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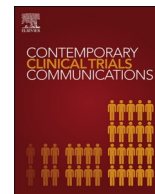
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Short communication

Preventing adolescent dating violence: An outcomes protocol for evaluating a gender-transformative healthy relationships promotion program

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ABSTRACT

Adolescent dating violence (ADV) is a pressing public health problem in North America. Strategies to prevent perpetration are needed, and a substantial body of research demonstrates the importance of applying a gender lens to target root causes of adolescent dating violence as part of effective prevention. To date, however, there has been limited research on how to specifically engage boys in adolescent dating violence prevention. In this short communication, we describe the protocol for a longitudinal, quasi-experimental outcome evaluation of a program called WiseGuyz. WiseGuyz is a community-facilitated, gender-transformative healthy relationships program for mid-adolescent male-identified youth that aims to reduce male-perpetrated dating violence and improve mental and sexual health, by allowing participants to critically examine and deconstruct male gender role expectations. The primary goal of this evaluation is to explore the impact of WiseGuyz on adolescent dating violence outcomes at one-year follow-up among participants, as compared to a risk- and demographically-matched comparison group. Knowledge generated and shared from this project will provide evidence on if and for whom WiseGuyz works, with important implications for adolescent health and well-being.

1. Introduction

The prevention of adolescent dating violence (ADV) is a pressing public health task [1,2], and healthy relationships-based prevention approaches are promising [3–6]. To date, most evidence-based healthy relationships ADV prevention programs have focused on individual skills needed for healthy relationships, such as communication/conflict negotiation skills ex. [3,7]. However, ecological and feminist approaches to violence prevention point to the importance of also targeting factors beyond the individual to address root causes of ADV. In particular, a growing body of literature demonstrates the connection between certain masculine role norms (e.g., avoidance of femininity, emotional restriction) and violence perpetration, including in adolescent dating relationships [8–14]. For example, in a sample of over 1600 male high school athletes, McCauley and colleagues [8] showed that

boys who held more gender-equitable attitudes were significantly less likely to report perpetration of both physical-sexual and emotional ADV. Adherence to these norms also facilitates the continuation of violence through their impact on men and boy's willingness to serve as bystanders and allies [15–17]. Yet, ADV prevention research in the past decade has almost exclusively focused on gender-neutral approaches – approaches that do not engage with how social gender norms are intertwined with experiences of violence – leading to recent calls for gender-transformative¹ violence prevention programming [18–20].

To date, only one such gender-transformative approach to violence prevention has been rigorously evaluated with male-identified youth in North America, Coaching Boys Into Men [21,22]. While this program demonstrated lower ADV perpetration and fewer negative bystander behaviors (e.g., going along with it) at one-year follow-up among participants as compared to controls, it is designed to be implemented in a

Abbreviations: ADV, Adolescent dating violence.

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¹ Gender transformative programs aim to “transform gender roles and promote more gender-equitable relationships between men and women,” [23]:p584 by “engag[ing] men and boys to reflect critically on – and then challenge and change – gender-inequitable attitudes and behaviors.” [20]:p1635.

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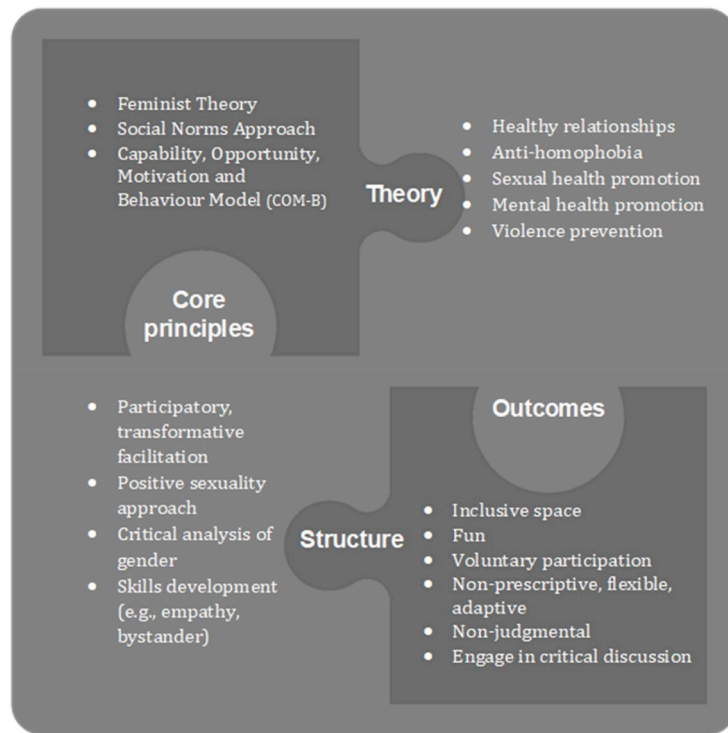
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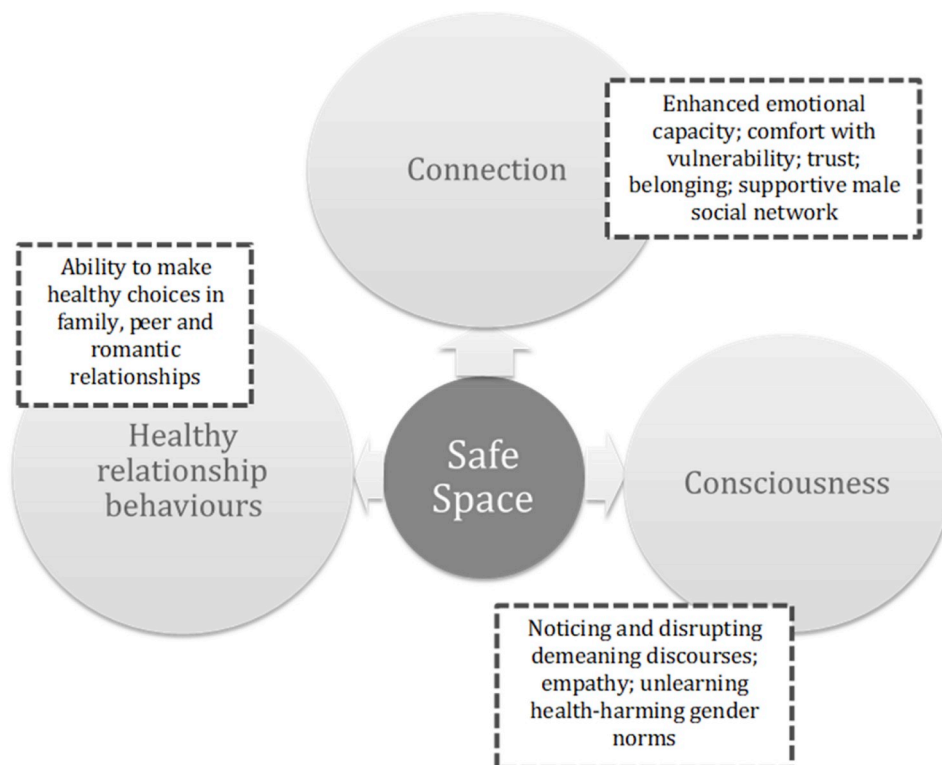
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A



B

Fig. 1. A. WiseGuyz conceptual model. Figure credit, Centre for Sexuality, Calgary, AB. B. WiseGuyz pilot outcomes summary. Figure credit, Dr. Debb Hurlock.

targeted population (high school athletes, with coaches as facilitators). Further, this program was designed and evaluated within an American context. Thus, Canadian programs that take a universal, gender-transformative approach to ADV prevention are needed.

WiseGuyz was designed to fill this gap, and draws on current knowledge about “what works” to prevent ADV [3,19], as well as recommended best practices for violence prevention with young men [23–25]. WiseGuyz is a participatory, gender-transformative healthy relationships promotion program, developed in 2010 by the Centre for Sexuality in Calgary, Alberta (Fig. 1A and B). WiseGuyz strategically targets ninth grade male-identified youth, who are in a pivotal developmental period regarding sexual health and relationships [26]. Past research also demonstrates that mid-adolescence (~ages 13–15) is a key period for starting to deconstruct expectations around social gender norms, and to discuss dating and sexual relationships as part of this deconstruction [18]. During this period, adolescents in Western settings also participate in gender and sexual identity development and prepare to take on adult roles [27,28], and romantic/sexual relationships are increasingly frequent [29].

WiseGuyz is primarily offered in schools, as this environment provides access to a majority of youth and is an important setting for gender role socialization [30]. WiseGuyz is delivered weekly during instructional time and facilitated by a community-based facilitator recruited and trained by the program developers. Each school works with the WiseGuyz team to determine when to offer the program during the school day (e.g., during a health period; during a flex period; alternating each week so students do not miss the same class). Each WiseGuyz session is 75–90 min, and there are 20 sessions total; with holidays, the program typically takes from early October to early June to implement. To promote a culturally safe environment, each group is capped at a maximum of 15 boys (average group size 10–12), and participation is always voluntary. Typically, two groups are run at each participating school. Prior to the start of the standardized curriculum, several weeks are spent creating a safe space and building rapport among participants: in our prior work, we have found that building this safe space at the start of and throughout the program is critical to WiseGuyz’ success [31]. Based on literature identifying the importance of “like-minded” men in prevention programming with male-identified adults and youth [32], all facilitators in this study will be young adult, male-identified individuals.

2. Materials and methods

2.1. Study design and overview

We will explore the effectiveness of WiseGuyz using a longitudinal,

quasi-experimental design. This design was chosen because of how recruitment into WiseGuyz occurs (i.e., always voluntary, and so randomizing youth to intervention was not possible at the within-school level). We will survey all ninth grade male-identified youth at each participating school who have parent consent and youth assent, and then create a risk- and demographically-matched comparison group (i.e., comparing youth who took WiseGuyz with those who did not).

The primary objective of this study is to assess whether WiseGuyz participants report increased positive bystander intervention behaviors (*primary outcome*) at one-year follow-up, as compared to the matched comparison group. A key secondary objective is to assess whether WiseGuyz participants report decreased ADV perpetration (*secondary outcome*) at one-year follow-up, as compared to the matched comparison group (Table 2). Proposed mediators of behavioral outcomes include attitudes towards male role norms and dating abuse awareness. Proposed moderators of behavioral outcomes include baseline levels of attitudes towards male role norms, masculine discrepancy stress, dating abuse awareness attitudes, sense of school belonging and stressful life experiences. For example, we will explore if dating abuse awareness attitudes at baseline (T1) moderate the association between male role norms at T1 and bystander behavior for violence prevention at follow-up, similar to McCauley and colleagues [8]. To contextualize quantitative survey data, we will conduct focus groups with WiseGuyz participants at each school. All procedures were reviewed and approved by a university research ethics board, and the participating school divisions.

2.2. Participants

We will recruit 6–700 ninth grade male-identified youth in 9 participating high schools across two cohorts (Cohort 1: Fall 2019; Cohort 2: Fall 2020). Any male-identified youth in ninth grade is welcome to participate, regardless of their involvement with WiseGuyz, and youth do not need to participate in the research to participate in the program. Schools for this project were chosen because they are in our two partner school divisions and willing to offer WiseGuyz and participate in the research project from 2019 to 2022. To recruit schools, the WiseGuyz program manager and research project lead (first author) met with principals at schools within each participating division that had contacted the Centre for Sexuality about offering WiseGuyz in the 2019/20 school year, and informed them about the research project. Participating schools receive a small honorarium (\$300) each year as a thank-you for their participation. To honor youth time commitment and support retention, all youth research participants (WiseGuyz and comparison) will receive a \$10 gift card at baseline (T1) and post-test (T2), and a \$25 gift card at one-year follow-up (T3). At recruitment, we are also

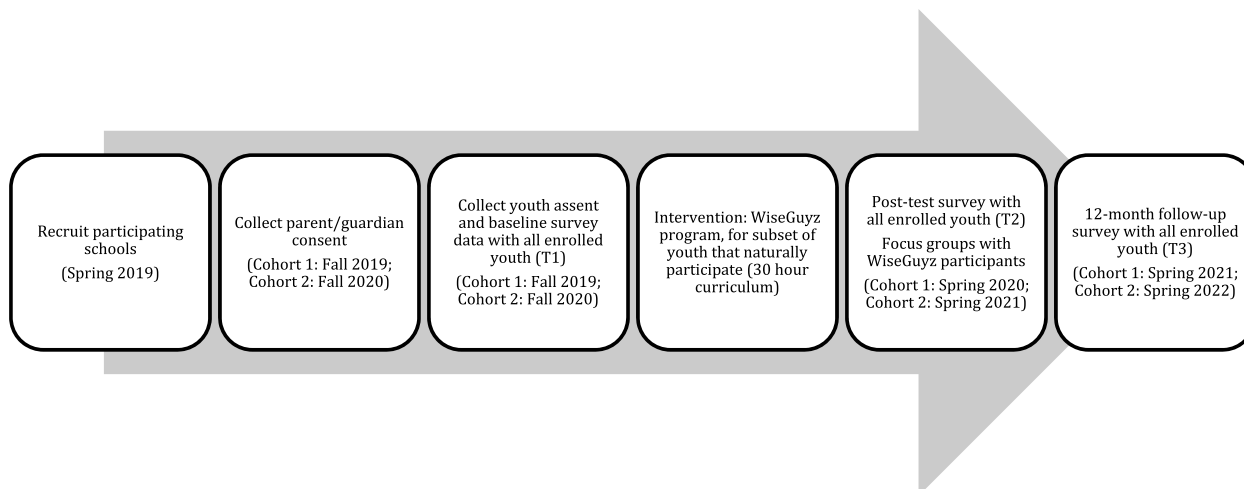


Fig. 2. WiseGuyz outcome evaluation study timeline.

Table 1
Overview of the WiseGuyz curriculum.

Module Description	Session Breakdown
Module 1: Healthy Relationships – This module examines the difference between healthy, unhealthy, and abusive relationships. Participants also learn about personal boundaries, consent, coping skills, empathy and emotional expression, and effective ways to resolve conflict.	<ul style="list-style-type: none"> • Session 1: Program Introduction and Rapport Building • Session 2: Values and Building Empathy • Session 3: Emotions, Self-Care and Mindfulness • Session 4: Conflict Resolution and Healthy Relationships • Session 5: Consent and Communication • Session 6: Healthy Decision Making and Boundaries
Module 2: Sexual Health – In this module, participants become more aware of healthy sexuality, including changes during puberty and reproductive anatomy. Participants also learn about sexual and reproductive health more broadly, including sexual consent, so that they can identify supports and make informed decisions.	<ul style="list-style-type: none"> • Session 7: Human Sexuality • Session 8: Introduction to Anatomy & Puberty • Session 9: Birth Control • Session 10: Sexually Transmitted Infections • Session 11: Consent • Session 12: Gender Socialization • Session 13: Gender and Sexual Diversity
Module 3: Gender, Sexuality and the Media – In this module, participants learn the difference between sex and gender and are encouraged to critically examine cultural and social messages about gender and sexuality (e.g., media portrayals of gender role scripts). Participants also discuss emotional literacy, and violence and power, and their connections to gender.	<ul style="list-style-type: none"> • Session 14: Gender in the Media – Masculinity • Session 15: Gender in the Media – Sexism • Session 16: Gender-Based Violence & Sexual Assault • Session 17: Introduction to Human Rights • Session 18: Exploring Privilege and Oppression • Session 19: Being an Active Bystander • Session 20: Making Change in Your World
Module 4: Advocacy and Leadership – In this module, participants discuss the basic rights of every human being and how to respect the differing values, perspectives, and lived experiences of others. There is also a focus on bystander behavior and activism, social support systems, LGBTQ2 + rights, and social justice.	

collecting contact information (email, cell phone, social media) from all participants to facilitate retention.

2.3. Procedures

We will make presentations on the research project to all ninth grade boys at participating schools in early fall 2019, to recruit both WiseGuyz and comparison group participants. To supplement these presentations, principals at participating schools will send out an email describing the project to the parents/guardians of adolescent boys (along with the electronic consent link); the research team will hold lunchtime snack tables at participating schools to tell boys directly about the project; and the research team will attend school parent nights to tell parents/guardians directly about the project. Interested participants need to provide signed parent/guardian consent (paper or electronic through REDCap) and themselves complete an assent form to participate in the research. To encourage parent consent return (whether or not the youth chooses to participate), all schools where at least 50% of boys return a parent consent (indicating yes or no to the project) will receive a pizza party for all grade 9 classes.

Quantitative data will be collected in two cohorts (**Cohort One** – T1: October 2019; T2: May 2020; T3: May 2021; **Cohort Two** – T1: October 2020; T2: May 2021; T3: May 2022; Fig. 2). All surveys will be conducted on computer using REDCap. At T1 and T2, we will go to each school site to collect data, and surveys will be completed during school time on a personal or school computer. We will work with each school to find a time and date that is convenient for them to conduct these surveys, and all surveys will be conducted on or before the third week of WiseGuyz programming at that particular school (as the third week is when content starts). At T3, data will be collected both in- and out-of-school time using email.

We will gather qualitative focus group data from ~60 WiseGuyz participants immediately post-intervention (Cohort One – May 2020; Cohort Two – May 2021). Based on our past experience conducting WiseGuyz focus groups, each focus group will be capped at five participants, to ensure a safe space for sharing. As such, a selection of those who have parental consent to participate in the focus groups will be

selected for participation (parent consent for focus groups is obtained at the same time as parent consent for surveys). Our selection procedures are as follows: 1) facilitators suggest youth who would enjoy participating in a focus group. This judgement is not based on youth engagement levels, but rather youth comfort with sharing in a group setting (as this is required in the focus group). As facilitators know youth very well by this point in the year, they are in the best position to tell us which youth would be most comfortable participating in this type of data collection. In addition, if any youth directly lets their facilitator know they want to participate, their name is added to the list; and 2) of that list, the research team looks at which of those youth have parental consent to participate. If there are more youth on the list than we can accommodate, participation decisions are made by random draw, to promote fairness. Facilitators then let selected youth know the date and time of the focus group, but the focus group is conducted by the research team (i.e., facilitators are not in the room during youth assenting or the conduct of the focus group). During the focus groups, youth will receive pizza and juice as a thank you for participating. The semi-structured focus group guide explores the participant's decision to join WiseGuyz, key learnings and perceived changes (e.g., in understanding of masculinity), and suggested improvements for the program.

2.4. WiseGuyz intervention

WiseGuyz is an integrated and sequential curriculum comprised of four core modules and 20 sessions (Table 1). Sessions are a mix of targeted education, group discussion, and skills development (e.g., role play). Theoretically, the program draws on feminist theory, the Capability, Opportunity, Motivation and Behavior model (COM-B) and a social norms approach (Fig. 1A) [20,33–35]. All WiseGuyz facilitators for this study have implemented the program for at least one year.

2.5. Measures

2.5.1. Primary outcome

Positive (increase) in bystander behavior for violence prevention, measured using the Bystander Intervention Behaviors scale [36] at T1

Table 2
Primary and secondary outcome measures.

Construct and Measure	Response Options	Data Collection Occasions	Items
Primary Outcome Measure			
Positive bystander intervention behaviours for violence prevention [36]	<ul style="list-style-type: none"> • I didn't say anything (-1) • I told the person in public that acting like that was not okay (+1) • I laughed or went along with it (-1) • I told the person in private that acting like that was not okay (+1) • I talked to an important adult about it privately (like a youth leader, teacher, coach) (+1) • I have not experienced this in the past 3 months (0) -Analyzed by creating sum score	T1 T2 T3	The following questions ask about specific behaviors that you may have seen or heard among your male peers or friends. If you experienced this at least once in the past 3 months, how did you respond? <ol style="list-style-type: none"> 1. Making rude or disrespectful comments about a girl's body, clothing, or make-up. 2. Spreading rumors about a girl's sexual reputation, like saying "she's easy." 3. Telling sexual jokes that disrespect women and girls. 4. Bragging about what they and their girlfriend do sexually. 5. Showing other people sexual messages or naked/sexual pictures of a girl on a cell phone or the internet. 6. Doing unwelcome or uninvited things toward a girl (or group of girls) such as howling, whistling, or making sexual gestures. 7. Fighting with a girl where he's starting to cuss at or threaten her. 8. Taking sexual advantage of a girl (like touching, kissing, having sex with) who is drunk, high from drugs, or passed out. 9. Shoving, grabbing, or otherwise physically hurting a girl.
Secondary Outcome Measures			
Adolescent dating violence perpetration: Conflict in Adolescent Dating Relationships Inventory (CADRI) [41]/Electronic Intrusiveness items [42]	Inclusion question: Have you ever had a dating relationship? A dating relationship is defined as the kind of relationship where you like a person, they like you back, and other people know that you are together. This does not have to mean going on a formal date. [43] ^{p268} Yes No (skip out) Not sure - Response options: 'never', 'once', and 'more than once'; dichotomized as any endorsement	T1 T3	Have you done any of the following to a dating partner in the past 6 months? Don't count it if you did it in self-defense. <ol style="list-style-type: none"> 1. I threw something at them 2. I kicked, hit or punched them 3. I slapped them or pulled their hair 4. I pushed, shoved or shook them 5. I destroyed or threatened to destroy something they valued 6. I deliberately tried to frighten them 7. I threatened to hurt them 8. I threatened to hit them or throw something at them 9. I touched them sexually when they didn't want me to 10. I forced them to have sex when they didn't want to 11. I threatened them in an attempt to have sex with them 12. I kissed them when they didn't want me to 13. I tried to turn their friends against them 14. I said things to their friends about them to turn their friends against them 15. I spread rumors about them 16. I did something to try to make them jealous 17. I brought up something bad they had done in the past 18. I said things to make them angry 19. I spoke to them in a hostile or mean tone of voice 20. I insulted them with put downs 21. I ridiculed or made fun of them in front of others 22. I kept track of who they were with and where they were 23. I blamed them for the problem 24. I accused them of flirting with another person 25. I threatened to end the relationship 26. I monitored who my dating partner(s) talk to and who he/she is friends with using the Internet or a cell phone 27. I looked at my dating partner's private information on a computer or cell phone without his/her permission (like his/her personal email, instant messages, text history, call log, etc.) 28. I monitored my dating partner's whereabouts using the Internet or a cell phone (checking his/her Facebook "status", calling or texting repeatedly to ask where he/she was, etc.)
Positive mental health: Mental Health Continuum – Short Form (MHC-SF) [44]	6 point Likert scale from 'Never' to 'Everyday'; analyzed as mean score overall and by sub-scale (emotional well-being, psychological well-being, social well-being)	T1 T3	The next questions ask about your feelings in the past month. For each statement, please fill in the bubble that describes YOU best.

(continued on next page)

Table 2 (continued)

Construct and Measure	Response Options	Data Collection Occasions	Items
Bullying perpetration: School Climate Bullying Survey – Bullying Behavior Sub-Scale (SCBS-BB) [45]	4 point Likert scale from ‘never’ to ‘several times per week’; dichotomized as any endorsement overall and by type	T1 T3	<p>During the past month, how often did you feel ...</p> <p><i>Emotional:</i></p> <ol style="list-style-type: none"> 1. . .happy? 2. . .interested in life? 3. . .satisfied with your life? <p><i>Social:</i></p> <ol style="list-style-type: none"> 4. . .that you had something important to contribute to society? 5. ... that you belonged to a community (like a social group, your school, your neighborhood, your city, etc.)? 6. ...that our society is becoming a better place for people like you? 7. ... that people are basically good? 8. . .that the way our society works makes sense to you? <p><i>Psychological:</i></p> <ol style="list-style-type: none"> 9. ... that you liked most parts of your personality? 10. . .good at managing the responsibilities of your daily life? 11. ... that you had warm and trusting relationships with others? 12. ...that you had experiences that challenged you to grow and become a better person? 13. ... confident to think or express your own ideas and opinions? 14. . .that your life has a sense of direction or meaning to it? <p>The next set of questions ask about your experiences with bullying in the last month. For this survey, bullying is defined as the use of one’s strength or popularity to injure, threaten or embarrass another person. Bullying can be physical, verbal, social or electronic. It is not bullying when two students who are about the same in strength or power have a fight or argument.</p> <ol style="list-style-type: none"> 1. Physical bullying involves repeatedly hitting, kicking, or shoving someone weaker on purpose. During the past month (30 days) at school: I have physically bullied or threatened to physically bully another student. 2. Verbal bullying involves repeatedly teasing, putting down, or insulting someone on purpose. During the past month (30 days) at school: I have verbally bullied another student. 3. Social bullying involves getting others repeatedly to ignore or leave someone out on purpose. During the past month (30 days) at school: I have socially bullied another student. 4. Cyber bullying involves using technology (cell phone, email, internet chat and posting, social media, etc.) to tease or put down someone. During the past month (30 days) at school or home: I have cyber bullied another student. <p>BEST SAME-SEX FRIEND</p> <ol style="list-style-type: none"> 1. How often do you spend fun time with this person? 2. How often do you tell this person things that you don’t want others to know? 3. How happy are you with your relationship with this person? 4. How often do you turn to this person for support with personal problems? 5. How often does this person praise you for the kind of person you are? 6. How often do you and this person go places and do things together? 7. How often do you tell this person everything you are going through? 8. How much do you like the way things are between you and this person? 9. How often do you depend on this person for help, advice, or sympathy? 10. How often does this person seem really proud of you? 11. How often do you play around and have fun with this person?
Friendship closeness: Network of Relationships Inventory – Relationship Qualities Version (NRI-RQV) [46]	5 point Likert scale from ‘never or hardly at all’ to ‘always or extremely much’; analyzed as mean score	T1 T3	

(continued on next page)

Table 2 (continued)

Construct and Measure	Response Options	Data Collection Occasions	Items
Homophobic name-calling: Homophobic Content Agent Scale (HCAT) [47]	5 point Likert scale from 'never' to '7 or more times'; analyzed as mean score for each target	T1T2 T3	12. How often do you share secrets and private feelings with this person? 13. How satisfied are you with your relationship with this person? 14. When you are feeling down or upset, how often do you depend on this person to cheer things up? 15. How much does this person like or approve of the things you do? Some kids call each other names such as gay, lesbo, fag, etc. How many times in the last week did you say these things to: 1. A friend 2. Someone I did not know 3. Someone I did not like 4. Someone I thought was gay 5. Someone I did not think was gay Available from scale developer
Sexual health self-efficacy: Sexual Health-Efficacy Scale (SHSE) [48]	5-point Likert scale from 'not at all confident' to 'extremely confident'; analyzed as mean score	T1 T2 T3	Available from scale developer
Adherence to male role norms: Male Role Norms Inventory – Adolescent – Revised (MRNI-A-r) [49]	7-point Likert scale from 'strongly disagree' to 'strongly agree'; analyzed as mean score overall and by sub-scale (avoidance of femininity, toughness, emotionally detached dominance)	T1 T2	Available from scale developer
Adolescent Masculinity Ideology in Relationships Scale (AMIRS) [50]	7-point Likert scale from 'strongly disagree' to 'strongly agree'; analyzed as mean score overall	T1 T2	1. It's important for a guy to act like nothing is wrong, even when something is bothering him. 2. In a good dating relationship, the guy gets his way most of the time. 3. I can respect a guy who backs down from a fight. 4. It's ok for a guy to say no to sex. 5. Guys should not let it show when their feelings are hurt. 6. A guy never needs to hit another guy to get respect. 7. If a guy tells people his worries, he will look weak. 8. I think it's important for a guy to go after what he wants, even if it means hurting other people's feelings. 9. I think it is important for a guy to act like he is sexually active even if he is not. 10. I would be friends with a guy who is gay. 11. It's embarrassing for a guy when he needs to ask for help. 12. I think it's important for a guy to talk about his feelings, even if people might laugh at him.
Masculine Discrepancy Stress Scale [51]	5-point Likert scale from 'disagree strongly' to 'agree strongly'; analyzed as mean score overall	T1 T2	1. I wish I were more "manly" 2. I wish I was interested in things that other guys find interesting 3. I worry that people judge me because I am not like the typical man 4. Sometimes I worry about my masculinity 5. I worry that women find me less attractive because I'm not as macho as other guys Available from scale developer
Attitudes towards sexual minorities: Negativity Towards Sexual Minorities Scale (NTSM) [52]	7-point Likert scale from 'strongly disagree' to 'strongly agree'; analyzed as mean score	T1 T2	Available from scale developer
Dating abuse awareness: Dating Abuse Awareness Scale (DAAS) [36]	5-point Likert scale from 'not abusive' to 'extremely abusive'; analyzed as mean score	T1 T2	Below is a list of experiences people might have in a dating relationship. Please rate each of the following actions towards a girlfriend or boyfriend as not abusive, a little abusive, somewhat abusive, very abusive or extremely abusive. 1. Name calling or insulting them 2. Telling them they're ugly or stupid 3. Making fun of them in front of other people 4. Telling them what to do all the time 5. Telling them which friends they can and can't see or talk to 6. Pressuring them not to break up with them 7. Not listening to what they have to say 8. Trying to convince them to have sex 9. Preventing them from leaving a room 10. Keeping tabs on them or spying on them 11. Threatening to hit them 12. Forcing them to have sex
Intentions to intervene with peers [36]	5-point Likert scale from 'very unlikely' to 'very likely'; analyzed as mean score	T1 T2	How likely are YOU to do something to try and stop what's happening if a male friend or peer (someone your age) is:

(continued on next page)

Table 2 (continued)

Construct and Measure	Response Options	Data Collection Occasions	Items
			<ol style="list-style-type: none"> 1. Making rude or disrespectful comments about a girl's body, clothing, or makeup 2. Spreading rumors about a girl's sexual reputation, like saying "she's easy" 3. Fighting with a girl where he's starting to cuss or threaten her 4. Doing unwelcome or uninvited things toward a girl (or group of girls), such as howling, whistling, or making sexual gestures 5. Shoving, grabbing, or otherwise physically hurting a girl 6. Showing other people sexual messages or naked/sexual pictures of a girl on a cell phone or the Internet 7. Telling sexual jokes that disrespect women and girls 8. Taking sexual advantage of a girl (like touching, kissing, having sex with) who is drunk, high from drugs, or passed out
Help-seeking intentions: General Help Seeking Questionnaire (GHSQ), adapted [53]	7-point Likert scale from 'extremely unlikely' to 'extremely likely'; analyzed as likelihood to seek help from each source	T1 T2	<p>If you were having a personal or emotional problem, how likely is it that you would seek help from the following people?</p> <ol style="list-style-type: none"> 1. Mental health professional (e.g., psychologist, social worker, school counsellor) 2. Teacher 3. Youth worker 4. I would not seek help from anyone
Drug use intentions: Drug Resistance Self-Efficacy (DRSE) [54]	5-point Likert scale from 'disagree strongly' to 'agree strongly'; analyzed as mean score	T1 T2	<p>I am confident that I can ...</p> <ol style="list-style-type: none"> 1. ... find ways of reducing stress, that don't involve alcohol/drugs 2. ... make friends with people who don't use alcohol/drugs 3. ... resist the temptation to use alcohol/drugs when others around me are using 4. ... find things to do that I enjoy but that don't involve alcohol/drugs 5. ... avoid situations and people where alcohol/drugs are present

and T3. This measure assesses both positive (e.g., said something to them in private) and negative (e.g., went along with it) bystander behaviors, and was previously used in the Coaching Boys Into Men evaluation [21,22]. See Table 2 for a full description of this scale.

2.5.2. Secondary outcomes

See Table 2 for a list of secondary outcomes.

2.5.3. Process evaluation

From October 2019–May 2021, we will collect implementation tracking data at the start of the program year, immediately following each WiseGuyz session, at the end of each WiseGuyz module, and at the end of the program year from all facilitators. Youth impressions of the program (e.g., acceptability, utility) will be assessed during the end-of-year focus groups.

2.6. Sample size

Based on our pilot data collection as well as retention in other ADV outcome evaluations, we anticipate an overall consent/assent rate of 50% across the 9 schools (total enrolled $n \sim 600-700$). We anticipate that approximately half of these participants will be in the WiseGuyz program, and the other half will serve as our comparison pool. We anticipate an attrition rate of 20% at the one-year follow-up. This final anticipated sample size after attrition ($n \sim 480-560$) gives us 80% power to detect an effect size (Cohen's d) of 0.24–0.26 at the $\alpha = 0.05$ level. In pilot testing, we have observed effect sizes in this range for attitudes, and larger effect sizes for positive bystander behaviors (Cohen's $d = 0.39$) [37].

2.7. Main analytic plan

We will use 1:1 propensity score matching to create matched comparison and intervention groups [38]. Variables we will explore as part of our propensity score model include baseline (T1) scores on the Male Role Norms Inventory-Adolescent-Revised (MRNI-A-r), Negativity Towards Sexual Minorities (NTSM), Adolescent Masculinity Ideology in Relationships Scale (AMIRS), Dating Abuse Awareness Scale (DAAS), Masculine Discrepancy Stress, and Intentions to Intervene with Peers scales (Table 2), a measure of stressful life experiences (T1); a measure of school belonging (T1); and demographics (race/ethnicity, socioeconomic status, sexual orientation and family structure). Because there are typically two WiseGuyz groups at each participating school, we will use multilevel models that account for nesting at both the school and group level (e.g., at School A, participants would be nested into School A-WiseGuyz Group 1; School A-WiseGuyz Group 2; or School A-Comparison). As we have nine schools participating, this will give us ~27 level 2 clusters. We will analyze our nested outcome data using multivariate models including an indicator for treatment group (1 = WiseGuyz; 0 = comparison), and controlling for the baseline level of the outcome variable and the propensity score [38]. We will also explore the data for any cohort effects, and if found, control for cohort, as well. We will conduct attrition analyses to compare those who do and do not complete T2 and T3 surveys, and explore multiple imputation to handle missing data.

Focus groups will be audio-recorded and transcribed verbatim. We will code transcripts in Dedoose (a mixed-methods analysis software), using qualitative description methodology [39]. As a member check, themes that arise from coding will be reviewed with WiseGuyz facilitators and the WiseGuyz youth advisory committee prior to finalizing.

Using Dedoose, we will also be able to disaggregate codes/themes by key demographic variables of interest (e.g., school). We will integrate quantitative and qualitative data using parallel mixed analysis [40], a method that facilitates triangulation, and is thus appropriate for project goals.

3. Results

We recruited nine high schools in a large, Western Canadian province for this study. High schools are in two school divisions, representing urban, suburban and rural areas. While standard, publicly available demographic information is not collected on Canadian students, census data on median income for included schools is presented in Table 3. Youth recruitment for this project will start in early September 2019.

4. Conclusions

WiseGuyz is a gender-transformative program designed to prevent ADV, and promote sexual and mental health, among mid-adolescent boys. The described study is an important first step in establishing the evidence base for WiseGuyz, and draws on six years of promising pilot work [26,31,37,55,56]. This will be the first study in Canada to provide evidence on if and how a gender-transformative program for boys impacts positive mental health, violence prevention and sexual health at one-year follow-up, as compared to a matched comparison group. As such, this project has the potential to make a major contribution to evidence-based research and practice with adolescent boys in Canada.

Based on the theoretical underpinnings of the program and anticipated power to detect effects, we chose bystander behavior for violence prevention as our primary outcome. Bystander behavior is an important target for a number of current violence prevention programs [e.g., 21], and is theoretically and empirically linked to reduced ADV perpetration [21,57,58]. The qualitative data we collect will deepen our understanding of potential program impacts (e.g., by allowing us to better understand *how* WiseGuyz promotes bystander behavior). Limitations of this study include the non-randomized design; the self-report nature of most survey and all process evaluation items; the collection of process evaluation items from facilitators only; and, as all involved school divisions require active consent, anticipated issues with parental consent return. However, despite these limitations, this study will provide critical information on gender-transformative violence prevention with adolescent boys, an area of growing interest and promise for ADV prevention.

Table 3
Geographic Setting and Median Income in Project Schools, in US dollars.

School Number	Geographic Setting ^a	Median Individual Income Range ^b
1	Rural (population < 15,000)	\$28,000-\$33,000
2	Small suburban (population < 40,000)	\$35,000-\$40,000
3	Rural (population < 15,000)	\$25,000-\$30,000
4	Large urban (population > 1,000,000)	\$38,000-\$43,000
5	Medium suburban (population < 100,000)	\$37,000-\$42,000
6	Small suburban (population < 40,000)	\$28,000-\$33,000
7	Small suburban (population < 40,000)	\$43,000-\$48,000
8	Rural (population < 15,000)	\$42,000-\$47,000
9	Small suburban (population < 40,000)	\$37,000-\$42,000

^a Geographic setting classifications taken from 2016 Canadian Census population centre data.

^b Income range given to protect school anonymity. The Low Income Cut-off (poverty line) set by Statistics Canada is \$17,940 USD per year. Conversion rate to US dollars (USD) was \$1 Canadian dollar = \$0.77 USD.

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Declaration of competing interest

The fourth and fifth author's organization is the creator and implementer of the WiseGuyz program. The third author is a consultant with the Centre for Sexuality. The first, second and sixth authors have no conflicts of interest to report.

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