An Exploratory Study on Cultural Identity and Participation in Substance Use for Indigenous Youth in Australia.

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Acknowledgement of Country

I would like to identify and acknowledge the traditional custodians and their continued connection to the lands of my birthplace, the Dainggatti language group, and the lands upon which I study at Griffith University, the Jagera, Turrbal, and Yugambeh language groups. I extend this acknowledgement and respect to all Elders, Ancestors, and First Nations peoples and their past and present connection to land, sea, and community.

Abstract

Criminological research has often overlooked the relationship between colonisation and historical trauma, beyond elements of social and economic disadvantage. This study aims to place Indigenous experience as central to our understanding of criminological outcomes, through examining the effect of cultural identity on substance use participation among Indigenous youth.

Data was sourced from the 2018 Australian Longitudinal Study of Indigenous Children (LSIC) for a sample of 422 Indigenous youth. Measures of cultural identity used in this study reflected an Indigenous perspective on cultural identity. OLS regression results showed that there is no significant relationship between self-reported substance use and cultural identity after accounting for other demographic circumstances and life events. On the other hand, strong cultural identity in school and teachers style significantly reduced self-reported substance use.

Contrary to existing research which has suggested that strong cultural identity provides a mechanism for enhancing positive well-being outcomes, this study did not find this mitigating effect on substance use participation for a sample of Indigenous youth (although this may be due to the limited variation in the high levels of cultural identity reported in the survey).

Instead, the results pointed to teachers style and cultural identity in school. In reflecting on how these concepts were measured, the items focus on how safe participants felt about being Indigenous in school, and how much respect was shown in the way teachers' interacted with students (teachers' style). Thus, this study indicates that cultural safety and respect are key concepts that should be considered in future research on substance use among Indigenous youth, as well as in broader criminological research.

Keywords: Colonisation, Culture, Identity, Indigenous, Substance Use, Youth.

Statement of Originality

This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by any other person except where due reference is made in the thesis itself.

Signature: __Timothy Clinton Barkley_____

Date: __27/10/22_____

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List of Abbreviations

ABS	Australian Bureau of Statistics
ADA	Australian Data Archives
AIATSIS	Australian Institute of Aboriginal and Torres Strait Islander Studies
FAHCSIA	Australian Government Department of Families, Housing, Community Services, and Indigenous Affairs
HREC	Human research ethics committee
ICC	Indigenous Coordination Centres
LSIC	Longitudinal Study of Indigenous Children
NATSIS	National Aboriginal and Torres Strait Islander Social Survey
RAO	Research Administration Officers

Acknowledgments

As a late early scholar, I am frequently surprised with people's interpretations of, and solutions to crime and offenders, and how information and opinion travels through the community driving trends, conversations, political and social change, for better or worse. Further, thinking back on discussions with fellow students, and my honour's lecturer Dr William Wood, highlights for me at least, how research and scholarly debate can stimulate new ideas that may in turn lead to positive change. To my fellow honours students, thank you for the stimulating debate and William, thank you for helping me to think and see beyond convention.

At times the truth can be difficult to digest or confront given our ontological and/or epistemological stance. Who we are and where we are from, our gender, our race, and more interferes at times with our research. But there is distinction in truth seeking when truth seeking reaches past these things and is inclusive of those who may have struggled over time. The challenges, tenacity, courage, and strength of others who live with adversity gives us strength to strive for and persist in tangible positive change despite who we are, where we are from, our gender, our race. To conduct this thesis in the hopes of making real change seems fanciful given its academic level and my limited academic experience, but my research is driven by the voices of those I know and those I don't know who live with adversity, and those who have given their hearts and souls to a commitment for real social change, including the staff and participants involved in the LSIC study.

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Chapter 1: Introduction

The importance of knowing and acknowledging the historical context of systematic oppression imposed upon Indigenous peoples[1] by the state is fundamental to understanding their current relationship with criminal law (Cunneen, 2020). Although researchers have acknowledged that colonisation has had an impact on justice related outcomes, mainstream criminological theoretical frameworks have neglected how colonisation has historically, and is presently, impacting upon Indigenous Peoples beyond social and economic disadvantage (Agozino, 2004; Broadhurst, 2002).

Colonisation, from an Indigenous perspective, throws an uncomfortable light on criminological explanations (Tauri, 2013), but is necessary if we are to have an inclusive theoretical lens and a more informed understanding of Indigenous peoples fractured relations with the state. Criminological research must cast its gaze further than simplistic crime predictors of economic stress, welfare dependency, unemployment, and alcohol dependency, to incorporate Indigenous experiences of colonisation and its historic and contemporary artifacts.

Impacts of colonisation

The processes and stages of colonisation, as shown in Table 1.1 below, have singled out and marginalised Indigenous peoples and youth in Australia (Nielsen & Robyn, 2003), creating ongoing systemic racism, bias, and inequality across a range of systems, including welfare, education, employment, and justice.

[1] In this research Indigenous Peoples refers to the First Peoples, the Traditional Owners, and Custodians of lands in Australia. I use the terminology Indigenous Peoples as this terminology is used in the LSIC study.

Table 1.1

Stages of Colonisation and State Policy

Protection	**Segregation**	**Assimilation**	**Criminalisation**
Indigenous peoples Protected by English law	Based on race	Assimilation into white culture and Christianity	Another form of state control
Policies to protect Indigenous peoples against white settler violence and exploitation	Accelerated land dispossession Indigenous Peoples moved on to missions, stations, and reserves	Indigenous Push for equal rights in the 1960s	Interventions aimed at regulating suspected deviant groups or populations
Protection and English law did not provide for equity in land ownership	Indigenous peoples were portrayed as dangerous	Lead to the abandonment of protection and segregation policies	Indigenous peoples were again portrayed as dangerous
Land dispossession sanctioned by the state through pastoral leasing	A response from white settlers and moved far from white settlements	Distance reduced Indigenous Peoples access to employment, education, health	Extending the ideology of dangerousness
Intensive state efforts to destroy Indigenous culture and traditions	State controlled Policy of surveillance Restricted movements	Provided for the introduction of disciplinary offences in law	Continued institutionalisation and state control through imprisonment
Removal of Indigenous children	Considered wards of the state	Inclusion into the courts and imprisonment as punishment	Adult and youth over-representation in the justice system
Protection as control	Citizens without rights	The push for equal rights moved Indigenous peoples from other forms of policy and control into incarceration	Police play a role throughout each stage of colonisation

(A compilation compiled from Carrington, 2011; Cunneen, 2020; Hogg, 2001; Short, 2003)

State policy remains based on race, systematically controlling and criminalising populations the state considered as being problematic, or deviant (Carrington, 2011). Control,

through criminalisation, has further moved into other domains, such as transport systems, hospitals, public spaces, and schools (Cunneen & Baldry, 2011). For example:

- on transport systems, the tragic death of Ms Tanya Louise Day in police custody on 5 December 2017 resulting from supposed ‘unruly’ behaviour on a train
- in public spaces, the introduction of new police move on powers in March 2000 (Spooner, 2001; White, 1999),
- in schools, the past and current high rates of exclusions (expulsions) for Indigenous youth compared with other students (Graham et al., 2022).

Contemporary, state policy and regulation of Indigenous peoples has converged such that criminalisation and incarceration has taken the place of previous (more overtly racist) white settler policy. O'Brien and Trudgett (2020, p.2) suggest that the contemporary incarceration of Indigenous peoples in Australia “may be perceived as another form of racism and oppression”. Concerningly, all too often criminological research has neglected the implications of colonisation in Indigenous over-representation in the justice system, and how historic and current colonial processes and government policy has negatively impacted upon the contemporary social and political positions of Indigenous peoples.

Colonisation and cultural identity

These governmental policies and regulations, and state institutional practices, continue to eradicate or erode Indigenous culture. As Cunneen (2020) effectively argues, the disruptive effects of colonisation on Indigenous communities and social patterns, highlight the undermining intentions of authorities in the colonial process (p39). A particular impact has been the ongoing disruption and fragmentation of Indigenous culture and cultural identity in Australia and internationally (Murrup-Stewart et al., 2021). Colonisation from an Indigenous Peoples perspective, (dispossession, marginalisation, and disempowerment), has had a

damaging effect on Indigenous populations and has left many Indigenous peoples traumatised (Cunneen, 2020), and with continuing poor well-being outcomes for both communities and individuals.

Colonisation and inter-generational trauma

Historical trauma has been shown to be associated with colonisation and acts of oppression (Nutton & Fast, 2015). Models of historical trauma include physical and psychological violence, segregation and/or displacement, economic deprivation, and cultural dispossession (see e.g. Sotero, 2006. as cited in Nutton & Fast 2015.p839). From our current position, the trauma experienced by Stolen Generations (under the guise of protection) removed from country, families, identity, culture, and way of life, and the ongoing consequences are experienced by communities and families. What is less seen is that the same trauma is being generated by policies and practices that have converged into an over-representation of Indigenous adults and youths in the criminal justice system (Nielsen & Robyn, 2003; White, 2015). Those impacted by detention and prison across generations have been described as the new removals, or the new stolen generation (Tauri & Porou, 2014).

The effects of colonisation and historical trauma may be experienced by Indigenous Peoples over three levels, individual, family, and community, as well as across generations (Sotero, 2006). Historical trauma has been implicated in the cross generational transmission of risk factors for Indigenous Peoples which result in a range of poor outcomes, such as mental and physical illness, suicide, child maltreatment, family and sexual violence, and incarceration (Nutton & Fast, 2015). High levels of substance use is a good example of the ongoing effect of historical trauma (MacRae & Hoareau, 2016).

Substance use can be a response to historical trauma that is associated with lost self-determination and self-governance, as well as lost control of land and cultural way of life (Nutton & Fast, 2015). Through impacting on the ability to be a capable and emotionally

supportive parent, it also creates conditions of inter-generational transmission of trauma (Nutton & Fast, 2015).

Colonisation, historical trauma, and criminology

Clearly, colonisation and historical trauma cannot be ignored in understanding a range of outcomes for Indigenous Peoples, particularly in criminology. However, it is not enough for traditional criminological explanations to explicitly 'add' colonisation and historical trauma; rather, theoretical explanations need to do this from an Indigenous perspective. To illustrate what this means, Cunneen (2018) uses the example of domestic violence. Although there have been some shifts in recognising family violence, domestic violence legislation and policy primarily reflects a western conception of self (an individual), rather than an Indigenous conception which places self within kin and country (p27). Further, the ongoing contemporary impact of historical child safety practices (such as forcible removal of children from Indigenous families) also shape victim decision-making about reporting and seeking support. In other words, these differing conceptions and experiences have implications for the way we understand victimisation and victim decision-making.

Purpose of current study

The current study aims to contribute to 'de-colonising' our understanding of criminal behavior, through examining the impact of cultural identity on substance use participation for a sample of Indigenous youth. Its contributions are threefold: (1) including a concept that is important to the Indigenous experience (cultural identity); (2) operationalising cultural identity using items developed from an Indigenous perspective; (3) centering the research on Indigenous experiences, rather than a comparison of Indigenous and non-Indigenous experiences.

Thesis Structure

Following this introduction, Chapter 2 reviews research on substance use among Indigenous youth, particularly within a context of colonisation, historical trauma, and cultural identity. Chapter 3 describes the secondary data used in this study, detailing the original study that generated the data, the sample, and data screening processes. Key variables are also described in this chapter, along with analytic techniques, diagnostics, and limitations. The results of the analyses performed are reported in Chapter 4, which is followed by a final discussion chapter which highlights the main findings of the research, considers the theoretical and practical implications of the study, and suggests directions for future research.

Chapter 2:Literature Review

In this literature review, I question how mainstream criminological explanations do not sit well from an Indigenous criminology perspective, with a brief overview of key approaches to explaining youths' substance use participation. To move towards a de-colonised explanation of substance use, I introduce cultural identity as a way in which Indigenous people can navigate or mitigate the impact of colonising processes, reviewing different measures of cultural identity used in past research. Past research, albeit limited, on the relationship of historical trauma, cultural identity, and substance use are discussed. Finally, the current study research questions are presented.

Explaining Substance Use

Mainstream theoretical frameworks explaining substance use

Although the health costs and effects of substance use in Australia are well documented (Catto & Thomson, 2008), Australian research on adolescent drug use from a criminological perspective is much more limited. There are three key approaches used in past research for explaining substance use among adolescents and young people: general strain theory, social control theory and risk factors framework. Overall, much of this research is conducted in North America, with the risk factor framework being most dominant in the Australian context.

General strain

General Strain Theory (GST) proposes that strain caused through blocked goals and failure to reach one's full potential, and the presence of negative stimuli is associated with adolescent drug use (Steele, 2016). In other words, substance use is a response to managing the emotions (e.g. anger or frustration) produced by the experience of strain. Adolescents

who have other coping strategies (such as better life skills, stronger positive relationships) can mitigate these negative emotional responses, and in turn reduce the likelihood of participation in substance use.

Empirically, how well strain explains substance use remains debateable, as research has shown mixed findings, particularly for explaining ethnic differences in substance use via differences in exposure to strain (e.g. Peck, 2013; Eitle et al, 2013). However, regardless of the empirical support, GST would argue that Indigenous youth would experience higher levels of strain (such as unemployed, low socio-economic status, low academic achievement), but have lower positive coping strategies (again linked to socio and economic status). Together, this results in higher negative emotional responses (anger), and then greater likelihood of participation in substance use (see the argument in Peck, 2013 for African American youth). In this argument, strain may be the result of historical colonising processes (dispossession, marginalisation, and disempowerment), which are exogenous to the model. However, the key critique is GST's emphasis on individualised responses to the experience of strain. The theory focuses on an autonomised individual. At least in Australia, this is contrary to Indigenous perspectives and experiences.

Social control

There is a wealth of research on social control theory and substance use. To summarise briefly, social control argues that connection to pro-social others, and pro-social activities, provides a bond to conformity, which in turn deters deviance (Hirschi, 1969; Schroeder & Ford, 2012). There has been considerable empirical testing of social control theory and adolescent substances use. Overall, there is support that at least some form of pro-social attachment or activity are associated with substance use (e.g. Bahr, Hoffman & Yang, 2005; Han et al. 2015; Krohn & Massey, 1980; Vakalahi, 2001).

There is a deficiency of research using social control theory to explain substance use among Australian Indigenous youth although, there are international studies exploring ethnic differences in substance use from a social control perspective. This research suggests the effect of different prosocial attachments and activities on substance use varies by ethnic group. For example Nagasawa et al. (2000) found that attachment to parents and family insulated some racial groups from substance use while attachment to teachers insulated other groups. Again, it is tempting to argue that, for Indigenous youth, colonisation has impacted the nature of prosocial attachments, such as through the removal of children or the fragmentation of families, resulting in the lower formation of prosocial relationships, which in turn weakens bonds to conformity, and increases the likelihood of substance use. While recognising the context of colonisation is vital, the underlying model of what counts as a prosocial attachment remains within a westernised colonial understanding of relationships.

Substance use and risk factors

A risk factor approach in criminology gained momentum over a decade ago (Farrington 2000) and is the most common approach to understanding substance use among adults and adolescents in Australian research. Studies have shown that tobacco, alcohol, and cannabis use cluster together for young people, including Australian Indigenous youth (Heris et al., 2021). For instance, alcohol and cannabis are predictors of smoking in school student populations (Heris et al., 2021). A range of risk and protective factors for substance use at individual, social, and environmental levels have been identified (Loxley et al., 2004). Despite the recognition of environmental factors, this approach has been criticised as reductionist, treating populations as homogeneous and ahistorical (Haines & Case, 2008). Further, it has been over-reliant on samples of white, working-class males in industrialised Western nations (Farrington, 2007). However, research on more diverse samples is emerging. For instance, using a sample of Indigenous and non-Indigenous youth, Heris et al. (2021) found that risk factors for tobacco

use included: disconnection from family and bullying (social); social disadvantage, housing, and remoteness (environmental). Protective factors included connection to culture and cultural participation.

Cultural Identity

Cultural identity as a protective factor has emerged as a one way to start moving towards including Indigenous perspectives, particularly in health and well-being research. Indigenous cultural identity can often be framed within cultural principles and concepts of social connectedness, supported through community associations and engagement in traditional cultural activities (Shepherd et al., 2018b). Positive outcomes on health and wellbeing can be attributed to a strong cultural identity, while strong cultural identity is empirically related to community connection, engagement in cultural practices, bonds with family and kin, and a sense of agency (Shepherd et al., 2018b).

The positive outcomes of strong cultural identity and cultural engagement are well-documented (King et al., 2009; Shepherd et al., 2018b; Shepherd et al., 2018a; Williams et al., 2018). Shepherd et al. (2018a) found that higher levels of cultural identity, and engagement in cultural activities, protected against the psychological distresses of discrimination. In New Zealand, Williams et al. (2018) found that Māori youth with a strong cultural identity experienced good mental health.

This has also been found for crime-related outcomes. Ferrante (2013) found that cultural factors provided protective effects against police arrest for Indigenous peoples; Indigenous people's participation and connection to community were at least as important in crime reduction as other well-known factors, such as educational achievement. Outcomes for alcoholism reduction programs that are culturally based within Indigenous communities have looked very promising for over twenty years (McCormick, 2000). Finally, and of particular

interest for the current study, Cao et al. (2018), in a study on drug use and Indigenous peoples in Canada, found that stronger ties to community were correlated with a reduced likelihood of trying illicit drugs; each 1 unit increase in strength of community ties resulted in a 6% reduction in illicit drug use.

Measuring cultural identity

There is no single measure of cultural identity used in past research, although most use a mix of language use, connection, and participation in cultural or traditional activities. For example, Dockery's (2010) measure of cultural identity drew upon variables from the 2008 Australian National Aboriginal and Torres Strait Islander Social Survey, including items relating to cultural participation, identity, language, and traditional activities. Ferrante (2013) uses factors of cultural strength, such as the use of an Indigenous language, connection to a clan, tribe or language group, homeland recognition, and participation in cultural events (p67).

One drawback with these types of measures is that Indigenous peoples or youth may have a strong sense of cultural identity and have family and community connection without speaking an Indigenous language or participating in cultural activities. For example, as shown in the National Aboriginal and Torres Strait Islander Social Survey results 2014-2015, around 34% of Indigenous youth aged 4 to 14 years spoke an Indigenous language, 63% were involved in cultural activities, and 51% spent time with elders (ABS, 2016). Do those who do not speak an Indigenous language have a weaker cultural identity? Are they not counted as being Indigenous? This is particularly pertinent, given, as noted earlier, colonisation in Australia through government policy has had a damaging effect on Indigenous culture, including language.

In a study on cultural identity, cultural engagement, and violent offending, Shepherd et al. (2018a) proposed a different approach, separating cultural identity from cultural engagement. Cultural identity was measured using items that included psychological indicators

of social and emotional wellbeing; while, cultural engagement used, indicators of participation in Indigenous activities. Overall, measures of culture and identity used in past research are somewhat lacking, particularly as these measures generally lack Indigenous input or voice on how culture and cultural identity should be measured, and what identity means to them.

Current study and research questions

Mainstream criminological explanations for substance use participation among adolescents tend to overlook the harmful effects of colonisation, and historical trauma, as well as what their experiences mean from their perspectives. Cultural identity has emerged one way to create a more inclusive understanding of a range of outcomes, although:

- its application in research on Indigenous adolescent substance use is limited
- its measurement has not necessarily involved Indigenous input.

This study seeks to address these gaps, exploring the following questions in a sample of Australian Indigenous youth:

1. Is cultural identity related to substance use participation?
2. Does cultural identity have an independent effect on substance use participation, after accounting for other life events and demographic characteristics?

Research has demonstrated that historical trauma is correlated with adverse experiences for Indigenous peoples; while strong cultural identity is linked to good mental and physical health, which should reduce the likelihood of substance use participation.

Chapter 3: Methods

This methods chapter provides an overview of the Australian Longitudinal Study of Indigenous Children (LSIC) study research (the data used in this study), highlighting the methodology used by the LSIC study's researchers, including data collection, survey methods, sample selection, development, and testing. The current study's procedures are highlighted with detailed descriptions of the variables used in the research. Finally, the analytical approach will be outlined.

Quantitative research was used to answer this study's research questions given the nature of the data. Although a quantitative approach was taken, Indigenous voices are present as the LSIC study was developed by Indigenous researchers in consultation with Indigenous community stake holders. Further, this study's analysis does not compare Indigenous experiences to non-Indigenous experiences but rather, explores the diversity within the experiences of Indigenous youth.

Data Source

Longitudinal Study of Indigenous Children Footprints in Time

To address the research questions in this study I used a cross-sectional secondary analysis approach, relying on the LSIC data set. This data set contains rich information from over 1,200 participants across 2,500 variables. The LSIC study is managed by the Australian Government Department of Families, Housing, Community Services, and Indigenous Affairs (FaHCSIA) under the guidance of a Footprints in Time Steering Committee.[2] The study has

[2] All information in this methods chapter on the LSIC study has been sourced from the LSIC data user guide release 11.0 unless otherwise referenced

followed two cohorts of Aboriginal and Torres Strait Islander children from urban, regional, and remote locations throughout Australia over a 13-year period, from 2008 (Wave1) to 2022 (Wave 15). Wave 11, which is the wave selected for this study, was conducted in 2018. It was the first study wave that captured justice system related data and is the last wave conducted before the Covid-19 pandemic.

Survey methodology

The LSIC survey methodology for each wave in the study is a cross-sectional sequential design, following two cohorts. Participants from cohort B entered the study as babies while cohort K entered the study at kindergarten age. A cross-sectional sequential design comprises of limited repeat measures collected from participant groups who enter the study at the same time but at different key developmental ages. This creates a data set that contains temporarily overlapping measurements of the various age groups (Duncan et al., 1996). Recruitment into the LSIC study was conducted both formally through invitations to addresses obtained from Centrelink and Medicare Australia, and informally by word of mouth, local knowledge, and study promotions.

Sample and site selection

The LSIC study used a non-random purposive sampling design. Eligible families were approached, voluntary consent obtained, and further agreements and approvals obtained from Elders in each site before the research commenced. Eleven sites were chosen to cover a range of socio-economic and community environments where Aboriginal and Torres Strait Islander children resided, covering New South Wales, Victoria, Queensland, Western Australia, South Australia, and the Northern Territory. Sites were also chosen to reflect equal representation of urban, regional, and remote areas. The final sites used in the study also included locations already engaged in pilot studies, and locations near Indigenous Coordination Centres (ICC)

where Research Administration Officers (RAOs) could be or were based. Actual site names were not released for confidentiality reasons.

Study development and testing

The LSIC study was designed and developed under the supervision of the Footprints in Time steering committee whose members are predominantly eminent Indigenous researchers, and with extensive consultation with Indigenous communities, organisers, and service providers in each area. This process ensured that the study gave a voice to and reflected the best interests of Indigenous peoples, and that the data obtained would benefit the children and their families. A pilot study was conducted prior to commencement with the support of the Australian Bureau of Statistics (ABS) who assisted in testing the questionnaires and field procedures.

Data collection

Initially, informed consent was obtained from the study child's parents or carers and their families. Interviews were conducted by Department of Social Security (DSS) employed Aboriginal and Torres Strait Islander RAO's. The LSIC study questionnaires asked participants a range of questions relating to factors associated with participants well-being including physical, social, and cognitive development, family and community relationships, and other significant life events. At each wave each cohort were asked only age-appropriate questions. The interviews, which were conducted by RAO's, were extensive in detail and face- to- face.

Ethics LSIC approvals

Ethics clearance for FaHCSIA to conduct the LSIC study was initially obtained through the Australian Government Department of Health's Departmental Ethics Committee which has continued to be the primary Human Research Ethics Committee (HREC). Further clearances were obtained from state-based HREC's or their equivalent, as well as consultations with state Departments of Education, the Catholic Dioceses, and state and territory departments managing

out-of-home care. Later approval for the study was given in 2018 by the Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS).

Participants consent

Participant consent was obtained by research staff in several phases. The first phase involved an introductory letter and DVD being sent to a potential study child and their families. The materials contained descriptions of the study and the consent procedures. Second, at the beginning of each interview, RAOs worked through each consent form with the primary parent or carer explaining the consent being sought. This enabled parents and carers to make informed decisions about their participation in the study. A statement was provided to participants who preferred to read about the study. Also, parents and carers provided consent on behalf of the study child.

Permission was sought for the recording of interviews, contact to be made with other parents and care givers, the study child to be photographed, and their teachers and/or childcare workers to be contacted. Parents and carers were provided with a summary sheet that included all consent agreements, and the contact details of the ethics committee and the DSS. Parents and carers were also informed that they could change their consent or withdraw from the study at any time. Finally, confirmation of previous consent was sought at each wave of the study. New consent forms provided allowing contact with the second parent and teachers/childcare workers, these were also signed before the commencement of each new wave.

Data Access

The LSIC data is of a cultural and age sensitive nature as it contains data and information about young Indigenous children and their families. Therefore, there is a formal process for external researchers to access the data that requires consideration of these issues.

The application process required the provision of external researchers general contact information, information on the academic institution and program of study, data storage data

safety, and more. Also, questions were asked on how my cultural background would affect the materials produced, and how this would be addressed. For the current study, and in addition to the inclusion of an Indigenous scholar as my research supervisor, I have committed to following an approach that centres Indigenous perspectives to the research. The application process also involved completing separate confidentiality deed polls through Australian Data Archive (ADA Data verse) by each researcher on the research team. Finally, ethics approval was obtained from the Griffith University HREC. As this was secondary data collected under an approved protocol, the ethics application was an expedited review.

Current Study

Data preparation and cleaning

Several steps were followed in the initial preparation of the LSIC data set before analysis could begin. These steps involved gathering the appropriate data from the LSIC study data set. For expediency, as the LSIC data set contained over 2,500 variables, a new data set was created in SPSS version 27 through data transfer to include only the variables needed for this study. Further data preparation included filtering out cohort B (entered as babies)[3] (n = 754) and deleting cases that were missing vital data (n = 77). As a result, there were 422 cases remaining.

Data and participants

This study relied on the LSIC study wave 11 data gathered from the questionnaire responses of the study child and parent 1 respondents only. The study was limited to the older Cohort K as questions on cultural identity, justice system contact, and substance use were only available for the older cohort in the data set. As shown in Table 3.1, from a sample of

[3] This cohort was excluded from the analysis as they were not asked vital questions on substance use in the LSIC study.

422 cases, 421 participants were aged between 12.17 and 15.5 years (M = 14, SD 0.49) and half were male. The highest proportion of participants resided in an area of low relative remoteness (n = 228, 54.3%), with less than 10 percent residing in high/extreme relative remoteness (n = 35, 8.3%).

Table 3.1

Table of Descriptive Statistics for Variables used in the Study.

Items	%	N	M	SD	Min - Max	Cronbach's Alpha
Dependent Variable						
Substances ever used	Yes					
Smoking	21.9	92				
Vaping	10.5	44				
Alcohol	39	164				
Marijuana	8.6	36				
Chroming	.7	3				
Other drugs	.7	3				
Substance use scale			.78	1.1	0 - 6	.62
Key Independent Variables						
Cultural Identity scale		365	62.70	13.11	15-75	.95
Cultural Identity in School scale		381	20.39	3.95	4-24	.82
Other Independent Variables						
Teachers style scale		397	24.68	5.11	5-30	.90
Financial Stress scale		410	13.3	1.24	7-14	.71
Adverse family events		421	2.43	2.0	0 - 11	.61
Closest relationships		421	5.46	3.34	0 – 18	
Control Variables						
Age		421	14	.49	12.17-15.5	
Male	50	211				
Female	50	211				
Level of remoteness						
None	28.6	120				
Low	54.3	228				
Moderate	8.8	37				
High/extreme	8.3	35				
Socio-economic disadvantage		418	3.12	2.4	1 - 10	

Variables

Dependent variable: Substance use related items

The dependent variable (substance use) is a scale using substance related items where the study child was asked whether they had participated in smoking, vaping, alcohol, marijuana, chroming, and other drugs. Other drugs included ice, heroin, and cocaine. These items were recoded (as 1 = yes; 0 = no) to indicate whether the SC had ever used (or not) that substance (see Appendix 1). An additive substance use scale was computed from the 6 substance use items[4]. With a Cronbach's alpha of .62[5], this index shows good internal consistency (see Table 3.1). Cronbach's alpha is a test for internal consistency and shows whether the items used to compute the scale are all measuring the same construct (Tavakol & Dennick, 2011).

As shown in Table 3.1, the highest proportion of participants reported yes to alcohol use (39%), followed by smoking (21.9%), with less than 1 per cent reporting ever chroming (.7%) or using other drugs (.7%). The mean substance use score was .78 (SD = 1.1) indicating very low overall substance use across the study sample.

Key independent variables: Cultural identity

Items measuring cultural identity, drawn from the LSIC study, are described in Table 3.2. The 15 items focused on whether the study child was socially or emotionally connected to or participated in Indigenous cultural tenets and activities. These items were developed by the LSIC study's eminent Indigenous researchers and therefore accurately reflect Indigenous perspectives of their own cultural identity.

[4] Analysis and scale construction in the study were computed using SPSS version 27 statistical software. For all scales, if an item was missing, the case was excluded from the analysis.

[5] Chronbach's alpha scores for all scale variables are shown in Table 3.1

Table 3.2

Cultural Identity Items

Knowing about your people/mob	Learning from strong Indigenous role models	Indigenous events
Knowing about your country	Ways and laws of Indigenous ancestors	Bush foods and medicines
Knowing about your Indigenous family connections	Being strong and deadly	Indigenous symbols, designs, and art works
Knowing the Indigenous stories	Having Indigenous friends	News media organizations that talk about culture

Appendix 2 presents the results of the samples responses to these cultural identity items. Most participants scored all 15 items as being either important or extremely important to them. An additive cultural identity scale was computed from the 15 cultural identity items. This scale has strong internal consistency with a Cronbach's alpha of .95. With scores ranging from 15 (least important) to 75 (most important), the mean score on cultural identity across the sample was 62.7 (SD = 13.11), indicating that on average cultural identity rated very highly across the sample (see Table 3.1).

Cultural identity in school

A second cultural identity variable was constructed, reflecting the study child's perception of their cultural identity within a particular context (school). These items were, (i) the study child felt good about being Indigenous in class; (ii) wanted to share things about being Indigenous in class; (iii) felt safe about being Indigenous in class; and (iv) wanted classmates to know that he/she is Indigenous. As shown in Appendix 1, responses were reverse coded, so lower responses scored 1 and higher responses scored 6.

Similar to the cultural identity items, the cultural identity in school items all rated highly across the sample (see Appendix 3). An additive cultural identity in school scale was computed, with good internal consistency (Cronbach's alpha .82). Ranging from 4 to 24, the mean score for cultural identity in school was 20.39 (SD = 3.94), indicating that on average cultural identity in school rated very high for participants in the study (see Table 3.1).

Other independent variables of interest

The inclusion of these variables drew on key theoretical frameworks, and their availability in the data.

Teachers style

Participants answered a number of questions about their perceptions of how fair and receptive their teachers were toward them in class. Teachers' style included 5 items: (i) that the teacher listened to the study child; (ii) the teacher was fair to the study child; (iii) the teacher made class a fun place to be; (iv) the teacher cared about the study child; (v) and the teacher understands how the study child talks. The items ranged from 1 to 6 where 1 = never and 6 = always. Most participants scored these items as always (see Appendix 4). Thus lower scores reflect negative responses, and higher scores reflect positive responses. An additive teachers positivity scale was computed. It's Cronbach's alpha of .90 suggests strong internal consistency. The mean score was 24.68 (SD = 5.11), on a scale ranging from 5 to 30 (see Table 3.1).

Adverse family events

Recall that the study child questionnaire was supplemented with a parent questionnaire. Information on adverse family events was drawn from the parent data. As described in Table 3.3, there were 13 items measuring adverse family events that had occurred in the last 12 months.

Table 3.3

Table of adverse family event items

	In the last 12 months a family member	
Was hurt or sick	Lost a job	Had a alcohol and drug problem
Passed away	Had housing problems	Was robbed
Family arguments	Study child being scared by others	Was mugged or assaulted
Family split up	Had problems with police	Were arrested or jailed
Study child being cared for by others		

These items were recoded to reflect the presence (1 = yes) or absence (0 = no) of the event (see appendix 1). Most respondents answered no to these event items except for a family member passing away (n = 215, 50.9%), was hurt or sick (n = 144, 34.1%), and had housing problems (n = 127, 30.1%). An additive adverse family events scale was created, with good internal consistency (Cronbach's alpha of .61). The mean score for participants was 2.43 (SD = 2.0) indicating that on average respondents scored very low on presence of adverse family events.

Financial stress

Financial stress variables were also drawn from the parent questionnaire. The 7 items included, (i) could not pay bills; (ii) could not pay housing payments; (iii) went without meals; (iv) were unable to heat/cool home; (v) pawned something; (vi) sought assistance from welfare organisations; (vii) and the study child could not do school activities. The items were recoded to indicate occurrence (1 = yes) or not (0 = no). Most respondents reported no to financial stress items (see appendix 6). The highest proportion of participants reported not being able to pay bills on time (n = 108, 26%), followed by seeking assistance from welfare organisations (n = 52, 12.5%). An additive financial stress scale was computed. With a Cronbach's alpha of .71,

this suggests strong internal consistency. The mean score was .70 (SD = 1.24), indicating on average very low levels of financial stress (see Table 3.1).

Closest relationships

In the current study only the closest relationships (circle 1) was used as overall most relationships fell within this circle. The variable 'closest relationships' is a continuous measure of the number of reported relationships in the study child's life. The number of closest relationships ranged from a minimum of 0 to a maximum of 18 people across the sample (see Table 3.1). The mean number of close relationships was 5.46 (SD = 3.34.

Control variables

Several demographic control variables were included to adjust for remoteness, socio-economic status, participant gender and participant age.

Level of relative remoteness

Level of relative remoteness (LORI) was measured in the LSIC study as relative closeness of 5 types of service centres, an extension of the Accessibility/Remoteness Index of Australia (ARIA), a standard Australian Bureau of Statistics index. Categories for LORI were i) no remoteness; ii) low remoteness; iii) moderate remoteness; and iv) high/extreme remoteness. As this was an ordinal variable, dummy variables were created for each level (coded 1 = yes and 0 = no), with not remote as the reference category (see Appendix 1).

Most participants resided in low-level remoteness (n = 228, 54.3%), followed by just over a quarter residing in non-remote areas (n = 120, 28.6%). Less than 10% of participants lived in moderate remoteness (n = 37, 8.8%) or high/extreme remoteness (n = 35, 8.3%).

Level of relative socio-economic disadvantage

A level of relative socio-economic disadvantage was included in the LSIC study, based on the deciles of socio-economic indexes for areas (SEIFA) using the Australian 2016 census.

From a possible scores ranging from 1 to 10, where 1 = the most disadvantaged and 10 the most advantaged, the mean score for participants on socio-economic disadvantage was 3.12 (SD = 2.4) (see Table 3.1). This indicates that, on average, participants in the sample scored as disadvantaged.

Age and gender

Other control variables included in this study were age, and gender. As participants age was bounded between 12.17 and 15.5 years and thus not continuous due to the sampling procedure, it was recoded as 13.5 years and under = 0, and over 13.5 years = 1. About 18% (75) of participants were aged 13.5 years and under, and 82.2% (346) (see Table 3.1). Gender was also recoded as male = 1 and female = 0. Analysis showed that participants were evenly split, male (211), and female (211) (see Table 3.1).

Analytical approach

Statistical techniques

To address research question 1, bivariate correlation analyses were used to examine the associations between the dependent variable (substance use) and the independent variables, as these were scale variables and could be treated as continuous. Non-parametric analyses (Mann-Whitney U) were performed to examine the association between two individual substance use items (smoking and alcohol) and the independent variables of interest. Smoking and alcohol use were the most frequently reported substances used by sample participants. Finally, OLS regression was conducted to estimate the impact of cultural identity on substance use while controlling for other life circumstances and demographic characteristics (research questions 2).

Diagnostics

Standard checks for violations of assumptions, including normality, linearity, and homoscedasticity, were conducted. Although a histogram showed that the substance use scale was not normally distributed as there were more respondents who scored at the lower end of the substance use scale, appropriate visual checks using scatter plots (residuals vs predicted values) indicated that the assumptions of linearity and homoscedasticity were tenable

Further, collinearity analysis indicated that multicollinearity was also not a concern (see Table 3.4). All variance inflation factors were less than 10 and tolerances above .2. As there was no excessive multicollinearity among the variables (i.e. variables were not highly correlated), all the variables were kept in the model. Thus, the diagnostics showed that assumptions have been reasonably met for this analysis.

Table 3.4

Table of Results for Multicollinearity Analysis.

	Tolerance	VIF
Cultural identity	.706	1.416
Cultural identity in school	.601	1.664
Teachers style	.704	1.421
Family events	.885	1.131
Financial stress	.890	1.124
Age	.956	1.047
Closest relationships	.815	1.227
Gender	.931	1.074
Socio-economic disadvantage	.847	1.181
Level of relative remoteness (LORI)		
Low	.715	1.398
Moderate	.798	1.253
High/Extreme	.729	1.371

Limitations

This study has several limitations. There are two key limitations to note here. First, the data used was secondary data, therefore this study was constrained by the available variables in the original data set. As a result, it was not possible to include all variables suggested by key theoretical frameworks, and some measures are limited to the available questionnaire items. Second, generalisability may be limited, as the study relies on a non-probability sample of Indigenous youth for a particular age-graded cohort.

Chapter 4: Results

As described in Chapter 3, self-reported survey data from Aboriginal and Torres Strait Islander youth were used to examine the relationship between the dependent variable substance use, and the key independent variables (cultural identity and cultural identity in school), adjusting for other independent and control variables. In this chapter, the results of bivariate and multivariate analyses are reported. Bivariate correlation analysis was conducted to examine the relationship between substance use, cultural identity variables, and other independent variables. Non-parametric tests (Mann-Whitney U) explore the association between median cultural identity scores for the most frequently used substances (smoking and alcohol use). OLS regression was used to estimate the effects of cultural identity, and cultural identity in school on substance use, adjusting for other variables.

Is there an association between substance use and cultural identity

The first research question focused on whether there was an association between substance use and cultural identity (measured as cultural identity and cultural identity in school), for Indigenous youth in the study sample. Table 4.1 reports the results of the bivariate correlation analysis. The analysis also included the other independent variables of interest (teachers' style, and other life events).

Substance use, cultural identity, and cultural identity in school

As shown in Table 4.1, there is no significant relationship between substance use and cultural identity ($r(346) = .03$, $p = .57$), but there is a significant (although weak) negative relationship between substance use and cultural identity in school ($r(358) = -.153$, $p = .004$).

Table 4.1

Descriptive Statistics and Pearson's Correlations Coefficients for Substance Use, Cultural Identity, Cultural Identity in School, Teachers Style, and Other Life Circumstances

Variable	M	SD	1	2	3	4	5	6	7
1. Substance use	0.8	1.1							
2. Cultural identity	62.7	13.1	0.030						
3. Cultural identity in school	20.4	3.9	-.153**	.498**					
4. Teachers style	24.7	5.1	-.238**	.121*	.352**				
5. Closest relationships	5.46	3.35	-.039	-.079	-.051	.024			
6. Adverse family events	2.4	2.0	.201**	0.027	-0.058	-0.081	0.078		
7. Financial stress	0.7	1.2	0.089	-0.038	-0.028	0.021	-0.038	0.093	

N = 291 **. P < 0.01 level. * P < .05 level.

Substance use and other independent variables.

Overall, there are few significant associations between substance use and the other independent variables. There is no significant relationship between substance use and closest relationships *(*$r(397) = -.039$, $p = .438$), or substance use and financial stress ($r(387) = -.089$, $p = .079$). However, there is a significant but weak negative relationship between substance use and teachers' style ($r(372) = -.238$, $p = .001$), and a significant weak positive relationship between substance use and adverse family events ($r(395) = .201$, $p = .001$).

Smoking, alcohol use, cultural identity, and cultural identity in school

To further explore the relationship between substance use and the cultural identity measures, the analysis also examined the association between the most frequently reported substances used by participants (smoking and alcohol use). Due to the non-normal distribution of smoking and alcohol use, these items were coded into two groups: have used versus have not used. As it is a more robust test, Mann-Whitney U tests were then used to compare median cultural identity and cultural identity in school scores for participants who had used these substances to those who had never used.

Smoking, cultural identity, and cultural identity in school

The results of a Mann Whitney U test *U* (= 9953.5, *z* = -1.626, *p* = .104) indicate that median cultural identity scores were not significantly different for the group who answered no to smoking (*Md* = 66, *n* = 286) compared with the group that answered yes to smoking (*Md* = 69, *n* = 79). The effect size is small ($\eta^2 = \frac{Z^2}{N-1}$ *r* = .007).

Similarly, median cultural identity in school scores were also not significantly different (*U* = 11200.5, *z* = -1.21, *p* = .225) for the group who answered no to smoking (*Md* = 22, *n* = 299) compared with the group that answered yes to smoking (*Md* = 21, *n* = 82), with a small effect size($\eta^2 = \frac{Z^2}{N-1} r$ = .003).

Alcohol, cultural identity, and cultural identity in school

Similar results were also found for alcohol use. Cultural identity scores were not significantly different (*U* = 14730.0, *z* = -.868, *p* = .386), ($\eta^2 = \frac{Z^2}{N-1}$ *r* = .007) for the group who answered no to alcohol use (*Md* = 68, *n* = 229) compared with the group that answered yes to alcohol use (*Md* = 66, *n* = 136).

Median scores for cultural identity in school were not significantly different (U = 15431.0, z = -1.67, p = .225) ($\eta^2 = \frac{z^2}{N-1}r$ = .007) for the group who answered no to alcohol use (Md = 22, n = 235) compared with the group that answered yes to alcohol use (Md = 21, n = 146).

Dose cultural identity have an independent effect on substance use, adjusting for other life circumstances and demographic characteristics?

The OLS regression results are reported in Table 4.2. The analysis proceeded through introducing variables in a series of conceptual blocks.[6] Five blocks (or models) were used: Model 1 contained only cultural identity; Model 2 added cultural identity in school; Model 3 added demographic characteristics; Model 4 included the school-related cultural identity variable (teachers' style); and Model 5 added family and life circumstances variables.

[6] In some disciplines, this approach is known as hierarchical regression. However, as there are also other hierarchical (multi-level) modelling approaches, I have chosen not to use this term.

Table 4.2

Results for OLS Regression Analysis

	Model 1			Model 2			Model 3			Model 4			Model 5		
Variables	b	β	*p*	b	β	*p*	b	β	*p*	b	β	*p*	b	β	*p*
Constant	.841		.010	1.543		.001	1.073		.013	1.223		.033	1.139		.055
Cultural Identity	-.002	-.019	.741	.008	.095	.157	.009	.106	.110	.006	.073	.263	.006	.068	.300
Cultural Identity School				-.064**	-.227	.001	-.062**	-.218	.001	-.032	-.114	.108	-.030	-.108	.128
SE-Disadvantage							.014	.031	.606	.019	.043	.469	.021	.047	.429
Age Over 13.5 Years							.350*	.128	.026	.335*	.122	.029	.334*	.122	.030
Male							-.095	-.044	.449	-.136	-.063	.270	-.156	-.072	.206
Remoteness (vs not remote)															
Low							.052	.024	.715	.032	.015	.816	.064	.029	.646
Moderate							-.105	-.027	.667	-.102	-.027	.667	-.071	-.018	.765
High/Extreme							.677**	.176	.008	.683**	.177	.006	.683**	.177	.006
Teachers Style										-.036**	-.171	.009	-.036**	-.169	.010
Adverse Family Events													.058	.110	.062
Closest Relationships													-.016	-.049	.379
Financial Stress													.033	.039	.505
R^2		.000			.039			.089			.139			.157	
Adjusted R^2		-.003			.032			.063			.108			.118	
R2 Change		.000			.038			.050			.050			.018	

Note: * p<0.05, ** p<.0.001

Model 1: The impact of cultural identity on substance use

The fit statistics suggest that the first model for cultural identity does not fit the data better than a model without any independent variables $F(1, 289 = .110; p = .741)$, explaining less than 1% of the variance in substance use (adjusted $R^2 = -.003$). Consistent with this, cultural identity was not a significant predictor of substance use ($b = -.002$, $\beta = -.019$, $p = .741$) (see Table 4.2).

Model 2: The impact of cultural identity in school on substance use

Adding cultural identity in school Model 2 improved the fit of the model ($F(2, 288) = 5.811$; $p = .003$), and significantly increased the proportion of variance explained (R^2 Change = .038; $F(2, 288) = 5.811$; $p = .003$). Cultural identity in school was a significant predictor of substance use ($b = -.064$, $p = .001$). The standardised coefficient indicates that a 1 standard deviation increase in cultural identity in school would yield a decrease in substance use of .227, after controlling cultural identity. As reported in Table 4.2, cultural identity remained a non-significant predictor of substance use ($b = .008$, $p = .157$). Overall, this model accounts for 3.2% of the variance in substance use (adjusted $R^2 = .032$).

Model 3: The impact of demographic and characteristic variables on substance use

For the third model, demographic characteristics were added: age, gender, socio-economic disadvantage, and low, moderate, and extreme remoteness (see Table 4.2). Accounting for an additional 5% of the variance in substance use (R^2 Change = .050; $F(8, 282) = 3.441$; p .001), this model fit to the data better than a model with no independent variables (F (8, 282) = 3.764; $p = .001$).

In this block, only age ($b = .350$, $p = .026$) and extreme remoteness (vs not remote) ($b = .677$, $p = .008$) were significant predictors of substance use, after adjusting for the other variables in the model. Older youth on average have higher substance use participation than

younger youth: participants aged over 13.5 years have an estimated substance use score 0.35 higher than participants 13.5 and under. Those residing in an area of extreme remoteness have, on average, an estimated substance use score that is 0.667 higher than those living in non-remote areas.

Although there is a small reduction in strength, cultural identity in school remained a significant, and strongest, predictor of substance use, with stronger cultural identity reducing substance use (b =-.062, β =-.218, p = .001).

Model 4: The impact of teachers' style on substance use

This model adds teachers' style, which adds 5% to the proportion of explained variance in substance use (R^2 Change = .050; F(10, 280) = 4.524; p .001). Again, the fourth model fits better than a constant-only model (F (10, 280) = 4.711; p = .001), explaining almost 11% of the variance in substance use.

While age and extreme remoteness (vs not remote) remain significant predictors of higher substance use (b = .335, p = .029; b =.683, p = .006, respectively), cultural identity in school no longer has a significant impact on substance use (b = -.032, p = .108) (see Table 4.2). Teachers' style has a significant negative effect on substance use, after adjusting for other variables in the model (b =-.036, β = -.171, p = .009). For each 1 unit increase in teachers' style, we would expect an average .036 (or 0.171 standard deviation units) decrease in substance use, holding all other variables constant. Together, these results suggest that teachers' style mediates the effect of cultural identity in school on substance use.

Model 5: The impact of family on substance use

For the fifth and final, life and family circumstances were included the analysis: closest relationships, adverse family events, and financial stress. The fifth model fits that data (F (13, 277) = 3.982; p = .001), but does not significantly improve the proportion of explained variance in substance use (R^2 Change = .018; F(13, 277) = 4.101; p .001) (see

Table 4.2). The full model accounts for 11.8 % of the variation in substance use, suggesting that 88.2 % of variation in substance use in this model cannot be explained by the included variables (adjusted $R^2 = 0.118$).

None of the life and family circumstances variables were significant predictors of substances use; adverse family events ($b = .058$, $p = .062$), closeness of relationships ($b = -.016$, $p = .379$) and financial stress ($b = .033$, $p = .505$). The pattern of significant predictors remained unchanged from Model 4, with no change to the size or direction of their coefficients. After controlling for all other variables, residing in an area of extreme remoteness (vs not remote) remained the strongest significant predictor, increasing substance use ($\beta = .177$).

Of particular interest, teachers' style continued to have a significant protective effect on substance use, adjusting for the other variables. On average, with each unit increase in the teachers' style scale, substance use reduced by 0.036 units, or 0.169 standard deviations ($b = -.036$, $\beta = -.169$, $p = .010$). Cultural identity in school remained mediated through teachers' style ($b = -.030$, $p = .128$).

Summary

In short, the analysis found that the measure of cultural identity was not significantly related to the substance use scale, but that the measure of cultural identity in school was significantly related to the substance use scale. However, in adjusting for other variables, the analysis suggested that cultural identity in school was mediated by participants' rating of positive teachers' style. Of further interest, after controlling for all variables, age, and extreme remoteness (vs not) were significant predictors of substances use; however, adverse life circumstances, disadvantage and gender did not have a significant impact on substance use. The implications of these results are discussed in the next chapter.

Chapter 5:Discussion

This study examined the relationship between cultural identity and substance use for a sample of Indigenous youth. In doing this, the study sought to, although imperfectly, address some of the critiques of criminological theory by Indigenous scholars. That is, Indigenous perspective and experiences remain peripheral in much criminological research (Cunneen, 2020; Tauri, 2013). Thus, this study works on this challenge in three key ways. First, in recognising colonial processes, this study critically responded to how Indigenous worldview is missing in our understanding of substance use through using the concept of cultural identity. Second, cultural identity was measured using items developed by Indigenous researchers, in consultation with Indigenous stakeholders. Finally, the study relies on an Indigenous only sample.

Key findings

There were several noteworthy findings in this study. First, contrary to expectations that cultural identity would have a protective effect, cultural identity did not have a statistically significant effect on substance use, even after adjusting for other variables. Moreover, there was no significant difference in median cultural identity scores for those who reported having smoked (versus those who have not) and those who reported alcohol use (versus those with no use). This lack of a significant effect could in part be due to methodological issues, such as insufficient variation in the cultural identity measure in the sample.

Second, and in contrast, cultural identity in school had a significant protective effect on substance use, until teachers' style was introduced into the model. Thus, the impact of cultural identity in school appears to be mediated by participants' assessment of

attentiveness, responsiveness and understanding of their teachers. The implications of this will be discussed later.

Third, after controlling for other variables in the model, teachers' style had a significant protective effect on substance use. This result is consistent with Han et al. (2015) and Nagasawa et al, (2000) where early onset delay for smoking and alcohol consumption was found to be correlated with attachment to teachers.

Fourth, although more adverse family events were positively correlated with increased substance use, these measures were not statistically significant in the multivariate model. Thus, unlike what is suggested by general strain theory, there was no empirical evidence that adverse family events were important in understanding substance use in this sample of Indigenous youth. Again, it is possible that this may reflect a lack of variation in the experience of adverse family events (which was measured over a 12-month period).

Finally, age and residing in an area of extreme remoteness (versus not remote) remained the strongest predictors of substance use, after adjusting for the other variables in the model. Unsurprisingly, older participants (aged over 13.5 years) had higher mean levels of substance use than younger participants (13.5 years and under); those living in areas of extreme remoteness also had higher mean levels of substances use, compared to those not in remote locations. Remoteness limits access to support, activities and other resources, its presence as a risk factor for substance use could be expected.

Implications and contribution

The outcome of this study is somewhat surprising and enlightening from a criminological standpoint. The results show that cultural identity may not provide a protective mechanism for -substance use of Indigenous youth. However, the findings suggests that cultural identity in school and teachers' style are protective. So what does this mean? One possible explanation focuses on methodological issues in measurement and model

specification (briefly noted above). However, if we take another look at the cultural identity in school and teachers' style items in the LSIC questionnaire, another plausible interpretation emerges. The cultural identity in school items can be seen as indicators of how safe participants felt being Indigenous within their school environment (e.g. 'felt good about being Indigenous in class'; 'wanted classmates to know that he/she is Indigenous'). In other words, these items might be measuring participants' perceptions of cultural safety. Similarly, the items in the teachers' style scale are about how the teacher interacts with the participant in ways that are respectful (e.g. 'the teacher listened to the study child'; 'the teacher understands how the study child talks'). Thus, these results highlight that what might matter in reducing substance use for Indigenous youth is cultural safety in expressing cultural identity and respect in interactions, at least for participants within a school context. Criminology has, to some extent, overlooked safety and respect in substance use research and intervention/prevention programs., which may explain why criminological theory has struggled to explain youth substance use, particularly for Indigenous populations in colonised countries.

What these findings also reinforce is that key institutions (such as schools) with which youth engage are important for reducing substance use. Previous health and youth research has identified that strong school connectedness and attachments are associated with lower levels of substance use. For example, similar items used in this study to measure cultural identity in school were also used by Mulla et al. (2020) to measure school connectedness in a study on dating, sexual violence, and substance use. The researchers found that school connectedness was negatively associated with alcohol and marijuana use for a sample of 10th grade high school students in the United States. Bond et al. (2007) found that strong school and social connectedness was associated with positive student outcomes for mental health, substance use, and educational achievement in a sample of 13- to 16-year-old students.

Similarly, Weatherson et al. (2018) also found that strong school connectedness had a protective effect on substance use for a sample of year 1 to 4 school students in Canada.

Here lies the challenge. For Indigenous youth (and populations more broadly), institutions and their practices are part of ongoing colonising practices. As research (such as that described above) indicates that educational spaces provide an effective environment for reducing the risk of substance use participation for youth, this is not necessarily the case for Indigenous youth where institutional practices fail to respond to the legacies of colonisation and historical trauma. Educational institutions assume a westernised non-Indigenous perspective of youth and education, resulting in negative attributions to the behaviours and motivations of Indigenous youth. Any successful school-based intervention needs to incorporate Indigenous perspectives and experiences, and as this research suggest that cultural safety and respect are critical elements. Although it should be mentioned that schools in general do not embody Indigenous perspectives on education. Vass, (2012) argues the deficits in Indigenous education in Australia suggesting that mainstream education, and even Indigenous education in the same educational system, in many ways is structured to achieve non-Indigenous purposes. This speaks to the relationships of power, and knowledge in mainstream education.

Future directions

Care must be taken in the interpretation of these findings, due to the limitations around the current study's findings, particularly around the use of secondary data and sampling procedure (see Chapter 3). However, a more important limitation is the use of quantitative methods, which have often been identified by Indigenous scholars as contributing to colonising processes around what knowledge is valued (Tauri, 2013). To partially address this challenge, a questionnaire designed by Indigenous researchers and stakeholders was used.

Thus, future research on substance use (and risky behaviours more generally) needs to:

- expand beyond cultural identity to consider cultural safety and respect as important protective mechanisms to produce positive outcomes for Indigenous youth.
- qualitatively explore what cultural identity, cultural safety and respect means from Indigenous perspectives and experiences, particularly young people.
- embed Indigenous communities as collaborators in building a better understanding of more positive outcomes around substance use can be attained for Indigenous youth.

On a final note, the premise that criminological theory has neglected Indigenous peoples' experiences of colonisation has been at the heart of this research. Colonisation has embedded bias, control and coercion into policy and institutional practices, including criminal justice and schools. In past research, cultural identity has emerged as a possible resource that Indigenous adults and youth might use to mitigate the impact of ongoing trauma and colonising processes. The current study suggests that, at least for a sample of Australian Indigenous youth, it might be the ability to be safe to express your cultural identity that provides a protective effect against negative outcomes, such as substances use. In other words, cultural safety and respect may provide a mechanism that can be used by Indigenous youth to navigate interactions with institutions to achieve more positive and resilient outcomes.

Appendices

Appendix 1

Item recoding table

Variables	Previous Coding	New Coding
Smoking/Alcohol	1=No	0=No
	2=Yes	1=Yes
	3=Yes just a few puffs/sips	
	4=Yes lots of times	
	5=Smoked/drank in previous wave	
Vaping, Marijuana Chroming, Other Drugs	1=Yes	1=Yes
	2=No	0=No
Financial stress	1=Yes	1=Yes
	2=No	0=No
Family events	1=Yes	1=Yes
	2=No	0=No
Cultural identity	1=Yes always	1=No never
	2=Yes most of the time	2=No not much
	3=Sometimes fair bit	3=Sometimes little bit
	4=Sometimes little bit	4=Sometimes fair bit
	5=No not much	5=Yes most of the time
	6=No never	6=Yes always
Cultural identity in school	1=Yes always	1=No never
	2=Yes most of the time	2=No not much
	3=Sometimes fair bit	3=Sometimes little bit
	4=Sometimes little bit	4=Sometimes fair bit
	5=No not much	5=Yes most of the time
	6=No never	6=Yes always
Teachers style	1 = Never	Same as previous
	2 = Not much	
	3 = Little bit	
	4 = Fair bit	
	5 = Most of the time	
	6 = Always	
Male	1	1
Female	2	0
Age	Continuous measure	0 = under 13.5 years

		1 = over 13.5 years
Level of relative remoteness		Dummy Variables
None	1	1 = Yes 0 = No
Low	2	1 = Yes 0 = No
Moderate	3	1 = Yes 0 = No
High/extreme	4	1 = Yes 0 = No

Appendix 2

Aspects of Indigenous identity Items.

	Level of Importance				
Response	Not very	Somewhat	Important	Very	Extremely
Variable			%		
People and mob	3.3	5.3	12.8	21.6	55
Country	2.3	3.3	11.6	24.4	58.0
Family connections	2.3	5.5	12.7	19.8	59.6
Strong Indigenous role models	5.0	4.8	18.1	17.8	51.5
Ways and laws of Indigenous Ancestors	7.3	7.3	12.5	16.4	56.0
Knowing Indigenous stories	3.5	6.5	20.6	16.1	47.7
Indigenous events	5.5	4.5	12.8	21.9	54.0
Being strong and deadly	2.0	1.8	9.3	15.1	71.1
Community connections	2.8	6.5	13.3	21.1	52.8
Having Indigenous friends	8.8	7.0	14.8	17.3	50.5
Knowing the language of your people	9.5	7.0	14.8	15.6	50.5
Bush foods and medicine	7.5	10.6	19.8	17.8	38.9
Aboriginal Torres Strait Islander flag	1.8	2.8	8.0	14.8	71.6
Indigenous symbols design and art works	3.3	4.3	12.8	19.8	58.8
News and media that talk about culture	9.0	12.1	19.3	17.3	38.4

Appendix 3

Cultural identity in school

	Level of Importance					
	Never	No not much	Sometimes little bit	Sometimes fair bit	Yes, most of the time	Yes always
Variable			%			
Study child feels good about being Indigenous in class	1.0	1.0	4.8	5.3	15.6	66.8
Study child wants to share things about being Indigenous	3.5	10.6	12.3	16.6	20.9	28.4
Study child feels safe about being Indigenous in class	.8	1.8	2.5	7.0	14.8	66.6
Study child wants classmates to know he/she is Indigenous	2.5	5.8	5.5	8.8	18.3	51.5

Appendix 4

Descriptive results for teachers' style.

	Level of Importance					
Response	Never	Not Much	Little Bit	Fair Bit	Most of the time	Always
Variables		%				
Teachers are fair to study child	6	21	27	71	121	158
Teachers make sure class is fun	6	24	37	75	125	139
Teachers care about study child	2	10	28	46	86	231
Teachers understand how study child talks	3	16	31	63	101	188

Appendix 5

Descriptive results for adverse family events.

Response	No		Yes	
Adverse events for a family member or a close friend	n	%	n	%
Hurt or sick	278	65.9	144	34.1
Passed away	207	49.1	215	50.9
Lose a job	394	93.4	28	6.6
Housing problems	295	69.9	127	30.1
Alcohol or drug problems	345	81.8	77	18.2
Mugged or assaulted	401	95.0	21	5.0
Robbed	388	91.9	34	8.1
Problems with police	361	85.5	61	14.5
Arrested or jail	375	88.9	47	11.1
Study child upset by family arguments	329	78.0	93	22.0
Study child scared by other people	336	79.6	86	20.4
Family split up	397	94.1	25	5.9
Study child is cared for by someone else	83.6	353	16.4	69

Appendix 6

Financial stress variables

Variables	Yes		No	
	n	%	n	%
Could not pay bills on time	108	26	307	74
Could not pay housing payments in time	41	10	374	90
Went without meals	18	4.3	397	95.7
Unable to heat or cool home	15	3.6	401	96.4
Pawned or sold something	36	8.7	378	91.3
Assistance from welfare organisation	52	12.5	363	87.5
Child could not do school activities	24	5.8	391	94.2

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