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An Examination of Novel Harm Reduction Interventions for Indigenous and Other Youth of Color

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**Abstract**

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Alcohol and other drug (AOD) use among youth populations remains a pressing social issue in the United States. Young people who experiment with or regularly use AODs are at heightened risk for experiencing AOD-related harms such as mental health issues, overconsumption, and death. Among American Indian/Alaska Native/Indigenous (hereafter, "Indigenous") youth, contextual risk factors such as limited access to culturally relevant AOD prevention information can exacerbate their risk for AOD harms such as early onset for problematic AOD use, AOD-use disorders in adulthood, infection of the human immunodeficiency virus (HIV), unresolved issues of trauma, and related experiences of inter-personal violence. An effective approach to reduce AOD-related harm among youth is *harm reduction*. Youth-specific harm reduction studies have shown significant effects in reducing AOD use and related harms, as well as increasing knowledge and awareness. However, there is a dearth of empirical literature on the development, acceptability, and measurement of culturally relevant, theoretically grounded harm reduction interventions for Indigenous youth. This dissertation examines three sets of interrelated questions regarding novel interventions designed to prevent and reduce AOD harms for youth of color (YOC), with a focus on the needs of Indigenous youth who participate in an Indigenous-specific after-school program. The first study reports use, usability, and overall satisfaction outcomes for the MyPEEPS (Male Youth Pursing Empowerment, Education, and Prevention around Sexuality) mobile app, an evidence-based HIV prevention intervention. A pre-post pilot feasibility study was conducted with racially and ethnically diverse 40

young men living in Birmingham, Alabama; Chicago, Illinois; New York City, New York; and Seattle, Washington. Results indicated 62.5% (25/40) of all participants completed the intervention in an average of 28.85 (SD 21.69) days. Overall, participants reported the app was easy to use and useful and had the potential to improve their sexual health knowledge, behaviors, and awareness in risky situations. The second study focused exclusively on the AOD prevention needs of Indigenous youth towards the development of a culturally relevant and theoretically grounded harm reduction intervention. A community-based participatory research approach was used to understand the perceptions of AOD use, harm reduction and culture among Indigenous youth 13-17 years of age enrolled in an Indigenous-specific after-school program. Key themes were organized with the Indigenous framework of Relationality and included: a) youth understand the negative consequences of AOD use, b) youth appreciated balanced, non-abstinence based AOD education, c) youth described a need for safe opportunities to talk about the impacts of AOD use, and d) youth described a desire to lead and help prevent AOD harms for their future selves and for those in their circle. The third study examined perceptions of Indigenous adults (18+ years of age) affiliated with the same Indigenous after-school program regarding AOD use, harm reduction, and risk factors for youth participants. Findings were organized using a risk environment framework to identify risk factors for youth on micro and macro levels across physical, social, economic, and policy domains. Last, adult-identified risk factors were paired with the previously reported youth recommendations where similar, to establish core content for a community-based, culturally relevant, and theoretically grounded harm reduction intervention for Indigenous youth, inclusive of multigenerational Indigenous perspectives. Results of these studies strongly indicate that harm reduction interventions as an acceptable approach to prevent AOD use and harm among diverse YOC. In addition, findings support culturally relevant harm reduction education as a valuable way to prevent AOD use and harm among Indigenous youth participating in an after-school program. Future research should seek

to explicitly test the hypothesis that interventions designed to enhance relationality among Indigenous youth can serve to buffer risk for AOD use and harm. Finally, meeting the needs of diverse YOC requires a community-based approach. Trust and respect must be established in order to develop a mutually beneficial research partnership with representatives from diverse populations and communities.

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# INTRODUCTION

Young people who experiment with or regularly use alcohol and other drugs (AODs) are at heightened risk for experiencing AOD-related harms. Some youth-specific examples of AOD harms include violence, accidents, overdose, and death (Gruskin, Plafker, & Smith-Estelle, 2001; Jenkins, Slemon, & Haines-Saah, 2017). Furthermore, early onset and frequency of AOD use during adolescence has been linked to increased risks for mental health issues and problematic use into adulthood (Jenkins et al., 2017). In a related study, Nelson, Van Ryzin, and Dishion (2015) found that adolescents with early and rapid onset trajectories of AOD use have an increased risk for problematic use in early adulthood. In addition, adolescents with escalating high school onset trajectories for alcohol and marijuana also have an increased risk for problematic use as they age (Nelson, Van Ryzin, & Dishion, 2015).

Among American Indian and Alaska Native (AI/AN) youth and young adults, AOD harms negatively impact health and wellness. For example, a 2015 national report of substance use and mental health indicators found that past-year alcohol and substance use disorders among AI/AN individuals 12 years of age and older were higher than national averages (SAMHSA, 2017). In addition, the Centers for Disease Control and Prevention (CDC, 2019) indicates AOD use among AI/AN people as an HIV risk factor specific to these groups, in comparison to other racial and ethnic groups. This is attributed to the effects of AODs, which can impair judgment and lead to engaging in risk behaviors, in tandem with data that indicate AI/AN populations tend to use AODs at a younger age, use them more often, and use them in higher quantities, all of which can increase risk for infection (CDC, 2016; CDC., 2019). Given the risks associated with AOD use among youth, specifically AI/AN youth, interventions are needed to meet their unique cultural, social, and developmental needs, including the needs of those who may have already experimented with or are regularly using AODs or who might be experiencing disorder symptoms.

Unfortunately, reducing AOD harms such as HIV infection among racially diverse youth of color (YOC) while also honoring their unique worldviews and cultural experiences can be challenging due to the lack of evidence-based interventions (EBIs) developed specifically for these groups. For example, many current HIV EBIs have limited effects for reducing HIV incidence among YOC because they are not culturally relevant or age appropriate (CDC, 2011; Lehman & Goodenow, 2001). In addition, the CDC compendium of HIV EBIs contains no effective intervention for other diverse high-risk groups such as young men who have sex with other men (YMSM) under 18 years of age. Of the 85 EBIs listed, only 17 were developed for HIV-negative youth. Of those 17 interventions, seven were developed for both young men and women, five were developed for only young women, and three were developed for only African American young men in juvenile detention facilities (CDC, 2015).

In response, this three-paper dissertation describes novel interventions developed for YOC, with an emphasis on AI/AN/Indigenous (hereafter, "Indigenous") youth. All three papers describe youth-specific interventions and strategies that aim to reduce risks for HIV infection, AOD use, and AOD harm (hereafter, "harm reduction interventions"). Paper 1 reports pilot study outcomes for an adapted HIV prevention intervention for racially and ethnically diverse young men who have sex with other men (YMSM) called MyPEEPS (Male Youth Pursuing Empowerment, Education, and Prevention Around Sexuality (Schnall, 2018). The MyPEEPS curriculum was adapted from a group-level, in-person intervention to an individual-level, mobile phone app intervention and was pilot tested on 40 racially diverse YMSM living in New York City, New York; Chicago, Illinois; Seattle, Washington; and Birmingham, Alabama. The research aims were to assess app use, usability, and overall satisfaction among individuals who were assigned male at birth, identified as male (or gender nonbinary, genderqueer, or gender nonconforming), and were attracted to other people assigned male at birth. Other eligibility criteria included the following: (a) was 13 to 18 years of age, (b) had an

HIV-negative or unknown status, (c) spoke English, (d) lived in one of the four U.S. cities, and (e) had access to a smartphone, tablet, or computer. An important demographic outcome for this study was that only one participant across all four study sites identified as “American Indian.” This contributed to a limited understanding on the acceptability of harm reduction-based interventions among Indigenous youth samples, which helped to inform the research questions for the remaining two dissertation papers.

In addition, in 2019 for my general exam, I completed a systematic review of youth-specific harm reduction studies ($n$ = 16) conducted between the years 1997 and 2017. The methods and results were reported in accordance with the preferred reporting items for systematic reviews and meta-analysis (PRISMA) statement (Moher, Liberati, Tetzlaff, & Altman, 2009). Findings from the review indicated harm reduction interventions to be highly acceptable and efficacious in increasing drug knowledge, reducing consumption, and decreasing harm. Findings also suggested a need for increased youth involvement in the creation, implementation, and evaluation of culturally relevant harm reduction interventions. Unfortunately, of the randomized control and quasi-experimental studies included in the review, none were developed for Indigenous youth, nor did any of the studies report outcomes for Indigenous youth samples. Therefore, given the overall limited representation of Indigenous youth participants in any harm reduction study, Papers 2 and 3 focused exclusively on the needs of Indigenous youth to develop an Indigenous-specific youth harm reduction intervention grounded in Indigenous cultural theoretical constructs.

In Paper 2, the perceptions of AODs, harm reduction, and culture are explored among Indigenous youth participants in an Indigenous-specific after-school program called Clear Sky Native Youth Council (hereafter, “Clear Sky”). Clear Sky meets twice a week and offers tutoring, sports practice, and cultural enrichment activities for youth. Clear Sky participants represent a wide range of Indigenous students from elementary, middle, and high schools in the Seattle metro area.

Trust and respect are foundational to working with any Indigenous entity, and prior to advancing to candidacy, I had an established working relationship with Clear Sky as a volunteer academic mentor and health educator. In conversations with the program director, there was interest expressed in developing culturally appropriate AOD prevention materials to address substance use and misuse with youth participants. As a result, an AOD prevention needs assessment was codeveloped and administered to Indigenous study participants in the spring of 2019.

For Paper 2, individual interviews were conducted with 10 youth participants (13–17 years of age) to gain an understanding of their perceptions of AOD use and harm, as well as how harm reduction intersects with Indigenous cultural worldviews. The resulting youth themes were then organized using the Indigenous research framework of *relationality* (Wilson, 2008); taken together, the themes embedded within the framework serve as the theoretical foundation for an Indigenous-specific, youth harm reduction intervention. Using this culturally relevant framework as an intervention foundation helps to promote activities and discussions that are grounded in the intertribal values of maintaining healthy connections to people, places, ideas, and the cosmos, which can help buffer risk for AOD use and harm.

Paper 3 explores the perceptions of Indigenous adults affiliated with Clear Sky (i.e., board members, staff, parents, participants, and academic mentors) who were 18+ years of age. When working from a culturally relevant approach, it is necessary to include the perspectives of Indigenous adults and elders in the design of a youth intervention, as they have cultural wisdom and knowledge gained from lived experience. Using the same semi-structured interview guide, culturally relevant risk factors and suggestions for the harm reduction intervention were collected and organized using a *risk environment framework* (Rhodes, 2002). Using this framework underscores how AOD use and harm are structurally and situationally dependent on the broader environments in which they occur (Rhodes, 2002). The resulting adult-identified risk factors were then compared with the youth

recommendations reported in Paper 2, and, where similar, they were aligned to establish core content for a community-based, culturally relevant, and theoretically grounded harm reduction intervention for Indigenous youth, inclusive of multigenerational Indigenous perspectives.

**Related Theoretical Foundations**

A theoretical underpinning of all three papers relies on the use of an Indigenous worldview perspective (Wilson, 2008). In Paper 1, an *Indigenous worldview perspective* is defined as having an understanding that "knowledge is seen as belonging to the cosmos of which we are a part and where researchers are only the interpreters of this knowledge (Wilson, 2008, p. 38). In other words, researchers have a subjective relationship with research questions, study design, findings, and participants (Wilson, 2008). This perspective allowed for Indigenous cultural elements to be integrated into the educational contents of the adapted MyPEEPS mobile phone intervention to increase its relevancy specifically for AI/AN youth participants. In Papers 2 and 3, the use of an Indigenous worldview perspective centered on the Indigenous research framework of relationality, which is based on the constructs of people, place, ideas, and the cosmos (Wilson, 2008). This framework was chosen due to its focus on healthy relationships from a holistic perspective, which can help to reduce risk for AOD use and harm. Moreover, findings from a systematic review of AI/AN-specific AOD interventions indicated a major area of need was for the use of theory in the development, implementation, and evaluation of AOD interventions that can be measured across multiple AI/AN communities (Walsh & Baldwin, 2015). As a result, establishing a theoretical foundation based on the four constructs of relationality increases the intervention's cultural relevancy for many Indigenous communities, which allows for the development and testing of similar interventions across multiple Indigenous communities.

Another theoretical approach unifying all three papers is *harm reduction*. Harm reduction is rooted in pragmatic and humanist theoretical perspectives and aims to reduce the harmful effects of

AODs and high-risk behaviors by meeting users "where they are at" along a continuum of drug use from abstinence to chemical dependency (Marlatt & Witkiewitz, 2010). According to the Harm Reduction Coalition, there are eight basic principles of harm reduction: (a) accepts drug use as part of our world and identifies strategies to reduce drug-related harms; (b) understands drug use as a complex issue in which users are situated along a continuum of use; (c) centers improved quality of life and well-being for individuals and communities as criteria for successful interventions; (d) calls for a nonjudgmental approach towards users; (e) engages users or those with a history of use to help develop programs and policies intended to serve them; (f) affirms users as the primary agents of change; (g) does not attempt to minimize the real and tragic dangers associated with drug use; and (h) recognizes the realities of trauma, racism, class, and poverty that can affect one's vulnerability to and capacity for addressing drug use (HRC, 2018). Before recording each interview in Papers 2 and 3, a list of common everyday harm reduction examples was read aloud as a warm-up activity. Participants were asked to reflect and discuss their own definition of harm reduction based on the following examples: washing hands to reduce the spread of germs, brushing teeth daily to reduce dental decay, wearing a seat belt to reduce serious injury or death, wearing a bike helmet to reduce injuries to the head, smoking outside to prevent exposing family members to secondhand smoke, and, if planning to drink alcohol, designating a driver to prevent accidents and injuries.

In addition, in Papers 2 and 3, a community-based participatory research (CBPR) design was used to allow for a shared power structure between university researchers and a community-based after-school program. Working from a CBPR approach can foster a respectful and mutually beneficial research partnerships with Indigenous communities (Holkup, Tripp-Reimer, Salois, & Weinert, 2004; Laveaux & Christopher, 2009; Mitchell, 2018; Petrucka, Bassendowski, Bickford, & Goodfeather, 2012; Rasmus, 2014; Tobias, Richmond, & Luginaah, 2013; Walsh & Baldwin, 2015). Clear Sky maintained oversight of all research activities at every stage of the process, and as a result,

Indigenous youth and adult perceptions, concerns, and suggestions regarding AOD prevention, harm reduction, and Indigenous culture were collected and reported on. The use of the aforementioned theories and frameworks was essential for examining the unique cultural- and community-based AOD prevention needs relevant to youth and young adults of color.

**Relevance for Intervention Research**

This dissertation is motivated by the goals of helping to prevent and reduce AOD use and harm among diverse YOC, particularly among Indigenous youth and young adults. Youth-specific harm reduction interventions have shown significant effects for reducing use, increasing knowledge, and reducing experiences of AOD harm. However, there is a dearth of information on the acceptability, feasibility, and efficacy of harm reduction interventions developed for and tested among Indigenous youth samples. Moreover, EBIs designed to reduce risk for HIV and related harms among high-risk YOC groups are often not culturally relevant or age appropriate(CDC, 2011; Lehman & Goodenow, 2001). More research is needed to identify evidence-based strategies and responses to prevent AOD use and harms among diverse YOC that accurately reflect their cultural worldviews and life experiences.

From a social justice perspective, this dissertation identifies and highlights prevention strategies that aim to meet the needs of racially and ethnically diverse youth, specifically Indigenous youth and young adults. Because Indigenous youth have an increased risk for AOD use and harm, it is essential to continue researching and implementing strategies to meet their cultural, spiritual, developmental, and mental health needs. Findings from this dissertation also contribute to the social work knowledge base by describing the steps taken to respectfully work with and engage underrepresented people and communities in the research literature while leveraging academic resources that help to promote their overall community health and wellness.

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# PAPER 1: PILOT TRIAL OF THE MYPEEPS MOBILE APP TO REDUCE SEXUAL RISK AMONG YOUNG MEN IN 4 CITIES

## Background

Young men who have sex with men (YMSM) are at a very high-risk for acquiring human immunodeficiency virus (HIV). In 2016, 92.7% of HIV diagnoses among very young men, ( 13-19 years old) were the results of male-to-male sexual contact (CDC, 2018). In 2016, 6,916 new cases of HIV were diagnosed among YMSM ages 13-24 in the US (CDC., 2018b). Among these new cases, 54% identified as Black/African-American, 25% identified as Latino, 16% identified as White, 2% identified as Asian, and <1% identified as Pacific Islander or American Indian and Alaskan Native (CDC., 2018b). Thus, while the majority of new infections among YMSM occur among Black youth, just under half of incident cases occur in other racial/ethnic groups.

Engagement in high-risk sexual behavior is the main mode of transmission among this demographic group (CDC., 2018a). Relatedly, YMSM who have sex with older MSM face increased risk of HIV infection, as older MSM are more likely to be exposed to and living with HIV (CDC, 2011a). Other social factors that make YMSM more vulnerable to becoming infected with HIV include stigma, homophobia, and racism, which cause many YMSM to feel rejected and isolated (CDC, 2011a, 2011b; Coalition, 2008; Garofalo, Wolf, Kessel, Palfrey, & DuRant, 1998; Resnick et al., 1997) and, as a result, do not disclose their sexual orientation (CDC, 2003) or seek HIV prevention services (CDC, 2011a). Moreover, access to youth-centered HIV prevention services is limited and often inadequate (CDC, 2011b; Lehman & Goodenow, 2001). Importantly, many current HIV prevention interventions and education programs have little effect on reducing HIV risk in YMSM as they lack age-appropriate, culturally-sensitive materials that address the needs of YMSM (CDC, 2011b; Lehman & Goodenow, 2001).

Despite biomedical advances in HIV prevention, there remains a dearth of evidence-based

HIV prevention interventions for racially and ethnically diverse YMSM. The current CDC compendium of evidence-based and best practices for HIV prevention has no interventions that have shown efficacy among YMSM under the age of 18 years. The CDC compendium has identified 85 effective behavioral interventions (EBIs) (CDC, 2015). Only 17 EBIs were developed for HIV-negative (or unknown status) youth. Of these, five were developed and tested with young women, seven were developed for both young men and women, and three were developed for young men in juvenile justice facilities or targeted for African-Americans only. We sought to adapt to mobile and then test feasibility and efficacy of an HIV prevention intervention for diverse racial/ethnic populations of YMSM called MyPEEPS (Male Youth Pursuing Empowerment, Education, and Prevention around Sexuality) (R. Schnall, Kuhns, L., Hidalgo, M., Powell, D., Thai, J., Hirschfield, S., Pearson, C., Ignacio, M., Bruce, J., Batey, D., Radix, A., Belkind, U., Garafolo, R., 2018)

The MyPEEPS curriculum was initially developed as a manualized, in-person, group-based intervention comprised of six modules focusing on key intermediate social and personal factors related to sexual risk taking among YMSM, including sexual health knowledge (e.g., correct way to use a condom), self-efficacy for safer sex, interpersonal communication skills, and behavioral skills. It was tested with 101 diverse (23% white, 39% black, 27% Latino, 12% other) YMSM, ages 16-20 years and demonstrated evidence of feasibility, acceptability, and preliminary efficacy in reducing sexual risk behaviors (Hidalgo et al., 2015). Importantly, key difficulties with the group-based intervention included coordination of youth willing to participate in a group-based intervention and difficulty with the travel to access the group-based intervention (Hidalgo et al., 2015). In response, we have adapted the MyPEEPS curriculum from a face-to-face, group-based intervention to an individual-level mobile responsive-driven web-based intervention to: 1) reach high-risk YMSM at a relatively low cost (Chiasson et al., 2006; Pequegnat et al., 2007; Stall & van Griensven, 2005), 2) engage YMSM where they meet sex partners (e.g., on the Internet) (Rosser et al., 2009), and 3)

enable YMSM to receive a behavioral intervention on a computer, tablet, or smartphone on their own schedule and in a private setting (Wolitski, Gomez, & Parsons, 2005).

In adapting the MyPEEPS intervention into a mobile app, we used a series of methodologies, including expert panel review, weekly team meetings with the software development company, and in-depth interviews with targeted end-users (R. Schnall, Kuhns, L., Hidalgo, M., Powell, D., Thai, J., Hirschfield, S., Pearson, C., Ignacio, M., Bruce, J., Batey, D., Radix, A., Belkind, U., Garafolo, R., 2018) The research and software development team worked to ensure the adaptation stayed true to the original content, while increasing the level of engagement through activities and games (5-10 minutes per activity) and shortening the amount of material overall for mobile delivery. In-depth interviews were audio-recorded, transcribed verbatim, and analyzed using a directed content analysis approach (Hsieh & Shannon, 2005). Findings from interview data analysis were used to adapt the MyPEEPS content into a mobile app intervention (R. Schnall, Kuhns, L., Hidalgo, M., Powell, D., Thai, J., Hirschfield, S., Pearson, C., Ignacio, M., Bruce, J., Batey, D., Radix, A., Belkind, U., Garafolo, R., 2018). Lastly, we conducted two usability evaluations: a heuristic evaluation with informatics experts to identify any violations of usability principles and end-user testing with 20 young males (15-18 years of age) to identify any obstacles with use of the app (Cho, 2018). The final version of the app includes 21 activities divided into four modules. Four characters, representing composite profiles of racially and ethnically diverse YMSM or "Peeps" (featured in the original version of the intervention) were integrated into app activities.

This paper describes the results of the pilot study testing the MyPEEPS Mobile intervention, a web application, accessible by smartphone or other web-enabled devices for racially and ethnically diverse very young MSM ages 13-18 years. The goals of the pilot study were to: a) understand app use and usability, b) assess the acceptability of MyPEEPS Mobile dosing and content across diverse

very young MSM, and c) gain direct feedback from participants about whether and to what degree the MyPEEPS Mobile system worked as intended.

## Methods

### Recruitment, screening and enrollment.

We conducted a six-week, pretest-posttest pilot study of the MyPEEPS Mobile intervention in spring 2018. Study team members from Birmingham, AL, Chicago, IL, New York City, NY, and Seattle, WA, used both convenience and participant referral to recruit ten participants at each site into the pilot study, for a total of 40 participants enrolled. We recruited individuals who were assigned male at birth, identified as male (or gender non-binary, genderqueer, or gender non-conforming) and were attracted to other people assigned male at birth. Other eligibility criteria for enrollment included: a) 13-18 years of age, b) HIV negative or unknown status (self-report), c) English-speaking, d) lives in either NYC, Chicago, Birmingham or Seattle metro area, and e) access to a smart phone, tablet or computer. The study protocol was approved by the central IRB at Columbia University Medical Center. We obtained written informed assent (under 18 years)/consent (18 years) for all study participants with a waiver of parental permission.

### Secure web-based baseline assessment.

We collected data at baseline and at post-intervention (6-week) visits in both self-reported and interviewer-administered electronic format. We used Qualtrics software, which included demographic measures as well as assessment of usability and satisfaction. Dosage of the intervention was measured through reports of participation interaction with the app via reports pulled directly from the MyPEEPS Mobile app.

## Study Measures

### App use.

To measure intervention exposure, we recorded the total number of participants who completed all four modules in the MyPEEPS app and the number of days to completion.

**Usability.**

We measured participants' perceived usability of the app using two validated usability measures. The first scale, the Health Information Technology Usability Evaluation Scale (Health-ITUES) (R. Schnall, Cho, & Liu, 2018)  is a customizable questionnaire with a four-factor structure and consists of 20-items rated on a five-point Likert scale from *strongly disagree* (1) to *strongly agree* (5). The 20-item scale is comprised of four subscales: (1) impact, (2) perceived usefulness, (3) perceived ease of use, and (4) user control. Impact represents the system impact on daily life, perceived usefulness evaluates task accomplishment through system use, whereas perceived ease of use and user control capture user-system interaction. The overall Health-ITUES score was the mean of all the items with each item weighted equally, whereas a higher scale value indicates higher perceived usability of the app.

The second measure we used to assess app usability was the third version of the (Post-Study System Usability Questionnaire (PSSUQ) (Lewis, 2002). The PSSUQ is an instrument for assessing user satisfaction with system usability, developed as a usability assessment tool specifically for use in the context of scenario-based usability testing (Lewis, 1992). The PSSUQ consists of a 16-item survey instrument to assess system usability on a scale ranging from 1 (*strongly agree*) to 7 (*strongly disagree*), with a neutral midpoint. A lower score indicates higher perceived usability of the app.

**Procedures**

Once consent was obtained and completion of baseline assessments occurred, participants were accessed the web-app at: https://app.mypeepsmobile.org/login. Participants created a username and created a secure password. Participants were then given six weeks to complete. The app included 21 mobile app activities divided into four sequential modules or "PEEPScapades.": 1)

Intro: introduced participants to the program; 2) #realtalk: participants explored sexual risk scenarios, drug and alcohol use, social vulnerability and HIV knowledge; 3) P Woke Up Like This: participants learn about HIV testing, HIV/STI risk behaviors, and steps for effective condom use; 4) Making Tough Situations LITuations: illustrated how intense emotions influence behavior and described strategies to manage stigma (R. Schnall, Kuhns, L., Hidalgo, M., Powell, D., Thai, J., Hirschfield, S., Pearson, C., Ignacio, M., Bruce, J., Batey, D., Radix, A., Belkind, U., Garafolo, R., 2018). Study participants logged in at their convenience; however, they were not able to access the subsequent module until the previous module had been completed. Participants were not allowed to complete more than two modules per week to promote absorption of the intervention material. Participants completed the first PEEPScapade (activities 1-4) at the baseline visit.

**Follow-Up Assessment**

After six weeks, participants scheduled a follow-up visit with a study team member to complete any unfinished modules and the post-intervention assessment, including the Health-ITUES, PSSUQ, and a debriefing interview. During the interview, staff reviewed each MyPEEPS Mobile module with the participant and asked follow-up questions pertaining to relevance, self-efficacy, comprehension, and technical difficulties in understanding the topic areas. The debrief interview was audio-recorded and answers were also typed into a data standardized collection form. The goal was to collect critiques of the material, content, delivery methods, and to identify subject matter that should be included to enhance relevance and efficacy for the full randomized trial of MyPEEPS Mobile intervention.

**Analysis**

We used descriptive statistics to analyze the study sample demographics and app use. Health ITUES scores were calculated as the mean of the 20-item scale as well as the mean scores of each of the four sub-scales: (1) quality of work life, (2) perceived usefulness, (3) perceived ease of use, and

(4) user control. The PSSUQ scores were calculated as the mean of the overall score as well as the mean of each of the sub-scales: system usefulness, information quality, and interface quality. Qualitative analysis of the interview data was completed through the use of open coding by segmenting data into meaningful expressions and organizing them by themes (Corbin & Strauss, 1990).

**Results**

**Study sample demographics.**

Our study sample comprised of 40 YMSM, 15-18 years of age, with a mean age of 17.15 (SD = 0.88). Study participants self-identified their race/ethnicity as American Indian (N=1), Asian (N=5), Black (N=12), Hispanic/Latinx (N=10), White (N=10) and multi-racial (N=2). Sexual orientation was reported as 67.5% (27/40) "only gay/homosexual," 12.5% (5/40) "mostly gay/homosexual", 17.5% (7/40) identified as "bisexual," and 2.5% (1/40) "something else." Only two study participants (5%) had ever dropped out of school. Additional study sample demographics are presented in Table 1.

**Table 1.1. Education, Living Status, Primary Language, Country of Origin among 40 MyPeeps Pilot Participants by Study Site.**

| | **Total n=40** | **Birmingham n=10** | **Chicago n=10** | **New York n=10** | **Seattle n=10** |
|---|---|---|---|---|---|
| **Education** | | | | | |
| 8th Grade | 3 (7.5) | 0 (0) | 1 (10) | 1 (10) | 1 (10) |
| Some high school | 28 (70) | 8 (80) | 6 (60) | 7 (70) | 7 (70) |
| High school diploma/GED | 5 (12.5) | 1 (10) | 3 (30) | 0 (0) | 1 (10) |
| Some college | 4 (10) | 1 (10) | 0 (0) | 2 (20) | 1 (10) |
| **Live with in past 30 days** | | | | | |
| Parents and/or step-parents | 26 (65) | 7 (70) | 4 (40) | 8 (80) | 7 (70) |
| Relatives – aunt, uncle, etc. but NOT parents | 3 (7.5) | 1 (10) | 1 (10) | 0 (0) | 1 (10) |
| Foster Care Parents | 1 (2.5) | 0 (0) | 1 (10) | 0 (0) | 0 (0) |

| | | | | | |
|---|---|---|---|---|---|
| An adult friend(s) of family | 2 (5) | 0 (0) | 2 (20) | 0 (0) | 0 (0) |
| Friends of yours w/no adults present | 5 (12.5) | 1 (10) | 2 (20) | 2 (20) | 0(0) |
| On your own | 2 (5) | 0 (0) | 0 (0) | 0 (0) | 2 (20) |
| Someone else | 1 (2.5) | 1 (10) | 0 (0) | 0 (0) | 0 (0) |
| **Primary Language** | | | | | |
| English | 32 (80) | 10 (100) | 8 (80) | 7 (70) | 7 (70) |
| Spanish | 5 (12.5) | 0 (0) | 1 (10) | 3 (30) | 1 (10) |
| Vietnamese | 1 (2.5) | 0 (0) | 0 (0) | 0 (0) | 1 (10) |
| Something else | 2 (5) | 0 (0) | 1 (10) | 0 (0) | 1 (10) |
| **Born in US** | | | | | |
| Yes | 37 (92.5) | 10 (100) | 10 (100) | 9 (90) | 8 (80) |
| No | 3 (7.5) | 0 (0) | 0 (0) | 1 (10) | 2 (20) |

**App Use and Retention**

Participants were given six weeks to complete the app before their follow-up visit. Across all four sites, 25 of 40 (62.5%) completed all of the modules prior to the follow-up visit. Of those who completed the app prior to the follow-up visit, it took the kids an average of 28.85 days to complete use of the app. There was a significant difference in the participants who completed the app modules by site (p=.033) with Birmingham having the smallest percentage of completers across sites. There was no significant difference (p=0.693) in those who completed the app by racial/ethnic characteristics. App use results are presented in Table 2 with a breakdown by each study site. During the pilot study, there was not a reminder system embedded in the app to remind participants about their need to complete the app modules.

**Table 1.2. MyPEEPS App Use Prior to the Follow-Up Visit among 40 Pilot Participants by Study Site.**

| | **All Sites n=40** | **Birmingham n=10** | **Chicago n=10** | **New York n=10** | **Seattle n=10** |
|---|---|---|---|---|---|
| **Completed App, n (%)** | 25 (62.5) | 4 (40) | 6 (60) | 8 (80) | 7(70) |

| Days to Complete Mean (SD) | 28.85 (21.69) | 43.75 (44.07) | 29.43 (12.39) | 24.63 (14.87) | 24.57 (19.59) |
|---|---|---|---|---|---|

Usability of App is reported in Table 3. Across all four sites, the Health-ITUES scores for overall usability and each of the sub-scales ranged from 4.19 – 4.73 with a score of 5 being the highest score, indicating a high perception of usability of the MyPEEPS Mobile app. Similarly, the scores on the PSSUQ indicated high usability of the app with scores ranging from 1.80 - 2.08. The highest score on the PSSUQ is a score of 7 indicating a usability disaster and a score of 1 reflects a perfectly usable system. The Health-ITUES and PSSUQ are inversely proportional to each other, meaning higher scores on the Health-ITUES and lower scores on the PSSUQ indicate high usability standards. Results from both scales show similar findings which suggests the app is highly usable.

**Table 1.3. Usability, Mean (SD) Assessment among Pilot Participants at Follow-Up Visit by Study Site.**

| | All Sites n=35 | Birmingham n=8 | Chicago n=9 | New York n=10 | Seattle n=8 |
|---|---|---|---|---|---|
| **Health-ITUES** | | | | | |
| Overall | 4.52 (0.49) | 4.64 (0.41) | 4.72 (0.26) | 4.6 (0.37) | 4.08 (0.68) |
| Impact (daily life) | 4.54 (0.57) | 4.63 (0.70) | 4.78 (0.33) | 4.67 (0.27) | 4.04 (0.70) |
| Perceived Usefulness | 4.51 (0.56) | 4.50 (0.63) | 4.75 (0.35) | 4.63 (0.40) | 4.08 (0.68) |
| Perceived Ease of Use | 4.73 (0.43) | 4.88 (0.21) | 4.93 (0.14) | 4.68 (0.42) | 4.40 (0.62) |
| User Control | 4.19 (0.85) | 4.67 (0.47) | 4.19 (0.71) | 4.30 (0.73) | 3.58 (1.16) |
| **PSSUQ** | | | | | |
| Overall | 1.93 (0.81) | 1.65 (0.72) | 1.58 (0.45) | 1.91 (0.76) | 2.63 (0.94) |
| System Quality | 1.80 (0.78) | 1.50 (0.61) | 1.39 (0.37) | 1.90 (0.80) | 2.42 (0.90) |
| Information Quality | 2.03 (0.87) | 1.73 (0.65) | 1.74 (0.57) | 1.95 (0.90) | 2.75 (1.00) |
| Interface Quality | 2.08 (1.16) | 1.88 (1.45) | 1.70 (0.72) | 2.00 (0.94) | 2.79 (1.37) |
| * NOTE: Health-ITUES scores range from 1-5 with higher values indicating better usability; PSSUQ scores range from 1-7 with lower values indicating better usability. | | | | | |

**Follow-up Interview Data**

Interview data reflect several themes related to accessibility, usability and engagement, as well as impact on sexual health knowledge and behavior and awareness in risky contexts.

**Accessibility and ease of use and engagement.**

A NYC participant comment was representative of many comments regarding the accessibility and concreteness of language in the app:

Everything is in vivid detail…everything was very easy to understand. I felt like the – it was very simple, like the language was very simple, but it was really specific at the same time, which was good. And a lot of times they use slang, which is good also, because a lot of people, even people who, let's say aren't into school, they could still use this app because it's understandable what it's trying to tell you (NYC).

Another participant described a high level of engagement with the educational content app:

Going through the whole game and then looking back on the progress that I made, I think that I actually learned a lot" (Chicago). One NYC participant explained, "I just want my friends to use the app, I loved it! I was trying to get them to come, but they just turned 19…I told all my friends and like my brother's friends who are gay…I tell them, use the app whenever it comes out, it's pretty cool (NYC).

**Sexual health knowledge and risk reduction.**

Participants reported an impact of the intervention on knowledge of: 1) biomedical HIV risk reduction approaches (eg. post-exposure prophylaxis (PEP) and pre-exposure prophylaxis (PrEP)) and 2) sexual risk behavior, both of which are key components of the app.

**PrEP and PEP.**

A participant from NYC explained learning about PrEP for the first time:

I didn't even know there was a medication to prevent, to lower the risk of HIV and like now that I do, like I always tell people…there is this medication out there, it's just that people don't know it. They don't teach this stuff in health class (NYC).

Another YMSM from Seattle described specific prevention information he retained:

Knowledge that I did gain from this is about post-exposure prophylaxis. Because I didn't know that. I didn't know exactly how it worked. I just like if that you were raped or you went through a dangerous situation…and you want to make sure that there's the lowest chance of you getting HIV that you talk to a doctor, you get post-exposure prophylaxis within 3 days of the incident and then you go through that, I believe a month, is what the app said (Seattle).

A participant in Chicago also commented on the PrEP resources provided:

I thought the activities were pretty easy and straightforward to complete…most of them gave a lot of useful information and at the end, they would give, some were phone numbers or websites were you could locate HIV testing, where you could get PrEP…and I thought that was really useful (Chicago).

**Sexual risk behavior**.

Another participant described how he believed that the app may change his sexual risk behavior. He said:

Coming from someone who typically did not use protection when engaged in sexual activities, I started using protection during sexual activities...because of the app. I learned a lot of different consequences, as well as other things you can get from not using protection…I guess I just learned more about myself (Birmingham).

Another participant described adopting safer-sex practices:

Well I can show more restraint now and for example, just last night, I was hanging out with someone that I'm really into and we were close to having sex, but I told him no because we didn't have a condom, I don't know his status and I don't know my own either and I don't even know if he knows his. I've actually been able to share some of the information with another friend of mine (Birmingham).

A 15-year-old youth from Seattle described how he is going to change his risk behaviors and detailed:

> I'm definitely not going to do it with people who are drunk or stoned…and also make sure that I definitely have a condom on me or like, make sure that I definitely know…they are tested and make sure I don't get any HIV or anything (Seattle).

**Contexts of sexual risk: substance use.**

A Chicago participant described the value of learning about the harmful effects of substance use. He stated:

> I learned a lot. I had no knowledge at all of poppers. I think that was really the one that stood out to me…and it's funny because I had done this activity…learned about them and then a friend of mine mentioned them. It's just something that I'm so glad I learned about on the app beforehand because had I learned about them from my friend as a source, then I'm sure I would have gotten a very one-sided explanation and description of them. And so I was really thankful to learn about the dangers (Chicago).

Another participant described the value of learning the signs of intoxication:

> I knew about drugs but didn't know how to identify when someone is under the influence…or what this or that could potentially do if I really used the wrong way…so I think that was very good (Birmingham).

Another participant described the value of learning about high-risk situations:

> We get a lot of that (drug and alcohol information), and I felt it was good, because you don't think about it in a sexual setting. They don't really do a lot of relation between drugs and sex…none, actually, in school, so it's good to actually have that somewhere laid out for you. Because I hadn't thought about it (Birmingham).

**Stigma related to minority stress.**

One participant appreciated the content describing the realities of coping with stigma. He stated:

> I personally really enjoyed the ways to manage stigma…it put into words what people, in this community face and like what they actually do to kind of cope with those things… that are like, not necessarily talked about (NYC).

Another participant described the immediate lessons learned from the activity:

> I think there's something reassuring about seeing a multitude of ways to manage stigma…it was comforting because I went from having sort of zero concrete ideas…on how to handle stigma to having four that I can access at any time if I need (Seattle).

Lastly, one participant described how the content reflected stressful situations he experienced in high school. He stated:

> I related to a lot of these activities in my personal life and I was thinking when I was in a locker room in high school and you know a lot of the guys would mess around, like 'oh he's gay," not me, they were talking about someone else…like behind the scenes. The gay one. 'Don't let him see you.' You know and I was like bro, '(that's) ignorant (Chicago).

## Discussion

Our pilot study provided very useful information on the ease of use, usefulness and potential impact of the MyPEEPS app on the proposed target population of YMSM. In the context of system development and technology acceptance, our end-users found the app to be extremely useful, easy to navigate and reported it would likely have an impact on their daily lives. Participants provided

salient information on the knowledge gains achieved by the app and their plans to potentially change their sexual behaviors which is the ultimate goal of the MyPEEPS intervention.

The primary goal of this pilot study was to inform the future use of this app in a multi-site randomized control trial (RCT), and we learned a number of important lessons which will be incorporated into our future trial. First, in order to maintain engagement with the app, participants will require reminders to use the app during the intervention period of the trial. Only 25 kids completed all of the modules prior to the follow up visit; however, 35 kids did attend their follow-up study visit. Therefore, study retention is not equivalent to app use and so both of these areas need to be monitored during our trial.

Second, participants did have technical difficulties using the app which were resolved by the end of the pilot study but complicated participants use during the pilot. As a result, we allowed the participants (N=10) to complete the modules at the follow-up study visit. This allowed us to collect more robust data during our follow-up interviews with participants. Interestingly, participants at the Birmingham site reported some of the most technical difficulties which may have contributed to their lower app use, with only four participants completing use of the app.

In addition to implementing reminder texts, phone calls or emails during the trial to remind participants to use the app, we also gained important information on explaining to study participants about the functionality of a web-app and its limitations. More specifically, many of the study participants during the pilot study tried to use the MyPEEPS app when moving into and out of Internet connectivity, and, thus, their information did not save to the app and they would become frustrated when they could not connect. Initially, we did not explain this to participants at enrollment but quickly learned that this was essential information during the onboarding process to overcome the perception of technical difficulties.

## Conclusion

This pilot study supports the use of the MyPEEPS app in a future trial. Overall, participants found the app to be highly usable and has the potential to positively impact daily life. Lessons learned from the pilot related to reminder systems and anticipatory guidance about Internet connectivity when using the app will be incorporated into study procedures for our multi-site trial.

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# PAPER 2: ESTABLISHING CULTURALLY RELEVANT THEORETICAL FOUNDATION FOR INDIGENOUS YOUTH HARM REDUCTION INTERVENTION

## Background

In the United States, alcohol and other drug (AOD) use among youth populations remains a pressing social issue. According to the 2018 National Survey of Drug Use and Health, in the past year approximately 17% of youth (ages 12 to 17) and 39% of young adults (ages 18 to 25) misused marijuana, cocaine, hallucinogens, prescription medications, heroin, and/or inhalants (Substance Abuse and Mental Health Services Administration [SAMHSA], 2019). In the same year, youth and young adults reported current alcohol use (9% and 55%, respectively), reported binge drinking in the past month (4.7% and 35%, respectively), and reported heavy drinking in the past 30 days (0.05% and 9%, respectively; (SAMHSA, 2019). Heavy alcohol use is defined as five or more drinks (four or more drinks for females) on the same occasion on five or more days in the past 30 days (SAMHSA, 2019).

Young people who experiment with or who regularly use AODs are at heightened risk for experiencing AOD-related harm. Some examples of AOD harm among youth include violence, accidents, overdose, and death (Gruskin, Plafker, & Smith-Estelle, 2001; Jenkins, Slemon, & Haines-Saah, 2017). Furthermore, harms such as overconsumption and consumption of drugs with unknown potency or contents (i.e., street drugs that are contaminated or "laced") can also negatively impact the health of youth. Moreover, early onset and frequency of AOD use during adolescence has been linked to an increased risk for mental health challenges and problematic use in adulthood (Jenkins et al., 2017). In a related study, Nelson, Van Ryzin, and Dishion (2015) found that adolescents with early and rapid onset trajectories of use have an increased vulnerability to developing problematic AOD use in early adulthood. Equally as important, adolescents with

escalating high school onset trajectories for alcohol and marijuana also have an increased vulnerability to developing problematic use as they age (Nelson, Van Ryzin, & Dishion, 2015).

Among American Indian and Alaska Native (AI/AN) youth and young adults, AOD harms such as alcohol and substance use disorders occur at higher rates than national averages. In 2015, a national report of substance use and mental health indicators found that past-year alcohol use disorders among AI/AN individuals 12 years of age and older were higher in comparison to national averages among individuals 18–25 and 26–44 years of age (8% and 6%, respectively; (SAMHSA, 2017). In the same year, the percentage of AI/AN individuals with a past-year drug use disorder (12 years of age and older) was higher than national averages for those 12–25 and 26–44 years of age (4% and 3%, respectively; (SAMHSA, 2017). Furthermore, the Centers for Disease Control and Prevention (CDC) indicates AOD use among AI/AN people as an HIV risk factor specifically among these groups in comparison to other racial and ethnic groups. This is attributed to the effects of AODs, which can impair judgment and lead to engaging in risk behaviors, in tandem with data that indicate AI/AN populations tend to use AODs at a younger age, use them more often, and use them in higher quantities, all of which can increase risk for infection (CDC, 2016; CDC., 2019).

Moreover, among AI/AN youth, there are culturally specific risk factors that increase risk for AOD use and harm. Using national data sets, Stanley and Swaim (2015) examined AOD use onset for AI youth living on or near reservations compared with White youth residing in similar socioeconomic conditions and attending the same schools. The results indicated that AI youth initiated using AODs significantly earlier than their White counterparts (Stanley & Swaim, 2015). In another study exploring a related issue, adverse childhood experiences among AI youth living on a reservation in the plains, results indicated that experiences of discrimination, neglect and abuse, historical-loss-associated symptoms, and witnessing violence against one's mother were common among the sample of AI youth and were strongly linked to poly-drug use, post-traumatic stress

disorder symptoms, depression symptoms, and suicide attempts (Brockie, Dana-Sacco, Wallen, Wilcox, & Campbell, 2015). Given the myriad of risks for AOD use and harm among AI/AN/Indigenous (hereafter, "Indigenous") youth, interventions are needed to prevent use and harm, inclusive of the needs of Indigenous youth who may be experimenting with, regularly using, or already experiencing AOD use disorder symptoms.

An effective approach to prevent AOD use and harm among youth is *harm reduction*. Harm reduction is rooted in pragmatic and humanist theoretical perspectives and aims to reduce the dangerous effects of AODs by meeting youth, "where they are at," along a continuum of use ranging from abstinence to chemical dependency (Marlatt & Witkiewitz, 2010). Harm reduction interventions have shown significant effects in reducing drug use among youth (Baer, A. W, & Marlatt, 2001; Champion et al., 2016; Elliot et al., 2004; Lester, 2014; McBride, Farringdon, Midford, Meuleners, & Phillips, 2004; Midford et al., 2012; Midford et al., 2014; Monti et al., 1999; Newton, Teesson, Vogl, & Andrews, 2010; Paschall, Antin, Ringwalt, & Saltz, 2011b; Tebes et al., 2007; L. Vogl et al., 2009b; L. E. Vogl, Newton, Champion, & Teesson, 2014), significant effects in increasing youth's drug knowledge (i.e. classifications, effects, and harms) (Champion et al., 2016; Elliot et al., 2004; Hongthong & Areesantichai, 2016; McBride, Midford, Farringdon, & Phillips, 2000; Midford et al., 2012; Midford et al., 2014; Newton et al., 2010; L. Vogl et al., 2009b; L. E. Vogl et al., 2014), and have significantly reduced drug-related harm among youth (Baer et al., 2001; Lester, 2014; McBride et al., 2004; Midford et al., 2012; Midford et al., 2014; Monti et al., 1999; Newton et al., 2010; Paschall, Antin, Ringwalt, & Saltz, 2011a; L. Vogl et al., 2009a). However, there are gaps in the literature on the development, acceptability, and effectiveness of harm reduction interventions developed for and tested among Indigenous youth samples. Given the dearth of information as it relates to Indigenous youth and harm reduction, this current study explores the AOD prevention

needs of Indigenous youth towards the development of a culturally relevant, theoretically grounded harm reduction intervention.

In a systematic review of substance abuse prevention programs targeting AI/AN youth and adults, Walsh and Baldwin (2015) indicated that a major area of need across all programs was the appropriate use of theory in the development, implementation, and refinement of culturally relevant AOD prevention efforts that can be measured across multiple AI/AN communities. In this current study, we use both grounded and existing theories to honor Indigenous youth voices and their lived experiences as well as to organize and report findings. Grounded theory approaches are used to identify key themes in the data centered on youth AOD prevention needs (Strauss & Glaser, 1967). Youth themes are then organized using the Indigenous framework of relationality (Wilson, 2008) to increase relevancy and allow for meaningful interpretation and reporting of findings (Walsh & Baldwin, 2015). The relationality framework underscores and centers Indigenous youth and their healthy connections to people, places, ideas, and the cosmos. This framework also serves to guide the development of culturally relevant activities to strengthen youth's connection to themselves and the world around them while simultaneously working to prevent and reduce AOD use and harm. Because this framework is grounded in an Indigenous worldview perspective, development of similar interventions in other Indigenous communities using this framework would allow for a systematic measurement of feasibility, acceptability, and effectiveness across studies.

Furthermore, additional findings from Walsh and Baldwin (2015) as well as others have underscored the importance of utilizing community-based participatory research (CBPR) approaches as a respectful method to engage and collaborate with Indigenous communities, to assess programmatic needs, and to identify and integrate AI/AN cultural elements into the program (Holkup, Tripp-Reimer, Salois, & Weinert, 2004; Laveaux & Christopher, 2009; Mitchell, 2018; Petrucka, Bassendowski, Bickford, & Goodfeather, 2012; Rasmus, 2014; Tobias, Richmond, &

Luginaah, 2013; Walsh & Baldwin, 2015). For this current study, a CBPR approach was used to codevelop an interview guide, identify eligible participants, assist with interpretation of results, and assist with dissemination of results. This research aims were to (a) understand the perceptions of AOD use, harm reduction and culture among Indigenous youth 13-17 years of age who are enrolled in an Indigenous-specific after-school program; (b) establish a theoretical foundation for a harm reduction intervention based on youth findings and Indigenous Relationality; (c) report specific content recommendations to include in an Indigenous youth harm reduction intervention.

**Methods**

A programmatic needs assessment centered on Indigenous youth and AOD prevention was codeveloped with the host program's leadership using a CBPR approach. Using this approach allows for a shared power structure between the researcher and the host organization. This shared power structure will allow for the host organization's oversight of research activities (Israel, Schulz, Parker, & Becker, 1998). Furthermore, working from a CBPR approach fosters a respectful, reciprocal, and mutually beneficial research partnership between Indigenous communities and researchers (Holkup et al., 2004; Laveaux & Christopher, 2009; Mitchell, 2018; Petrucka et al., 2012; Rasmus, 2014; Tobias et al., 2013; Walsh & Baldwin, 2015). As a result, Indigenous youth perceptions, concerns, and suggestions regarding AOD prevention, harm reduction, and Indigenous healing strategies will be collected and reported on.

**Participants and Sampling**

In 2008, Urban Native Education Alliance (UNEA) developed Clear Sky Native Youth Council (hereafter, "Clear Sky") in response to the lack of Native-specific cultural, social and academic support for Indigenous youth across the Seattle Metro area. Clear Sky is a youth-driven program of UNEA that meets twice a week and offers dinner, tutoring, sports practice, and cultural enrichment activities. Clear Sky is open to family members of youth, organizes community advocacy

events, and celebrates youth graduates each year with a 100% graduation success rate. Clear Sky is free of charge and includes a wide range of Native students from elementary to high school and their families who reside in Seattle or in the surrounding tribal nations and communities. The research team conducted 10 individual interviews with youth participants of Clear Sky who were 13-17 years of age. A student of any gender identity was eligible to participate. Participants needed to self-identify as Indigenous, read and speak English, hear interview questions, and verbally share their responses.

**Data Collection**

In the spring of 2019, an institutional review board (IRB) application was submitted for the research team to conduct interviews with 10 youth (13-17 years of age) and 10 adults (18+ years of age) at Clear Sky. The university's human subjects division determined that the needs assessment did not meet the federal definition of research and did not require exempt status or an IRB review. Regardless, assent forms were developed and administered to all participants under 18 years of age for signature. Participants were recruited via word of mouth, advertisement in the program's newsletter, and during the start of each afterschool session. Data from the programmatic needs assessment were collected through semi-structured interviews, which took place at Clear Sky in a semiprivate area to promote the safety and comfort of youth in a surrounding familiar to them. Interviews were voluntary and participants were compensated $10 in appreciation. Participants were told if they ended the interview early for any reason, they would still receive compensation. Data collection focused on the following:

*Experiences of AOD prevention*: How would you describe experiences of learning about AOD? (Probe: formal lessons, informal experiences with family, etc.) What were some concepts you remember? Do you think AOD education is needed for Native youth in general, why or why not?

*Harm reduction*: What is your understanding of harm reduction? (Probe: past experiences, attitudes, and beliefs) How do you define harm reduction? Do you think Native youth would be interested in harm reduction? (Probe: family and community interest in harm reduction.)

*Native culture and harm reduction:* Thinking about your community and traditional values, how does harm reduction education reflect your cultural beliefs, norms, or your values? (Probe: Does harm reduction conflict with your personal values?)

*Specific content needs:* What topics you would want to see in a Native-specific drug and alcohol education course? (Probe: relevant cultural teachings and values.)

**Data Analysis**

A grounded theory approach was used to generate themes using concurrent data collection and data analysis procedures to ensure themes were "grounded" in the qualitative data set (Strauss & Glaser, 1967). An inductive thematic analysis allowed for similarities and differences in responses to be highlighted, allowing for unanticipated insights to emerge by identifying, analyzing, organizing, describing, and reporting themes found in the data set (Nowell, Norris, White, & Moules, 2017). Interviews were audio recorded and transcribed verbatim. All identifying information was removed to protect the identity of participants, as they are also members of the urban Indigenous community of Seattle. Transcripts were coded to identify units and segments of data that seemed important or meaningful (Maxwell, 2013). Initial codes were grouped into categories and supported with operational definitions. The codes, categories, and definitions were confirmed by a younger, independent coder who is Indigenous-identified and works in the Indigenous public health arena. Interrater reliability was assessed, and any issues regarding codes, categories, definitions, and interpretations were resolved by a third Indigenous researcher with expertise in Indigenous health and wellness. The raters continued to clarify the categories by comparing original raw data with original research questions, ensuring themes were mutually exclusive yet broad enough to capture a

set of ideas based on direct quotes, to make sure all conclusions were firmly grounded in the data (Lincoln, 1985).

Themes identified across youth interviews were contextually analyzed using an *Indigenous worldview perspective*, which can be defined as having the understanding that "knowledge is seen as belonging to the cosmos of which we are a part and where researchers are only the interpreters of this knowledge" (Wilson, 2008, p. 38). In other words, researchers have a subjective relationship with research questions, study design, data and findings, and study participants (Wilson, 2008). Working from this perspective, the framework of *relationality* (Wilson, 2018) was selected to theoretically ground and illuminate on the findings. Relationality is best described as placing a high value on "the importance of relationships," which exemplifies to the core, "what it means to be Indigenous" (Wilson, 2008). Relationality places emphasis on healthy connections across four constructs: people, places, ideas, and the cosmos. This framework is relevant and applicable to a wide range of Indigenous communities because the number 4, from an Indigenous spiritual perspective, is often considered a sacred number, as it aligns with the four directions (i.e., north, south, east, west), and/or the four dimensions of holistic health (i.e., mind, body, mental, and spiritual). Within a research context, Wilson (2008) defines the four constructs as follows:

*Relations with people*: includes relationships with self, family, community; can provide context upon which new relationships are formed; fostering healthy relationships can lead to mutually beneficial research outcomes.

*Relations with place*: includes relationships with land and environment (physical); knowing the relationships formed with the places we live in (nonphysical); and reducing the space between things to strengthen the relationship. Bringing people and ideas to share the same space via research is ceremonial.

*Relations with ideas*: includes having an inclusive and egalitarian approach to new ideas; and being nonjudgmental, noncritical to new ideas or theories. Relationship building with new ideas means providing new information and then allowing individuals to form their own conclusions.

*Relations with the cosmos*: includes one's internal sense of connection to the universe; connection to a higher being, humanity, and/or the environment. It is an integral aspect throughout Indigenous worldviews; any activity that increases human connection or builds relationships is spiritual.

In addition, specific content recommendations across youth interviews were collected and reported on using the relationality framework. We summarized individual recommendations into a "Suggested Topic" to provide an easy-to-read list of activities and discussion topics. We then categorized each suggested topic within the four constructs of relationality (see Table 1). By organizing youth recommendations using the framework of relationality, we established a menu of culturally relevant activities to promote healthy connections in the lives of young people as a primary strategy to reduce AOD use and harm.

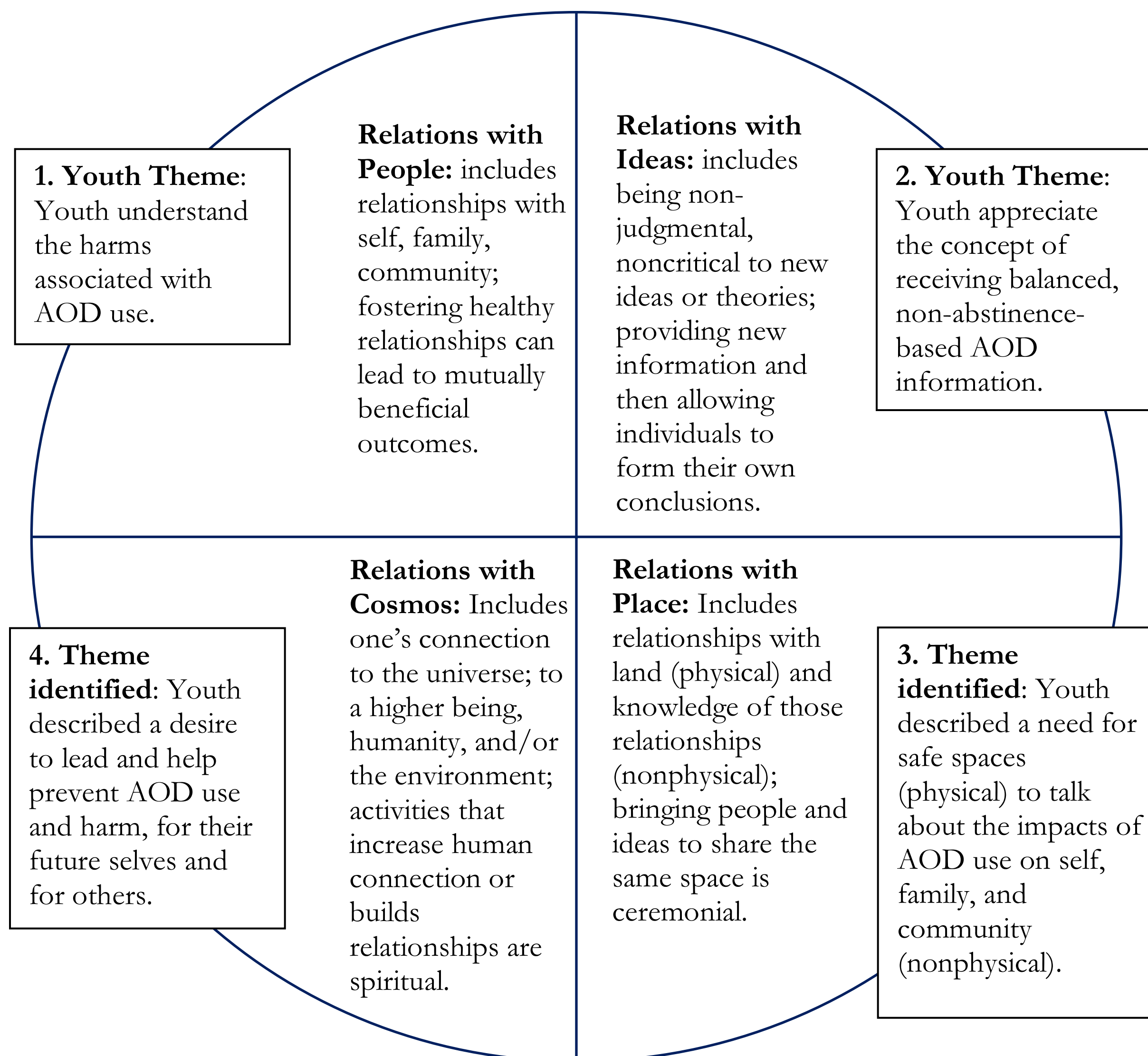
**Results**

In total, 10 Indigenous youth participated in semi-structured, individual interviews. Six participants identified as female, four as male, and none identified as Two-Spirit or transgender. All youth were participants at Clear Sky, enrolled and attending school, and were 13-17 years of age. Youths' tribal affiliations represented a wide range of Indigenous communities and nations, which we do not list to protect their identities. Five youth described receiving curriculum-based AOD education in the sixth grade (n = 3) and in the ninth grade (n = 2). The remaining five participants received very limited or no education via a health or chemistry class (n = 3), by watching a required video (n = 1), or received no AOD prevention education (n = 1).

Four overarching themes emerged as a result of conducting the needs assessment: (a) youth understand the negative consequences of drug use, and (b) youth appreciated the concept of receiving balanced, non-abstinence-based AOD education. Additionally, when asked to describe their perceptions of AOD use in the context of Indigenous communities, (c) youth described a need for opportunities to safely talk about the impact of AOD use on self, families, and community, and (d) youth described a desire to lead and help prevent AOD harms, for their future selves and for those in their circle.

Figure 1 shows the four constructs of relationality as the theoretical foundation for an Indigenous youth harm reduction intervention organized into a circular figure to serve as an easy-to-understand visual representation for youth. Youth themes were then categorized according to the most relevant relationality construct. The youth themes serve to guide the development of activities and educational topics to strengthen youth relationships with people, places, ideas, and the cosmos while simultaneously reducing their risk for AOD use and harm.

**Figure 1.1. Four Youth Themes Organized by the Four Constructs of Indigenous Relationality.**



**Relationality Constructs and Related Youth Themes**

**1. Relations with people: youth understand the negative consequences of AOD use for self and others.**

Youth openly described concern for their peers and family who actively use AODs, as well as their appreciation for healthy connections to friends, family, and community. This demonstrates a cultural understanding of the importance of relationships with others for survival. One youth described a ripple effect of harm if a fatality were to occur as a result of a drug overdose:

> And just doing drugs in general is really bad 'cause you're not affecting just yourself; you're affecting your whole family and friends because if you die, that's affecting everyone in your community, not just you. And now your mom, your dad, like everyone close to you. (Youth 02)

Another youth participant described an advanced understanding on the relational harms AOD use can cause when users do not have access to or are unable to receive treatment:

> Sometimes like having a big heart towards those people [who use drugs], it can get you hurt too. And I feel like that's what happens in a lot of families, that they start to become broken because like they don't really appreciate it. They're not getting like the type of help they need. So they take advantage and it breaks families apart. (Youth 03)

Several participants indicated the importance of learning from role models, particularly from those who have experienced AOD use disorders and have achieved abstinence or sobriety. Youth felt learning firsthand information from former users and people who have become "successful" is beneficial:

> You need a person from like personal experience to like share their inside thoughts, "Oh I've gone through this. If you do, it can be better," type of thing. (Youth 09)

> And we need more, like successful Natives in our community and drugs just limits so much possibility from that. It's just learning about it and knowing how to wait for the right choice and when to make the right choice is very crucial. (Youth 05)

The construct of *people* affirms healthy relationships with self and others, and how those relationships can lead to mutually beneficial outcomes. Most youth indicated an advanced, experiential level of knowledge regarding the potential harms AOD use can cause with self, family, and community. Youth highlighted the value of seeing, hearing, and learning from those with lived experiences of how they overcame challenges with AOD use and misuse.

**2. Relations with ideas: Youth appreciate non-abstinence-based, harm reduction education**

Youth valued harm reduction education because of its balanced, honest, straightforward, practical approach. One youth described the need for harm reduction education to help prevent unintentional harm or accidents:

> No one wants to intentionally harm themselves when . . . or not most people, when they make a decision to do drugs. (Youth 05)

Another participant compared harm reduction education and strategies with Indigenous cultural practices (e.g., prayer) and teachings as integral elements of daily life:

> In harm reduction, you take the responsibility of doing a daily routine, like putting on your seatbelt or brushing your teeth. And then, like Native [cultural] education, you take the responsibility of doing the things you have to do [culturally]. So they both related in those two ways. (Youth 10)

Several youth participants described their interest in learning more about harm reduction because of its intentionality to inform and support, rather than condemn, judge, or dictate:

> I think that if all of us know more about this and are more informed, then the possibility of anyone, their life being ruined because of something with drugs [is prevented], I don't know, I just love that. (Youth 05)

> Well I'm just thinking it would work on me and the people I know that are Native youth. And telling them, "*No* you can't do that," . . . so you're not exactly challenging them, you're just saying, "*If* you do this, just know that you will have these consequences." (Youth 07)

Youth valued the concept of harm reduction, its nonjudgmental approach, and how it relates to Indigenous cultural values. Youth also appreciated the straightforward and practical nature of harm reduction strategies. These findings align with the construct of *ideas* because they support youth's openness to learning new strategies that promote health while simultaneously reducing harm.

**3. Relations with place: Youth describe a need for safe spaces to talk about the impacts of AOD use**

The construct of *place* has two dimensions. One is centered on the physical relationship we have with place; for example, the locations of where we live, the spaces we occupy, and the lands we physically stand on. The other dimension is centered on the nonphysical relationship we have with those places, often in the form of knowledge, memories, experiences, and emotions. One youth summed up both perfectly by describing the harms witnessed while growing up in a home where drugs were used (physical relationship) and the aftereffects and trauma as a result of those experiences (nonphysical relationship):

> They should have a program where it's just comforting that they can reach out and talk to like counseling, especially for kids, because they don't really realize like how

> bad it is. Like, I didn't realize how bad it was growing up. Like the environment I was in and the people around and the stuff they're doing until I got older. 'Cause that's when you start to know better. So it's better to get them young and let them know. Natives, like specifically, they go through the most trauma. There's like a lot of stuff going on in their families and they don't really have a lot of people to reach out to. (Youth 03)

Several youth described experiences of seeing AODs promoted and marketed on their traditional homelands and how that potentially leads to ongoing AOD dependency and harm:

> I think you need it because there's a lot of drug abuse in Native, on the reservations. And liquors are promoted a lot there . . . big cigarette posters on the outside of the one store, there's a lot of cigarette promotion stuff. (Youth 09)
>
> Around our rez, alcohol is a really big problem. There's lots of people that are addicted to alcohol and they think its kind of an escape for them (Youth 07)
>
> Yeah, growing up a lot of my cousins and families on the rez, they would all do that. (Youth 01)

Another participant indicated how racism is connected to "place," and the varying repercussions for drug use in school settings due to race and ethnicity:

> Even if we are in the same, a very similar situation as anyone like, one of the White students, White teenager, we're still at a disadvantage because of ethnicity and if they had done drugs and then maybe got caught or something, they have less repercussions than a Native student. (Youth 05)

Youth participants advocated a need for safe spaces to talk about the negative impact or traumas of AOD use among self, family, and community. Youth described having to grapple with drug use positively promoted on social media, in music, and via advertisements in stark contrast to

the negative aspects of family and relatives who actively use. Youth also acknowledged issues related to historical trauma, trauma, poverty, and racism as integral aspects that contribute to problematic AOD use. These findings support the use of this construct to address issues that youth experience in the places they occupy and have relationships with.

**4. Relations with cosmos: Youth describe a desire to lead and help prevent AOD use and harm, for their future selves and for others.**

Youth indicated the benefits of and the need for training to prepare them for leadership roles to prevent AOD harm for themselves and for those around them:

> In a lot of Native homes, I think a lot of people do that stuff and it does take a toll on their family and drives that person to be more distant from their family and what they need to do. Some kids could have been raised in a drug or alcohol community and that's all they've known and if they go to school and learn about it [harm reduction], they could learn about the things that it could impact on your life and take a toll on, and they could learn not to do it, and that's great. (Youth 10)

> I'd like to learn more to help other people learn and help educate them, the pros and cons. (Youth 02)

One youth cited their own interview process as an example of how they could envision themselves in a helping role for the future:

> I feel like I want to learn about the harm because, how I could like, prevent people from doing that. I wouldn't mind doing that. Just like what you're doing, talking to me. I wouldn't mind doing that. I would like to see interviews like this and I would like to see these kids that did a lot of drug abuse and how they came over it. (Youth 01)

Youth felt harm reduction education would become increasingly important as they age and encounter risky situations. Youth recommend receiving training to become leaders who help to prevent AOD use and harm among their peers and networks. This demonstrates a concern for the future health and wellness of community, which is in alignment with definition of the *cosmos* construct.

**Content-Specific Youth Recommendations**

Table 1 shows the resulting youth recommendations arranged by the four constructs of relationality. We offer a list of suggested topics based directly on youth recommendations to provide an easy-to-read list of identifiable activities and discussion topics. In addition, we also provide supplemental youth quotes to support the list of suggested topics:

**Table 2.1. Suggested Topics for Intervention Organized by Relationality Constructs With Supporting Youth Quotes.**

| Relationality Construct | Suggested Topic | Youth Quotes |
|---|---|---|
| **Relations With People** | • How to care for one's mind, body, spirit, emotions instead of using AODs (alcohol and other drugs) | "The importance of who or what you run to for mental healing, whether if its drugs or a person, or if like the person is a bad influence. Yeah, just home remedies instead of trying to like figure out a different way to heal yourself" (Youth 03). |
| | • The influences of media (music), advertisements, and social media on AOD use | "Making it clear that you are not the media, you are yourself and to remember values. So, teaching values and stuff like that" (Youth 05). |

| | | |
|---|---|---|
| | • Unpacking negative stereotypes<br><br>• How to improve self-esteem<br><br>• How to increase positive self-image | "Like when we learned it [AOD education], we were taught that it's more common among us. Kinda just shows that it's almost inevitable. Just gives off the message that it's more likely it will happen to us than other people, this is the way they make it sound" (Youth 09).<br><br>"I always thought it was normal and then just walking around Seattle, you could see everybody, or like Native park at Pike Place, that's when I really thought it was just normal for Natives to be like that" (Youth 03).<br><br>"I'd like to see a program come through to help Native youth because there are a lot of stereotypes and a lot of people falling into that stereotype and that's not good" (Youth 02).<br><br>"they think that because they don't get good grades or something, then they are the stereotype, but they aren't the stereotype. And I really hope that people learn that" (Youth 05). |
| **Relations With Place** | • What is historical trauma and trauma? | "Maybe the past that our Native people have had with alcohol and drug use and maybe 'don't go on that path' because it's affected other Native people in a bad way and you could teach us, not to go down that path and maybe go on a 'different path'" (Youth 10). |
| | • What does healing look like? | "Like examples of stuff that you could be doing instead of this. You could get a successful person, 'you can be like this instead of being like this, you don't have to do this . . . you can be successful; you can do more things with your life'" (Youth 09). |
| | • Using motivational and inspirational speakers | "We had a couple of speakers [at school]. I think he was a DJ, but he was like wearing his Native regalia stuff and he would show us" (Youth 09). |

| | | |
|---|---|---|
| | • Using a strengths-based approach to teaching | "Traditional teaching is just showing them how, and letting them do it as they can, or nurturing what they're good at when you see them as a young child" (Youth 07). |
| **Relations With Ideas** | • Overview of drugs and alcohol<br><br>• AOD effects on the body and brain development | "Like talk about the aftereffects of what it does to your body and what it does to your mind and what it makes you want to do after. Like if I were to take it, then I would probably do something I don't want to do. And if I drink, I would black out and I don't know what I would've done" (Youth 04). |
| | • Social consequences of influencing next generation of users<br><br>• Social consequences of underage drinking | "How it could affect your brain and how it could affect your life and if you do it around other people, it can make them, when they get older, want to do it" (Youth 01).<br><br>"Underage drinking. Drinking and driving and knowing when to limit yourself" (Youth 08). |
| **Relations With the Cosmos** | • What are the skills of being an effective leader? | "Maybe a 'how-to' on leadership skills and stuff. If you know how to be one of the followers in the community and the leaders, then you'll know more and good choices come from knowing that, understanding that relationship" (Youth 05). |
| | • Role of sacred medicines; for example, sage, cedar, and tobacco<br><br>• What is the difference between use and misuse? | "Like sage. They say when you inhale, you get an instant relief. And you can do that instead of trying to like smoke or light a cigarette or something, or drink" (Youth 03).<br><br>"Like smoking for example, when you light sage—and the smoke carries the prayers up to the Creator. But if you use that in a bad way, it's disrespectful in a way. So I was always taught not to do drugs. 'Cause in the smoke, your bad thoughts can go up with it and that's not really good" (Youth 02). |

| | | |
|---|---|---|
| | | "I learned about the traditional use of tobacco and I learned about abusing the drug, you can still use the drug and not abuse it. And how does it look like if you're not abusing something, like understanding how sacred it is and then taking it for granted is something to know about" (Youth 05). |
| | • What are tribal-specific and/or traditional value systems?<br><br>• How do we use traditional values in a modern world? | "I would like to learn more about cultural beliefs, other peoples' culture, beliefs about how it'll affect their tribe or their beliefs or culture and learn more about my own because I'm not 100% sure" (Youth 02).<br><br>"I know different, there's some tribes that have a list of values and I like learning about those things. I think that always helps even if it's not directly tied to drugs. Again, having a good system of values helps a lot" (Youth 05). |

**Discussion**

Working from the approaches of CBPR, Indigenous relationality, and harm reduction, the purpose of this study was to (a) understand the perceptions of AOD use, harm reduction, and culture among Indigenous youth enrolled in an Indigenous-specific after-school program, (b) establish a theoretical foundation grounded in youth findings and the Indigenous framework of relationality, and (c) report youth-identified content recommendations to include in a youth-specific, Indigenous harm reduction intervention. A CBPR design was used to allow for the involvement of the target audience in the development, implementation, interpretation, and dissemination of study findings. There were four youth themes that were aligned within the four constructs of relationality to illuminate how harm reduction, AOD use, and Indigenous cultures intersect and affect the lives of youth participants.

Overall, youth understand the dangers of any drug use, value harm reduction approaches to education, identified a need for safe spaces to share experiences of trauma and/or drug harm, and

have a desire to help lead and prevent AOD use and harm for themselves and others. Because the constructs of relationality are grounded in an Indigenous worldview perspective, we believe this needs assessment process could be replicated across many Indigenous communities who wish to develop similar harm reduction interventions. In essence, developing a culturally relevant intervention based on youth-identified needs and the four constructs of relationality allows for the development of activities and discussion topics that strengthen the relationships youth have with themselves, their cultural identities, and the world around them while simultaneously helping to prevent and reduce AOD use and harm.

The theoretical foundation developed in this study was generated by using a grounded theory approach. We inductively gathered data from semi-structured interviews, coded and categorized key themes, then organized key themes according to the four constructs of relationality. Alternatively, identifying needs could have been conducted from a deductive approach. In other words, conducting a needs assessment centered around a singular construct (or a subset) can provide structure for a targeted needs assessment focused exclusively on the *relational* needs of Indigenous youth as a form of prevention. This methodological flexibility allows for multiple communities, with varying resources and capacities, to develop localized, culturally appropriate, youth-specific harm reduction interventions using a collectively understood cultural framework. Regarding evaluation, measuring standardized outcomes on the four constructs across multiple studies would allow for systematic testing of acceptability, feasibility, and effectiveness. In addition to standardized measures, this framework also allows for the inclusion of unique, localized, and community-specific content that would not be measured across multiple sites.

Youth themes serve to guide the development of culturally relevant activities and discussion topics. Across youth interviews, relations with people included a common understanding of the connection between using AODs and their potential risks. Youth described learning about AOD

harm via direct experiences in the home, in their communities, and/or in popular media. Relations with ideas included an appreciation for balanced, non-abstinence-based AOD education. This nonjudgmental approach to education is a cornerstone of harm reduction education because it allows for the delivery of accurate and honest information to help individuals make informed decisions in risky situations, regardless of whether they are actively using or not. In addition, relations with place included a need for a safe spaces or dedicated opportunities to safely talk about the impacts of AODs. This theme encompassed both physical and nonphysical relationships to place. In other words, creating a *physical* safe space or designated times to talk about the negative impacts of AODs is actively tending to the *nonphysical* relationship youth have with the places they are from and connected to (e.g., urban Indigenous community, reservation, neighborhood).

There were several noteworthy findings. Primarily, the near-perfect alignment between youth-identified needs and the relationality framework. For example, youth shared their desire for leadership training to help prevent AOD use and harm for themselves and for those in their social circle. This theme was categorized under the construct of *cosmos*, which includes one's connection to the universe, a higher being, humanity, or the environment. This construct defines any activity that aims to increases human connections or builds relationships as spiritual.  Youth shared their vision of receiving leadership training to inform themselves and to help others reduce AOD harm in their lives. This vision is in concert with their appreciation for harm reduction education. For example, by providing education on harm reduction strategies in addition to receiving training on public speaking, youth would more prepared to share prevention messages with those in their circle. Findings from all four constructs overwhelmingly demonstrate a humanitarian concern for their friends, family, and community. As a result, because all four youth themes aligned near perfectly within the four constructs, we believe the framework of relationality will suffice as a culturally

relevant theoretical foundation to inform the development of harm reduction discussions and activities.

Moreover, youth provided salient content recommendations including receiving overviews of AODs and their biological effects, discussing the social and legal consequences of drug use, learning to care for oneself from a holistic perspective, and discussing how AODs are represented in and on popular media. Culturally specific recommendations included learning more about historical trauma and healing, the role of sacred medicines, the difference between use and misuse, and learning about tribal-specific value systems. We consider it important that the issue of negative stereotypes was mentioned throughout youth interviews. This strongly suggests a need for opportunities to unpack or process experiences of and any damaging effects of negative stereotypes.

Another important finding included youth specifically mentioning the value of being taught from a perspective that is nurturing and strengths based. One youth linked this approach to traditional or Indigenous ways of teaching, which, according to the participant, aims to identify inherent strengths "when you see them as a young child." *Strengths-based education* can be defined as a parallel process. First, educators identify and cultivate their own individual skill sets, talents, and abilities, then help students identify their own skills, talents, abilities, and strengths to achieve "previously unattained levels" of individual excellence (Lopez & Louis, 2009). Furthermore, strengths-based education has a foundational goal of transforming students into confident, lifelong learners with an infused sense of purpose. There is a fundamental assumption this potential exists in all students and educators have a responsibility to help students realize it (Lopez & Louis, 2009).

Last, youth recommend the use of Indigenous role models, community members, and known family members to help increase and sustain their interest. At present, youth already interact and learn from a wide range of Indigenous role models and known community members at Clear Sky, as this is a fundamental aspect of program design. Youth receive regular, ongoing educational

and skills-building activities, such as learning about Indigenous social justice movements and learning cultural stories from Indigenous facilitators. Moving forward, the same activities could be facilitated with a stated intent to strengthen and build healthy connections with themselves, others, and their communities as a way to prevent and reduce AOD use and harm.

**Limitations**

Limitations of this study include a small sample size and exclusion of any program participant who were 18 years of age or over. However, study participants included males and females who represented a wide range of Indigenous identities and communities. Youth also reported varied exposure to any drug and alcohol education, including witnessing drug and alcohol use and harm in their community. Another limitation is the sample itself, as it comprised youth who may be more prepared to identify their prevention needs in comparison to Indigenous youth who have never participated in any after-school program and whose needs might require a more intensive approach. In addition, youth may have felt less comfortable sharing with the interviewer, as he had a dual role as an academic mentor and researcher. However, we have enhanced the trustworthiness of the study findings by using an all-Indigenous team in the data collection and data analysis process. The coders all had expertise in Indigenous social work and public health and helped to confirm interpretations of the findings, organize themes, and develop the list of suggested topics.

**Conclusion**

The findings from this community-based, qualitative study support the development of a harm reduction intervention to educate and prevent AOD use and harm among youth attending an Indigenous-specific after-school program. Data from 10 individual interviews was inductively and contextually analyzed using a grounded theory approach within an Indigenous worldview perspective. Youth themes were categorized according to the four constructs of relationality, which includes people, places, ideas, and the cosmos. Grounding our findings in a culturally relevant

framework increases the intervention's relevancy, informs respectful intervention design, and allows for the meaningful interpretation and reporting of outcomes. The resulting alignment of relationality constructs and youth themes indicate that (a) youth understand the harms associated with AOD use (people); (b) youth appreciate balanced, non-abstinence-based AOD education (ideas); (c) youth have a need for safe spaces to talk about the impact of AOD use (place); and (d) youth would like leadership training to help prevent AOD harms for themselves and for others (cosmos). Youth also offered salient content suggestions, including opportunities to learn more about AODs and related social consequences; learning about the influences of music, advertisements, and social media on AOD use; learning about historical trauma and healing; learning the difference between use and abuse; and learning more about how to use traditional values and medicines in a modern world. Youth also underscored the importance of using of Indigenous role models and facilitators to lead AOD prevention activities to engage and enhance their learning.

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# PAPER 3: INDIGENOUS ADULT PERSPECTIVES FOR HARM REDUCTION INTERVETION TARGETING YOUTH PARTICIPANTS OF AN INDIGNEOUS AFTERSCHOOL PROGRAM

## Background

Youth and young adults who experiment with or who regularly use alcohol and/or other drugs (AODs) are at a heightened risk for drug-related harm. Examples of AOD harm among youth include increased exposure to violence and accidents, as well as overconsumption, drug contamination, mental illness, overdose, and death (Gruskin, Plafker, & Smith-Estelle, 2001; Jenkins, Slemon, & Haines-Saah, 2017). Specifically, among American Indian and Alaska Native (AI/AN) youth and young adults, drug harms such as AOD use disorders (i.e., dependency) continue to occur at higher rates than national averages. In 2015, a U.S. report of substance use and mental health indicators found that past-year alcohol use disorders among AI/AN individuals 12 years of age and older were higher than national averages among individuals 18–25 and 26–44 years of age (8% and 6%, respectively; Substance Abuse and Mental Health Services Administration [SAMHSA], 2017). In the same year, the percentage of AI/AN individuals with a past-year drug use disorder (12 years of age and older) was higher than national averages for those 12–25 and 26–44 years of age (4% and 3%, respectively (SAMHSA, 2017).

Moreover, Stanley and Swaim (2015) examined AOD use onset for AI youth living on or near a reservation compared with White youth residing in similar socioeconomic conditions and found that AI youth initiated AOD use significantly earlier than did their White counterparts (Stanley & Swaim, 2015). In another study exploring a related issue, adverse childhood experiences among AI youth living on a reservation in the plains, results indicated that experiences of discrimination, neglect and abuse, witnessing violence against one's mother, and historical-loss-associated symptoms were common among the sample and were strongly linked to poly-drug use,

depression symptoms, PTSD symptoms, and suicide attempts (Brockie, Dana-Sacco, Wallen, Wilcox, & Campbell, 2015).

Furthermore, the Centers for Disease Control and Prevention (CDC; 2019) indicates AOD use among AI/AN people as an HIV-specific risk factor in comparison to other racial and ethnic groups, as AI/AN populations tend to use AODs at a younger age, use them more often, and use them in higher quantities, all of which increases risk for HIV infection (CDC., 2019). Given the potential risk and harms associated with AOD use among AI/AN/Indigenous (hereafter, "Indigenous") youth and young adults, culturally relevant harm reduction interventions are needed to protect the lives of Indigenous young people, inclusive of the needs of those who may be experimenting with, regularly using, or already experiencing AOD use disorders symptoms.

An effective approach to reduce the risks associated with AOD use among youth is harm reduction. Randomized control trials and quasi-experimental studies of youth harm reduction interventions have shown significant effects in reducing drug use among youth (Baer, A. W, & Marlatt, 2001; Champion et al., 2016; Elliot et al., 2004; Lester, 2014; McBride, Farringdon, Midford, Meuleners, & Phillips, 2004; Midford et al., 2012; Midford et al., 2014; Monti et al., 1999; Newton, Teesson, Vogl, & Andrews, 2010; Paschall, Antin, Ringwalt, & Saltz, 2011b; Tebes et al., 2007; L. Vogl et al., 2009a; L. E. Vogl, Newton, Champion, & Teesson, 2014), significant effects in increasing youth's drug knowledge (i.e., classifications, effects, and harms; (Champion et al., 2016; Elliot et al., 2004; Hongthong & Areesantichai, 2016; McBride, Midford, Farringdon, & Phillips, 2000; Midford et al., 2012; Midford et al., 2014; Newton et al., 2010; L. Vogl et al., 2009a; L. E. Vogl et al., 2014), and significant reductions of drug harm among youth (Baer et al., 2001; Lester, 2014; McBride et al., 2004; Midford et al., 2012; Midford et al., 2014; Monti et al., 1999; Newton et al., 2010; Paschall, Antin, Ringwalt, & Saltz, 2011a; L. Vogl et al., 2009b). However, there are gaps in the research literature centered on the development, as well as on the acceptability and effectiveness, of harm

reduction interventions developed for and tested among Indigenous youth samples. In order to address this gap, the current study is centered on Indigenous adult perspectives on AOD use, harm reduction, and risk factors as it pertains to Indigenous youth participants of an Indigenous-specific after-school program. Results will then be compared with the previously reported youth findings to establish the educational core content for a culturally relevant harm reduction intervention that is inclusive of Indigenous youth, adult, and elder perspectives.

When considering risk factors for AOD use, Rhodes (2003) offers a risk environment framework to underscore how risk behaviors are structurally and socially dependent on the places in which they occur (Tim Rhodes, 2002). The risk environment framework organizes social- and place-based risk factors for AOD use and harm on micro and macro levels across four different types of environments: physical, social, economic, and policy. This harm reduction framework has been used across a wide range of communities and environments including substance use risk among adults moving into permanent supportive housing (Henwood, Lahey, Taylor, & Wenzel, 2018), material-insecure women at risk for HIV (Whittle et al., 2020), drug use among Mexican female sex workers on the U.S.-Mexico border (Nowotny, Cepeda, Perdue, Negi, & Valdez, 2017), racialized risk environments for people who inject drugs (H. L. F. Cooper et al., 2016), law enforcement activities that undermine syringe access in New York City (H. L. Cooper et al., 2012), managed alcohol programs and their impact on homeless individuals, housing, and quality of life (B. Pauly et al., 2019; B. B. Pauly et al., 2016), and social science and ethical research considerations for harm reduction studies (McGowan, Viens, Harris, & Rhodes, 2017; T. Rhodes, 2009).

Furthermore, findings from Walsh and Baldwin (2015), as well as others, have underscored the importance of utilizing community-based participatory research (CBPR) approaches as a respectful method to engage and collaborate with Indigenous communities, to assess programmatic needs, and to identify and integrate AI/AN cultural program elements (Holkup, Tripp-Reimer,

Salois, & Weinert, 2004; Laveaux & Christopher, 2009; Mitchell, 2018; Petrucka, Bassendowski, Bickford, & Goodfeather, 2012; Rasmus, 2014; Tobias, Richmond, & Luginaah, 2013; Walsh & Baldwin, 2015). For this current study, a CBPR approach was used to codevelop an interview guide, identify eligible adult participants, assist with interpretation of results, and allow for opportunities to disseminate results. Our research aims were to (a) understand perceptions of Indigenous adults (18+ years of age) on AOD use, harm reduction, and risk factors for youth participants of an Indigenous-specific after-school program; (b) organize findings using a risk environment framework to identify environmental risk factors for youth on micro and macro levels across physical, social, economic, and policy environments; and (c) compare and align, where similar, adult-identified risk factors with previously reported youth recommendations to establish core content for a community-based, culturally relevant, and theoretically grounded harm reduction intervention for Indigenous youth, inclusive of multigenerational Indigenous perspectives.

**Methods**

A programmatic needs assessment centered on Indigenous youth and their AOD prevention needs was codeveloped with the host program's leadership and was previously administered to 10 Indigenous youth (13–17 years of age). Their needs and recommendations were organized using the four constructs of relationality (Wilson, 2008), which places a high value on "the importance of relationships" that exemplify to the core "what it means to be Indigenous" (Wilson, 2008). Developing an intervention that underscores the cultural importance of healthy relationships can buffer risk for AOD use and harm. In this current study, adult findings were organized using a risk environment framework to identify and include relevant risk factors gleaned from the lived experience of an adult. Including this perspective is part of working from an Indigenous worldview perspective because in a traditional society, elders, parents, teachers, and other adults all have a responsibility to protect youth from harm. We also worked from a CBPR approach to allow for a

shared power structure among researchers, organizations, and community and to allow for host organizational oversight of all research activities (Israel, Schulz, Parker, & Becker, 1998). The resulting adult-identified risk factors were compared with the previously reported youth recommendations and, where similar, they were aligned to establish the core content for a youth-specific harm reduction intervention.

**Participants and Sampling**

In 2008, Urban Native Education Alliance (UNEA) developed Clear Sky Native Youth Council (hereafter, "Clear Sky") in response to the lack of Native-specific cultural, social, and academic support for Indigenous youth across the Seattle Metro area. Clear Sky is a youth-driven program of UNEA that meets twice a week and offers dinner, tutoring, sports practice, and cultural enrichment activities. Clear Sky is open to families of youth, organizes community advocacy events, and celebrates youth graduates each year with a 100% graduation success rate. Clear Sky is free of charge and includes a wide range of Indigenous students and their families who reside in Seattle or in the surrounding tribal nations and communities. The research team conducted 10 semi-structured interviews with Indigenous adults (18+ years of age) who support Clear Sky in a variety of ways: as parents or guardians of youth, as program administrators and board members, and as academic tutors or mentors for youth. In addition, after-school program participants who were 18 years of age (or older) were also invited to participate. Individuals of any gender identity were eligible, and participants needed to self-identify as Indigenous, read and speak English, hear and be able to understand interview questions, and verbally share their responses.

**Data Collection**

Data from the needs assessment centered on youth participants and their AOD prevention needs were collected through semi-structured interviews, which took place at Clear Sky in a semiprivate area to promote the safety and comfort of participants. An institutional review board

(IRB) application was submitted to conduct individual interviews with 10 youth (13–17 years) and 10 adults (18+ years) in spring 2019. The university's human subjects division determined the organizational needs assessment did not meet the federal definition of research and did not require exempt status or an IRB review. Regardless, consent forms were developed and administered to all participants for signature. Interviews were voluntary and participants were compensated $10 in appreciation. Participants were told if they ended the interview early for any reason, they would still receive compensation. Interview questions focused on the following:

*Experiences of AOD prevention*: How would you describe past experience learning about AOD? (Probe: formal lessons, informal experiences with family, etc.) What were some concepts you remember? Do you think AOD education is needed for Native youth?

*Harm reduction*: What is your understanding of harm reduction? (Probe: past experiences, attitudes, beliefs, etc.) How do you define harm reduction? Do you think Native youth would be interested in harm reduction? (Probe: family and community interest in harm reduction)

*Native culture and harm reduction:* thinking about your community and traditional values, how does harm reduction education reflect your cultural beliefs, norms, or your values? (Probe: Does harm reduction conflict with your personal values?)

*Specific content needs:* what topics you would want to see in a Native-specific drug and alcohol education course? (Probe: relevant cultural teachings and values.)

**Data Analysis**

A deductive thematic analysis approach was used to examine adult perspectives by highlighting similarities and differences in responses and allowing for unanticipated insights to emerge by identifying, analyzing, organizing, describing, and reporting risk factors found in the data set (Nowell, Norris, White, & Moules, 2017). Interviews were audio recorded and transcribed verbatim. All identifying information was removed to protect the identity of participants, as they are

also members of the urban Indigenous community of Seattle. Transcripts were coded to identify units and segments of data that seemed important or meaningful (Maxwell, 2013). Initial codes were grouped into categories supported with operational definitions. The categories and definitions were confirmed by an independent, Indigenous-identified coder to assist with interpreting data for cultural relevance. Interrater reliability was assessed between two coders, and any issues regarding codes, themes, and interpretations were resolved by a third Indigenous-identified researcher with expertise in Indigenous health. The raters continued to clarify the categories by comparing with original raw data and research questions to identify risk factors that were mutually exclusive, yet broad enough to capture a set of ideas based on direct quotes, ensuring all conclusions were firmly grounded in the data (Lincoln, 1985).

Next, the resulting risk factors were organized using a risk environment framework to highlight social situations and environments where harm is produced among Indigenous youth (Tim Rhodes, 2002). This analysis underscores how risk taking is structurally and situationally dependent on the environments in which it occurs by using two key dimensions: types of environment (i.e., physical, social, economic, and policy) and levels of environmental influence (i.e., micro and macro; (Tim Rhodes, 2002). The first part required the rater to code the risk factors according to one of the four types of environments. Second, the rater determined the risk factor was either a micro or macro level and coded it accordingly.

**Results**

In total, 10 Indigenous adults participated in semi-structured, individual interviews to assess the AOD prevention needs of youth participants. Findings from 10 youth interviews were previously reported. Adults in this arm of the study were between 18 and 65+ years of age. Four participants identified as female, five as male, and one as Two-Spirit. Adult tribal affiliations represented a wide range of Indigenous communities and nations, which we do not list to protect

their identities. Of the seven adults who received AOD education in any school setting, six received abstinence-only education in the form of DARE or MADD programs. Participants all shared similar stories of lived experience witnessing AOD harms among those close to them. Most participants (*n* = 7) described witnessing alcohol-related harms among family; five specifically mentioned male-identified family members (e.g., father, step/brother, uncle). Harms included chemical dependency, prison and incarceration, violence and aggression, and loss of life from drunk driving accidents.

Adult-identified risk factors were organized using a risk environment framework to identify micro- and macro-level risk factors across four different types of environments: physical, social, economic, and policy (see Table 1). These risk factors are culturally relevant and reflect multigenerational perspectives:

**Table 3.1. Adult-Identified Risk Factors on Micro and Macro Levels Across Four Environmental Domains.**

| Environment Domain | Micro Environment | Macro Environment |
|---|---|---|
| **Physical** | • Normalized, everyday experiences of drug use or harm in the home, among peers, and in community | • Increased vulnerability to violence, human trafficking when using (e.g., MMIWG)<br>• Repeated cycles of AOD use across generations |
| **Social** | • Minimized use of traditional values in everyday life (e.g., value of individual responsibility<br>• Influence of popular media and culture on AOD use | • Loss of traditional values across many communities<br>• Lasting effects of historical and contemporary trauma<br>• Effects of stereotypes |
| **Economic** | • AOD use to cope with stress in everyday life | • Widespread poverty and limited discussions on the connection between poverty and AOD use |
| **Policy** | • Need culturally relevant strategies and tools to reduce AOD harm and inform decision-making | • Communicate to youth they are not alone; we share histories and efforts to collective healing; we are relational |

| | | |
|---|---|---|
| | • Create safe opportunities for youth to share thoughts and experiences<br>• Address recovery as an option | |

*Note*. MMIWG = Missing and Murdered Indigenous Women and Girls.

**Adult-Identified Risk Factors**

**1. Physical Environment Risk Factors**

Adults identified micro-level risk factors within physical environments on both individual and family levels. One adult described how everyday drug use in the home increases the risk for youth to experiment with and use AODs:

> When someone is growing up in an environment that its very normalized [drug use] . . . if you grow up surrounded by that, it's something you might not even think twice about. (Adult 02)

Adults also identified risks that overlapped between micro and macro levels. One adult spoke about empowering youth with harm reduction education as a way to increase the future health and wellness of the community:

> It's really important for them to know, to be empowered so that they can decide to make a change and not continue the cycles that have been happening . . . it will give them a sensitivity of understanding, why their family members or people they see in their communities are struggling, to know that they can break those cycles. (Adult 06)

On a macro level, adults spoke about the connection between violence and AODs. One adult spoke about the current humanitarian crisis of Missing and Murdered Indigenous Women and Girls (MMIWG):

> There is a lot of intersections with drugs and alcohol, other issues like assault, missing and murdered Indigenous women, and just how we're so much more vulnerable than the average population and especially when your mind is altered with drugs and alcohol makes you have a big target on your back for a lot of those issues. (Adult 09)

Across adult interviews, participants emphasized the importance of how the physical environments that youth occupy, such as the home or the neighborhood, can normalize AOD using behaviors, which can then exacerbate their risk for harm. Adult participants felt educating youth on harm reduction was a way to facilitate healthy decision-making, which can positively impact the community as a whole. Adults also spoke about specific risks associated with interpersonal violence (e.g., MMIWG).

**2. Social Environment Risk Factors**

On a micro level, adults spoke about the importance of teaching individual and community responsibility based on cultural teachings:

> I know we are taught certain values and certain ways you're supposed to carry yourself and learn. Definitely drugs and alcohol aren't part of our traditions and of our ancestors. (Adult 09)

> One of the bigger cultural overarching values is free will, "your own will," and allowing that independence, but within the framework of interconnection, family, community, society, nature, higher power, and Creator. We all have our own will to make choices [to use] . . . but then there's societal consequences for that. (Adult 10)

Adults also identified the legalization of recreational marijuana and stated the influences of popular media have shifted youth's perceptions on risk and harm:

> I feel like teenagers and younger kids are thinking this is just an everyday thing now, like "it's legal." I feel like youth need to understand that this is still illegal *for them*. (Adult 06)

> Probably through pop culture, they think that certain substances are fine, especially pot, like, "it's okay, it's better than drinking or it's better than this." (Adult 07)

On a larger scale, adults identified macro-level risk factors associated with historical trauma and the resulting loss of traditional values and ways of life. Weighing in on a related issue, adults also spoke about risks associated with structural oppression and racism:

> A lot of our communities or tribal communities have been so eroded with the morals and values and teachings that there isn't a strong, strong containment to address when those things are violated. (Adult 10)

> If you are a Native youth who is feeling inclined to do drugs a lot, a component of that probably comes from a society made to put down and oppress your people and to acknowledge how alcohol and drugs had been a big part of that . . . how it has had such a large impact historically on Native peoples. (Adult 02)

> Addressing the stereotypes of alcohol use and Natives is pretty relevant because I was pretty shocked when I first heard someone make a joke at me for it and then getting upset when I realized that was a stereotype. (Adult 08)

Adult participants spoke about the importance of teaching cultural values that enforce individual-level responsibility. Adult participants indicated the need to address the influences of media, as well as to provide specific education on structural oppression and racism (e.g., stereotypes) to prevent future AOD use and harm. Addressing these sociocultural risk factors would increase youth's knowledge of and capacity for navigating risks in social settings and environments.

**3. Economic Environment Risk Factors**

On a micro level, adults spoke about individual stress-coping strategies. One adult described hearing directly from Indigenous youth on "self-medicating" as a way to manage life challenges:

> They openly acknowledge a lot of times when they're using, it's "self-medicating," and they'll tell you flat out, "I get high because that's when I feel good. I can block out everything else." (Adult 07)

On a macro level, adults specifically name economic factors as a contributor to stress within the family unit and across communities. Adults spoke about their own lack of prevention knowledge as it relates to economic disadvantage, and another participant described limited access to treatment services is a risk factor:

> I've never had it [AOD prevention education] in school. . . . They were all much more wealthier than I was at the time, they were usually Caucasian. . . . I do believe that it was this school that was neglected and funded in that way. (Adult 04)
>
> There is a very high poverty rate with Native families and communities. And the areas that they live in usually won't have the level of resources that other more financially wealthy areas would. (Adult 02)

Another adult described how poverty is systematically and structurally embedded in our economic system and the benefits of learning about those systems from a cultural lens:

> There's no conversation . . . about what systems are causing them [addictions] as well as what addiction looks like from an Indigenous perspective rather than the White person's perspective. (Adult 01)

Adults strongly linked issues of poverty as a risk factor for AOD use and harm. Adults described a need for youth to understand the connection between economic stress and increased AOD use. Adults also identified a need for discussions on poverty from a cultural perspective. For example, this could include future discussions on historical trauma and systematic oppression with

youth using current examples of tribal resiliency and strength to foster a sense of confidence to pursue their life goals.

**4. Policy Environment Risk Factors**

Adults support the use of harm reduction education for youth participants. Several adults acknowledged "addictions" are already part of their everyday life and knowing how to navigate risky situations would be extremely helpful for them:

> They know people that have addictions. They have friends that have addictions and alcoholism. And so that's already affecting them. (Adult 01)
>
> Figure out how to do the right thing in different situations. There's going to be situations that I'm sure they're going to be in as they get older, where having the knowledge of harm reduction would give them the tools to figure out a best plan. (Adult 05)

Several adults also highlighted the importance of delivering harm reduction education from an Indigenous worldview perspective. One adult described cultural risk factors that place youth at risk, and another adult highlighted the importance of discussing culturally relevant recovery options for future reference:

> I would prefer a culturally relevant approach . . . because we have a lot of other external circumstances that impact us in different ways. There's the historical trauma, there's boarding schools, displacement. There's poverty, there's extended family. There's being disenfranchised, victims of gentrification. There's so many contributing factors that I think would not be discussed if it was a mainstream approach. (Adult 10)
>
> Know there is life after and that there are recovery programs and there's even Native-specific, like Wellbriety and Red Road. And know for themselves and for

> others, that recovery is a process, that relapse is part of recovery. Even if they are far from here, many years in the future . . . if they do fall into addiction, there is recovery. And if they relapse, that's part of the process. (Adult 05)

On a macro level, adults identified a need for opportunities for youth to express themselves safely, particularly for youth who feel isolated and alone when dealing with AOD use in the home or in the community:

> They need to be able to connect with . . . know that they're not alone. That you can go to a reservation or village in Alaska and they will learn the stories are very similar, to be able to make that connection. (Adult 06)

> There is empowerment in being around others who are coming from similar backgrounds and facing similar experiences that people not coming from the reservation or stuff just can't relate to or maybe their ethnic backgrounds got a different relationship with alcohol or other substances. (Adult 07)

Adult participants support culturally relevant harm reduction education because of its strengths-based approach and focus on skills building to navigate risky situations. Adults acknowledged youth are already exposed to drug use and harm and indicated they may need opportunities to safely process those experiences. Adults also highlighted the importance of discussing relapse, as well as culturally relevant AOD treatment and recovery options. Adults want youth to know "they're not alone," because there is a shared history of struggle as well as shared opportunities to "take a different path" for a better life. These strategies and messages could be codified as part of the overall program's mission and goals.

**Core Content for Indigenous Youth Harm Reduction Intervention**

Last, adult-identified risk factors were compared with the previously reported youth recommendations and, where similar, we paired both findings. Of important interest, both sets of

findings aligned near perfectly. We organized the pairings using the four constructs of relationality (i.e., people, place, ideas, and the cosmos) to ensure consistent cultural grounding. We also identified the environmental domain for each risk factor in parentheses. As a result, this near-identical alignment of risk factors and recommendations establishes the core content for a community-based, culturally relevant, and theoretically grounded harm reduction intervention for Indigenous youth that is inclusive of multigenerational perspectives (see Table 2):

**Table 3.2. Adult-Identified Risk Factors, Suggested Topics, and Supporting Youth Quotes Organized by Relationality Constructs.**

| Environmental Risk Factors (with domain) | Suggested Topics | Supporting Youth Quotes |
|---|---|---|
| | **Relations with People** | |
| AOD use to cope with stress in everyday life (Economic) | **How to care for one's mind, body, spirit, emotions instead of using AODs** | "The importance of who or what you run to for mental healing, whether if it's drugs or a person, or if like the person is a bad influence. Yeah, just home remedies instead of trying to like figure out a different way to heal yourself" (Youth 03). |
| Influence of popular media and popular culture on AOD use (Social) | **The influences of media (music), advertisements, and social media on AOD use** | "Making it clear that you are not the media, you are yourself and to remember values. So, teaching values and stuff like that" (Youth 05). |
| Effects of stereotypes (Social) | **Unpacking negative stereotypes, increasing self-esteem**<br><br>**How to increase positive self-image** | "Like when we learned it [AOD education], we were taught that it's more common among us. Kinda just shows that it's almost inevitable. Just gives off the message that it's more likely it will happen to us than other people, this is the way they make it sound" (Youth 09). |

| | | |
|---|---|---|
| | | "I always thought it was normal and then just walking around Seattle, you could see everybody, or like Native park at Pike Place, that's when I really thought it was just normal for Natives to be like that" (Youth 03).<br><br>"I'd like to see a program come through to help Native youth because there are a lot of stereotypes and a lot of people falling into that stereotype and that's not good" (Youth 02).<br><br>"they think that because they don't get good grades or something, then they are the stereotype, but they aren't the stereotype. And I really hope that people learn that" (Youth 05). |
| **Relations with Place** | | |
| Widespread poverty and limited discussions on the connection between poverty and AOD use (Economic) | **What is historical trauma and contemporary trauma?** | "Maybe the past that our Native people have had with alcohol and drug use and maybe, 'don't go on that path' because it's affected other Native people in a bad way and you could teach us, not to go down that path and maybe go on a 'different path'" (Youth 10). |
| | **What does healing look like?** | "Like examples of stuff that you could be doing instead of this. You could get a successful person, 'you can be like this instead of being like this, you don't have to do this . . . you can be successful; you can do more things with your life'" (Youth 09). |

| | | |
|---|---|---|
| Communicate to youth they are not alone; we share histories and efforts to collective healing; we are relational (Policy) | **Using motivational and inspirational speakers** | "We had a couple of speakers [at school]. I think he was a DJ, but he was like wearing his Native regalia stuff and he would show us" (Youth 09). |
| | **Using a strengths-based approach to teaching** | "Traditional teaching is just showing them how, and letting them do it as they can, or nurturing what they're good at when you see them as a young child" (Youth 07). |
| Create safe opportunities for youth to share thoughts and experiences (Policy)<br><br>Address recovery as an option (Policy) | **Youth described a need for safe spaces to talk about the impacts of AOD use on self, family, and community** | "They should have a program where it's just comforting that they can reach out and talk to like counseling, especially for kids, because they don't really realize like how bad it is. Like, I didn't realize how bad it was growing up. Like the environment I was in and the people around and the stuff they're doing until I got older. 'Cause that's when you start to know better. So it's better to get them young and let them know. Natives, like specifically, they go through the most trauma. There's like a lot of stuff going on in their families and they don't really have a lot of people to reach out to" (Youth 03). |
| **Relations with Ideas** | | |
| Normalized, everyday experiences of drug use or harm in the home, among peers, and in community (Physical) | **Overview of drugs and alcohol**<br><br>**AOD effects on the body and brain development** | "Like talk about the aftereffects of what it does to your body and what it does to your mind and what it makes you want to do after. Like if I were to take it, then I would probably do something I don't want to do. And if I drink, I would black out and I don't know what I would've done" (Youth 04). |

| | | |
|---|---|---|
| Increased vulnerability to violence, human trafficking when using (e.g., MMIWG) (Physical) | **Social consequences of influencing next generation of users** | "How it could affect your brain and how it could affect your life and if you do it around other people, it can make them, when they get older, want to do it" (Youth 01). |
| Repeated cycles of AOD use across generations (Physical) | **Social consequences of underage drinking** | "Underage drinking. Drinking and driving and knowing when to limit yourself" (Youth 08). |
| **Relations with Cosmos** | | |
| Provide culturally relevant strategies and tools to reduce AOD harm and inform decision-making (Policy) | **What are the skills of being an effective leader?** | "Maybe a 'how-to' on leadership skills and stuff. If you know how to be one of the followers in the community and the leaders, then you'll know more and good choices come from knowing that, understanding that relationship" (Youth 05). |
| | **Role of sacred medicines; for example, sage and tobacco, others.** | "Like smoking for example, when you light sage—and the smoke carries the prayers up to the Creator. But if you use that in a bad way, it's disrespectful in a way. So I was always taught not to do drugs. 'Cause in the smoke, your bad thoughts can go up with it and that's not really good" (Youth 02).<br><br>"Like sage. They say when you inhale, you get an instant relief. And you can do that instead of trying to like smoke or light a cigarette or something, or drink" (Youth 03). |
| | **What is the difference between use and misuse?** | "I learned about the traditional use of tobacco and I learned about abusing the drug, you can still use the drug and not abuse it. And how does it look like if you're not abusing something, like understanding how sacred it is and |

| | | |
|---|---|---|
| | | then taking it for granted is something to know about" (Youth 05). |
| Loss of traditional values across many communities (Social)<br><br>Minimized use of traditional values in everyday life (e.g., value of individual responsibility) (Social) | **What are tribal-specific and/or traditional value systems?**<br><br>**How do we use traditional values in a modern world?** | "I would like to learn more about cultural beliefs, other peoples' culture, beliefs about how it'll affect their tribe or their beliefs or culture and learn more about my own because I'm not 100% sure" (Youth 02).<br><br>"I know different, there's some tribes that have a list of values and I like learning about those things. I think that always helps even if it's not directly tied to drugs. Again, having a good system of values helps a lot" (Youth 05). |

*Note*. MMIWG = Missing and Murdered Indigenous Women and Girls.

**Discussion**

Overall, adult participants support harm reduction education that is grounded in Indigenous teachings and culture to increase youth's knowledge and skill sets to navigate risky and harmful situations. Adults identified risk factors for youth across policy, social, economic, and physical environments on both micro and macro levels. Some examples of environmental risk factors for youth include exposure to AOD use and harm in their daily lives; an increased risk for place-based violence when using AODs; the negative influences of popular media and culture; systemic issues of trauma, racism, poverty, and related stress; and limited opportunities for youth to safely discuss issues related to AOD use and harm.

There were several noteworthy findings in this study. The primary finding was the nearly identical alignment between adult-identified risk factors and youth-identified recommendations given the different theoretical frameworks used to organize the two sets of data. This near perfect alignment between adult and youth findings suggests both frameworks complement each other and

will support the development and implementation of culturally relevant harm reduction activities. This may be due to the holistic, contextual, and macro-perspectives of both frameworks. In other communities or settings, findings between youth and adults may not align, which would require more synthesis to establish intervention content. Youth recommendations were reported using the Indigenous framework of relationality (Wilson, 2008). These recommendations can be described as what Rhodes (2009) referred to as "interventions" that help to create "enabling environments," which are optimal environmental conditions or settings to increase intervention effectiveness (T. Rhodes, 2009). Youth recommendations included needing educational AOD overviews, safely discussing issues of trauma and healing, learning about traditional value systems, identifying alternatives to drug use, and learning leadership skills to help prevent AOD harm for themselves and others. Taken together, where similar adult-identified risk factors align with youth-identified recommendations, core content is established for a community-based, culturally relevant, and theoretically grounded harm reduction intervention to address the prevention needs of youth attending an Indigenous-specific urban after-school program in the Pacific Northwest.

Second, adults identified interpersonal violence as a risk factor associated with the physical environments that youth occupy. A central aspect of Indigenous identities is the relationship with place, land, or one's own environment (Wilson, 2008), yet these environments can also increase risk for harm when using AODs. For example, adults spoke of the connection between AOD use and the risk of experiencing violence, specifically naming the public health emergency of MMIWG. In a recent study by the Urban Indian Health Institute (UIHI, 2018), researchers concluded that verbal, domestic, physical, and sexual violence is part of the historical and ongoing legacy of colonization, perpetuated by historical trauma and grief, resulting in an increased vulnerability for Indigenous women and girls. Moreover, a staggering 94% of Seattle-residing AI/AN female participants in the study over the age of 18 years had been raped or sexually coerced at some point in their lives

(UIHI, 2018b). Furthermore, 32% of Seattle-residing female participants who experienced victimization in their lifetime used drugs to cope, including 49% of participants who reported they had misused alcohol on a monthly, weekly, or daily basis within the past year (UIHI, 2018b). In a related national report, the state with the second highest numbers of MMIWG cases is Washington (n = 71), with New Mexico (n = 78) having the most cases, and Arizona (n = 54) having the third most cases (UIHI, 2018a). Even worse, the U.S. city with the highest number of MMIWG cases is Seattle, Washington (n = 45), followed by Albuquerque, New Mexico (n = 37), and then Anchorage, Alaska (n = 31; (UIHI, 2018a). Authors of both reports discuss data limitations, given that tribal, local, and national cases are underreported, often racially misclassified, and are "lost" between law enforcement and communities. Underreporting ultimately limits our understanding of this humanitarian crisis. However, based on these findings alone, it is *critically* important to continue to actively address these risks as they relate to AOD use among Indigenous youth.

Another important finding among adult participants were risks associated with poverty and stress. Among AI youth, stressful life events have been positively associated with substance use, depressed mood, and risky behaviors (Baldwin, Brown, Wayment, Nez, & Brelsford, 2011). Further exacerbating risk, AI youth tend to live in more stressful environments due to unemployment, poverty, social isolation, and discrimination than most non-Hispanic Whites (Eitle & Eitle, 2014). Eitle and Eitle (2014) also found that White youth were more likely to use active stress-coping strategies such as acceptance, in contrast to AI youth who were more likely to use denial as a form of coping. This may be due to the realities of having limited resources needed to utilize such strategies among AI youth, relative to Whites (Eitle & Eitle, 2014). For this current study, both Indigenous adults and youth identified issues of stress as a risk factor for AOD use and harm. Youth recommended that they would benefit from learning more about how to take care of oneself from a

holistic approach and participate in discussions and learn from examples of what Indigenous healing looks like.

Last, adults emphasized how feelings of isolation can increase risk among youth, particularly for youth where AOD use and harm are in the home. Both adults and youth indicated a need for discussions and opportunities for youth to safely express their feelings as it relates to AOD use and harm. In addition, youth also indicated a need for leadership training on ways to prevent AOD use and harm for themselves and others. These programmatic activities would simultaneously work to decrease experiences of isolation, increase communication skills, and help to promote the health and wellness of the communities they are part of.

**Limitations**

Limitations of this study include a small sample size; however, participants included diverse gender identities and represented many Indigenous communities and nations. Adults reported varied exposure to any AOD prevention education, including lived experiences related to AOD use. Another limitation is the sample itself, as it comprises adults who may already engage in related discussions at home, which may have contributed to similar findings between adults and youth. In addition, adults may have felt less comfortable sharing with the interviewer, as he had a dual role as an academic mentor and researcher. We have enhanced the trustworthiness of the study findings by using an all-Indigenous team in the data collection and data analysis process. The coders all had expertise in Indigenous social work and public health and helped to confirm interpretations of the themes and categorize them into the risk environment framework.

**Conclusion**

Indigenous adult participants in this community-based, qualitative study support the use of culturally grounded harm reduction education for youth participants of an Indigenous-specific after-school program. Community-based and culturally relevant risk factors for youth were organized

using a risk environment framework to identify potential risks across four environments, on micro and macro levels. Adult-identified risks included AOD use and harm in the home; place-based violence when using AODs (e.g., MMIWG); the negative influences of popular media and culture; and systemic issues of trauma, racism, poverty, and stress. We compared and aligned adult-identified risk factors with previously reported youth-identified recommendations where similar. Notably, both sets of findings aligned near perfectly. We organized the pairings using the four constructs of relationality (i.e., people, place, ideas, and the cosmos) to ensure consistent cultural grounding. As a result, this near-identical alignment of risk factors and recommendations establishes the core content for a community-based, culturally relevant, and theoretically grounded harm reduction intervention for Indigenous youth that is inclusive and honors multigenerational perspectives.

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# CONCLUSION

This dissertation examined youth-specific harm reduction interventions developed for diverse youth of color (YOC), with a focus on the development of a culturally relevant intervention for Indigenous youth attending an Indigenous after-school program in the Pacific Northwest. In doing so, historically underrepresented youth voices in the research literature were collected and reported on. The findings are relevant for both harm reduction-focused and Indigenous health-focused research. The results are also important for interventions aimed at preventing and reducing alcohol and other drug (AOD) use and harm among racially and ethnically underserved youth. These concluding pages will provide a brief overview of results, highlight the importance of these findings for social work practice and research, and offer suggestions for future harm reduction research among Indigenous people and communities.

## Overview of Results

Significant findings regarding the prevention of AOD use and harm among diverse YOC emerged from two different but related studies. In Paper 1, the MyPEEPS (Male Youth Pursuing Empowerment, Education, and Prevention Around Sexuality) study examined use and usability as well as overall satisfaction of a particular intervention, an HIV prevention mobile phone app. Participants indicated that the app was easy to use and had the potential to positively impact their life, and they also highly rated the interface qualities of the app. In Papers 2 and 3, the prevention needs of Indigenous youth were specifically examined with regard to the development of an Indigenous youth harm reduction intervention. As reported in Papers 2 and 3, Indigenous participants valued harm reduction education due to its practical, strengths-based approach to education. Youth particularly appreciated the strengths-based nature of harm reduction. Taking the findings from all three papers together, we posit that harm reduction education is an effective strategy to engage diverse, underrepresented youth that helps to inform healthy decision-making.

Furthermore, because harm reduction approaches align with Indigenous approaches to wellness (i.e., both are holistic in nature), it is a suitable prevention approach for a culturally relevant harm reduction intervention targeting Indigenous youth attending an Indigenous-specific after-school program in the Pacific Northwest.

More specifically, Paper 1 describes the pilot study outcomes for the MyPEEPS mobile intervention, developed for racially and ethnically diverse, young men who have sex with other men (YMSM). Adapting the intervention from a group-level format to an individual-level mobile phone app involved the use of expert review panels, a software development company, and findings from in-depth interviews with end users. Furthermore, four animated characters representing racially and ethnically diverse YMSM or "Peeps" were integrated into app activities and content. One character identified as American Indian and Alaska Native (AI/AN), and thus, cultural elements related to his story line were included.

The study aims were to understand app use and usability, assess the acceptability of MyPEEPS dosing and content, and elicit feedback from participants about how the intervention worked. Data were collected at baseline and at postintervention visits (at 6 weeks) in both interviewer-administered and self-report formats. Dosage was measured through reports from the mobile app, and usability was measured using two validated measures, the Health Information Technology Usability Evaluation Scale (Health-ITUES) (Schnall, Cho, & Liu, 2018) and the Post-Study System Usability Questionnaire (PSSUQ) (Lewis, 2002). The overall Health-ITUES score was the mean of 20 items rated on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*) for each item. The PSSUQ consisted of a 16-item survey instrument that assessed usability on a scale ranging from 1 (*strongly agree*) to 7 (*strongly disagree*). Individual debrief interviews were audio-recorded and feedback on any of the material, content, and delivery methods were collected to refine and enhance relevancy of the intervention.

Across all four study sites, 62.5% (25/40) of participants completed all of the educational modules in an average of 28.85 ($SD$ = 21.69) days. The Health-ITUES scores and PSSUQ scores indicated high usability of the app, which suggest the app is highly usable. During debrief sessions, youth participants stated the app was easy to use, had the potential to positively impact daily life, and highly rated the information and interface quality of the app. Youth participants shared how the health information gained from the intervention applied to their everyday life. For example, one youth described how he "typically" didn't use "protection" when sexually active. However, after receiving education on the harms of unprotected sex, he "started using protection during sexual activities because of the app." Additional findings indicated a need for reminder systems and anticipatory guidance about Internet connectivity when using the app.

In Paper 2, we described a programmatic needs assessment centered on Indigenous youth and AOD prevention codeveloped with Clear Sky's leadership using a community-based participatory research (CBPR) approach. Indigenous youth perceptions, concerns, and suggestions regarding AOD prevention, harm reduction, and Indigenous healing strategies were collected and reported on. Data from the needs assessment were collected using semi-structured interviews ($n$ = 10) largely focused on experiences of AOD prevention, understandings of harm reduction, Indigenous cultures and harm reduction, and any recommendations for an Indigenous-specific drug and alcohol education course. Using a ground theory approach, four youth themes emerged. Themes were then contextually analyzed and aligned within the four constructs of relationality. The resulting alignment between relationality constructs and youth themes indicate that (a) youth understand the connection between AOD use and related harms (people); (b) youth appreciate balanced, non-abstinence-based AOD education (ideas); (c) youth have a need for safe spaces to talk about the impact of AOD use (place); and (d) youth would like leadership training to help prevent AOD harms for themselves and for others (cosmos). Participants described how AODs have

negatively impacted their life and acknowledged the limited access to support systems. For example, one youth shared, "Natives, like specifically, they go through the most trauma. There's like a lot of stuff going on in their families and they don't really have a lot of people to reach out to." Because of similar responses, a suggested activity for the intervention is to include individual and/or group-level opportunities for trauma-informed sharing sessions. Youth also recommended more opportunities to learn about AODs and related social consequences; the influences of music, advertisements, and social media on AOD use; historical trauma and healing; the difference between use and abuse; and learning more about how to use traditional values and medicines in a modern world. Youth also underscored the importance of using of Indigenous role models and facilitators to lead AOD prevention activities as a way to engage and enhance their learning.

A noteworthy finding of Paper 2 is the near-perfect alignment between the four youth-identified themes and the four constructs of relationality. For example, youth shared their desire for leadership training to help prevent AOD use and harm for themselves and for those in their social circle. This theme was categorized under the construct of *cosmos*, which includes one's connection to the universe, a higher being, humanity, or the environment and defines any activity that increases human connection or builds relationships as spiritual. The resulting four youth themes embedded within the four constructs of relationality strongly indicate a humanitarian concern for their friends, family, and community. As a result, the framework of relationality suffices as a culturally relevant theoretical foundation to inform the development of harm reduction educational materials and activities. These findings support the development of a harm reduction intervention that underscores the cultural importance of healthy relationships, which can buffer risks for AOD use and harm among Indigenous youth participants of an Indigenous-specific after-school program.

In Paper 3, working from an Indigenous worldview perspective mandates the inclusion of Indigenous elders, parents, teachers, and other vested adults in the creation of an Indigenous youth

intervention because they all have a responsibility to protect youth from harm. Therefore, 10 Indigenous adults participated in semi-structured, individual interviews to assess the AOD prevention needs for Clear Sky youth participants using the same semi-structed interview guide and process described in the previous paper. Adults in this arm of the study were between 18 and 65+ years of age. Four participants identified as female, five as male, and one as Two-Spirit. Of the seven adults who received AOD education in any school setting, six received abstinence-only education. All adults shared similar stories of lived experience witnessing AOD harms among those close to them. Most participants ($n$ = 7) described witnessing alcohol-related harms among family; five specifically mentioned male-identified family members (e.g., father, step/brother, and uncle). Harms included chemical dependency, prison and incarceration, violence and aggression, and loss of life from drunk-driving accidents.

Adult-identified risk factors were then organized using a risk environment framework to identify social situations and environments where harm is produced (and reduced) for Indigenous youth (Rhodes, 2002). This analysis underscores how risk taking is structurally and situationally dependent on the environments in which it occurs along two key dimensions: types of environment (i.e., physical, social, economic, and policy) and levels of environmental influence (i.e., micro and macro; (Rhodes, 2002). First, adult-identified risk factors were categorized according to one of the four types of environments. Second, the risk factor was categorized as either a micro- or macro-level risk factor.

Overall, findings strongly indicate that adult participants support harm reduction education that is grounded in Indigenous teachings and culture to increase youth's knowledge and skill sets to navigate risky and harmful situations. Some examples of adult-identified environmental risk factors for youth included the exposure to AOD use and harm in their daily lives; an increased risk for place-based violence when using AODs; the negative influences of popular media and culture;

systemic issues of trauma, racism, poverty, and related stress; and limited opportunities for youth to safely discuss issues related to AOD use and harm. Adult-identified risk factors were then compared with the previously reported youth recommendations, and, where similar, the pairings were organized according to the four constructs of relationality (i.e., people, place, ideas, and the cosmos) to ensure consistent cultural grounding. As a result, the combined risk factors and recommendations establishes the core content for a community-based, culturally relevant, and theoretically grounded harm reduction intervention for Indigenous youth, inclusive of multigenerational perspectives.

Like the previous paper, an important finding for this arm of the study was the nearly identical alignment between adult-identified risk factors and youth-identified recommendations, given the different theoretical frameworks used to organize the two sets of data. This near-perfect alignment between adult and youth findings suggests both frameworks complement each other and will support the development and implementation of culturally relevant harm reduction activities. The alignment of both findings might be attributed to the holistic, contextual, and macro perspectives of both frameworks. In other communities or settings, findings between youth and adults may not align, which would require more synthesis to establish intervention content.

**Implications for Practice and Research**

Regarding practice implications, results from these three papers strongly indicate that harm reduction-based interventions are an acceptable practice approach to prevent and reduce AOD use and harm among diverse YOC. In addition, findings also support harm reduction education grounded in Indigenous teachings and values as a valuable way to reduce AOD use and harm among Indigenous youth participants of an after-school program. From a social justice perspective, the studies in this dissertation center underrepresented YOC experiences and voices to inform the development and/or refinement of interventions intended to serve them. Their voices are fundamental to ensure that intervention approaches and content reflect their unique cultural needs

and life experiences. In Paper 1, youth participants were given the opportunity to provide direct feedback during debrief sessions on their experiences of using the mobile phone app intervention. Youth participants described how the health information gained from the mobile app was applied to their everyday life. For Paper 2, there was an intentional effort to capture and represent Indigenous youth voices using grounded and existing Indigenous theories to illuminate on their responses. Similarly, in Paper 3, Indigenous adult voices were included in the development of the youth intervention, which aligns with working from an Indigenous worldview perspective because elders, parents, and other adults all have a responsibility to protect youth from harm.

Regarding research implications for the Indigenous harm reduction intervention, more precise information is necessary to finalize the core content for the proposed curriculum reported in Paper 3. Validated measures also need to be identified and included for each of the four constructs of relationality. This would allow for the explicit testing of the hypothesis that interventions designed to enhance relationality among Indigenous youth can serve as a buffer against AOD use and harm. In addition, any relevant preexisting educational content that is not culturally relevant would have to be culturally adapted to meet the needs of the target audience. Furthermore, Indigenous educators who have harm reduction practice experience need to be identified to facilitate the range of activities and discussion groups included in the core content. To the best of my knowledge, there are no studies focused on the development, acceptability, and/or effectiveness of any harm reduction intervention that is grounded in Indigenous cultural worldviews, developed exclusively for Indigenous youth.

**Future Harm Reduction Research With Indigenous Communities**

Ultimately, meeting the needs of diverse YOC requires a community-based approach. Trust and respect must be established in order to develop a mutually beneficial research partnership with underrepresented populations. Developing interventions to reduce AOD harms among diverse

YOC should be an ever-unfolding process of refinement, as cultural norms and AOD using trends change and can vary in severity over time. Specifically, for Papers 2 and 3, a CBPR approach was used to respectfully engage Indigenous people in the creation of an intervention designed to enhance relationality among Indigenous youth while simultaneously reducing AOD use and harm.

In Paper 1, the primary goal of the mobile app intervention was to facilitate behavior change. Given the short time frame and the small sample size of the pilot study, behavior changes as a result the intervention were not able to be measured. Moving forward, oversampling of Indigenous youth participants would be necessary to ensure that their perspectives are included in future trials. For Papers 2 and 3, the limitations of both arms of the study can also attributed to the sample size and the composition of the samples themselves. In Paper 2, the youth sample potentially comprised of Indigenous youth who were more prepared to identify their prevention needs than those who had never participated in an after-school program and whose needs might have required a more intensive approach. As with the youth sample, the adult sample potentially comprised adults who already engaged in related discussions with family at home, which may have contributed to similar findings between adult and youth participants. Although beyond the scope of this dissertation, it is essential to recognize the lack of available culturally relevant AOD prevention and treatment options for Indigenous young people, which can exacerbate their risk for AOD use, harm, and relapse. It is also important to recognize Indigenous youth in other settings may have greater needs related to involvement with gang activity, criminal justice systems, and/or child welfare issues. The intersection of these challenges in relationship to risks for AOD use among Indigenous youth underscores the urgency for culturally relevant prevention interventions developed for, tested among, and evaluated by those most at risk.

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