Exploring Anishinabe Youth Resilience during the COVID-19 Pandemic: A Multi-Level Analysis of Cultural Awareness Moderating Within-Person Effects of Positive and Negative Affect on Alcohol Use and Consequences

Julianne Dumont

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Signed by the final examining committee:

_____ Chair
Kristen Dunfield, Ph.D.

_____ Examiner
Andrew Ryder, Ph.D.

_____ Examiner
Jean-Phillipe Gouin, Ph.D.

_____ Supervisor
Roisin M. O'Connor, Ph.D.

Approved by

_____
Chair of Department
Kristen Dunfield, Ph.D.

_____
Dean of Faculty
Pascale Sicotte, Ph.D.

Date: _____

Abstract

Exploring Anishinabe Youth Resilience during the COVID-19 Pandemic:

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Julianne Dumont

Since time immemorial, First Nations (FN) communities have incorporated culture into wellness models. Though, empirical support linking enculturation and historical loss with alcohol use is new. The COVID-19 pandemic may trigger pre-existing trauma, as reflected in state affect, thus increasing alcohol misuse risk. Coupling this with growing recognition that cultural connectedness promotes FN peoples' well-being, the current study assessed the influence of cultural awareness constructs on affect-related alcohol use during the COVID-19 pandemic. We hypothesized that cultural connectedness (CCS), awareness of connectedness (ACS), and historical loss (HLS) would moderate the effect of affect on alcohol outcomes, such that elevated CCS and ACS would mitigate, and HLS exacerbate, the risk of low positive/high negative affect on alcohol outcomes. The current 7-week online study included 48 Anishinabe youth (15-30 years old) who completed baseline measures of CCS, ACS, and HLS and weekly assessments of positive/negative affect and alcohol outcomes. Multi-level Zero-Inflated Poisson (ZIP) regressions supported CCS and ACS as moderators. At high CCS likelihood of alcohol use was mitigated at low positive affect, as hypothesized, but unexpectedly, risk for use was evident at high positive affect. At high ACS, increased positive affect was associated with decreased likelihood of alcohol use, with the opposite found at low ACS, suggesting risk mitigation at high positive affect. As hypothesized, elevated negative affect was associated with reduced negative

alcohol consequences, at high (not low) ACS. Results support the protective role of FN youths' cultural awareness constructs on affective risk for alcohol use in the COVID-19 context.

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Migwetch (thank you) to the Anishinabe youth who chose to participate in the study, engaged in discussion, reviewed my thesis, and held me accountable to the community. I am truly grateful for the support I have received from all of you throughout the research process.

During this trying year I cannot help but express my upmost gratitude and love for my family, friends, and community. We often say it takes a community to raise a child, but I believe it also takes a community to support the ongoing wellness of an individual. I am resilient because my loved ones taught me how. Migwetch ashidj kizagiyan.

My sincere thanks to my supervisor, Dr. Roisin O'Connor, who radiates patience and compassion. Roisin, your guidance has been instrumental throughout the research process. Your encouragement and unconditional support to ensure ethical community-based research does not go unnoticed. Thank you for sharing your knowledge and kindness with me.

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Dedication

To respect Anishinabe protocols, I must first acknowledge my positionality. My name is Julianne Dumont. I am an Anishinabekwe, member of the Algonquin Nation and was born and raised in the community Kitigan Zibi Anishinabeg. As an Anishinabekwe, I continue to occupy and work on our unceded Algonquin territory. As the Algonquin nation, we continue to strive for mino-bimaadiziwin (the good life). The good life is to seek balance and harmony with our relationships.

I want to take a moment to grieve the loss of the Indigenous children who are being uncovered at various unmarked burial sites across the country. I encourage readers to collectively pray for the children as they begin their journey to the spirit world. I ask us all to reflect on our roles and consider what are we doing to support Indigenous wellbeing and, ultimately, Indigenous lives. It is time to acknowledge, mourn, grieve, and sit with these truths. Then, our response is to heal together and reconnect. I hope from this moment on, we all continue to reflect. I dedicate my work and my life to those who have survived the residential school system and for those who never came home.

I dedicate my work to family and community. I dedicate the research to the mothers and fathers who are raising proud Anishinabe children. I dedicate the research to the grandparents who are passing on their stories and language. I dedicate the research to the aunts and uncles working to heal and interrupt the cycle of intergenerational trauma. I dedicate the research to the cousins who laugh, dance, and play. Lastly, I dedicate my research to all Anishinabeg who continue to strive for mino-bimaadziwin.

Migwetch onje kakina kego.

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Exploring Anishinabe Youth Resilience during the COVID-19 Pandemic: A Multi-Level Analysis of Cultural Components Moderating Within-Person Effects of Positive and Negative Affect on Alcohol Use and Consequences

Many First Nations (FN) youth from various communities across Canada continue to experience a higher risk of mental health problems compared to white Canadians (First Nations Information Governance Centre, 2012; Hop Wo et al., 2020). The disproportionate risks have been identified as context-specific arising from the extensive history of maltreatment of FN people involving the oppression and marginalization of their cultures (Kirmayer et al., 2009). Given that the loss of culture has negatively impacted the well-being of FN communities, the degree of reclaimed culture may be an important protective factor for FN youth (Gray & Cote, 2019; Snowshoe et al., 2017). Unfortunately, research has focused mainly on comparative studies of FN and non-FN counterparts or FN acculturation, failing to explore culturally specific protective factors for FN youth. For this reason, the purpose of this thesis is to assess the extent to which cultural awareness (i.e., cultural connectedness, historical loss, and awareness of connectedness) contributes to the within-person association between affect and alcohol use and negative consequences for Anishinabe youth during the COVID-19 pandemic.

Anishinabeg

Broadly, Indigenous peoples are indigenous to the lands they occupy (Alfred & Corntassel, 2005). With that said, the term Indigenous tends to homogenize various experiences and diversity amongst distinct Indigenous nations, whereas Indigenous peoples are a highly heterogeneous group of diverse nations (King et al., 2019). In Canada, there are three distinct groups that make up the term Indigenous, including the First Nation (FN), Métis, and Inuit (Statistics Canada, 2006). The FN is the largest and most varied group of Indigenous peoples in

Canada. FN is comprised of distinct nations, including the Anishinabe Nation (i.e., the people of the land). The Anishinabe Nation is comprised of many culturally-related tribes, including the Algonquin, Ojibway, Odawa, Mississauga, Saulteaux, and Potawatomi tribes (Simpson, 2008). These heterogeneous groups hold worldviews that are distinct to their respective nations.

Anishinabe Wellness

Anishinabe ways of knowing include an ever-growing body of knowledge that has developed over many generations (Battiste, 2002). Anishinabe knowledge is place-based and provides highly specific information about certain landscapes and depends on relationships from a holistic perspective (Watts, 2013; Wilson, 2008). For the Anishinabeg, the teaching of the medicine wheel proves to be central to their way of living and understanding the world (Wilson, 2003). The medicine wheel offers teachings of mino-bimaadiziwin (the good life). It instills the importance of holistic well-being involving aspects of spiritual, physical, mental, and emotional health. Spiritual health includes the desire of living in the world and connecting with the spirit world in a good way (Fiedeldey-Van Dijk et al., 2017). Physical health involves ways in which we take care of our bodies. Mental health includes our drive to learn and grow through various experiences. Emotional health is rooted in family, community, and relationships with creation as an extended family. With this knowledge, the current study will employ an Anishinabe conceptualization of holistic wellness by measuring spiritual (cultural connectedness), mental (affect), and emotional (historical loss and awareness of connectedness) aspects.

Colonization and Historical Trauma

The well-being of FN must be understood considering the aversive colonial context subjugated onto FN communities in Canada. The disproportionate risk of mental health problems experienced by FN communities in Canada have arisen within the context of an all-

encompassing history of maltreatment aimed at suppressing and oppressing FN cultures (Bombay et al., 2009; Kirmayer et al., 2009). Many FN populations experienced assimilation policies, forced relocation, and confinement to reserves. One of the most notorious colonization attempts of assimilation borne of political policy by the Canadian government enacted on FN peoples was the Indian residential school and allied Indian day school system (Archibald & Castellano, 2006; Bruyere, 2016). Devastatingly, the residential school system forcefully removed well over 150,000 Indigenous children from their families between the years 1874 and 1986, with the last school closure of the Gordon Residential School in Saskatchewan in 1996 (Archibald & Castellano, 2006). Children as young as three years old were forcibly removed from their homes and taken away from their community to attend residential schools that sought to "kill the Indian in the child" (Churchill, 2004) by breaking down family structures, disrupting intergenerational knowledge transfer, and forbidding cultural practices (Sunseri & Cannon, 2011). Later, many survivors revealed various traumas endured while in residential schools, including sexual, physical, mental, and spiritual abuse (Sunseri & Cannon, 2011).

The impacts of colonization have caused lasting health and mental health issues within FN communities; these circumstances have been termed intergenerational trauma, cultural genocide, or historical trauma (Brave Heart & DeBruyn, 1998; Duran et al., 1998; Truth and Reconciliation Commission of Canada, 2016). Historical trauma occurs when the maladaptive effects of an original trauma experience, such as residential schools, result in unhealthy consequences on the first generation being passed down to the next generation or multiple generations (Bombay et al., 2014; Gaywish & Mordoch, 2018). To this day, many Indigenous peoples suffer from substance abuse linked to historical trauma experiences (Heart, 2003; Nebelkopf & Phillips, 2004).

Although empirical evidence is still being documented, historical trauma created a context of disproportionate risk for alcohol use which fosters many social problems within FN communities (Whitehead & Hayes, 1998). For Indigenous peoples, historical trauma symptoms were linked to alcohol use in the past month (Wiechelt et al., 2012). Qualitative research with FN elders attributed alcohol abuse to historical trauma (Whitbeck et al., 2004). While severe trauma increased the probability of obtaining an alcohol use disorder for Indigenous youth, with the intensity and quantity of traumas increasing extent of use (Boyd-Ball et al., 2006). High rates of trauma symptomatology have also been reported in Indigenous adolescents in substance abuse treatment (Deters et al., 2006). Further, individuals with substance use issues have been found to experience more distress related to historical loss than those without substance dependence (Ehlers et al., 2013). Altogether, the colonization attempts and ongoing historical trauma symptomatology created a context of disproportionate risk for alcohol use and alcohol-related problems that FN communities continue to endure.

The COVID-19 Context

Notably, the COVID-19 pandemic presents as a context of critical significance, given this is a time where we observe an increased risk of mental health problems for youth (Debowska et al., 2020; Giuntella et al., 2021). Specifically, younger adults from racial/ethnic minorities report having experienced a disproportionate increase in substance use and worse mental health outcomes during the COVID-19 pandemic compared to the general public (Czeisler et al., 2020; Pierce et al., 2020). Youth endorsed low mood, loneliness, stress, anxiety, and in turn, disruptions to relationships with friends and family (Copeland et al., 2021; Rogers et al., 2021). While substance use has increased overall compared to pre-pandemic times, the most significant reported increase is in alcohol use (Dumas et al., 2020; Sharma et al., 2020). Of which, endorsed

psychological stress due to the COVID-19 pandemic has been linked to exacerbated alcohol use risk for young adults (Ahmed et al., 2020; Batchelor et al., 2021; Bignardi et al., 2021). A cross-sectional study found that youth who reported higher stress levels also demonstrated increased alcohol use (Bourion-Bédès et al., 2021). Not to mention, youth reported engaging in alcohol use, mainly to cope with pandemic-related stress (Coakley et al., 2021). Drinking to cope has been extensively investigated with non-indigenous samples and found that alcohol-related consequences are most present for those individuals who drink when high on negative affect (Blevins et al., 2016; Martens et al., 2015). While the empirical literature regarding the effects of the COVID-19 pandemic on youth mental health is in development, the literature to date supports the tension reduction theory of alcohol use that suggests individuals consume alcohol to alleviate or cope with negative affect (Conger, 1956). Similarly, negative reinforcement models suggest that individuals drink alcohol expecting positive affective consequences (Cooper, 1994; Cox & Klinger, 1988). Thus, considering the two theoretical frameworks coupled with the empirical evidence to date, it seems that youth may be more prone to engage in affect-motivated alcohol use, thereby reducing negative affect linked to pandemic-related stressors, increasing the likelihood of negative consequences when drinking.

Cultural Awareness

While strength-based research with Indigenous communities is in its infancy, the empirical evidence supporting the protective effect of cultural awareness constructs involving the knowledge of, engagement with, and awareness of aspects of FN culture is emerging (Snowshoe et al., 2015). In support of the newly established empirical literature, Stone et al. (2006) found that participation in traditional activities coupled with strong spiritual beliefs had significant reductions in alcohol use and increased in positive mental health outcomes for Indigenous youth.

Likewise, Navajo youth with high levels of exploration, affirmation, or commitment to their culture reported the most adaptive functioning and lowest levels of substance use (Jones & Galliher, 2007). Maori youth with high cultural identity had greater probability to experience adaptive mental health outcomes (Williams et al., 2018). Further, in a Navajo male adolescent sample, a positive longitudinal direct effect between cultural identity and substance use emerged, such that a strong cultural identity at year one predicted decreased substance use for older adolescents at year two (Galliher et al., 2010). Correspondingly, an association between enculturation and increased levels of self-esteem has been reported for Navajo adolescents (Jones & Galliher, 2007). Thus, empirical evidence suggests that both cultural engagement and strong cultural identity serve as compensatory resilience mechanisms against mental health problems and substance use among Indigenous youth (LaFromboise et al., 2006; Snowshoe et al., 2017).

A core belief within the Anishinabe worldview includes the awareness of the interrelatedness amongst creation, involving oneself, family, community, and the natural environment. Interrelatedness involves understanding the importance of relationships on an individual, collective, and environment level, and how in turn, all parts affect one another (Barreiro, 2010). In support of the findings on the importance of family relatedness, a mixed-methods RCT study found significant improvement in Indigenous youth well-being and decreased substance use for those who received group intervention involving activities to strengthen family ties compared to solely individual treatment as usual (Nagel et al., 2009). In terms of community and nationhood, it is well established in the literature that adverse mental health outcomes are associated with discrimination experiences (LaFromboise et al., 2006). With that said, positive feelings regarding one's cultural group interact with perceived discrimination in that endorsed pride was associated with decreased depressive symptoms, suggesting cultural

pride may act as a protective factor (Bombay et al., 2010). Not to mention, growing research suggests that connection to the land is an integral part of Indigenous well-being (Hansen, 2018; Simpson, 2014). Freeman (2019) argued that FN peoples could not fully understand their culture and way of living in the world if they are not aware of their relation to land. Johnson-Jennings et al. (2020) qualitative findings support the statement suggesting that locating the self in relation to land and ancestors can alter notions of trauma into healing. Further, results indicate that youth aware of their connection to land reflect on their role and the need to engage in healthy behaviours. Thus, interrelatedness may be a compensatory resilience factor against mental health problems, including substance use, via pride and belief in interrelatedness between oneself, family, community, and the natural environment (Pokhrel & Herzog, 2014).

Interplay Between Cultural Awareness and Affect on Alcohol Use

Together, tension reduction theory and negative reinforcement models suggest that those with high negative affect will engage in alcohol use to temporarily reduce negative affect, and this puts them at risk for negative consequences when drinking alcohol (Park & Levenson, 2002; Stewart et al., 2011). Of primary concern, the COVID-19 pandemic has been a context in which youth are experiencing negative affect and poor mental health outcomes. The COVID-19 pandemic and associated stressors can also (re)trigger pre-existing trauma. Specifically, the uncovering of the remains at residential schools during the pandemic could have triggered survivors and family of survivors. The investigations began with the former Kamloops Indian Residential School in British Columbia where at least 215 Indigenous children, some as young as three years old, have been found buried in a mass unmarked grave (Press, 2021). Since then, the investigations have continued throughout Canada, uncovering over 5000 children from unmarked graves, and many communities are struggling as they re-experience the trauma

(Nichols, 2015). Of which, historical trauma incites feelings of hopelessness for FN youth in Canada which is directly linked to depression symptoms. Further, the depression symptoms are directly correlated to drinking to cope as a strategy to deal with negative affect (Freeman, 2019). This suggests that FN youth with greater perceived hopelessness are at increased risk of drinking to cope as the depression symptoms may motivate them to drink alcohol to eliminate negative mood or rather avoid negative mood through drinking. Thus, in the context of the COVID-19 pandemic, historical trauma may exacerbate an affect-motivated pattern of drinking which has been shown to be a problem indicator as those who engage in this pattern are more likely to drink heavily and experience more negative consequences (Kushner et al., 2000).

With this context in mind, enculturation has been associated with improved self-esteem coupled with reduced alcohol use and negative consequences among Indigenous youth (Cheah & Nelson, 2004; Currie et al., 2011). In particular, the indigenist stress-coping model proposes that stress due to trauma (e.g., COVID-19 pandemic, historical trauma) can be moderated by cultural buffers (e.g., cultural connectedness and awareness of connectedness) and in turn protect mental health outcomes (Walters & Simoni, 2002). Interestingly, Indigenous youth described turning to cultural practices when feeling low mood and describing and ceremonies as "revitalizing," "uplifting," and "rejuvenating," suggesting increases in positive affect (Currie et al., 2011). Thus, enculturation may reduce motivations to use alcohol as youth turn to cultural practice for their mental health needs. Moreover, given that ceremonies often prohibit alcohol use or recommend moderation, perhaps participation may also have a direct effect on alcohol use and problems. Some elders and healers believe that, in order to heal, alcohol needs to be prohibited as the alcohol disrupts spiritual connection (Brady, 1995; Duran, 2006). Thus, participation in cultural practices and ceremonies and strong cultural identity may have a direct or indirect influence on

alcohol use. All in all, high endorsed enculturation should be protective against affect-motivated alcohol use and associated negative consequences.

The Current Study

The purpose of the current study was to examine the factors that promote and hinder wellness for Anishinabe youth during the COVID-19 pandemic. The conceptualization of the study was based on the holistic well-being teachings (i.e., involving spiritual, mental, physical, and emotional aspects of health) within the medicine in accordance with Anishinabe worldview. In the current study, spiritual health will map onto baseline cultural connectedness for Anishinabe youth. Emotional health will map onto baseline historical loss and awareness of connectedness. Last, mental health will be assessed with weekly measures of positive and negative affect as well as alcohol use and negative consequences.

This study aimed to investigate the effects of weekly positive and negative affect on alcohol use and alcohol use negative consequences in a sample of Anishinabe youth. Further, the study considered the role of baseline levels of cultural connectedness, historical loss, and awareness of connectedness as moderators. This seven-week online study assessed both baseline characteristics of cultural connectedness, historical loss, awareness of connectedness, and weekly assessments of positive and negative affect as well as alcohol use and alcohol use consequences. The following was hypothesized: (1) baseline cultural connectedness and awareness of connectedness would be associated with decreased, and historical loss would be associated with increased, weekly alcohol use and negative consequence; (2) weekly positive affect would be associated with decreased, and negative affect would be associated with increased weekly alcohol use and negative consequences; (3) baseline cultural connectedness, awareness of connectedness, and historical loss would moderate the within person effects of positive and

negative affect on alcohol outcomes, such that risk would be mitigated at high cultural connectedness and awareness of connectedness but exacerbated at high historical loss.

Method

Participants

The participants included $N = 48$ Anishinabe youth from a specific Anishinabe community in Quebec. To be eligible to participate in the study, individuals had to be between the ages of 15 and 30 years of age, from the specific Anishinabe community, and comfortable reading/responding in English (as all questionnaires are in English). The primary language of instruction for the majority of the Anishinabe youth sample is English. Therefore, this study would support generalizability to most Anishinabe youth within the broader Anishinabe Nation. Youth under the age of 18 required parental consent as well as individual assent to participate in the study; participants over the age of 18 provided individual consent. At the end of the study, participants were compensated with $15.00 (eGift card) for the completion of each full questionnaire battery (T1, T7) and $5.00 (eGift card) for the completion of each short questionnaire battery (T2-T6). Thus, participants could have received a total of $55.00 via eGift card. Also, upon the termination of each survey, all participants were entered into a draw for a tablet.

The mean age of participants within the sample was 22.71 ($SD = 3.78$). The majority of the sample were female (68.8%) compared to males (31.2%). In regard to gender, 66.7% identified as a woman, 29.2% identified as a man, and 4.2% identified as two-spirited. Most participants grew up in their Indigenous community (56.3%) compared to elsewhere (37.5%). Meanwhile, 45.8% of the sample were currently living on their reserve, while 54.2% were living elsewhere. The majority of participants lived with parents (33.3%), a romantic partner (27.1%),

children (18.8%), siblings (18.0%), or alone (10.4%) before the COVID-19 pandemic social distancing measures. During social distancing measures, living situations remained fairly consistent with most living with parents (35.4%), a romantic partner (34.4%), children (22.9%), siblings (25.0%), or alone (12.5%).

In terms of the highest level of education completed at the time of the study (keeping in mind that participants may have been currently attending school), the majority of the sample had completed high school (43.8%), college (22.9%), university at the undergraduate level (25.0%) or at the graduate level (6.3%). Most participants were employed before social distancing measures (54.2%) and continued to be employed after social distancing measures (62.5%). For mother's highest level of education completed, 18.8% completed high school, 37.5% completed college, 25.0% completed university at the undergraduate level, and 16.7% at the graduate level. Most mothers were employed before (79.2%), and since (75.0%), social distancing measures were put in place. For father's highest level of education completed, 37.5% completed high school, 14.6% completed college, 12.5% completed university at the undergraduate level, and 18.8 completed at the graduate level. Most fathers were employed before (60.4%), and since (62.5%), social distancing measures were put in place.

Procedure

The online study recruited Anishinabe participants through advertisements shared across various forums, including social media (e.g., Facebook), emails (using snowball method), community flyers, and postings at local businesses. Youth interested in the study contacted the study-specific email. Eligible participants completed the 7-week online study, which included both online questionnaires and information sessions. The online questionnaires were distributed weekly. Participants received an email with a URL embedded on Thursday evenings each week

and had until Sunday to complete the questionnaire. The web survey included both a full battery (baseline measures) and a short battery (weekly measures) of questionnaires. The full battery included baseline measures of cultural connectedness, historical loss, and awareness of connectedness. The short battery included weekly measures of positive and negative affect, alcohol use, and alcohol use consequences. Meanwhile, the online information sessions were pre-recorded and emailed to the participants bi-weekly. The information sessions presented brief discussions of cultural teachings and practices (e.g., medicine wheel teachings and smudging practices), health-related behaviors (e.g., physical activity and sleep hygiene), and local resources. The information sessions were intended to increase engagement as well as offer participants resources.

The study abides by the FN research principles of OCAP, which includes four central components: ownership, control, access, and possession (E. Duran, 2006). A Data Ownership and Access Sharing Agreement was co-created and signed by the principal investigator, the Concordia University representative (Vice President of Strategy and Operations), and the Anishinabe community leadership (Chief and Council and the Health and Services Community Director). The agreement holds that the FN community collectively owns their data and information. The community has the right to control their information; collectively, they must give consent for any publication of data and can choose when the data be destroyed. Throughout the entire research process, the Anishinabeg were and will be continually viewed as a sovereign nation that has ownership and control over their information and data.

Measures

Cultural Connectedness (Baseline; T1)

The Cultural Connectedness Scale (CCS; Snowshoe et al., 2015) is a twenty-nine-item instrument that was used to assess cultural connectedness consisting of three dimensions, including identity, traditions, and spirituality. The CCS was included in the full battery questionnaire as a baseline (level 2) indicator of cultural connectedness. Participants endorsed whether they engage in cultural traditions on a 2-point response scale (0 [No], 1 [Yes]). Participants endorsed how much they agree with each statement about their cultural identity on a 4-point response scale (0 = [Strongly disagree] to 4 [Strongly agree]). Participants endorsed how frequently they use spiritual medicines on a 4-point response scale (0 = [Never, Once/Twice in the last year] to 3 [Every day]). The total score was derived by the sum of each identity, tradition, and spirituality subscale. The criterion validity of the CCS was supported as all correlations between the CCS, and their theoretically relevant measures (i.e., sense of self, spiritual attendance, and life satisfaction) were significant and in the expected direction (Snowshoe et al., 2017). All three subscales demonstrated adequate scale score reliabilities. In the current study, the CCS demonstrated good internal consistency (see Table 1).

Historical Loss Scale (Baseline; T1)

The Historical Loss Scale (HLS; Whitbeck et al., 2004) is a ten-item instrument that was used to assess the losses Indigenous communities experience(d) since contact with Europeans (Whites). The HLS was included in the full battery questionnaire as a baseline (level 2) indicator of historical loss. Participants endorsed how often they think about each of these losses that Indigenous communities have experienced (e.g., The loss of our family ties because of boarding/residential schools) on a 6-point response scale (1 [Never] to 6 [Several times a day].

The single composite score was derived by summing all items. Convergent validity was supported as the associations were significant between HLS and a theoretically similar historical grief measure and had high internal reliability (Whitbeck et al., 2004). In the current study, HLS demonstrated good internal consistency (see Table 1).

Awareness of Connectedness (Baseline; T1)

The Awareness of Connectedness Scale (ACS; Mohatt et al., 2011) is a twelve-item instrument that was used to assess the interrelated welfare of the individual, one's family, one's community, and the natural environment. The ACS was included in the full battery questionnaire as a baseline (level 2) indicator of awareness of connectedness. Participants endorsed the concept of interrelatedness (reciprocal well-being) within themselves, their family, community, and the natural environment (e.g., I treat nature with respect like a family member) on a 3-point response scale (0 [Not at all] to 2 [A lot]). The sum of all items was used to derive the single composite score. Convergent and discriminant validity were supported as the correlations were significantly associated as expected between ACS and measures of reasons for living and communal mastery (Mohatt et al., 2011). In the current study, ACS demonstrated good internal consistency (see Table 1).

Affect (Weekly; T1 through T7)

The Positive and Negative Affect Schedule (PANAS; Watson et al., 1988) is a twenty-item measure that was used to assess each independent dimension of positive and negative affect. For the current study, three out of the ten items for each independent dimension were used to measure positive and negative affect. The PANAS was included in the short battery questionnaire as a weekly (level 1) indicator of positive and negative affect. Participants were asked to indicate the extent to which they felt any given positive or negative emotion over the

past week (e.g., enthusiastic, distressed) on a 5-point response scale (1 [Very slightly or Not at all] to 5 [Extremely]). The total score for both independent dimensions was derived by the sum of all positive and negative affect items, respectively. Both independent dimensions supported high internal consistency and were significantly correlated as expected with the HADS depression measure and DASS anxiety measure supporting criterion validity (Crawford & Henry, 2004). In the current study, PANAS positive affect demonstrated adequate score reliability while negative affect demonstrated good internal consistency (see Table 1).

Alcohol Use (Weekly; T1 through T7)

The Timeline Follow-back (TLFB; Sobell & Sobell, 1992) was used to assess alcohol use on a weekly basis. The TLFB alcohol measure was included in the short battery questionnaire as a weekly (level 1) indicator of alcohol use. Participants were asked to indicate how many drinks (with alcohol) they had on each day of the past week (i.e., from Monday to Sunday). The TLFB resulted in a composite quantity by frequency score for the past week (i.e., the total amount of alcohol consumed in the past week).

Alcohol Consequences (Weekly; T1 through T7)

The Brief Young Adult Alcohol Consequences Questionnaire (B-YAACQ; Kahler et al., 2005) is a 24-item self-report questionnaire assessing consequences when using alcohol. The B-YAACQ measure was included in the short battery questionnaire as a weekly (level 1) indicator of alcohol use consequences. Participants identified whether or not they had experienced a negative consequence when drinking alcohol over the past week (e.g., “While drinking, I have said or done embarrassing things”) using a dichotomous response format (0 [No] and 1 [Yes]). The sum of all items was used to derive the single composite score. The B-YAACQ showed very good internal consistency (Kahler et al., 2008). The B-YAACQ was highly correlated with the

Rutgers Alcohol Problem Index (RAPI), a theoretically similar drinking consequence measure, thus supporting the convergent validity of the measure (Kahler et al., 2005). In the current study, the B-YAACQ demonstrated good internal consistency (see Table 1).

Data Analytic Overview

Data Integrity

All data were screened prior to analysis to identify violations of the multi-level modeling assumptions. The data were screened for multivariate outliers discerned by examining Mahalanobis and Cook's distances (Cook, 1977; Mahalanobis, 1930). No multivariate outliers were identified. Though, there was identified missing data across the seven time points. To handle the missing data, Full Information Maximum Likelihood (FIML) estimation was used as the analysis best estimates the likelihood of data based on the existing data (Enders, 2001; Enders & Bandalos, 2001). Next, in accordance to Tabachnick & Fidell (2007) criteria, multicollinearity diagnostics were in the normal range suggesting absence of multicollinearity as no tolerance values were lower than 0.1 for variables with bivariate correlations greater than 0.9.

Overall, 48 participants completed a total of 336 assessments across seven time points. Out of 336 assessments across all participants, 0 assessments were missing for the baseline measures. For the weekly measures, 79 assessments were not completed of the weekly positive and negative affect measure, 77 were not completed of the alcohol use measure, and 78 were not completed of the alcohol consequences measure. Out of the total 259 alcohol use assessments that were completed, 151 (58%) did not include drinking behaviours (i.e., no alcohol use in the given week) over the seven-week assessment period. When alcohol use was endorsed (i.e., non-zero on TLFB), participants reported consuming on average 2.82 (SD = 5.11) alcoholic drinks on a given week. In terms of alcohol consequences, out of the 258 completed assessments, 196

(76%) experienced no alcohol use consequences over the seven-week assessment period. When negative consequences were endorsed (i.e., non-zero on B-YAACQ), participants reported experiencing on average 1.27 (*SD* = 3.68) consequences a week. Descriptive statistics and bivariate correlations for variables included in the statistical analyses are presented in Table 1 and Table 2.

Model Estimation

A two-level analysis framework was utilized to decipher associations at the within-person (level 1) and between-person (level 2) levels. The analyses were conducted with MPlus 8.0 (Muthén, L.K., Muthén, 2017) using the Maximum Likelihood Robust (MLR) estimator to handle missing data. Multi-level Zero-Inflated Poisson (ZIP) regression model was utilized to account for the nature of the alcohol use and alcohol consequence outcome variables, which followed a count (i.e., Poisson) distribution given a large number of data points were at zero (i.e., zero-inflated). ZIP regression models (Atkins et al., 2013; Simons et al., 2006) were utilized to account for the characteristics as it allows for the disaggregation of two types of predictions: (1) assess a behaviour occurrence (drank alcohol vs. did not drink; experience alcohol use negative consequence vs. no consequence) and (2) frequency of the behaviour when it occurs (quantity of drinks containing alcohol consumed; quantity of negative consequences after drinking alcohol). Last, power should not be an issue as the effective sample size in multi-level modelling is the number of participants multiplied by the number of assessment points (Maas & Hox, 2005). Simulation studies support that approximately fifty participants are sufficient (Maas & Hox, 2002). Further, simpler models were tested such that one level 2 variables were considered at a time as a moderator. The pattern of results was consistent; thus, we chose to continue with the comprehensive, theory-informed model.

The present study aimed to understand whether cultural connectedness (level 2), historical loss (level 2), and awareness of connectedness (level 2) moderated the relation between weekly endorsed positive and negative affect (level 1) on alcohol use and negative consequences (see Figure 1). All level 2 variables, along with positive and negative affect (level 1) data points, were grand-mean centered prior to the analysis (Kreft et al., 1995). Two separate analyses were conducted, one for the alcohol use outcome and the other for the alcohol consequence outcome. For each analysis, cultural connectedness (level 2), historical loss (level 2), and awareness of connectedness (level 2) were entered as moderators, positive and negative affect (level 1) were entered as first-order predictors, and both binary and continuous outcomes for both alcohol use and negative consequences were taken into account given the ZIP model was utilized. Both sets of analyses (alcohol use outcome and the alcohol use consequence outcome) were conducted in three steps. Model 1 tested the effect of level 2 predictors on the outcome variable. Then, Model 2 tested the effect of level 1 predictors on the outcome. In Model 3, level 2 variables were added, testing the level 2 variability on the effect of level 1 predictors (positive and negative affect). This final step provided the test of hypothesized moderation. The identification of statistically significant interaction terms was followed by the estimation of simple slopes (Aiken et al., 1991). Specifically, the effect of level 1 predictors on the outcome variable was conditioned on high (+1 *SD*) and low (-1 *SD*) levels of the level 2 variable.

Results

The current study examined the influence of baseline (level 2) cultural connectedness (CCS), historical loss (HLS), and awareness of connectedness (ACS) on alcohol use (occurrence and quantity) and negative consequence (occurrence and quantity). Next, the impact of weekly (level 1) positive and negative affect (PANAS) on alcohol use (TLFB) and negative

consequences (YAACQ) was examined. Last, the moderation effect of baseline CCS (level 2), HLS (level 2), and ACS (level 2) on the within-person association of weekly positive and negative affect (level 1) on alcohol use (binary and continuous outcome) and negative consequence (binary and continuous outcome) were assessed.

Specific to the current study variables, hypotheses included:

(1) Baseline (level 2) CCS and ACS will be negatively associated, and HLS positively associated, with weekly alcohol use and negative consequence.

(2) Weekly (level 1) negative and positive affect will be positively and negatively associated, respectively, with weekly alcohol use and negative consequences.

(3) Level 1 effects of weekly negative and positive affect on alcohol use and negative consequence will be moderated by baseline CCS, ACS, and HLS. Specifically, increased negative and decreased positive affect will be associated with increased weekly alcohol use and negative consequences, but this effect is expected to be dampened at high levels of baseline CCS and ACS and strengthened at high levels of HLS.

Descriptive Statistics

Descriptive statistics and bivariate correlations for variables included in the statistical analyses are presented in Table 1 and Table 2. Results from the bivariate correlations show a moderate positive association between all cultural awareness components, including CCS, HLS, and ACS. Specifically, CCS was positively correlated with HLS. HLS was positively correlated with ACS. ACS was positively correlated with CCS. Interestingly, both positive affect and negative affect were positively correlated with one another. Positive affect and negative affect were also positively correlated with alcohol use and negative consequences. Last, alcohol use and negative consequences were strongly positively correlated. Markedly, extant research

supports the notion that both alcohol use and negative consequence are distinct outcomes and should be handled as such (Kuntsche et al., 2008).

Outcome: Alcohol Use

Alcohol Use Occurrence. Coefficients and 90% CI for the three regression models predicting alcohol use occurrence (drank alcohol vs. did not drink in past week) are reported in Table 3. In the first step baseline (level 2) CCS (p = .012) and ACS (p = .007) were statistically significant predictors of weekly alcohol use occurrence. Specifically, results indicated that elevated baseline CCS was associated with increased likelihood of weekly alcohol use; this was opposite to what was hypothesized. However, consistent with hypotheses, elevated baseline ACS was associated with decreased likelihood of weekly alcohol use. Baseline HLS was not supported as a statistically significant predictor (p >.05). In the second step, weekly (level 1) positive and negative affect were not statistically significant predictors (p >.05) of weekly alcohol use occurrence.

In the final step, the two-way interaction terms between CCS, HLS, and ACS with negative affect were not statistically significant (p >.05) predictors of alcohol use occurrence. Accordingly, CCS, HLS, and ACS were not supported as moderators of the association between weekly negative affect and alcohol use occurrence. However, the two-way interaction terms between CCS and ACS with weekly positive affect were statistically significant (p = .000, p = .002, respectively). Thus, consistent with hypotheses, results supported CCS and ACS as moderators of the within-effect association between weekly positive affect and weekly alcohol use occurrence. Given supported moderation, simple slopes analyses were completed to understand the association. HLS was not supported as a moderator (i.e., HLS X positive affect

interaction term: $p > .05$) of the within-person association between weekly positive affect and alcohol use occurrence.

The simple slope analyses for CCS revealed that the effect of positive affect on alcohol use occurrence was statistically significant at both high (+1 *SD*) ($B = 0.829$, $SE = 0.347$, $p = 0.017$) and low (-1 *SD*) ($B = -0.960$, $SE = 0.348$, $p = 0.006$) CCS. Plotting the simple slopes (see Figure 2) reveals a somewhat complex picture. Consistent with hypotheses, decreased positive affect is associated with reduced risk for likelihood of alcohol use in past week, though when CCS is low compared to high, suggesting low CCS dampens positive affect risk for drinking. But somewhat unexpected, it appears that elevated positive affect is associated with increased likelihood of alcohol use at high (but not low) levels of CCS.

The simple slopes analyses for ACS revealed that the effect of positive affect on alcohol use occurrence was not statistically significant at high (+1 *SD*) ($B = -0.778$, $SE = 0.429$, $p = 0.070$) and low (-1 *SD*) ($B = 0.647$, $SE = 0.391$, $p = 0.098$) ACS, but in both cases, there was marginal support ($p < .10$). Given the support for statistically significant moderation, we proceeded to inspect the simple slopes (see Figure 3). The hypothesized negative association between positive affect and alcohol occurrence is evident at high ACS, while at low ACS a positive association is observed. It appears, in contrast to findings for CCS, that risk for likelihood of alcohol use in the past week at elevated positive affect is dampened at high ACS, or conversely, elevated positive affect is associated with increased likelihood of alcohol use at low (but not high) ACS.

Alcohol Use Quantity. Coefficients and 90% CI for the three regression models predicting alcohol use quantity are reported in Table 4. In the first step, all baseline (level 2) variables were not statistically significant predictors ($p > .05$) of weekly alcohol use quantity. In

the second step, weekly (level 1) positive and negative affect were not statistically significant (p >.05) predictors of weekly alcohol use quantity. In the final step, the two-way interaction terms between CCS, HLS, and ACS with negative affect and positive affect were not statistically significant (p >.05) predictors of alcohol use quantity. Thus, hypothesized moderation of level 2 variables on level 1 effects were not supported in predicting how much individuals drank on weeks when they did drink alcohol.

Outcome: Alcohol Use Consequence

Alcohol Use Consequence Occurrence. Coefficients and 90% CI for the three regression models predicting alcohol use consequence occurrence (experience alcohol use negative consequence vs. no consequence in past week) are reported in Table 5. In the first step baseline (level 2) CCS (p = .038) and HLS (p = .012) were statistically significant predictors of weekly negative consequence occurrence. Specifically, results indicated that elevated baseline CCS was associated with increased likelihood of experiencing weekly negative alcohol consequences, while elevated baseline HLS was associated with decreased likelihood of experiencing negative alcohol consequences; these effects were opposite to what was hypothesized. Baseline ACS was not supported as a statistically significant predictor (p >.05). In the second step, weekly (level 1) positive affect was not a statistically significant predictor (p >.05), while weekly negative affect was supported as a statistically significant predictor (p =.027). Specifically, consistent with hypotheses, elevated weekly negative affect was associated with increased likelihood of experiencing negative alcohol consequences in the past week.

In the final step, the two-way interaction terms between CCS, HLS, and ACS with positive affect were not statistically significant (p >.05) predictors of negative consequence occurrence (i.e., likelihood of consequence vs. no consequence). Accordingly, CCS, HLS, and

ACS were not supported as moderators of the association between weekly positive affect and negative consequence occurrence. The two-way interaction terms between CCS and HLS with weekly negative affect were also not statistically significant (p >.05). However, the two-way interaction term between ACS and weekly negative affect was statistically significant (p =.004). Thus, in partial support of hypotheses, ACS but not CCS and HLS was supported as a moderator of the association between weekly negative affect and negative consequence occurrence. Accordingly, simple slopes analyses were completed to understand the association.

The simple slope analyses for ACS revealed that the effect of negative affect on negative consequence occurrence was not statistically significant at high (+1 *SD*) (B = -0.547 SE = 0.496 p = 0.270) but was statistically significant at low (-1 *SD*) (B = 2.003 SE = 0.587 p = 0.001) ACS. Plotting the simple slopes (see Figure 4) revealed that while increased weekly negative affect is associated with increased likelihood of experiencing consequences at low levels of ACS, consistent with hypotheses, high level of ACS seems to dampen this effect in that negative affect is not predictive of negative consequence occurrence. Thus, it would appear that elevated negative affect is associated with increased risk for negative consequence occurrence only when low on ACS.

Alcohol Use Consequence Quantity. Coefficients and 90% CI for the three regression models predicting alcohol use consequence quantity are reported in Table 6. In the first step, baseline (level 2) HLS was a statistically significant (p = .000) predictor of weekly negative consequence quantity. Specifically, results indicated that elevated baseline HLS was associated with decreased number of weekly negative consequences; this effect was opposite to what was hypothesized. Both baseline CCS and ACS were not supported as statistically significant predictors (p >.05) of weekly negative consequence quantity. In the second step, weekly (level 1)

positive and negative affect were not statistically significant predictors (p >.05) of negative consequence quantity.

In the final step, the two-way interaction terms between CCS, HLS, and ACS with positive affect were not statistically significant (p >.05) predictors of negative consequence quantity. Accordingly, CCS, HLS, and ACS were not supported as moderators of the association between weekly positive affect and negative consequence quantity. The two-way interaction terms between CCS and HLS with negative affect were also not statistically significant (p >.05). However, the two-way interaction term between ACS and weekly negative affect approached statistical significance (p =.057). Thus, in partial support of hypotheses, ACS but not CCS and HLS was supported as a moderator of the association between weekly negative affect and negative consequence quantity. Accordingly, simple slopes analyses were completed to understand the association.

The results from simple slope analyses revealed that the effect of negative affect on alcohol consequence quantity was not statistically significant at both high (+1 *SD*) (B = -0.325 SE = 0.208 p = 0.119) and low (-1 *SD*) (B = 0.699 SE = 0.425 p = 0.100) ACS. However, given the support for statistically significant moderation, we proceeded to inspect the simple slopes (see Figure 5). Given the non-statistically significant simple slopes, the results are interpreted with caution. While increased weekly negative affect is associated with increased likelihood of negative consequences at low levels of ACS, consistent with hypotheses, high level of ACS seems to dampen this effect in that negative affect predicts decreased likelihood in negative consequence quantity. Therefore, it would appear that elevated negative affect is associated with increased risk for negative consequence quantity when low on ACS.

Discussion

Many FN communities have incorporated culture into their wellness models since time immemorial. The goal of the current study was to provide empirical evidence for the role of cultural awareness constructs on affect-related alcohol use for Anishinabe youth during the COVID-19 pandemic. The present study revealed a mix of hypothesized and unexpected findings. Consistent with hypotheses, results supported ACS as protective against alcohol risk behaviour (i.e., alcohol use), such that those aware of their interrelated welfare were less likely to drink alcohol in a given week. However, contrary to hypotheses, elevated CCS was associated with increased, and elevated HLS with reduced, alcohol risk behaviour (i.e., alcohol use, negative consequences). As hypothesized, high weekly negative affect was linked with weekly alcohol risk behaviour (i.e., negative consequences), while positive affect showed a null effect. Notably, the study supported both CCS and ACS as moderators of affect effects on weekly alcohol behaviour. Contrary to hypotheses, alcohol use risk was exacerbated at high positive affect when CCS was high (vs. low), while this positive-affect related risk was mitigated at high (vs. low) ACS. However, consistent with hypotheses, high (vs. low) ACS dampened alcohol risk (i.e., negative consequences) associated with high negative affect.

Outcome: Alcohol Use

Level 2 (between-subject) predictors. Given there was an interaction effect, the main effects should be interpreted with caution. Consistent with our hypotheses, elevated baseline ACS was associated with a decreased likelihood of using alcohol in a given week. However, unexpectedly, baseline HLS did not predict the likelihood of drinking on a given week. Instead, elevated baseline CCS was associated with an increased probability of using alcohol in a given

week. Notably, none of the cultural awareness baseline measures included in this study predicted how much individuals consumed when they did drink alcohol (i.e., quantity).

Existing literature supports ACS as a protective factor given that youth highly aware of their interrelated welfare also feel less pressure to conform to youth drinking norms as they perceive to be supported and connected to family, community, and natural environment (Mohatt et al., 2011). Further, Johnson-Jennings et al. (2020) found that youth aware of their relationship with creation develop an increased sense of responsibility regarding their actions. Not to mention, the networks of youth highly aware of their interconnected welfare may include more people who are also vigilant of their behaviours as they believe their choices impact others and may decide to avoid alcohol or engage in harm reduction approaches.

Otherwise, the CCS findings seem contradictory to the existing literature that continuously supports enculturation as a cultural-specific protective factor for alcohol abuse in Indigenous youth (Whitbeck et al., 2004). Again, recognizing there is no current empirical evidence to date gauging the impacts of the COVID-19 pandemic on cultural identity, traditions, and spirituality, we must interpret the findings with care. When considering pre-pandemic times, Currie et al. (2011) found that participation in cultural ceremonies could directly affect alcohol use as many cultural practices prohibit use (Morgan & Freeman, 2009) or indirectly reduce motivations to drink. Given the social distancing measures during the COVID-19 pandemic, the results may reflect decreased accessibility to cultural practices and ceremonies coupled with isolation from culturally like-minded people, diminishing the previously identified reductions in motivations to drink associated with enculturation (Wendt et al., 2021). The disconnect from practices and peoples may have led youth who are more enculturated to search for other activities, given that many cultural activities were inaccessible in the pandemic context.

Additionally, with the developmental context in mind, adolescence is a time of substance use experimentation. Perhaps the inaccessibility of cultural practices and ceremonies during the COVID-19 pandemic stimulated identity exploration regarding alcohol use in place of cultural aspects (White & Jackson, 2004). Altogether, while the results seem contradictory, they shed light on the influence of the COVID-19 pandemic on the relationship between enculturation and alcohol use.

Level 1 (within-person) predictors. Weekly positive and negative affect were not significant predictors of the likelihood of drinking or quantity of alcohol consumed in a given week; this was contrary to hypotheses. Literature on tension reduction suggests that only a subset of vulnerable individuals are at risk for drinking due to negative affect (Conger, 1956; Kushner et al., 2000). Further, an affect-motivated pattern of drinking was identified as an alcohol-problem indicator. In particular, drinking for coping motives has been consistently linked with experiencing alcohol-related negative consequences, while less often predicted quantity of use (Copper, 1994; Grant et al., 2007; Martens et al., 2008; Park & Levenson, 2002). Those who endorse drinking for social reasons drink lighter and more infrequently. In contrast, those who drink for enhancement purposes typically engage in heavier drinking, an identified risk for alcohol-related problems (Grant et al., 2007). When considering the affect-motivated drinking literature, no association between affect and drinking occurrence should be interpreted as an indicator of non-problematic drinking patterns amongst the sample of Anishinabe youth.

Moderation. HLS was not supported as a moderator of the association between affect and likelihood of using alcohol in a given week. Nonetheless, both CCS and ACS were supported as moderators of weekly positive affect on the probability of alcohol use in a given week. None of the cultural awareness variables were supported as a moderator of the link

between weekly negative affect on the likelihood of alcohol use or on the effect of weekly positive or negative affect on the quantity of alcohol use.

Consistent with hypotheses, low CCS dampens positive affect risk for drinking. However, it also appears that elevated positive affect is associated with an increased likelihood of alcohol use at high levels of CCS. The latter results seem to contradict current literature that suggests high enculturation leads to alcohol cessation instead of an increased likelihood of consuming alcohol (Galliher et al., 2010). Moreover, given the positive valence, there are likely social or enhancement motives influencing drinking as mentioned prior (Grant et al., 2007). In general, positive valence motives (i.e., social and enhancement motives) are not as strong risk indicators compared to negative affect-motivated alcohol use. Given the conflicting evidence, the study findings may suggest a distinct interaction within the context of the pandemic. For example, youth who usually engage in cultural practices are not given the opportunity under social distancing measures. In addition, given that adolescents and emerging adults do not have access to cultural supports, they may experiment with different behaviours when high in positive affect given the exploration stage they are in developmentally. The results may also suggest that those high on CCS engage in fewer problem behaviours as Anishinabe youth are less likely to engage in alcohol use when lower on positive affect, and more likely to engage when experiencing more significant positive affect. Although the results seem contradictory and complex, they provide an understanding that is specific to the COVID-19 pandemic context.

There is a negative association between positive affect and alcohol occurrence at high ACS, while a positive association is observed at low ACS. Therefore, it appears there is a risk for alcohol use in a given week when high on positive affect, although high ACS dampened the effect. Conversely, elevated positive affect is associated with an increased likelihood of alcohol

use at low ACS. Thus, it seems as though positive affect motivated drinking is present at low levels of ACS, though this is not a cause of great concern to the extent of negative affect motivated drinking (Grant et al., 2007). Moreover, under social distancing measures, likely social motives (improving relationships) were not as present as enhancement motives (enhancing positive mood; Cooper, 1994) which is associated with heavy drinking (Grant et al., 2007; Irizar et al., 2021). Fortunately, high ACS is protective, indicating a FN worldview including understanding the interrelatedness of relationships on an individual, collective, and environment level seem to be protective against the likelihood of using alcohol (Barreiro, 2010).

Outcome: Alcohol Use Consequence

Level 2 (between-subject) predictors. Given there was an interaction effect, the main effects should be interpreted with caution. Contrary to hypotheses, elevated baseline CCS was associated with increased risk for the likelihood of experiencing negative alcohol consequences. Those high on cultural connectedness were more likely to experience negative alcohol consequences in a given week. However, CCS was not associated with the number of negative alcohol consequences experienced. Also inconsistent with hypotheses, elevated baseline HLS was protective against both negative consequence occurrence and quantity. Those high on historical loss were less likely to experience a negative consequence, and those who have experienced adverse effects were more likely to experience fewer in a given week. Notably, ACS did not predict the likelihood nor number of weekly negative alcohol consequences experienced.

The CCS result contradicts existing literature that suggests enculturation is associated with reduced alcohol problems for Indigenous youth in Canada (Currie et al., 2011). To note, Currie et al. (2011) found that Indigenous youth in Canada believed it was not the frequency in which they participated in ceremonies (e.g., sweat lodge) or Indigenous events (e.g., round

dance, pow wow) that was important, but whether these practices were available when needed. In particular, youth described practicing cultural traditions when they "needed to deal with something personal" and to "connect with others" (Currie et al., 2011). Given social distancing measures were enforced, the pandemic context interrupted the transfer of knowledge and engagement in ceremonies and practices within FN communities. Thus, accessibility to cultural activities and rituals that promote and strengthen cultural traditions, identity, and spirituality were prohibited, perhaps increasing the likelihood of alcohol experimentation and related consequences for youth.

Surprisingly, HLS seems to be protective against negative consequences. However, progressions in historical trauma theory suggest that we must distinguish the events and memories from the trauma response. The manifestation of historical trauma can vary drastically by individuals (Denham, 2008). For example, while a significant portion of the Indigenous individuals (45.9%) think daily about alcoholism and its impact on the community (Whitbeck et al., 2004), their historical trauma response can vary from expressions of suffering to resilience and resistance (Denham, 2008). Though the results were not as expected, novel research supports that if distressing symptoms relating to the historical trauma are low, the thoughts may be protective and associated with better alcohol outcomes (Gameon & Skewes, 2021). In this case, the awareness or acknowledgement of historical traumas may be a protective factor from alcohol use problems dependent on the trauma response (Heart, 2003; Morgan & Freeman, 2009). Consistent with this theory, Brave Heart (1998) argued that healing for Indigenous peoples requires recognizing historical trauma and acknowledging the effects of the historical events, followed by processing grief in individual and collective settings. Thus, while perhaps youth are highly aware and think much about the historical traumas, perhaps their trauma response is one

of resistance to negative alcohol consequences given the recognition of history and cycles of intergenerational traumas with the community.

Level 1 (within-person) predictors. Weekly positive affect was not a significant predictor of negative consequence occurrence or quantity in a given week. In contrast, weekly negative affect was statistically significant, indicating that endorsed weekly negative affect predicted an increased likelihood of an alcohol-related problem but not the number of alcohol negative consequences in a given week. The results reflect the status of the current literature, which points to a unique risk for alcohol-related problems linked to negative affect (Martens et al., 2008). Negative affect personality styles have been associated with drinking to cope, and in turn, related to likelihood of negative alcohol consequences (Grant et al., 2007). Strikingly, the role of negative affect on alcohol use consequences is similar across gender and amongst heavy and lighter drinkers (Blevins et al., 2016). As hypothesized, the affect-motivated drinking behaviours fit with the tension reduction theory and negative reinforcement models suggesting that individuals consume alcohol to alleviate negative affect or encourage positive affect (Conger, 1956; Cooper, 1994; Cox & Klinger, 1988). To conclude, these theoretical frameworks suggest that those who engage in alcohol use when experiencing negative affect are at increased risk for alcohol-related problems (Park & Levenson, 2002; Stewart et al., 2011).

Moderation. CCS and HLS were not supported as moderators of weekly positive and negative affect on the likelihood or quantity of negative alcohol consequences experienced in a given week. However, ACS was supported as a moderator of the effect of weekly negative (but not positive) affect on the likelihood and quantity (marginal statistical support) of negative alcohol consequences experienced in a given week. Specifically, negative affect was associated

with an increased likelihood of an alcohol-related problem and number of problems in a given week at low levels of ACS, though high levels of ACS seem to dampen this effect.

Again, negative affect is identified as a risk indicator for alcohol-related problems (Blevins et al., 2016). Youth who engage in alcohol use when experiencing negative affect are at a disproportionate risk for negative consequences (Grant et al., 2007; Stewart et al., 2011). Fortunately, ACS seems to be protective in dampening the effect, consistent with current research. Seemingly, youth aware of their connection to family, community, and land reflect on their role and the need to engage in healthy behaviours (Johnson-Jennings et al., 2020). Overall, the belief that one's well-being is depends on others and vice-versa presents as a culturally specific compensatory resilience factor against alcohol-related problems for Anishinabe youth.

Strengths, Limitations, & Future Directions

A significant strength of the current study is the sample as it is distinct, involving Anishinabe youth from a specific Algonquin community. As discussed, Indigenous peoples are highly heterogeneous peoples, and it is a strength to research specific communities respecting their contexts and particular worldview (King et al., 2019). Not to mention, Indigenous youth have been understudied in alcohol research. Besides the lack of empirical literature, there is also a discrepancy between deficit-focussed and strength-based research with Indigenous populations. Following guidance from FN communities, the current study engages with a strength-based model by identifying protective factors to understand better the influence of cultural awareness components on alcohol use and negative consequences for Anishinabe youth. Altogether, the research conducted with the distinct Algonquin community allowed for many culturally specific truths to be understood within the context of the COVID 19 pandemic.

Despite the notable strengths of the study, there remain limitations. With that said, the current analyses used a method of estimation (FIML) that utilizes all available information to mitigate any issues due to missing data. While future research should address the methodological issue to reduce attrition rates, it may also be valuable to gather ecological momentary assessments (EMA) daily or multiple times within a day in place of weekly assessments to assess the moment to moment influence between positive and negative affect and alcohol use and consequences (Shiffman et al., 2008). Thus, future research must balance the benefits of addressing attrition rates while also choosing a study design that provides rich information on the role of mood on alcohol use and consequences at the moment.

Second, while the current study focuses on alcohol use and negative consequences as an outcome, the majority of the Anishinabe youth sample did not engage in alcohol use during the course of the study, and correspondingly many did not experience negative alcohol use consequences. Since the data followed a count (i.e., Poisson) distribution, Multi-level Zero-Inflated Poisson (ZIP) regression models were utilized to account for the large number of zero data points for the outcome variables (Atkins et al., 2013; Simons et al., 2006). Nonetheless, the sample may have impacted the research findings, given the study aimed to examine factors that influence alcohol use behaviours and consequences. The findings may suggest influence of the convenience sampling method as the participants recruited to voluntarily engage in the community research likely represent a specific group of youth with the capacity to engage in research during the timeframe of the study.

For future research, in terms of the study variables, it would have been beneficial to assess perceived stress throughout the study and understand how it influences alcohol use and negative consequences for Anishinabe youth while accounting for pandemic-related stress. In

addition, motives for alcohol use, specifically the need to cope, may add to our understanding of drinking behaviours amongst the sample (Mushquash et al., 2008). Finally, it would be worthwhile to differentiate between the awareness of trauma and the trauma response (i.e., how people interpret and respond to the losses). Understanding awareness of the event and the trauma response may add to our knowledge of the continual historical trauma impacts and the differing response trajectories that may lead to suffering or healing within FN communities.

Furthermore, since extent research identified cultural connectedness as an important protective factor for FN youth (Snowshoe et al., 2017), its contribution likely changes throughout adolescence and early adulthood during the process of cultural identity exploration and commitment (Phinney & Ong, 2007). Adolescence is a time of substance use experimentation. As such, the compensatory resilience factor of cultural connectedness may not be observed until youth engage in identity exploration or rather when identity commitment is achieved (White & Jackson, 2004). As the literature suggests, those with high levels of exploration and high levels of commitment to their culture reported the most positive functioning and lower levels of substance use (Jones & Galliher, 2007). Therefore, developmental research on the trajectory of cultural awareness levels would be informative during the identity exploration process through to the commitment stage to understand the influence on mental health and alcohol use outcomes in particular.

Implications and Conclusion

Overall, the current study results lend well to the existing research exploring the impact of cultural awareness components on alcohol use and negative consequence trajectories for Anishinabe youth. Grounded within a developmental psychopathology perspective, which highlights the dynamic interplay of risk and protective factors that influence alcohol use and

negative consequences, the current study utilized a sample of Anishinabe youth and sophisticated longitudinal methodologies that identified awareness of connectedness as a crucial protective moderator that influences the within-person association between positive affect and alcohol use as well as negative affect and negative consequences. Further, the results uncovered interesting historical trauma influences on alcohol-related problems, perhaps reflecting nuances in the historical trauma theory of response. Last, there was an unexpected relationship between cultural connectedness in that cultural connectedness increased the likelihood of alcohol use and negative consequence on a given week. CCS was a risk factor such that high levels of positive affect were associated with an increased likelihood of alcohol use only at high levels of CCS. In contrast, those with lower positive affect were less likely to drink at high levels of CCS.

Beyond advancing the empirical literature, the findings can inform prevention programs and culturally-relevant interventions among Anishinabe youth struggling with alcohol use during the critical developmental period (Phinney & Ong, 2007). Adapting current evidence-based practice to include specific cultural components in therapy, including FN worldview on the interconnectedness of creation, could help young Anishinabe youth transition well through the alcohol use experimentation phase and mitigate risk for long-term negative consequences (Marsh et al., 2015). In addition, including psychoeducation surrounding the development of historical trauma and ongoing effects within the community may prove beneficial (Brave Heart, 1998). In sum, we offer a community understanding of wellness, which reflects the resiliency of Anishinabe youth during the COIVD-19 pandemic.

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Table 1

Descriptive Statistics for all Variables in the Model.

Variable	N	Mean	SD	Skewness	Kurtosis	Cronbach's α
Baseline CCS	48	70.104	16.028	-.402	-.759	.939
Baseline HLS	48	36.313	11.561	-.007	-.444	.953
Baseline ACS	48	28.208	4.171	-.942	1.152	.798
Positive Affect						
T1	48	7.875	2.826	.115	-.224	.702
T2	42	8.119	2.680	.785	-.091	.712
T3	40	8.050	2.745	.141	-.203	.708
T4	35	8.428	2.893	.441	-.560	.689
T5	30	8.267	2.638	.19	-.888	.710
T6	31	8.419	2.718	.217	-1.181	.747
T7	31	8.00	2.595	.514	-.039	.504
Negative Affect						
T1	48	7.938	3.165	.274	-.224	.804
T2	42	7.024	2.850	.420	-.769	.778
T3	40	6.575	2.800	.756	.489	.776
T4	35	5.714	2.916	1.334	1.913	.862
T5	30	6.100	2.339	.633	-.530	.800
T6	31	6.581	3.212	.607	-.659	.870
T7	31	6.322	3.260	1.013	.312	.830
Alcohol Use						
T1	48	2.583	3.978	1.526	1.350	
T2	42	2.095	4.083	2.144	3.830	
T3	40	2.600	3.706	1.737	3.540	
T4	36	2.806	4.816	1.937	3.721	
T5	30	2.633	3.952	1.542	1.634	
T6	32	2.844	4.573	2.485	7.551	
T7	31	4.613	9.528	4.099	19.635	

Alcohol Consequences						
T1	48	2.875	5.382	2.433	6.253	.954
T2	42	1.191	3.522	4.447	21.474	.951
T3	40	1.000	3.942	4.664	22.674	.979
T4	36	1.194	4.248	4.815	25.154	.978
T5	30	.8333	1.984	2.858	7.947	.838
T6	31	.484	1.313	3.341	11.536	.768
T7	31	.156	1.029	2.115	4.013	.594

Note. CCS = Cultural Connectedness Scale; HLS = Historical Loss Scale; ACS = Awareness of Connectedness Scale; *N* = sample size; *SD* = Standard Deviation; α = alpha; T1 = baseline; T2-T7 week 2-7.

Table 2

Correlation Matrix of Baseline Cultural Connectedness, Historical Loss, Awareness of Connectedness (T1) and Weekly Positive Affect, Negative Affect, Alcohol Use and Alcohol Use Consequences (T1 through T7).

	1	2	3	4	5	6	7
CCS	-						
HLS	.472**	-					
ACS	.556**	.622**	-				
Positive Affect	.043	-.032	-.001	-			
Negative Affect	.042	-.031	-.002	1.000**	-		
Alcohol Use	.016	-.026	.007	.983**	.983**	-	
Alcohol Use Consequences	.029	-.024	.010	.992**	.992**	.991**	-

Note. CCS = Cultural Connectedness Scale; HLS = Historical Loss Scale; ACS = Awareness of Connectedness Scale. † $p < .1$; * $p < .05$; ** $p < .01$.

Table 3

Zero-Inflated Poisson Regression Multi-level Model: Effect of Level 1 Positive and Negative Affect on Drinking Occurrence Moderated by Level 2 CCS, HLS, and ACS.

	Model 1				Model 2				Model 3			
AU#1	*B*	*SE*	*p*	*90% CI*	*B*	*SE*	*p*	*90% CI*	*B*	*SE*	*p*	*90% CI*
Intercept	0.352	0.232	0.130	-0.030, 0.734	0.675	0.349	0.053	0.101, 1.248	0.625	0.389	0.108	-0.015, 1.266
CCS	0.010	0.020	0.612	-0.023, 0.044	0.053	0.033	0.110	-0.002, 0.107	0.086	0.034	0.012	0.030, 0.142
HLS	-0.019	0.029	0.513	-0.067, 0.029	-0.040	0.044	0.357	-0.112, 0.032	-0.060	0.045	0.178	-0.133, 0.013
ACS	-0.109	0.085	0.199	-0.248, 0.031	-0.266	0.126	0.035	-0.474, -0.058	-0.412	0.154	0.007	-0.665, -0.159
PA					-0.023	0.192	0.904	-0.338, 0.292	-0.066	0.204	0.747	-0.401, 0.270
NA					0.009	0.099	0.931	-0.154, 0.171	0.070	0.173	0.684	-0.214, 0.355
PA*CCS									0.056	0.016	0.000	0.030, 0.083
NA*CCS									-0.009	0.042	0.830	-0.078, 0.060
PA*HLS									-0.037	0.023	0.111	-0.075, 0.001
NA*HLS									0.000	0.023	0.986	-0.038, 0.039
PA*ACS									-0.173	0.056	0.002	-0.264, -0.081
NA*ACS									0.018	0.109	0.865	-0.160, 0.197

Note. *B* = unstandardized parameter estimate. AU#1 = alcohol use binary outcome (drink vs. did not drink); *CCS* = Cultural Connectedness Scale (level 2); HLS = Historical Loss Scale (level 2); *ACS* = Awareness of Connectedness Scale (level 2); PA = Positive Affect (level 1); NA = Negative Affect (level 1).

Table 4

Zero-Inflated Poisson Regression Multi-level Model: Effect of Level 1 Positive and Negative Affect on Drinking Quantity Moderated by Level 2 CCS, HLS, and ACS.

	Model 1				Model 2				Model 3			
AU	*B*	*SE*	*p*	*90% CI*	*B*	*SE*	*p*	*90% CI*	*B*	*SE*	*p*	*90% CI*
Intercept	1.828	0.088	0.000	1.683, 1.972	1.637	0.119	0.000	1.441, 1.832	1.634	0.161	0.000	1.369, 1.900
CCS	-0.008	0.008	0.272	-0.021, 0.004	0.000	0.013	0.998	-0.021, 0.021	0.004	0.013	0.742	-0.018, 0.026
HLS	0.015	0.021	0.484	-0.020, 0.049	0.015	0.022	0.490	-0.021, 0.050	0.009	0.038	0.817	-0.053, 0.071
ACS	0.043	0.038	0.259	-0.019, 0.105	-0.014	0.068	0.832	-0.126, 0.097	0.009	0.042	0.835	-0.061, 0.078
PA					-0.006	0.063	0.929	-0.110, 0.099	-0.066	0.115	0.564	-0.256, 0.123
NA					-0.083	0.055	0.129	-0.173, 0.007	-0.052	0.088	0.551	-0.196, 0.092
PA*CCS									0.004	0.017	0.792	-0.023, 0.032
NA*CCS									-0.005	0.007	0.459	-0.017, 0.007
PA*HLS									-0.014	0.015	0.360	-0.038, 0.011
NA*HLS									-0.001	0.010	0.904	-0.018, 0.015
PA*ACS									0.017	0.037	0.648	-0.044, 0.078
NA*ACS									0.019	0.025	0.444	-0.022, 0.061

Note. *B* = unstandardized parameter estimate. AU = alcohol use continuous outcome; *CCS* = Cultural Connectedness Scale (level 2); HLS = Historical Loss Scale (level 2); *ACS* = Awareness of Connectedness Scale (level 2); PA = Positive Affect (level 1); NA = Negative Affect (level 1).

Table 5

Zero-Inflated Poisson Regression Model: Effect of Positive and Negative Affect on Consequence Occurrence Moderated by CCS HLS and ACS.

	Model 1				Model 2				Model 3			
BYAACQ#1	*B*	*SE*	*p*	*90% CI*	*B*	*SE*	*p*	*90% CI*	*B*	*SE*	*p*	*90% CI*
Intercept	1.190	0.272	0.000	0.742, 1.637	1.565	1.338	0.242	-0.636, 3.765	0.205	0.698	0.769	-0.943, 1.352
CCS	0.011	0.022	0.601	-0.024, 0.047	0.036	0.069	0.519	-0.078, 0.150	0.147	0.071	0.038	0.030, 0.264
HLS	0.003	0.026	0.907	-0.040, 0.046	0.039	0.085	0.647	-0.101, 0.178	-0.277	0.111	0.012	-0.459, -0.096
ACS	-0.103	0.092	0.264	-0.255, 0.049	-0.064	0.157	0.685	-0.322, 0.195	0.038	0.418	0.928	-0.649, 0.725
PA					-0.555	0.293	0.058	-1.037, -0.073	-0.857	0.626	0.171	-1.887, 0.173
NA					-0.092	0.306	0.763	-0.596, 0.411	0.649	0.294	0.027	0.166, 1.132
PA*CCS									0.013	0.055	0.808	-0.078, 0.105
NA*CCS									-0.032	0.055	0.559	-0.123, 0.059
PA*HLS									-0.006	0.085	0.943	-0.146, 0.134
NA*HLS									0.080	0.081	0.319	-0.052, 0.213
PA*ACS									0.043	0.146	0.767	-0.197, 0.283
NA*ACS									-0.311	0.107	0.004	-0.488, -0.134

Note. *B* = unstandardized parameter estimate. *CCS* = Cultural Connectedness Scale (level 2); HLS = Historical Loss Scale (level 2); *ACS* = Awareness of Connectedness Scale (level 2); PA = Positive Affect (level 1); NA = Negative Affect (level 1).

Table 6

Zero-Inflated Poisson Regression Model: Effect of Positive and Negative Affect on Quantity of Consequences Moderated by CCS HLS and ACS.

	Model 1				Model 2				Model 3			
BYAACQ	*B*	*SE*	*p*	*90% CI*	*B*	*SE*	*p*	*90% CI*	*B*	*SE*	*p*	*90% CI*
Intercept	1.574	0.158	0.000	1.314, 1.834	0.847	1.108	0.445	-0.976, 2.670	0.664	0.112	0.000	0.480, 0.848
CCS	-0.014	0.012	0.241	-0.033, 0.005	-0.033	0.085	0.702	-0.173, 0.108	0.028	0.016	0.083	0.001, 0.055
HLS	0.000	0.026	0.994	-0.043, 0.043	0.046	0.125	0.712	-0.160, 0.252	-0.168	0.037	0.000	-0.229, -0.106
ACS	0.041	0.059	0.488	-0.056, 0.138	0.054	0.262	0.835	-0.376, 0.485	0.245	0.139	0.078	0.016, 0.473
PA					-0.237	0.206	0.250	-0.575, 0.102	-0.249	0.377	0.509	-0.870, 0.371
NA					-0.058	0.293	0.843	-0.540, 0.424	0.178	0.202	0.378	-0.154, 0.511
PA*CCS									-0.009	0.032	0.774	-0.063, 0.044
NA*CCS									-0.015	0.019	0.431	-0.046, 0.016
PA*HLS									0.041	0.041	0.319	-0.026, 0.108
NA*HLS									0.051	0.032	0.120	-0.003, 0.104
PA*ACS									-0.098	0.090	0.280	-0.246, 0.051
NA*ACS									-0.127	0.067	0.057	-0.237, -0.017

Note. *B* = unstandardized parameter estimate. *CCS* = Cultural Connectedness Scale (level 2); HLS = Historical Loss Scale (level 2); *ACS* = Awareness of Connectedness Scale (level 2); PA = Positive Affect (level 1); NA = Negative Affect (level 1).

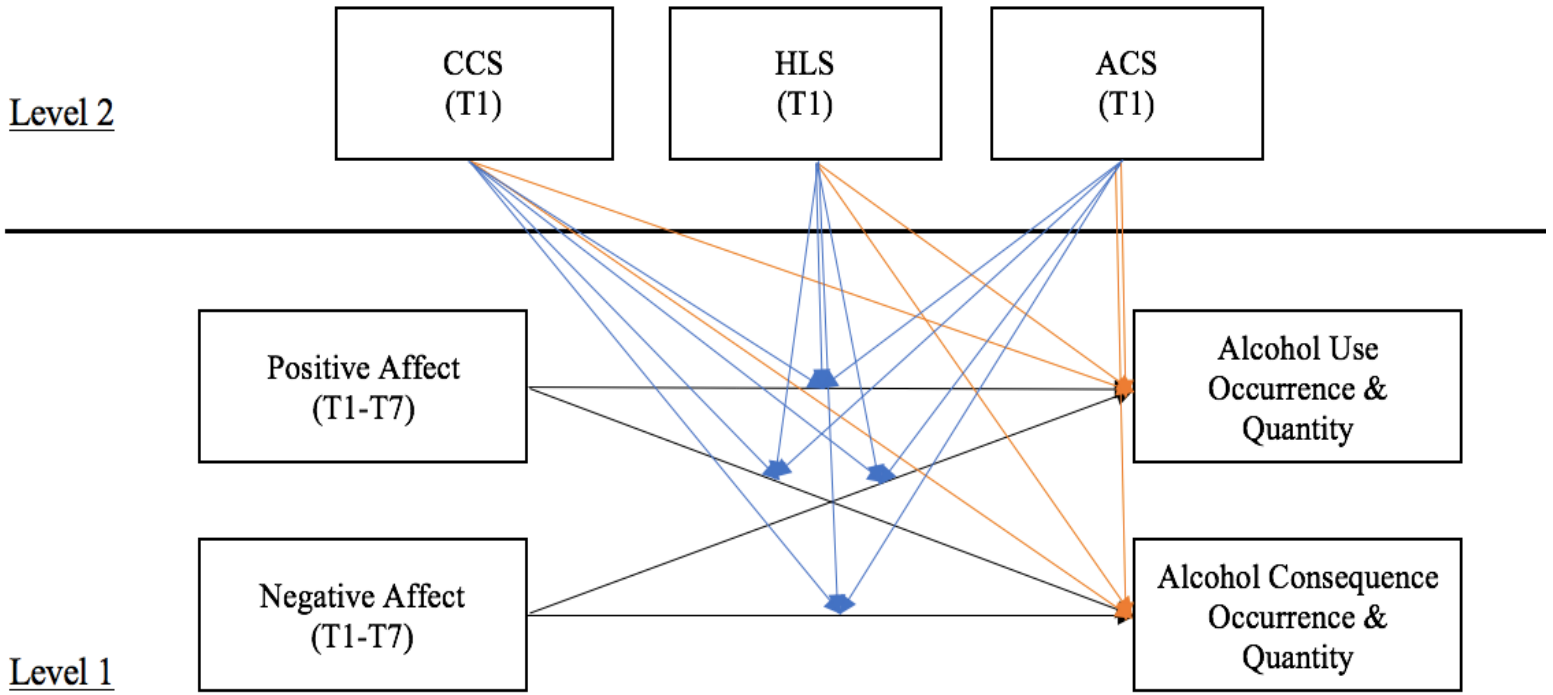

Figure 1. Hypothesized multi-level model with Cultural Connectedness Scale (T1), Historical Loss Scale (T1), Awareness of Connectedness Scale (T1) hypothesized as moderators of the effect of Positive Affect (T1-T7) and Negative Affect (T1-T7) on Alcohol Use Occurrence & Quantity and Alcohol Use Consequence Occurrence & Quantity (T1-T7).

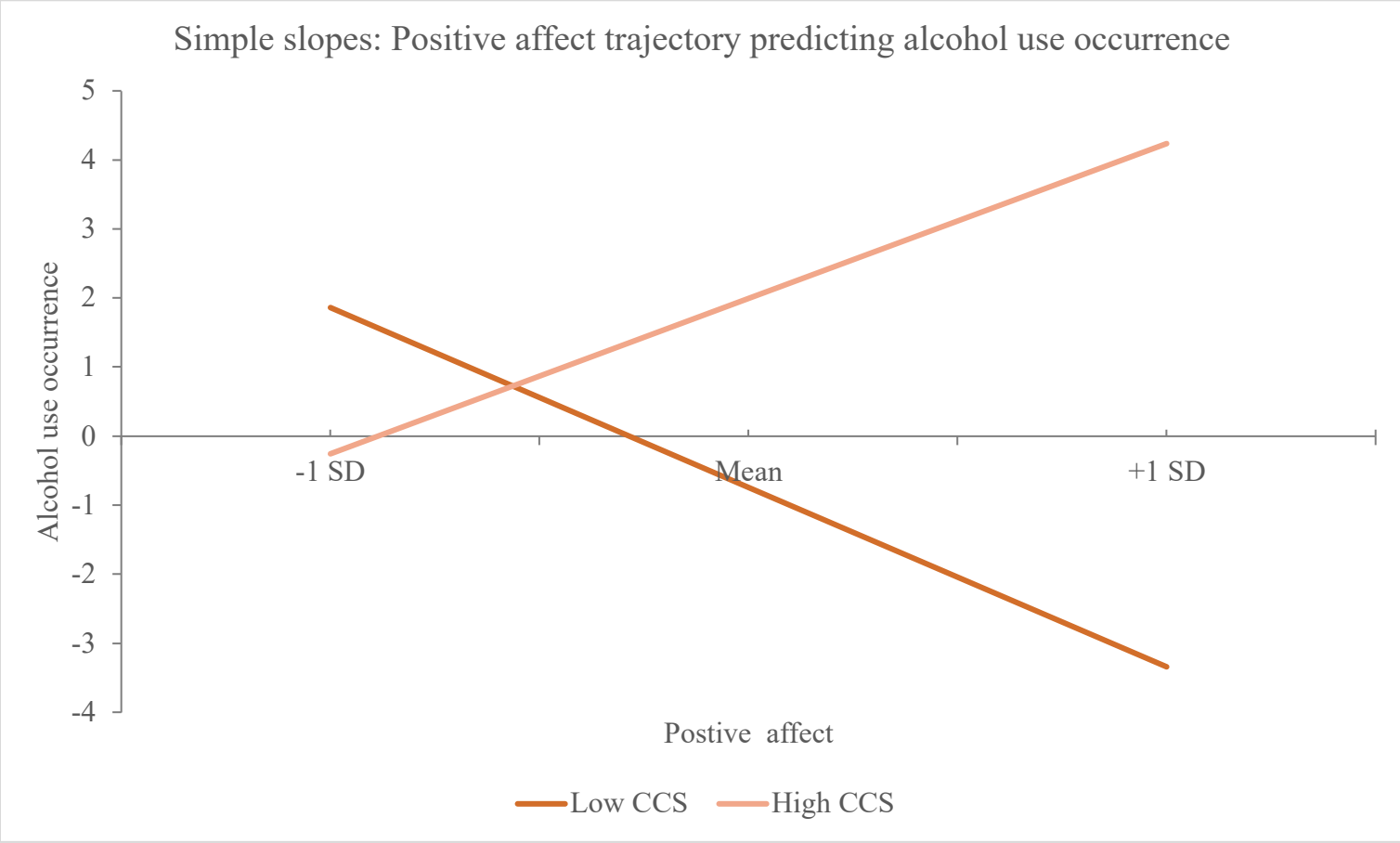

Figure 2. Within person effect of positive affect predicting alcohol use occurrence (i.e., binary; alcohol use occurrence vs did not drink) at high (+1 *SD*) and low (-1 *SD*) levels of Cultural Connectedness.

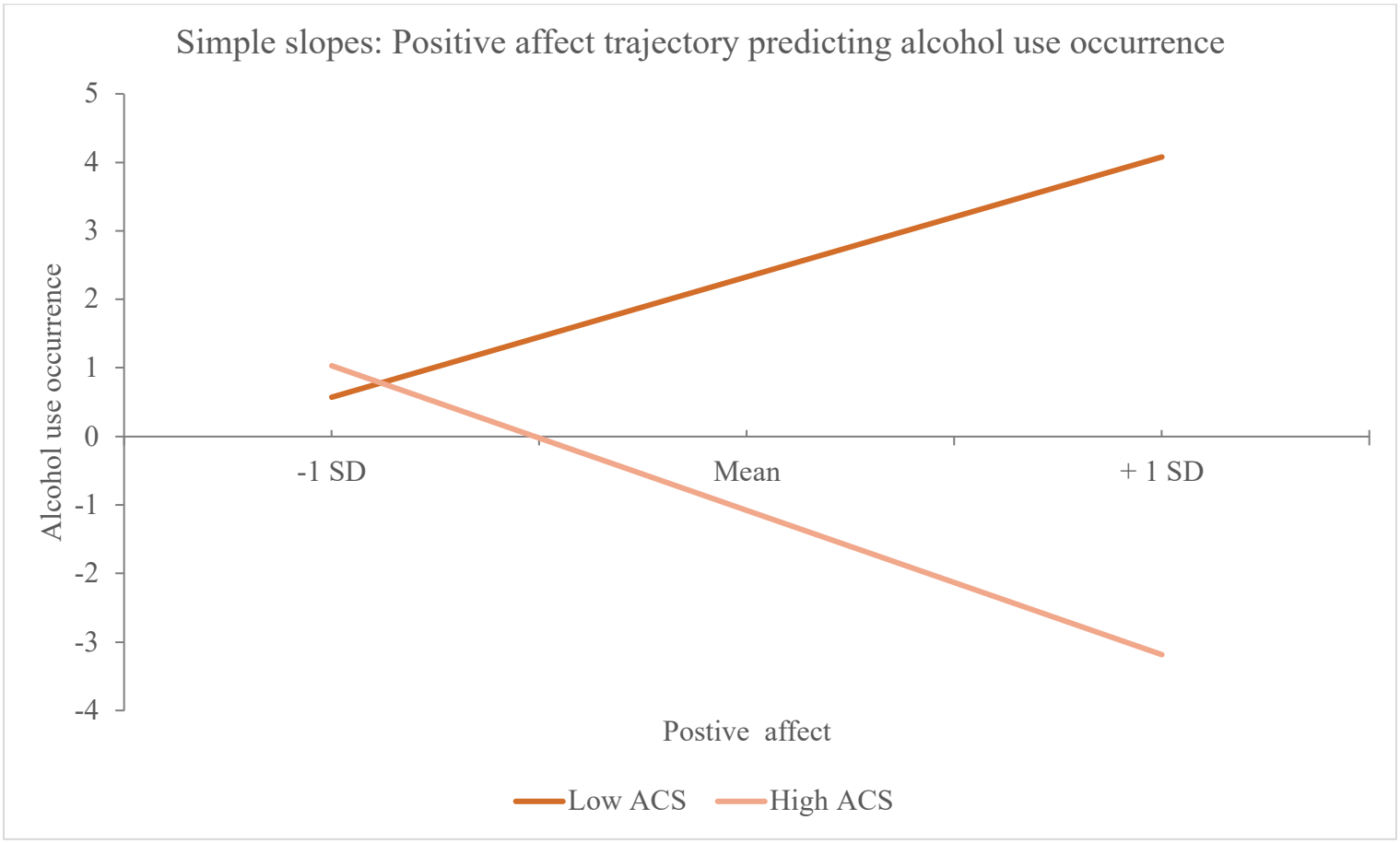

Figure 3. Within person effect of positive affect predicting alcohol use occurrence (i.e., binary; alcohol use occurrence vs did not drink) at high (+1 *SD*) and low (-1 *SD*) levels of Awareness of Connectedness.

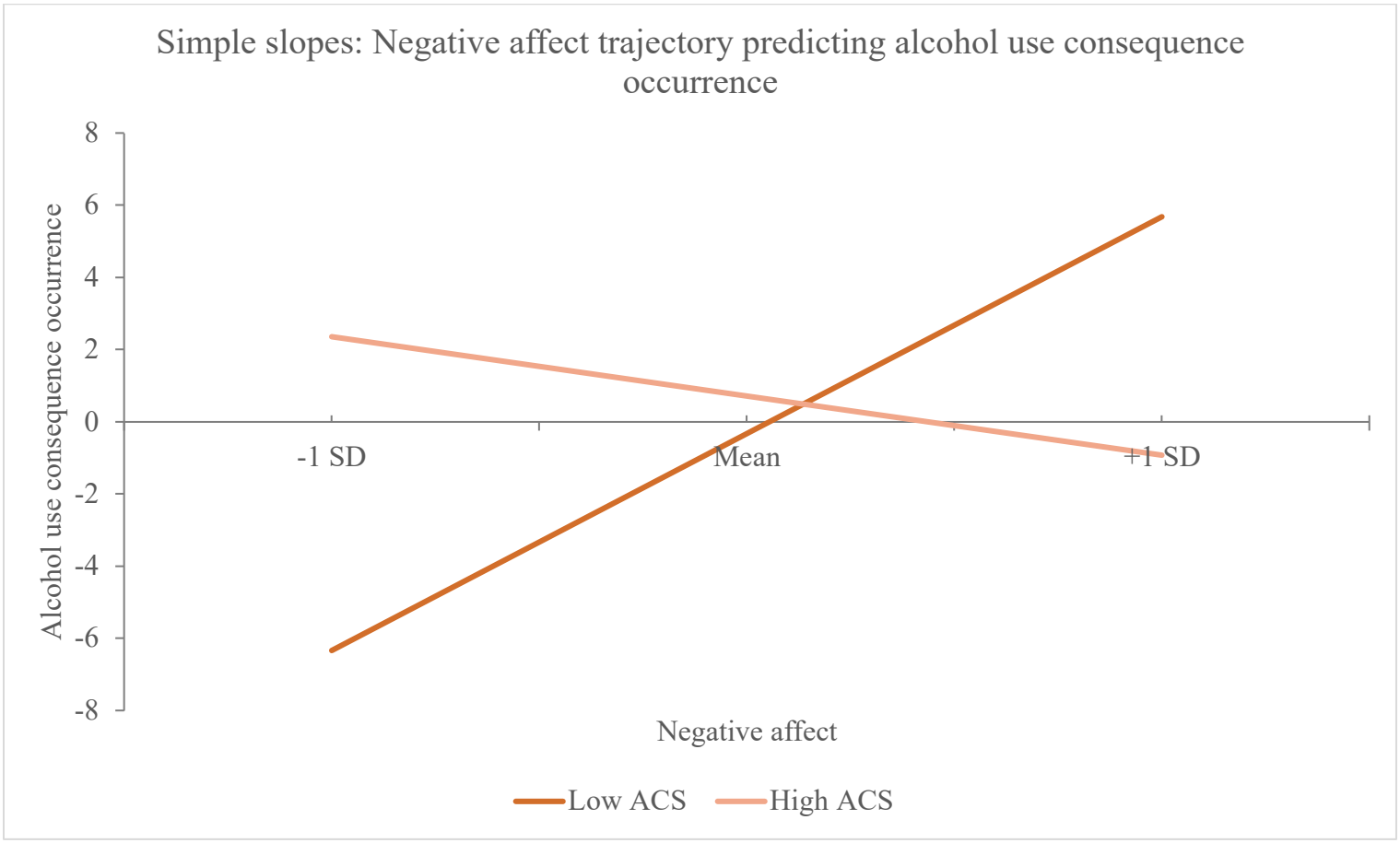

Figure 4. Within person effect of negative affect predicting alcohol use consequence occurrence (i.e., binary; negative consequence occurrence vs did not experience negative consequence) at high (+1 *SD*) and low (-1 *SD*) levels of Awareness of Connectedness.

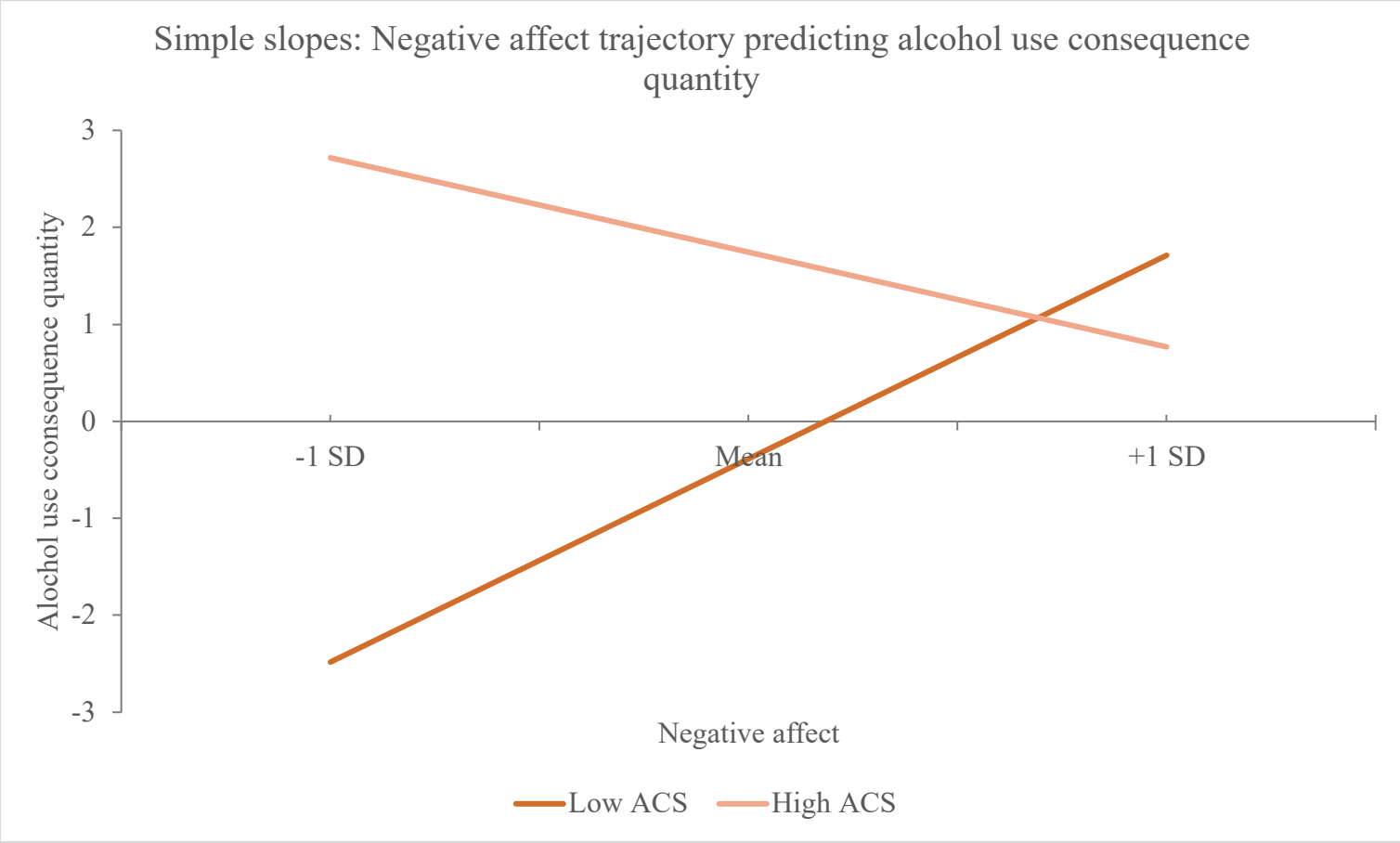

Figure 5. Within person effect of negative affect predicting alcohol use consequence quantity (i.e., continuous; number of negative consequences) at high (+1 *SD*) and low (-1 *SD*) levels of Awareness of Connectedness.