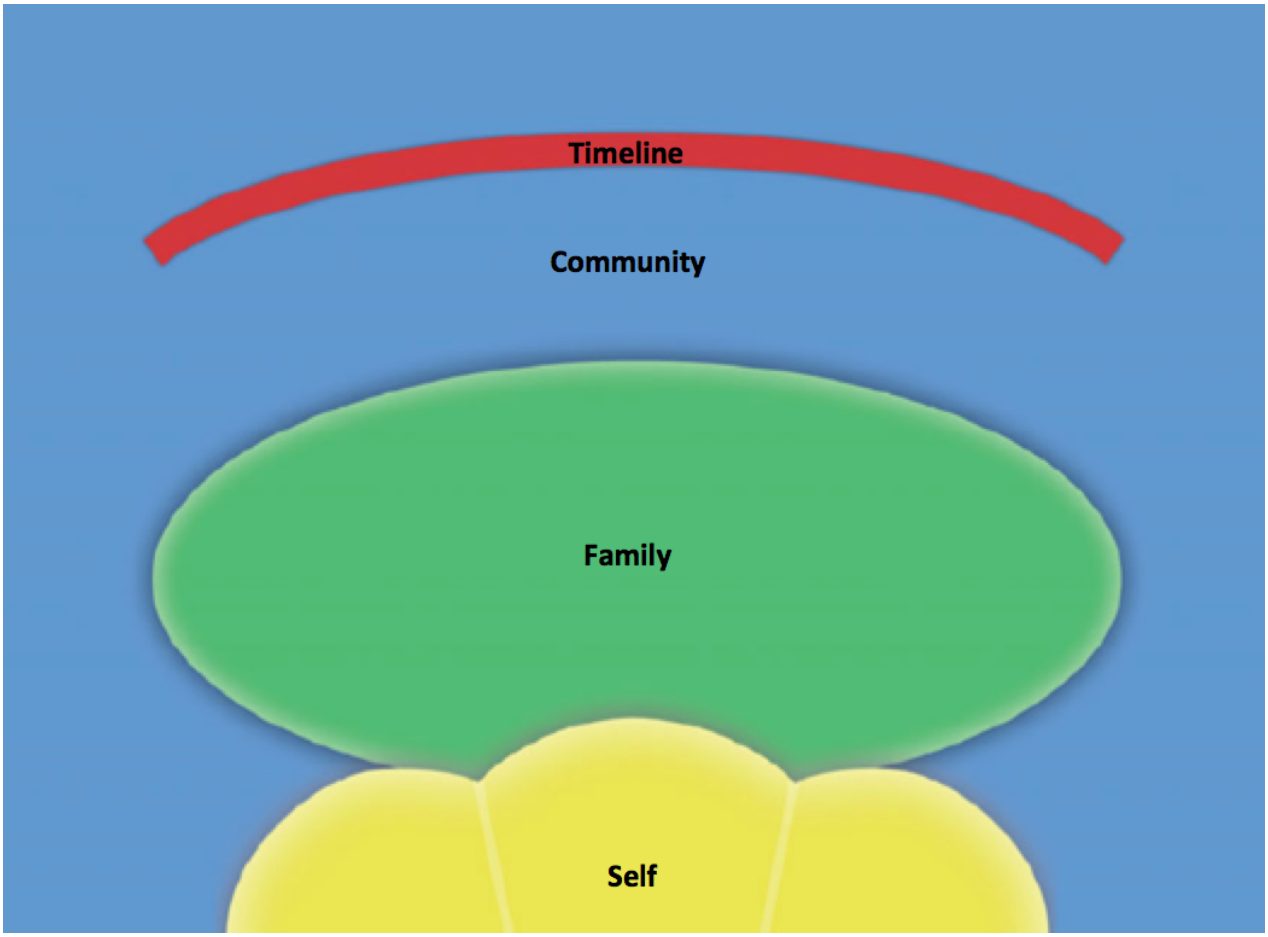
e. Do you have a support system to help with your healing journey? If so, what or who would you say it is that supports you? Can you share a story about your support system and how it may have changed during your experience with bariatric surgery?

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

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

5. What do you feel may support other Indigenous patients more on their healing journey and in clinic?

Thank you for meeting with us today.



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

Journal:	*BMJ Open*
Manuscript ID	bmjopen-2019-036595.R3
Article Type:	Protocol
Date Submitted by the Author:	28-Aug-2020
Complete List of Authors:	Hardy, Krista; University of Manitoba, Department of Surgery Zmudzinski, Marta; University of Manitoba, Department of Surgery Fowler, Melinda; University of Manitoba, Departments of Community Health Sciences and Family Medicine Shingoose, Geraldine; University of Manitoba, Department of Community Health Sciences Fowler-Woods, Amanda; University of Manitoba, Ongomiizwin Indigenous Institute for Health and Healing Daeninck, Felicia; University of Manitoba, Department of Surgery Hatala, Andrew; University of Manitoba, Department of Community Health Sciences Vergis, Ashley; University of Manitoba, Department of Surgery
Primary Subject Heading:	Surgery
Secondary Subject Heading:	Qualitative research
Keywords:	QUALITATIVE RESEARCH, General diabetes < DIABETES & ENDOCRINOLOGY, SURGERY

I, the Submitting Author has the right to grant and does grant on behalf of all authors of the Work (as defined in the below author licence), an exclusive licence and/or a non-exclusive licence for contributions from authors who are: i) UK Crown employees; ii) where BMJ has agreed a CC-BY licence shall apply, and/or iii) in accordance with the terms applicable for US Federal Government officers or employees acting as part of their official duties; on a worldwide, perpetual, irrevocable, royalty-free basis to BMJ Publishing Group Ltd ("BMJ") its licensees and where the relevant Journal is co-owned by BMJ to the co-owners of the Journal, to publish the Work in this journal and any other BMJ products and to exploit all rights, as set out in our licence.

The Submitting Author accepts and understands that any supply made under these terms is made by BMJ to the Submitting Author unless you are acting as an employee on behalf of your employer or a postgraduate student of an affiliated institution which is paying any applicable article publishing charge ("APC") for Open Access articles. Where the Submitting Author wishes to make the Work available on an Open Access basis (and intends to pay the relevant APC), the terms of reuse of such Open Access shall be governed by a Creative Commons licence – details of these licences and which Creative Commons licence will apply to this Work are set out in our licence referred to above.

Other than as permitted in any relevant BMJ Author's Self Archiving Policies, I confirm this Work has not been accepted for publication elsewhere, is not being considered for publication elsewhere and does not duplicate material already published. I confirm all authors consent to publication of this Work and authorise the granting of this licence.

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

Authors:

*Krista Hardy, MD, MSc, FRCSC, FACS, Department of Surgery, University of Manitoba, Winnipeg, MB, Canada

Marta Zmudzinski, BSc, MD, Department of Surgery, University of Manitoba, Winnipeg, MB, Canada

Melinda Fowler-Woods, BScN, DC, MD, Departments of Community Health Sciences and Family Medicine, University of Manitoba, Winnipeg, MB, Canada

Geraldine Shingoose, Indigenous Elder, Department of Community Health Sciences, University of Manitoba, Winnipeg, MB, Canada

Amanda Fowler-Woods, MSc, Ongomiizwin Indigenous Institute for Health and Healing, University of Manitoba, Winnipeg, MB, Canada

Felicia Daeninck, Department of Surgery, University of Manitoba, Winnipeg, MB, Canada

Andrew Hatala, PhD, Department of Community Health Sciences, University of Manitoba, Winnipeg, MB, Canada

Ashley Vergis, MMEd, MD, FRCSC, FACS, Department of Surgery, University of Manitoba, Winnipeg, MB, Canada

*Corresponding author:

Krista Hardy, MD, MSC, FRCSC, FACS

St. Boniface General Hospital, 409 Tache Avenue,

Winnipeg, MB, Canada, R2H 2A6,

khardy@sbgh.mb.ca, Phone: (204) 237-2574

Word Count: 3, 553

Abstract

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

Methods and analysis: Sequential Sharing Circles (SSCs) and semi-structured conversational interviews that have been purposefully designed to be culturally relevant with the guidance of an Indigenous Elder and Advisory Group (IAG) will be carried out in Winnipeg, Manitoba, Canada. Indigenous adults who are obese (BMI >35), have T2DM and live in an urban center will be recruited. 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 a bariatric surgery program. Each group of 10-12 participants will be guided through a semi-structured script led by an Indigenous Elder. Elder-facilitated conversational interviews will also be completed following the SSCs. All content will be audio recorded and transcribed. Thematic analysis will be used to identify emerging patterns using a Constructive Grounded Theory approach.

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

Strengths and Limitations:

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

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 protocol 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 insights 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]. By outlining this project protocol, we hope to inspire similar studies in Canada or globally to replicate or disprove the findings which will encourage more critical and constructive dialogue about and further culturally sensitive research on Type II diabetes mellitus, obesity, and bariatric surgery with Indigenous populations.

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 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].

Participants

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.

Sample size

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 participant 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

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

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

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

Data Analysis

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

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

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

Discussion

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

This qualitative decolonizing research approach utilizing SSCs and individual "conversational" interviews 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 study is congruent with the Truth and Reconciliation Commission of Canada: Calls to Action #19 [22]. Effective treatment strategies that are culturally sensitive, address access barriers, and encourage positive, empowering interactions with health care providers are needed to impact future health care delivery and patient outcomes for Indigenous peoples.

The findings of this study 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 [31]. Sharing circles and "conversational" interview methodology have vast potential to generate 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. A "two-eyed seeing" framework also ensures Indigenous knowledge, perspectives, and values are upheld and maintained throughout the duration of the research project.

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.

Funding statement

This work is supported by the University of Manitoba Dr. Paul H.T Thorlakson Foundation Fund [grant number 322080] and a Department of Surgery GFT Surgeons Research Grant from clinical earnings of GFT surgeons at the University of Manitoba, Winnipeg, Manitoba, Canada [grant number 320019].

Competing interests statement

There are no conflicts of interest to report.

Full references

1 World Health Organization. Controlling the global obesity epidemic. https://www.who.int/nutrition/topics/obesity/en/ (accessed June 14, 2020).

2 Sharma A, and Lau D. Obesity and type 2 diabetes mellitus. *Can J Diabetes* 2013;37:63-4.

3 Katz A, Kinew KA, Star L et al. 2019. Manitoba Centre for Health Policy. The Health Status of and Access to Healthcare by Registered First Nation Peoples in Manitoba. 2nd Edition. University of Manitoba. (accessed June 14, 2020).

4 Halseth R. 2019. The prevalence of Type 2 diabetes among First Nations and considerations for prevention. Prince George, BC: National Collaborating Centre for Aboriginal Health. https://www.nccih.ca/docs/health/RPT-Diabetes-First-Nations-Halseth-EN.pdf

5 Rice K, Te Hiwi B, Zwarenstein M, et al. Best practices for the prevention and management of diabetes and obesity-related chronic disease among Indigenous Peoples in Canada: a review. *Can J Diabetes* 2016;40:216-25. https://doi.org/10.1016/j.jcjd.2015.10.007

6 Turin TC, Saad N, Jun M, et al. Lifetime risk of diabetes among First Nations and non-First Nations people. *CMAJ* 2016;188:1147-53. https://doi.org/10.1503/cmaj.150787

7 Lovrics O, Doumouras AG, Gmora S, Anvari M. Metabolic outcomes after bariatric surgery for Indigenous patients in Ontario. Surgery for Obesity and Related Diseases. 2019:15:1340-1347.

8 Richmond C.A.M., Cook C. Creating conditions for Canadian aboriginal health equity: the promise of healthy public policy. *Public Health Rev* 2016;37(2). https://doi.org/10.1186/s40985-016-0016-5

9 Sharples AJQ, Mullan M, Hardy K, Vergis A. Effect of Roux-en-Y gastric bypass on pharmacologic dependence in obese patients with type 2 diabetes. *Can J Surg*. 2019;62(4):259-264. doi:10.1503/cjs.005018

10 Ding S, Simonson D, Wewalka M, et al. Adjustable gastric band surgery or medical management in patients with type 2 diabetes: a randomized clinical trial. *J Clin Endocrinol Metab* 2015;100:2546-56. 10.1210/jc.2015-1443

11 Dixon J, O'Brien P, Playfair J, et al. Adjustable gastric banding and conventional therapy of type 2 diabetes: a randomized controlled trial. *JAMA* 2008;299:316-23. doi:10.1001/jama.299.3.316

12 Mingrone G, Panunzi S, De Gaetano A, et al. Bariatric surgery versus conventional medical therapy for type 2 diabetes. *N Engl J Med* 2012;366:1577-85. 10.1056/NEJMoa1200111

13 Schauer P, Bhatt D, Kirwan J, et al. Bariatric surgery versus intensive medical therapy for diabetes--3-year outcomes. *N Engl J Med* 2014;370:2002-13. 10.1056/NEJMoa1401329

14 Gloy V, Briel M, Bhatt D, et al. Bariatric surgery versus non-surgical treatment for obesity: a systematic review and meta-analysis of randomised controlled trials. *BMJ* 2013;347:f5934 10.1136/bmj.f5934.

15 Sanchis P, Frances C, Nicolau J, et al. Cardiovascular risk profile in Mediterranean patients submitted to bariatric surgery and intensive lifestyle intervention: impact of both interventions after 1 year of follow-up. *Obes Surg* 2015;25:97-108. https://doi.org/10.1007/s11695-014-1321-z

16 Panunzi S, Carlsson L, De Gaetano A, et al. Determinants of diabetes remission and glycemic control after bariatric surgery. *Diabetes Care* 2016;39:166-74. https://doi.org/10.2337/dc15-0575

17 Halperin F, Ding S, Simonson D, et al. Roux-en-Y gastric bypass surgery or lifestyle with intensive medical management in patients with type 2 diabetes: feasibility and 1-year results of a randomized clinical trial. *JAMA Surg* 2014;149:716-26. 10.1001/jamasurg.2014.514

18 Ikramuddin S, Korner J, Lee W, et al. Roux-en-Y gastric bypass vs intensive medical management for the control of type 2 diabetes, hypertension, and hyperlipidemia: the Diabetes Surgery Study randomized clinical trial. *JAMA* 2013;309:2240-9. 10.1001/jama.2013.5835

19 Courcoulas A, Goodpaster B, Eagleton J, et al. Surgical vs medical treatments for type 2 diabetes mellitus: a randomized

clinical trial. *JAMA Surg* 2014;149:707–15. doi:10.1001/jamasurg.2014.467

20 Courcoulas A, Belle S, Neiberg R, et al. Three-year outcomes of bariatric surgery vs lifestyle intervention for type 2 diabetes mellitus treatment: a randomized clinical trial. *JAMA Surg* 2015;150:931–40. 10.1001/jamasurg.2015.1534

21 O'Brien P, DeWitt D, Laurie C, et al. The effect of weight loss on Indigenous Australians with diabetes: a study of feasibility, acceptability and effectiveness of laparoscopic adjustable gastric banding. *Obes Surg* 2016;26:45–53. https://doi.org/10.1007/s11695-015-1733-4

22 Truth and Reconciliation Commission of Canada, 2015. Truth and Reconciliation Commission of Canada: Calls to Action. http://www.trc.ca/websites/trcinstitution/File/2015/Findings/Calls_to_Action_English2.pdf. (accessed June 2020)

23 Allen L, Hatala AR, Ijaz S, Courchene D, & Bushie B. Indigenous-led partnerships in Canadian health care. *CMAJ* 2020;192:E208-16. https://doi.org/10.1503/cmaj.190728

24 Kovach, M. 2009. Indigenous Methodologies: Characteristics, Conversations, and Contexts. Toronto, ON: University of Toronto Press.

25 Kovach M. Conversational method in Indigenous research. First Peoples Child & Family Review 2010;5;40–48. Available from: https://fncaringsociety.com/sites/default/files/online-journal/vol5num1/Kovach_pp40.pdf

26 Lavallée, L. "Practical Application of an Indigenous Research Framework and Two Qualitative Indigenous Research Methods: Sharing Circles and Anishinaabe Symbol-based Reflection." *Int J Qual Methods* 2009;8 (1): 21–40. doi:10.1177/160940690900800103.

27 Whitty-Rogers J, Caine V, & Cameron,B. Aboriginal women's experiences with gestational diabetes mellitus: A participatory study with Mi'kmaq women in Canada. *Adv Nurs Sci* 2016; 39:181–198. doi:10.1097/ANS.0000000000000115

28 Hart MA. Seeking Mino-Pimatisiwin: An aboriginal approach to helping. Halifax, NS: Fernwood 2002.

29 Jacklin K, Ly A, Calam B, et al. An innovative sequential focus group method for investigating diabetes care experiences with Indigenous Peoples in Canada. *Int J Qual Methods* 2016;1-12. 10.1177/1609406916674965

30 Struthers R, Hodge F, Geishirt-Cantrell B, et al. Participant experience of talking circles on type 2 diabetes in two Northern Plains American Indian tribes. *Qual Health Res* 2003;131:1094-1115. 10.1177/1049732303256357

31 Jacklin K, Henderson R, Green, M, et al. Health care experiences of Indigenous people living with type 2 diabetes in Canada. *CMAJ* 2017;189:E106-12. https://doi.org/10.1503/cmaj.161098

32 Batal M, Decelles S. A Scoping Review of Obesity among Indigenous Peoples in Canada. *J Obes* 2019 :9741090 doi:10.1155/2019/9741090

33 Statistics Canada. National Indigenous Peoples Day… by the numbers. [updated: 2018 July 5] https://www.statcan.gc.ca/eng/dai/smr08/2018/smr08_225_2018 (accessed June 17, 2020)

34 Framework for Research Engagement with First Nation, Metis, and Inuit Peoples. University of Manitoba. https://umanitoba.ca/faculties/health_sciences/medicine/media/UofM_Framework_Report_web.pdf (accessed June 26, 2020)

35 Forbes A, Ritchie S, Walker J, & Young N. (2020). Applications of Two-Eyed Seeing in primary research focused on Indigenous health: A Scoping Review. *Int J Qual Methods* 2020;19:1-18.

36 Martin DH. Two-Eyed Seeing: A framework for understanding Indigenous and non-Indigenous approaches to Indigenous health research. *CJNR* 2012;44(2):20–42.

37 Chase R, Mignone J, & Diffey L. Life Story Board: A tool in the prevention of domestic violence. *Pimatisiwin*, 2010;8(2):145-154.

38 Charmaz K. The power of constructivist grounded theory for critical inquiry. *Qual Inq* 2017;23:34-45.

39 Ryan F, Coughlan M, Cronin P. Step-by-step guide to critiquing research. Part 2: qualitative research. *Br J Nurs* 2007;16(2):738-744.

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

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

Prompts: Community

Elders/Traditional medicines and Sacred Ceremonies/Prayer

Faith-based clergy/Sacraments/Prayer

Family

Friends

Health care providers (doctors, Nurses)

Other? (identify)

3. What challenges did you face in order to be approved for bariatric surgery?

Prompts: smoking, impact of residential schools

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

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

********BREAK*********

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

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

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?

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

Friends

Health care providers (doctors, Nurses)

Other? (identify)

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

**********BREAK**********

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

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

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

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

Health Sciences Centre Winnipeg | Rady Faculty of Health Sciences | University of Manitoba | Hôpital St-Boniface Hospital

Department of Surgery | 3rd Floor Z Block | 409 Tache Avenue | Winnipeg, Manitoba

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?

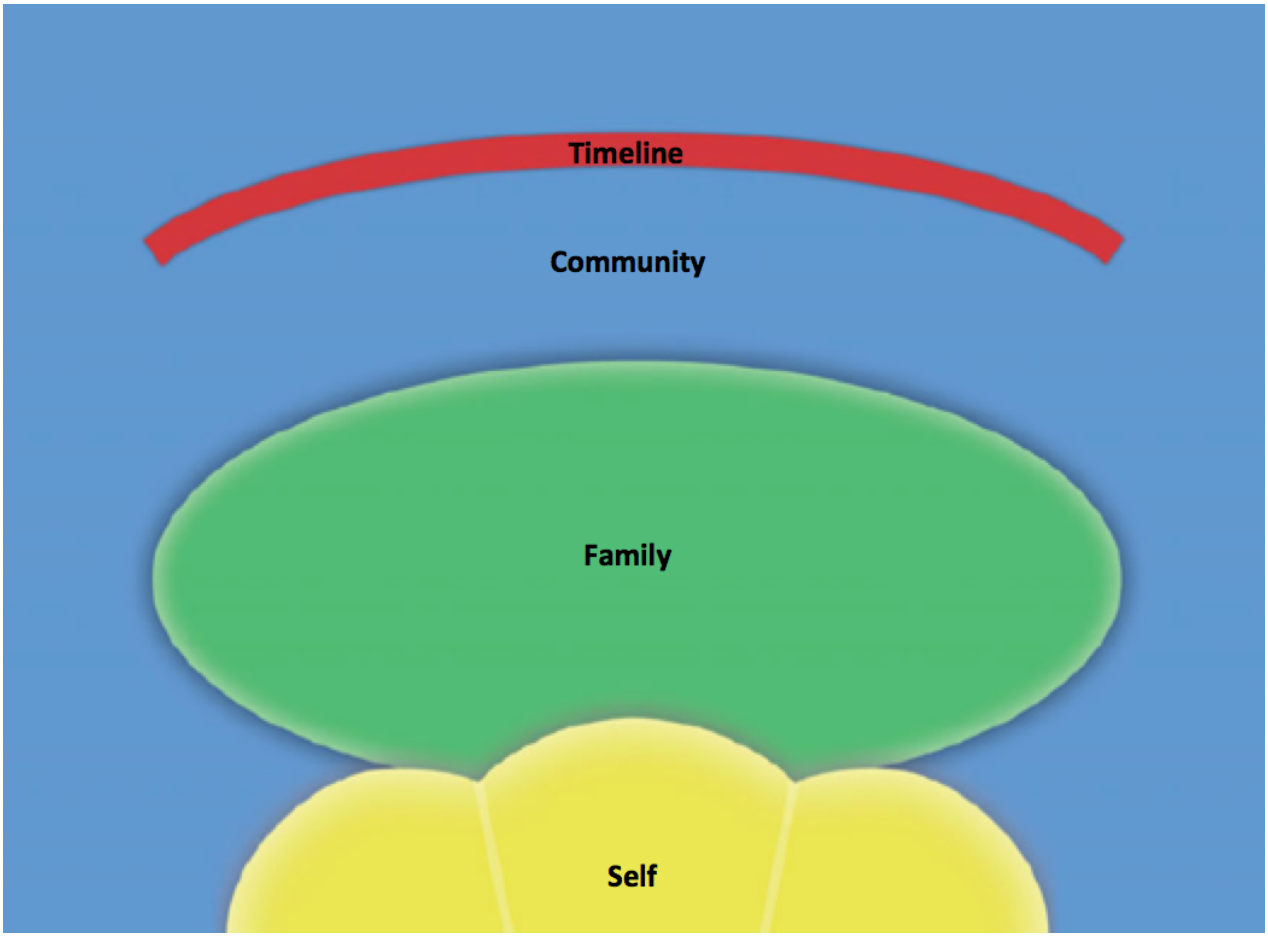
e. Do you have a support system to help with your healing journey? If so, what or who would you say it is that supports you? Can you share a story about your support system and how it may have changed during your experience with bariatric surgery?

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

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

5. What do you feel may support other Indigenous patients more on their healing journey and in clinic?

Thank you for meeting with us today.



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	-