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NCETA

**ALCOHOL TOBACCO AND OTHER DRUG
SCREENING TOOLS FOR MOTHERS OF
ABORIGINAL AND TORRES STRAIT ISLANDER
BABIES AND ABORIGINAL AND TORRES STRAIT
ISLANDER PEOPLES LIVING WITH CHRONIC
DISEASE AND/OR MENTAL HEALTH CONCERN**

LITERATURE REVIEW

JUNE 2023

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Terminology

The term Aboriginal will be used throughout this report respectfully and will be inclusive of Aboriginal and/or Torres Strait Islander peoples. The authors acknowledge the rich culture and differences between and within these groups. The term First Nations will be used when referring to international context.

It is important to acknowledge that not all individuals who experience pregnancy identify as women and/or mothers. The terms women and mothers will be used in this report respectfully as all-encompassing terms, and will be inclusive of all people who experience pregnancy, including those that do not identify as women or mothers.

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About NCETA

NCETA is based at Flinders University in South Australia and is an internationally recognised research and training centre that works as a catalyst for change in the alcohol and other drug (AOD) field. NCETA's areas of expertise include training needs analyses, the provision of training and other workforce development approaches. We have developed training curricula, programs and resources, and provided training programs, to cater for the needs of: specialist AOD workers; frontline health and welfare workers; Aboriginal and Torres Strait Islander workers; community groups; mental health workers; police officers; and employers and employee groups. The Centre focuses on supporting evidence-based change and specialises in change management processes, setting standards for the development of training curriculum content and delivery modes, building consensus models and making complex and disparate information readily accessible to workers and organisations.

Contact us



National Centre for Education and Training on Addiction

- +61 8 8201 7535
- nceta.flinders.edu.au
- nceta@flinders.edu.au
- [@NCETAFlinders](https://twitter.com/NCETAFlinders)
- GPO Box 2100
Adelaide SA 5001

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Executive summary

Alcohol, tobacco and other drug (ATOD) use during pregnancy is a risk factor for poor maternal health, poor birth outcomes and child mortality in Aboriginal peoples.¹ Aboriginal peoples are vulnerable to chronic disease and mental health issues as a result of ongoing disadvantage and inequity.² ATOD screening tools are used in clinical settings to identify clients/patients who are at risk of engaging in risky or problematic ATOD use and may benefit from further intervention.³

Despite evidence of the harms of ATOD use, to our knowledge, there are no validated tools available for use with pregnant women who identify as Aboriginal. Whilst there are validated tools available for use with Aboriginal peoples who have a chronic disease and/or mental health concern, there are substantial knowledge gaps in the utility and acceptance of these instruments. This literature review therefore examines ATOD screening tools currently utilised and aims to identify valid and culturally safe screening tools for pregnant women and mothers of Aboriginal babies, and Aboriginal peoples who have a chronic disease and/or mental health concern.

Review questions

Question 1: What screening tools and intake assessment processes are available that can be adapted or adopted to support or inform ATOD intake and/or assessment of:

1. Mothers of Aboriginal babies (in utero – 4 years)
2. Aboriginal peoples living with chronic disease and/or mental health concern?

Question 2: How have ATOD screening tools and intake assessment processes been applied within the two target populations, and are tools/processes:

- o validated for use; and
- o culturally appropriate/sensitive?

Summary of methods

A comprehensive literature review of ATOD screening tools and intake assessment processes was undertaken in March 2023. Five electronic databases were searched and after duplicates were removed, 1,378 articles were screened (title and abstract, followed by full-text), with 33 peer-reviewed articles meeting the criteria for inclusion in this review. A desktop search and email contact with 44 organisations found a further 10 documents from the grey literature that met the criteria for inclusion in the review.

Key findings

Table 1: Summary of ATOD screening tools used with mothers of Aboriginal babies (in utero – 4 years) and Aboriginal peoples living with a chronic condition(s) and/or mental health concern(s)

Screening tool	Drug(s) targeted	Validated for use in Aboriginal peoples	Recommended for use with:		Advantages	Disadvantages
			Women of Aboriginal babies (in utero – 4 years)	Aboriginal peoples with chronic disease and/or mental health concern		
Alcohol Use Disorders Identification Test (AUDIT)	Alcohol	No	No	Yes	<ul style="list-style-type: none"> Recommended for use with Aboriginal peoples in AOD settings Adaptable, modified wording of questions used in culturally appropriate screening programs (Grog Survey app)⁴ 	<ul style="list-style-type: none"> Found to be too lengthy for some Aboriginal primary healthcare services⁵
Alcohol Use Disorders Identification Test– Consumption (AUDIT-C)	Alcohol	No	Yes	Yes	<ul style="list-style-type: none"> Brief, easily incorporated into pregnancy health screenings and check-ups⁵ Training of staff can significantly improve rates of assessment in Aboriginal peoples⁶ 	<ul style="list-style-type: none"> Yet to be validated in either target population
Tailored Surveys	Alcohol, tobacco and other drugs	No	Yes	Yes	<ul style="list-style-type: none"> Allows tailoring to identify ATOD use in culturally specific and respectful ways 	<ul style="list-style-type: none"> Lack of standardisation makes wide-spread administration and training difficult
Smoking Characteristics Survey	Tobacco	Yes, validated in an Aboriginal based-community study	Yes	No	<ul style="list-style-type: none"> Has been used previously with pregnant Aboriginal women 	<ul style="list-style-type: none"> Lack of widespread use

Fagerstrom Test for Nicotine Dependence (FTND)	Tobacco	No, used with Aboriginal peoples however lack of evidence informing its use ⁷	No	No	<ul style="list-style-type: none"> Found to be acceptable to assess tobacco use rates in pregnant American Indian / Alaskan natives⁷ 	<ul style="list-style-type: none"> Lack of testing within Aboriginal communities to inform its use
Alcohol, Smoking and Substance Involvement Screening Test (ASSIST)	Alcohol, tobacco and other drugs	Yes	Yes	Yes	<ul style="list-style-type: none"> Promoted for use by Flinders Aboriginal Health Research Culturally adaptable with Pitjantjatjara translation under development⁸ Detailed intervention preferred by some local Aboriginal Community members 	
Drug Use Disorders Identification Test (DUDIT)	Other drugs	No	No	No	<ul style="list-style-type: none"> Identifies at risk drug-use, not only dependence Favourable validity and reliability measures in research internationally⁹ 	<ul style="list-style-type: none"> Limited use in Aboriginal peoples
Substance Abuse Subtle Screening Inventory– 3 (SASSI-3)	Other drugs	No, but validated internationally with American Indian / Alaskan Native people ¹⁰	No	No (more research warranted)	<ul style="list-style-type: none"> Good positive and negative predictive power Validated in a First Nations population with promising results Items which both directly and indirectly measured SUD 	<ul style="list-style-type: none"> Very limited clinical research/usage
Indigenous Risk Impact Screen (IRIS)	Alcohol, tobacco and other drugs	Yes	No	Yes	<ul style="list-style-type: none"> Developed by Aboriginal and non-Aboriginal researchers specifically for use with Aboriginal peoples Favourable internal consistency of the tool when used with Aboriginal peoples 	<ul style="list-style-type: none"> Lack of recent use within a research context
Drug Abuse Screening Test– 10 (DAST-10)	Any substance besides alcohol	No	No	No	<ul style="list-style-type: none"> Brief and easy to administer Moderate to high levels of test-retest and internal reliability¹¹ 	<ul style="list-style-type: none"> Low sensitivity and limited use for pregnant women¹²

- The tools most commonly used in both target groups were the tailored surveys, the Alcohol Use Disorders Identification Test (AUDIT) and the AUDIT–Consumption (AUDIT-C).
- The AUDIT-C is suitable for use within both target groups, having been utilised to screen for alcohol use in various settings (Primary healthcare services, Aboriginal Community Controlled Health Organisations and residential rehabilitation services), and in a variety of populations including those with age-related conditions and chronic diseases requiring emergency department attendance.
- The Smoking Characteristics Survey has been validated and used with pregnant Aboriginal women to gather data on smoking behaviours, attitudes, and intentions to quit.
- The Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST), an 8-item screening tool, has been recommended for use in pregnant women and has been validated in Aboriginal peoples. Adaptations have been made to ensure improved acceptance and completion of screening among Aboriginal peoples.
- Components of the Smoking, Nutrition, Alcohol Consumption, Physical Activity, and Emotional Wellbeing (SNAPE) survey suite have been validated among Aboriginal peoples, allowing for consecutive screening of tobacco and alcohol use. The tool is suitable for monitoring self-management and lifestyle interventions.
- The IRIS has been used in some Aboriginal residential rehabilitation services and has shown favourable internal consistency. The tool has been recommended for use among Aboriginal peoples but has had limited utility within research contexts recently.
- Tailoring the intake process based on screening scores, utilising brief screening tools like the AUDIT-C, and implementing targeted training and support for healthcare staff have shown promising results in improving cultural sensitivity and screening rates.
- The development of the Pitjantjatjara Translation of the ASSIST tool suggests potential for broader utilisation in specific Aboriginal peoples. However, no studies to date have been published to confirm this.

Recommendations

Mothers of Aboriginal babies (in utero – 4 years)

1. The ASSIST is a comprehensive 8-item screening tool that identifies substance use-related health risks and disorders. It has been utilised effectively in Aboriginal primary healthcare settings and is recommended for use with pregnant Aboriginal women. Consider using the ASSIST for a broader assessment of substance involvement beyond alcohol with mothers of Aboriginal babies.
2. The AUDIT-C is a condensed version of the AUDIT, consisting of 3-items. It has been found suitable for use in primary healthcare settings and has been effectively utilised in Aboriginal primary healthcare settings, however has not been formally validated with pregnant Aboriginal women. Consider using the AUDIT-C as a shorter screening tool for alcohol consumption.

Aboriginal peoples living with chronic disease and/or mental health concern?

3. The IRIS is a 13-item culturally specific instrument that screens for both ATOD use and mental health risks. It may provide valuable insights into the intersection of these two areas. It has been recommended for use among Aboriginal peoples. Consider using the IRIS when screening for ATOD use and mental health risks simultaneously.
4. The ASSIST is a comprehensive 8-item screening tool that identifies substance use-related health risks and disorders. It has been utilised effectively in Aboriginal primary healthcare settings with patients who have chronic conditions. Consider using the ASSIST for a broad assessment of substance use beyond alcohol.

Additional recommendations

5. The use of screening tools should be accompanied with appropriate training to healthcare providers to ensure both accurate screening of ATOD use, and appropriate response to 'positive' screening results. Training can help enhance the understanding of screening tools, cultural considerations, and appropriate interventions.
6. When 'positive' screening results are obtained, it is recommended to conduct a detailed assessment. A 'positive' screening result indicates a need for further evaluation and a more comprehensive understanding of the individual's ATOD use, related concerns and determination about whether further supports or referrals are required.

Conclusion

Improving health equity for Aboriginal peoples requires ensuring the cross-cultural validity of screening tools and intake assessment processes. Tools should be assessed for cultural sensitivity to determine appropriateness for use with mothers of Aboriginal babies and Aboriginal peoples living with chronic disease and/or mental health concern. For pregnant Aboriginal women, the most utilised tool was the AUDIT-C. The AUDIT was also used but considered lengthy for primary healthcare settings. In Aboriginal peoples living with chronic diseases or mental health concerns, the AUDIT and AUDIT-C are commonly used tools. The ASSIST and IRIS were also used and have been tailored for Aboriginal Australians to improve acceptance and completion rates.

Policy makers will be able to use the results from our literature review to inform the adaption of an Aboriginal population-specific screening tool focused on ATOD-related risk and protective factors. Clinicians need appropriate training to be able to administer these ATOD screening tools. The findings generally favoured the use of the abbreviated AUDIT form, the AUDIT-C, and the ASSIST tool for pregnant mothers of Aboriginal babies, while favouring IRIS and ASSIST for Aboriginal peoples with a chronic disease and/or mental health concern.

Introduction

Purpose of review

Aboriginal peoples are vulnerable to chronic disease and mental health issues as a result of ongoing disadvantage and inequity.² Alcohol, tobacco and other drug (ATOD) use during pregnancy is a risk factor for poor maternal health, poor birth outcomes and child mortality in Aboriginal peoples.¹ Standardised screening tools and intake assessment processes for ATOD use are crucial in enabling early prevention, intervention and safety of clients/patients.¹³ However, there is limited availability of ATOD screening tools specifically validated for use with Aboriginal peoples in Australia, especially when considering women pregnant with an Aboriginal child.⁵ While there are validated tools available for use with Aboriginal peoples who have a chronic disease and/or mental health concern, there are substantial knowledge gaps in the utility and acceptance of these instruments.

This review aimed to explore what screening tools and intake assessment processes are available that can be adapted or adopted to support or inform ATOD intake and/or assessment of:

- (1) mothers of Aboriginal babies (in utero – 4 years); and
- (2) Aboriginal peoples living with chronic disease and/or mental health concern.

We also aimed to explore if ATOD screening tools and intake assessment processes have been applied within the two target populations, and whether tools/processes are: validated for use; and culturally appropriate/sensitive.

This report outlines the evidence base regarding the validity and cultural appropriateness of ATOD screening tools for the two target population groups. It identifies tools of potential use that are both culturally safe and sensitive to Aboriginal peoples. Additionally, it highlights avenues for further investigation. The production of this report involved collaboration between Aboriginal and non-Aboriginal investigators and was funded by Drug and Alcohol Services South Australia.

Background

Maternal health

ATOD use during pregnancy has well-established associations with poor maternal health and delivery outcomes,^{1,14} and with paediatric mortality and morbidity. Aboriginal women experience higher rates of adverse outcomes during pregnancy and childbirth compared to non-Aboriginal women.¹⁵ This disparity extends to an increased prevalence of foetal alcohol spectrum disorder (FASD) among babies compared with non-Aboriginal and more advantaged groups.¹⁶

While the proportion of Aboriginal mothers who smoke during pregnancy has decreased from 49% in 2010 to 43% in 2020, smoking rates are still significantly and substantially higher among Aboriginal women during pregnancy compared to non-Aboriginal women.¹⁷ The impact of invasion and the removal of Aboriginal children from their families both historically and currently has resulted in many factors that impact health, including Aboriginal peoples being afraid to access healthcare services.¹⁸ Building trust among Aboriginal peoples and communities is important to overcome this barrier.^{19, 20} In addition to this, not all pregnant Aboriginal women are aware that substance use during pregnancy is problematic,²¹ which can result in delayed access to necessary antenatal care early in pregnancy, and is why screening is important.^{22, 23}

While there is a higher prevalence of ATOD use during pregnancy among Aboriginal women,^{17,24} it is important to avoid making generalisations. ATOD use is common among women of all ages and socioeconomic status.²² In the healthcare of pregnant women, it is considered good practice to screen for ATOD use to ensure effective antenatal and postnatal care for both mother and baby.²⁵ Health professionals are advised to regularly and routinely inquire about ATOD use with all pregnant women as early as possible during discussions about their health. This approach upholds the principles of social justice and helps prevent further stigmatisation and stereotyping of an already marginalised population.²⁶ By utilising a general approach to screening rather than a targeted one, stigma can be reduced, and child outcomes can be improved.²³

Chronic disease and mental health

First Nations populations globally face an increased vulnerability to mental health issues as a result of ongoing discrimination, inequality and disadvantage.² Among Aboriginal peoples, good health extends beyond the absence of disease or illness. It encompasses the importance of connection to land, culture, spirituality and ancestry, and recognises how these factors impact the wellbeing of both individuals and communities.²⁷ In 2018, mental and substance use disorders, including anxiety, depression, and drug use, were the primary contributors to the burden of disease among Aboriginal peoples.²⁸

Significant factors such as family separation, imprisonment, loss of loved ones, discrimination, unemployment, and daily life stressors can have a detrimental impact on

mental health.^{27,29} According to self-reported survey data, approximately 24% of Aboriginal Australians reported being diagnosed with a mental health or behavioural condition in 2018-19.³⁰ In addition, 1 in 3 Aboriginal adults reported experiencing 'high' or 'very high' levels of psychological distress.³⁰

Over the past decade, there have been increases in higher median age at death of Aboriginal peoples (from a mean age of 56.5 in 2010 to 61.0 in 2020).³¹ In 2020, the leading causes of death among Aboriginal peoples were coronary heart disease, diabetes, chronic lower respiratory diseases, lung, bronchus, and trachea cancers, and intentional self-harm.³² Individuals with ATOD-related issues are more likely to seek assistance from an Aboriginal Community Controlled Health Services rather than a specialised treatment service, regardless of whether their presentation is specific to these problems.³³ This presents an opportunity for screening and engaging potential clients/patients in treatment.³³ Access to Medicare funding is available for such services, for screening, brief interventions and improved treatment under mental health and chronic disease care packages, however this is currently underutilised.³³

Screening

Routine screening and assessment play a crucial role in identifying the specific needs of patients and are essential for developing an understanding of their cases among all patients. This process enables early diagnosis, intervention, and treatment, ultimately improving patient outcomes.³⁴ Utilising standardised screening and assessment tools also provides a reliable and valid perspective on a patient's current situation. Furthermore, a standardised assessment can facilitate the development of rapport between patients and workers,³⁵ which is particularly important for healthcare services providing support to Aboriginal peoples.³⁶ Screening for potentially harmful alcohol use is encompassed in the annual Aboriginal peoples health check, which is supported through Medicare. This initiative aims to provide early detection, diagnosis and intervention for common and treatable conditions in primary healthcare settings.³⁷

It is important to note that screening tools are not diagnostic in nature; rather, screening acts as a sieve, any client/patient with a score above the tools' established cut-off should be referred for appropriate assessments.³ These, patients may be referred for treatment or offered a brief intervention, which includes advice on safe drinking levels, information, and education.^{3,38}

Many screening instruments are available to identify problematic ATOD use, but barriers to successful integration of these tools have been identified,^{39,40} and it is acknowledged that adaptations may be necessary to align with the specific needs of local communities.⁴¹ The utility and appropriateness of these tools for use with mothers of Aboriginal babies and Aboriginal peoples who have a chronic disease and/or mental health concern has not yet been established.

Caveats

We recognise that Aboriginal peoples are not culturally uniform;⁴² instead, they comprise diverse cultural groups with unique languages, knowledge systems and beliefs. However, these communities share a common history of government dispossession and genocide that has had a profound impact on their collective consciousness.⁴² An example of this is the government-sanctioned practice of forcibly removing children from their families, known as the "Stolen Generations," which took place between 1910 and 1970. This historical event continues to have ongoing negative effects on Aboriginal peoples.⁴³

There are numerous Aboriginal communities across South Australia. Approximately half of South Australia's Aboriginal peoples live in metropolitan Adelaide, and the other half in rural South Australia.⁴⁴ It is estimated that prior to invasion there were approximately 270 language groups spread across Australia with around 600 different dialects.⁴⁵

Cultural safety

Cultural safety has been a well-established concept for some time, initially emerging and being applied in the cultural context of New Zealand.⁴⁶ It arose in response to the detrimental impact of invasion and the lasting consequences it had on the well-being and healthcare of Māori people, especially within mainstream health services.⁴⁶ Creating healthcare systems and settings that are culturally safe involves a progressive process that includes fostering cultural awareness, cultural sensitivity, and cultural competence.⁴⁷ The significance of cultural respect and safety is emphasised in official documents issued by the Australian government.^{48,49} The key principles of cultural respect outlined are health equity, partnerships, leadership, monitoring and Aboriginal consumer engagement.⁴⁸

Methods

Peer reviewed literature

A comprehensive literature review of ATOD screening tools and intake assessment processes was undertaken. Medline, CINAHL, PsycINFO, Scopus, and Informit were searched to identify relevant studies, using a comprehensive search strategy developed with input from a research librarian. Search terms included synonyms of the two population groups, alcohol, tobacco, other drugs, and included each database's own "MeSH" terms or subject headings (see Appendix 1 for complete search strategy). The search included peer-reviewed articles available in English and published from January 2018 to March 2023.

To be included in the review, articles needed to report the use of ATOD screening or intake assessment processes among (1) pregnant and postpartum women of Aboriginal babies aged 0-4 years or (2) Aboriginal peoples living with chronic disease and/or mental health concern. Studies were excluded if they exclusively reported the use of screening tools with mothers of non-Aboriginal babies, non-Aboriginal peoples with a chronic disease or mental health concern or youth aged 0-18 years.

Four researchers independently screened studies by title, abstract, and full text, with each item screened independently by at least two researchers. Data was extracted independently by three authors utilising a template in line with the aims of this review.

Grey literature

A desktop search was conducted for relevant grey literature using Google Advanced and relevant organisations websites (e.g., HealthInfoNet, Lowitja Institute), using simplified search terms identified for the electronic database search. Forty-four key organisations were contacted directly for internal documents, organisations included the AOD peak bodies from all states and territories in Australia, the Primary Health Networks from all states and territories in Australia, and the Aboriginal Community Controlled Health Organisations from all states and territories in Australia. Of which, 29 organisations responded after up to three contact attempts, and eight organisations provided documents. Grey literature was reviewed and screened manually against inclusion criteria. Data was extracted independently by two authors utilising a template like that of peer reviewed literature.

Findings

A total of 2,476 articles were identified from searches of academic databases. Thirty-three peer-reviewed articles, 13 for women with Aboriginal children (in-utero – 4 years) and 20 for Aboriginal people with a chronic disease and/or mental health concern. A further 10 grey literature documents met the criteria for inclusion in the review. A PRISMA flowchart of the literature selection process is included as Appendix 2.

Mothers of Aboriginal babies (in utero – 4 years)

Thirteen studies were identified that screened for ATOD use among pregnant Aboriginal women. Most studies used tailored questions in self-reported surveys designed for specific studies (n=8), and the Alcohol Use Disorders Identification Test–Consumption (AUDIT-C) (n=3). Other validated techniques were also identified in the literature, including the Smoking Characteristics Survey (n=1), Alcohol Use Disorders Identification Test (AUDIT) (n=1), and the Fagerstrom Test for Nicotine Dependence (FTND) (n=1). Surveys with tailored questions appeared to be relatively common in this population, likely due to the variety in the aims of the research studies having more targeted or nuanced outcomes than what could be extracted from a standardised screening assessment.

Alcohol Use Disorders Identification Test (AUDIT)

The AUDIT is an internationally validated 10-item screening tool developed by the World Health Organisation, which screens for risky alcohol consumption and potential dependence.⁵ Questions are centred around levels of consumption (Q1-3), potential for dependence (Q4-6) and extent of harmful use (7-10).⁵⁰ The AUDIT has been used previously within Aboriginal peoples and has been validated in primary healthcare services which target Aboriginal peoples.⁵ The AUDIT has also been utilised internationally among First Nations peoples with promising results, particularly in determining patterns of alcohol use.⁵¹⁻⁵³

To our knowledge, the AUDIT has never been specifically validated with women who are either pregnant with or mothers of an Aboriginal child under five years of age. A systematic review found that healthcare services targeting Aboriginal peoples found the AUDIT to be lengthy, with services preferring to use only consumption questions.⁵ In another study, healthcare services for pregnant women commonly opted for the AUDIT-C (a 3-item instrument discussed below).^{54,55}

Alcohol Use Disorders Identification Test–Consumption (AUDIT-C)

The AUDIT-C comprises 3-items assessing alcohol consumption and can help identify people who are risky drinkers or who have active alcohol use disorders. The AUDIT-C has been recommended by a number of health bodies focused on Aboriginal health.^{56 57} The

AUDIT-C has also been validated with pregnant women in primary healthcare settings.⁵⁸ However, like the AUDIT it has not been specifically validated in mothers with an Aboriginal child (in utero – 4 years). A recent systematic review of brief alcohol screening instruments in pregnancy found the AUDIT-C to have the highest sensitivity for identifying risky alcohol consumption among pregnant women.⁵⁹ Also noted within the literature is the value and suitability of brief screening tools such as the AUDIT-C, for integration into general health screening protocols⁵ and subsequently tailoring intake processes. For example, in a cohort of pregnant women (5% Aboriginal peoples) from the Hunter New England Local Health District, New South Wales, AUDIT-C scores were used to determine whether women received referral to a ‘*Get Healthy In Pregnancy*’ telephone service (if low or medium risk), or if high risk, referral to specialist AOD services.⁵⁴

Recent research emerging from Aboriginal Community Controlled Health Services indicates that targeted training and support for staff, can improve AUDIT-C screening rates 5-fold (compared to absence of staff support intervention).⁶⁰ This finding was consistent with a broader study of pregnant women.⁵⁴

Tailored Surveys

A large number of included studies involved tailored, semi-structured surveys of pregnant women.⁶¹⁻⁶⁷ These surveys examined the use of ATOD, and behavioural and situational contexts in which use occurs. The potential appeal of semi-structured surveys may be the ability to tailor wording and to identify ways in which ATOD use may be reduced, in culturally appropriate and respectful ways.

Other surveys have examined a variety of substances including tobacco, alcohol and methamphetamine.^{61,64,65,68} These surveys have all included a range of questions to determine amount, frequency of use, withdrawal symptoms, and frequency of reduction and cessation attempts amongst pregnant or child rearing Aboriginal women. The flexible nature of the surveys also allow researchers to develop a more a detailed picture of the demographic, pregnancy and labour characteristics of these women.⁶⁶

Smoking Characteristics Survey

The Smoking Characteristics Survey is a 56-item survey about attitudes to smoking, intentions to quit and smoking behaviours. The survey was employed as part of a tobacco intervention in pregnant Aboriginal women by the Aboriginal Counselling and Nicotine (ICAN) QUIT in Pregnancy pilot group.⁶² This survey has been validated in an Aboriginal community-based study^{69,70} and has previously been used with pregnant Aboriginal women.^{71 72}

Fagerström Test for Nicotine Dependence (FTND)

The FTND is a 4-item instrument that assesses for tobacco withdrawal symptoms and probable dependence, which has been validated for use in general populations.⁷³ An advantage of the validated FTND is that it is widely used due to its brevity and reliability in predicting smoking relapse.⁷⁴ The FTND has been used among Aboriginal peoples, however

there is a lack of evidence regarding its suitability for use within Aboriginal communities to inform its use.⁷ The FTND was recently utilised internationally, within a group of pregnant American Indian / Alaskan Native women.⁶⁵ Among this population, the FTND was found to be an acceptable tool to assess tobacco use rates during pregnancy, however instrument validity was not assessed.

Current utilisation of the FTND screening tool in Aboriginal research is relatively limited and therefore the validity or applicability of the test towards pregnant Aboriginal women is yet to be explored.

Alcohol, Smoking and Substance Involvement Screening Test (ASSIST)

Developed by the World Health Organisation in collaboration with clinicians, the ASSIST is an 8-item screening tool which aids in the early identification of substance use related health risks and substance use disorders in a primary healthcare setting.⁷⁵ Risk scores calculated from the tool are used to tailor interventions. The ASSIST has been validated with Aboriginal peoples,⁸ and is recommended as a screening tool for use with pregnant women by the National Drug and Alcohol Research Centre.¹² Notably, a recent study has detailed first-stage development of the Pitjantjatjara Translation of the ASSIST, suggesting potential for the tool to be more readily utilised in the Pitjantjatjara speaking population, including mothers of Aboriginal babies.⁸

Aboriginal peoples living with chronic disease and/or mental health concern

Of the literature found between 2018 and 2023, 20 studies were identified for relevant ATOD screening of clients who identify as Aboriginal, who have also been diagnosed with a chronic disease or have a mental health concern. These included Alcohol Use Disorders Identification Test (AUDIT) (n=6), AUDIT–Consumption (AUDIT-C) (n=5), Alcohol, Smoking and Substance Involvement Test (ASSIST) (n=4), tailored surveys (n=3) Smoking Nutrition Alcohol use Physical Activity and Emotional Wellbeing (SNAPE) survey (n=2), Drug Abuse Screening Test-10 (DAST-10) (n=2), Drug Use Disorders Identification Test (DUDIT) (n=1), Indigenous Risk Impact Screen (IRIS) (n=1), and Substance Abuse Subtle Screening Inventory-3 (SASSI-3)(n=1).

Alcohol Use Disorders Identification Test (AUDIT)

The use of AUDIT with clients who are Aboriginal and have either a chronic disease and/or mental health concern appears to be relatively common in the literature. Recent research has used the AUDIT with Aboriginal clients in residential rehabilitation settings.⁸ A feasibility study was also recently conducted in a trial of an adapted community reinforcement approach intervention in New South Wales.⁷⁵

While the AUDIT is yet to be validated in Aboriginal peoples with a chronic disease and/or mental health concern, it appears to be a useful tool that can be implemented in a variety of settings, both in primary health and rehabilitation services, and has been widely implemented in Aboriginal Community Controlled Health Services since 2017.⁴

As noted earlier, the AUDIT has been used with individuals experiencing chronic diseases including hypertension,⁷⁶ diabetes, HIV/AIDS,⁷⁷ total joint arthroplasty,⁷⁸ and also with people diagnosed with mental health conditions including depression, anxiety and suicidal ideation.^{75,77} The AUDIT has also been utilised as part of a packaged intervention targeting American Indian / Alaskan Native youth at risk of suicide.⁷⁹

Alcohol Use Disorders Identification Test–Consumption (AUDIT-C)

The AUDIT-C, while not yet validated in this population, has been recommended for use with Aboriginal peoples with a chronic illness and/or mental health concern.^{56,60,80} The AUDIT-C has been utilised with Aboriginal peoples who have chronic age-related conditions,⁸¹ chronic diseases requiring emergency department attendance,⁸² chronic Hepatitis C,⁸³ chronic diabetes,⁸⁴ and with primary healthcare Aboriginal Community Controlled Health Services clients.⁶⁰ In the study assessing chronic disease requiring emergency department visitation, further patient questionnaires were designed by local clinicians and were pilot tested with a sample of 10 patients. Pilot testing ensured appropriate questionnaire content that validated scaling instruments, was culturally and linguistically appropriate for the patient demographic, and to optimise layout.⁸² Factors such as these may have contributed to willingness to complete the screening tool and also acted to reduce any possible bias in answering.

Alcohol, Smoking and Substance Involvement Screening Test (ASSIST)

The ASSIST tool has been readily employed by recent research interventions to determine baseline and post-intervention rates of alcohol, tobacco, cannabis and other drug use in Aboriginal peoples with a chronic illness and/or mental health condition.^{75,85} The ASSIST is a recommended screening tool for Aboriginal peoples,⁵⁶ with a Pitjantjatjara translation currently under development.⁸

Acceptance and screening rates using the ASSIST tool can be improved in Aboriginal peoples through the use of tailored wording which has been proven acceptable and culturally appropriate.⁸⁴ In one study, prior to implementation of the ASSIST tool, consultation with local Aboriginal community members highlighted the importance of discussing alcohol-related harms sensitively, their preference for a detailed, rather than brief intervention and improved skill acquisition by staff throughout the screening and intervention stages.⁷⁵

Drug Use Disorders Identification Test (DUDIT)

Developed by the Karolinka Institute⁸⁶ to complement the AUDIT, the DUDIT is an 11-item screening tool used to identify drug-related problems in people using substances other than tobacco and alcohol.⁸⁷ Validity and reliability measures of the tool have shown favourable results internationally.⁹ Perceived advantages of the tool include its attempt at identifying at-risk drug use, not only drug dependence, the brevity of the instrument and the focus on past 12-month drug use.⁹ The DUDIT-C, a shorter 4-item version of the DUDIT, is also effective in identifying individuals with likely drug dependence.⁹

Recent use of the tool within Aboriginal peoples is limited, with one published study demonstrating use of the tool in a single residential rehabilitation service, assessing the client characteristics of those attending.⁸⁸ However, the DUDIT-C and DUDIT are yet to be validated with Aboriginal peoples and further research is warranted.

Substance Abuse Subtle Screening Inventory– 3 (SASSI-3)

The SASSI-3 is an empirically based psychological questionnaire designed to screen individuals for high probability of substance use disorder.⁸⁹ The SASSI-3 contains 67 true or false items which measure substance use indirectly and can statistically discriminate between groups with known substance use issues and those without, followed by 12-items pertaining to alcohol use and 14-items pertaining to other drugs.¹⁰ One reported advantage of the SASSI-3 is the inclusion of items that both directly and indirectly measure substance use disorder.

The SASSI-3 has recently been assessed among the Northern Plains American Indian population within the United States for its psychometric validity and efficacy in identifying substance abuse within this population.¹⁰ Participants investigated were diagnosed with either a substance use disorder by a licenced provider and were receiving outpatient treatment, or were not in treatment and had not received a substance use disorder diagnosis.¹⁰ Results suggested that the SASSI-3 had good positive predictive power and negative predictive power, meaning that the clinical group (those with a previous substance

use disorder diagnosis) scored significantly higher than the no diagnosis group on all but one measure of the SASSI-3.¹⁰ However, the SASSI-3 has not been validated among Aboriginal peoples, nor has there been any use of the tool in research with Aboriginal peoples in the last 5 years.

Smoking, Nutrition, Alcohol Consumption, Physical Activity and Emotional Wellbeing (SNAPE) Survey

The SNAPE survey tool is composed of five lifestyle-related questionnaires based on Central Australian Rural Practitioners Association recommendations and was developed in consultation with rural health services over a 12-month period.⁸¹ The five components of the SNAPE tool address modifiable health behaviours which are associated with physical and mental health outcomes.^{81,90} Two components of the SNAPE survey suite have been previously validated with Aboriginal peoples (alcohol and emotional wellbeing surveys) and the remaining two have been used in at least one adult Aboriginal group with diabetes.⁹¹ The smoking component of the SNAPE survey utilises the 4-item FTND while the alcohol component utilises the 10-item AUDIT, the potential advantage of this being the ability to screen for both tobacco and alcohol use consecutively. In all cases, the tool was administered by an experienced and culturally aware staff member,⁹⁰ with a 77% response rate to at least one of the 5 surveys. While this was not a validation study, research concluded that the tool, delivered electronically or via paper, is suitable for monitoring self-management and assessment of lifestyle intervention.⁹⁰

Indigenous Risk Impact Screen (IRIS)

The IRIS is a 13-item tool which jointly screens for alcohol, other drugs and mental health risk, and it has been validated with Aboriginal peoples generally.⁵ The tool was developed with the broad aims of identifying at risk individuals and providing timely advice to clients about potential risks. It also aimed to enable both Aboriginal and mainstream substance misuse and health agencies to better respond to client needs, and provide appropriate and timely referrals.

During its implementation, the IRIS program provided training nationally on screening and brief interventions for both mental health and ATOD use issues, incorporating principles of motivational interviewing aligned with Aboriginal cultural priorities.⁵⁷ In a recent demographic and characteristics analysis of four Aboriginal residential rehabilitation services, only one (Namatijra Haven) used the IRIS, with 88% of clients being categorised as being at-risk of a mental health problem.⁸⁸ In a recent exploratory study examining the associations between experience of perceived racism and ATOD use in Aboriginal peoples, the internal consistency of the IRIS against the ATOD and wellbeing and mental health dimension scales has been identified as favourable.⁸⁸ The tool has been recommended for use with Aboriginal peoples.^{92,93} However, there has been limited use of the tool within a research context among the populations of interest.

Drug Abuse Screening Test (DAST-10)

The DAST-10 tool comprises 10-items and is a condensed version of the DAST-20 (20-items) which screens for any substance use besides alcohol.⁹⁴ The DAST-10 has been used recently as part of a packaged intervention ('Hope and Wellness' screening toolkit) for screening drug abuse and suicide risk within American Indian / Alaska Native communities.^{79,95} The tool is brief and easy to administer and possesses moderate to high levels of test-retest and internal reliability.¹¹ Similarly, the tool has been used to screen for drug-use in Native American participants involved in a 'Weaving Healthy Families' intervention aimed at understanding and reducing the influence of historical oppression on family outcomes.⁹⁶ However, the tool is yet to be validated with Aboriginal peoples.

Discussion

This review aimed to explore what screening tools and intake assessment processes are available that can be adapted or adopted to support or inform ATOD intake and/or assessment of: (1) mothers of Aboriginal babies (in utero – 4 years); and (2) Aboriginal peoples living with chronic disease and/or mental health concern. We also aimed to explore if ATOD screening tools and intake assessment processes have been applied within the two target populations, and whether tools/processes are: validated for use; and culturally appropriate/sensitive.

Maternal health

Due to the stigma associated with substance use during pregnancy, women may be hesitant to discuss their substance use with healthcare providers, particularly in the early stages of consultations where a trusting relationship has not yet been established. To minimise harm to both pregnant Aboriginal women and their babies in utero, it is recommended to utilise brief, validated screening methods that can be regularly integrated into initial and routine antenatal appointments. These screening methods should be implemented in a culturally appropriate, compassionate, and non-judgmental manner, allowing for a safe environment that promotes open communication and helps mitigate potential risks. In this review, none of the ATOD screening tools examined have received formal validation for use specifically with pregnant Aboriginal peoples. However, there are screening tools that are recommended for use for screening pregnant Aboriginal women, like the AUDIT-C, and ASSIST.

The AUDIT-C, consisting of 3-items, is effective in identifying problematic alcohol use, assessing the need for intervention regarding risky ATOD use. The AUDIT-C has demonstrated effective performance with pregnant women and is commonly utilised in Aboriginal Community Controlled Health Services throughout Australia. Its brevity makes it particularly suitable for incorporation into regular prenatal visits. However, if the AUDIT-C were to be employed as an ATOD screening tool, additional questions addressing tobacco and other drug use would need to be included.

Alternatively, the ASSIST tool offers more comprehensive assessments, however implementation requires additional time, and clients may perceive the tool as intrusive, particularly in the absence of established rapport. The ASSIST has been validated with Aboriginal peoples and is recommended as a screening tool for pregnant women. The recently developed Pitjantjatjara translated version of the ASSIST could potentially make the tool more accessible for the Pitjantjatjara speaking population, including Aboriginal mothers.

In a busy primary healthcare setting with competing demands on time and resources, the brevity of screening tools and the availability of clear recommendations for further evaluation and intervention are essential to promptly address disclosures of ATOD use by pregnant women. Considering the many harms associated with ATOD use, it is crucial to maintain routine and regular screening in primary healthcare settings, even as consultation,

research, and evaluation efforts persist to refine screening approaches and optimise their effectiveness.

Chronic disease and mental health

There has been much progress in declining smoking rates among Aboriginal peoples and more Aboriginal peoples abstain from alcohol than non-Aboriginal peoples. However, despite this, Aboriginal peoples face significant disparities in physical and mental health compared to the broader Australian population.³⁶ Highlighting that there is an opportunity to reduce the health burden of ATOD use for Aboriginal chronic disease and mental health patients. One way to lessen this burden is by ATOD screening and early intervention. There are screening tools that are recommended for use for screening Aboriginal chronic disease and mental health patients, like the IRIS, and ASSIST.

For health services who include a focus on Aboriginal peoples with a chronic disease and/or mental health concern, the IRIS tool can be a valuable screening instrument. It allows for a comprehensive assessment of alcohol use in relation to other substance use and addresses mental health, placing it within a broader context. The tool has been recommended for use with Aboriginal peoples within these settings, as it enables healthcare providers to respond to client needs and make appropriate referrals.

Consultations with local Aboriginal community members emphasised the importance of sensitively discussing alcohol-related harms, their preference for detailed interventions rather than brief ones, and the need for staff to improve their skills throughout the screening and intervention process. Therefore, the ASSIST tool is recommended as a screening tool for Aboriginal peoples with a chronic condition. Efforts are being made to develop a Pitjantjatjara translation, to improve acceptance and screening rates among Pitjantjatjara speaking Aboriginal peoples, tailored wording that is culturally appropriate may increase acceptance.

Each individual component or element integrated into ATOD screening should assist practitioners in utilising evidence-based strategies, such as narrative therapy¹⁰⁷ and clinical yarning.¹⁰⁸ Any screening or assessment approach could benefit from pilot testing across a range of settings,^{97,98} as Aboriginal peoples comprise many diverse nations, including those living with more traditional lifestyles and speaking languages other than English. By applying the tool in different environments and contexts, valuable insights can be gained regarding its effectiveness, feasibility, and appropriateness. Pilot testing helps identify potential challenges, refine procedures, and gather feedback from stakeholders. This iterative process allows for adjustments and improvements before full-scale implementation, ensuring that the screening or assessment approach is well-suited to diverse settings, and maximises its utility and impact.

Aboriginal health professionals may face cultural barriers when inquiring about substance use, particularly when the client is a close friend, family member, or part of the community. These factors can create challenges in effectively addressing and discussing alcohol-related issues within Aboriginal communities.⁹⁹ Incorporating ATOD-related questions as part of a general health assessment and emphasising that these questions are routinely asked of all

clients can help diminish sensitivity surrounding the topic.^{100,101} Over time, utilising universal screening rather than targeted screening can help decrease sensitivity.⁹⁹

Lastly, clinicians may benefit from an aid that assists in converting alcohol consumption into standard drink measurements. The use of a touchscreen computer or a dedicated computer app can potentially help overcome challenges in accurately assessing alcohol intake. Additionally, such technology can enhance privacy and reduce social desirability bias, leading to more reliable and unbiased assessments.^{97,102-104}

Recommendations

What screening tools and intake assessment processes are available that can be adapted or adopted to support or inform ATOD intake and/or assessment of:

Mothers of Aboriginal babies (in utero – 4 years)

1. The ASSIST is a comprehensive 8-item screening tool that identifies substance use-related health risks and disorders. It has been utilised effectively in Aboriginal primary healthcare settings and is recommended for use with pregnant Aboriginal women. Consider using the ASSIST for a broader assessment of substance involvement beyond alcohol with mothers of Aboriginal babies.
2. The AUDIT-C is a condensed version of the AUDIT, consisting of 3-items. It has been found suitable for use in primary healthcare settings and has been effectively utilised in Aboriginal primary healthcare settings, however has not been formally validated with pregnant Aboriginal women. Consider using the AUDIT-C as a shorter screening tool for alcohol consumption.

Aboriginal peoples living with chronic disease and/or mental health concern?

3. The IRIS is a 13-item culturally specific instrument that screens for both ATOD use and mental health risks. It may provide valuable insights into the intersection of these two areas. It has been recommended for use among Aboriginal peoples. Consider using the IRIS when screening for ATOD use and mental health risks simultaneously.
4. The ASSIST is a comprehensive 8-item screening tool that identifies substance use-related health risks and disorders. It has been utilised effectively in Aboriginal primary healthcare settings with patients who have chronic conditions. Consider using the ASSIST for a broad assessment of substance involvement beyond alcohol.

Additional recommendations

5. The use of screening tools should be accompanied with appropriate training to healthcare providers to ensure both accurate screening of ATOD use, and appropriate response to 'positive' screening results. Training can help enhance the understanding of screening tools, cultural considerations, and appropriate interventions.
6. When 'positive' screening results are obtained, it is recommended to conduct a detailed assessment. A 'positive' screening result indicates a need for further evaluation and a more comprehensive understanding of the individual's ATOD use, related concerns and determination about whether further supports or referrals are required.

Conclusion

Our findings emphasise the need for culturally safe and appropriate validated ATOD screening tools and intake assessment processes for Aboriginal peoples, particularly among those who are pregnant, have a chronic disease or mental health concern. Enhancing ATOD screening processes through appropriate mainstream services would bring significant benefits to Aboriginal peoples within the two target population groups.^{99,105,60} Therefore, the implementation of standardised ATOD screening should be widespread across general practice, community health, welfare settings, and hospitals.¹⁰⁶ It is crucial to involve the Aboriginal communities in the co-design of these screening tools and intake assessments to ensure they align with their social and cultural norms. This involves utilising culturally relevant images and language, engaging in consultations with the appropriate communities and their leaders, and developing resources tailored to their specific needs.

The findings generally favoured the use of the abbreviated AUDIT form, the AUDIT-C, for pregnant mothers of Aboriginal babies when focusing on alcohol consumption, and the comprehensive ASSIST tool when screening for ATOD use. The findings favoured the IRIS and ASSIST tools for Aboriginal peoples with a chronic disease and/or mental health concern. It is important to consider the specific context, resources, and preferences of the healthcare setting's clients when selecting a screening tool. Additionally, ongoing evaluation and validation of these tools within the target populations are important for ensuring their cultural appropriateness and validity. Further research is required to explore the effectiveness and implementation of standardised screening methods, guided by local community members, Elders, and adhering to local cultural protocols.¹⁰⁹

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Appendices

Appendix 1: Search Strategy

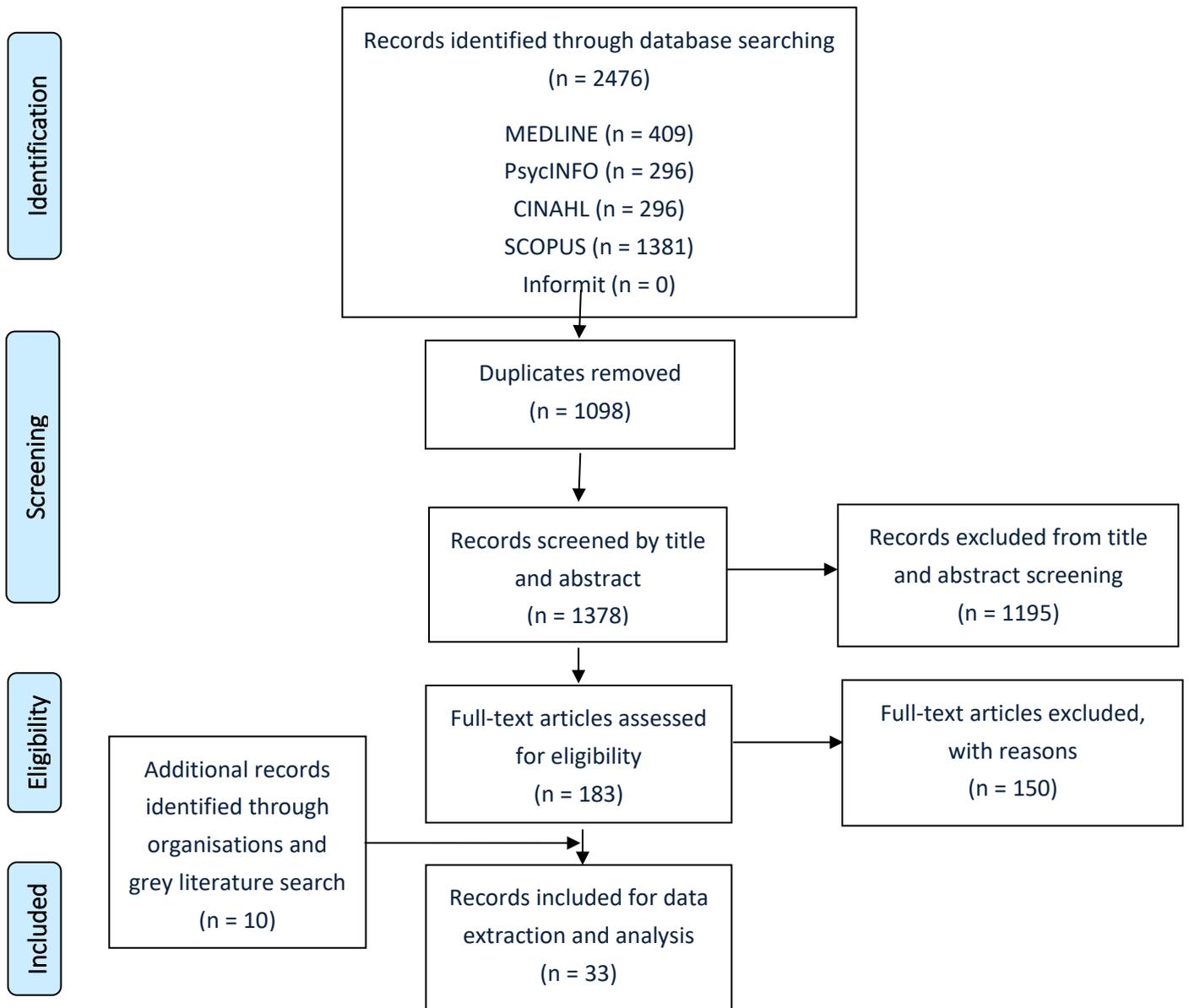
Search string for population 1: Mothers of Aboriginal babies (in utero – 4 years)

(TITLE-ABS-KEY ((("Substance use*" OR "substance abuse*" OR "substance misuse*" OR "drug use*" OR "drug using" OR "drug abuse*" OR "illicit drug*" OR "alcohol use*" OR "alcohol abuse*" OR "alcohol dependen*" OR "alcohol misuse*" OR grog OR "alcohol problem*" OR alcoholism OR alcoholic* OR "problem drinker*" OR addict* OR methadone OR "opioid dependen*" OR "cannabis use*" OR "cannabis dependence" OR "prescription opioid*" OR cocaine OR ecstasy OR methamphetamine* OR amphetamine* OR crack OR "crystal meth" OR stimulant* OR "opiate addiction" OR heroin OR "injecting drug*" OR "inject drug*" OR alcohol OR nang OR "nitrous oxide" OR sniffing OR glue OR marijuana)) OR (("other drug" OR morphine) W/3 (abuse OR misuse* OR dependence*)) OR ((tobacco OR vaping OR smoking OR "e-cig*" OR "electronic cigar*") W/2 (use* OR abuse OR misuse* OR dependence*)))) AND (TITLE-ABS-KEY (indigenous OR aborigin* OR "Torres Strait Islander" OR nunga OR koori OR koorie OR murri OR nyoongar OR anangu OR bining OR yolngu OR palawah OR ainu OR "American Indian" OR aynu OR cymry OR cherokee OR eskimo OR "First Nation" OR "First Nations" OR "First people*" OR greenlandic OR inuit OR inupiat OR inuvialuit OR islander OR kalaallit OR "k*naka Maoli" OR lapps OR llaplander OR laplander* OR mapuche OR m*ori OR m*tis OR nava*o OR n unangat OR ojibwe OR sami OR saami OR skolt OR taiga OR "tangata whenua" OR wampanoag OR yuit OR yupik OR zuni)) AND (TITLE-ABS-KEY (tool* OR screen* OR "intake process*" OR validation OR diagnostic* OR assess* OR "ASSIST" OR "ASSIST-Lite" OR "AUDIT" OR "AUDIT-C" OR "AUDIT-3" OR "CAGE" OR "CAGE-AID" OR "DAST" OR "DUDIT" OR "DUDIT-C" OR "FTND" OR "IRIS" OR "SDS" OR "AWQ" OR "ASHSA" OR "ATOP" OR "DASS" OR "DAS S-21" OR "GHQ-12" OR "K10" OR "K6" OR "SMMSE" OR "MMSE" OR "MSE" OR mms OR "PsyCheck" OR "SF36" OR "WHOQOL-BREF" OR "T-ACE" OR "TWEAK" OR "PHQ9" OR "ORS" OR "Grog survey app" OR "Drug survey app" OR "Grog app" OR "Drug app")) AND ((TITLE-ABS-KEY ((hypertension OR "high blood pressure" OR "elevated blood pressure" OR "heart failure" OR copd OR coad OR "chronic obstructive pulmonary disease" OR "coronary artery disease" OR "cardiovascular disease" OR "congestive heart failure" OR "NIDDM" OR diabetes OR diabetic* OR "IDDM" OR cancer* OR carcinoma* OR neoplas* OR tumor* OR malignan* OR oncolog* OR leuk*emia* OR metasta* OR lymphoma* OR melanoma*)) OR (TITLE-ABS-KEY ((kidney OR renal) W/3 (disease OR hypertensi*))) OR (TITLE-ABS-KEY ("CKD" OR "ESKD" OR nephropath* OR nephritis)) OR (TITLE-ABS-KEY (arthritis OR (liver W/2 diseas*))) OR (TITLE-ABS-KEY ((chronic OR "long term") W/4 (disease* OR illness* OR condition*))) OR (TITLE-ABS-KEY ("emotional wellbeing" OR "social wellbeing" OR suicid* OR "self inflicted injur*" OR "self mutilation" OR anxiety OR depressi* OR "mental health")))) AND (LIMIT-TO (PUBYEAR , 2023) OR LIMIT-TO (PUBYEAR , 2022) OR LIMIT-TO (PUBYEAR , 2021) OR LIMIT-TO (PUBYEAR , 2020) OR LIMIT-TO (PUBYEAR , 2019) OR LIMIT-TO (PUBYEAR , 2018))

Search string for population 2: Aboriginal peoples living with chronic disease and/or mental health concern

(TITLE-ABS-KEY (*indigenous* OR *aborigin** OR "*Torres Strait Islander*" OR *nunga* OR *koori* OR *koorie* OR *murri* OR *nyoongar* OR *anangu* OR *bining* OR *yolngu* OR *palawah* OR *ainu* OR "*American Indian*" OR *aynu* OR *cymry* OR *cherokee* OR *eskimo* OR "*First Nation*" OR "*First Nations*" OR "*First people**" OR *greenlandic* OR *inuit* OR *inupiat* OR *inuvialuit* OR *islander* OR *kalaallit* OR "*k*naka Maoli*" OR *lapps* OR *llaplander* OR *laplander** OR *mapuche* OR *m*ori* OR *m*tis* OR *nava*o* OR *nunangat* OR *ojibwe* OR *sami* OR *saami* OR *skolt* OR *taiga* OR "*tangata whenua*" OR *wampanoag* OR *yuit* OR *yupik* OR *zuni*)) AND (TITLE-ABS-KEY (("*Substance use**" OR "*substance abuse**" OR "*substance misuse**" OR "*drug use**" OR "*drug using*" OR "*drug abuse**" OR "*illicit drug**" OR "*alcohol use**" OR "*alcohol abuse**" OR "*alcohol dependen**" OR "*alcohol misuse**" OR *grog* OR "*alcohol problem**" OR *alcoholism* OR *alcoholic** OR "*problem drinker**" OR *addict** OR *methadone* OR "*opioid dependen**" OR "*cannabis use**" OR "*cannabis dependence*" OR "*prescription opioid**" OR *cocaine* OR *ecstasy* OR *methamphetamine** OR *amphetamine** OR *crack* OR "*crystal meth*" OR *stimulant** OR "*opiate addiction*" OR *heroin* OR "*injecting drug**" OR "*inject drug**" OR *alcohol* OR *nang* OR "*nitrous oxide*" OR *sniffing* OR *glue* OR *marijuana*)) OR (("*other drug*" OR *morphine*) W/3 (*abuse* OR *misuse** OR *dependence**)) OR ((*tobacco* OR *vaping* OR *smoking* OR "*e-cig**" OR "*electronic cigar**") W/2 (*use** OR *abuse* OR *misuse** OR *dependence**))) AND (TITLE-ABS-KEY (*tool** OR *screen** OR "*intake process**" OR *validation* OR *diagnostic** OR *assess** OR "*ASSIST*" OR "*ASSIST-Lite*" OR "*AUDIT*" OR "*AUDIT-C*" OR "*AUDIT-3*" OR "*CAGE*" OR "*CAGE-AID*" OR "*DAST*" OR "*DUDIT*" OR "*DUDIT-C*" OR "*FTND*" OR "*IRIS*" OR "*SDS*" OR "*AWQ*" OR "*ASHSA*" OR "*ATOP*" OR "*DASS*" OR "*DAS S-21*" OR "*GHQ-12*" OR "*K10*" OR "*K6*" OR "*SMMSE*" OR "*MMSE*" OR "*MSE*" OR *mms* OR "*PsyCheck*" OR "*SF36*" OR "*WHOQOL-BREF*" OR "*T-ACE*" OR "*TWEAK*" OR "*PHQ9*" OR "*ORS*" OR "*Grog survey app*" OR "*Drug survey app*" OR "*Grog app*" OR "*Drug app*")) AND (TITLE-ABS-KEY (*pregnan** OR *matern** OR *gestat** OR *fetal* OR *fetus* OR *foet** OR *antenatal* OR *prenatal* OR *perinatal* OR "*New Born*" OR *neonat** OR *baby* OR *toddler* OR *preschool* OR *infant** OR *mother** OR (*age** W/1 (*week** OR *month** OR "*1*" OR "*2*" OR "*3*" OR "*4*")))) AND (LIMIT-TO (PUBYEAR , 2023) OR LIMIT-TO (PUBYEAR , 2022) OR LIMIT-TO (PUBYEAR , 2021) OR LIMIT-TO (PUBYEAR , 2020) OR LIMIT-TO (PUBYEAR , 2019) OR LIMIT-TO (PUBYEAR , 2018))

Appendix 2: PRISMA flow diagram for selecting peer reviewed articles and grey literature¹¹⁰



Appendix 3: Alcohol, Smoking and Substance Involvement Test (ASSIST)

Administrator script:

I am going to ask you some questions about your experience of using a range of substances across your lifetime and in the past three months. Some of the substances listed may be prescribed by a doctor (like amphetamines, sedatives, pain medications). For this interview, we will not record medications that are used as prescribed by your doctor. However, if you have taken such medications for reasons other than prescription, or taken them more frequently or at higher doses than prescribed, please let me know.

Q.1 Tobacco products (cigarettes, chewing tobacco, cigars, etc.)

1.a	In your life have you ever used tobacco products (cigarettes, chewing tobacco, cigars, etc.)?	No - Go to Q2			Yes	
		<input type="checkbox"/> 0			<input type="checkbox"/> 1	
1.b	In the past three months, how often have you used tobacco?	Never <input type="checkbox"/> 0	Once or Twice <input type="checkbox"/> 1	Monthly <input type="checkbox"/> 2	Weekly <input type="checkbox"/> 3	Daily or Almost Daily <input type="checkbox"/> 4
1.c	In the past three months, how often have you had a strong desire or urge to use tobacco?	Never <input type="checkbox"/> 0	Once or Twice <input type="checkbox"/> 1	Monthly <input type="checkbox"/> 2	Weekly <input type="checkbox"/> 3	Daily or Almost Daily <input type="checkbox"/> 4
1.d	In the past three months, how often has your use of tobacco led to health, social, legal or financial problems?	Never <input type="checkbox"/> 0	Once or Twice <input type="checkbox"/> 1	Monthly <input type="checkbox"/> 2	Weekly <input type="checkbox"/> 3	Daily or Almost Daily <input type="checkbox"/> 4
1.e	During the past three months, how often have you failed to do what was normally expected of you because of your use of tobacco?	Never <input type="checkbox"/> 0	Once or Twice <input type="checkbox"/> 1	Monthly <input type="checkbox"/> 2	Weekly <input type="checkbox"/> 3	Daily or Almost Daily <input type="checkbox"/> 4
1.f	Has a friend or relative or anyone else ever expressed concern about your use of tobacco?	No, Never <input type="checkbox"/> 0	Yes, in the past 3 months <input type="checkbox"/> 6		Yes, but not in the past 3 months <input type="checkbox"/> 3	
1.g	Have you ever tried and failed to control, cut down or stop using tobacco?	No, Never <input type="checkbox"/> 0	Yes, in the past 3 months <input type="checkbox"/> 6		Yes, but not in the past 3 months <input type="checkbox"/> 3	
Tobacco Score:						

Q.2 Alcoholic beverages (beer, wine, spirits, etc.)

2.a	In your life have you ever used alcohol beverages (beer, wine, spirits, etc.)?	No - Go to Q3			Yes	
		<input type="checkbox"/> 0			<input type="checkbox"/> 1	
2.b	In the past three months, how often have you used alcohol?	Never <input type="checkbox"/> 0	Once or Twice <input type="checkbox"/> 1	Monthly <input type="checkbox"/> 2	Weekly <input type="checkbox"/> 3	Daily or Almost Daily <input type="checkbox"/> 4
2.c	In the past three months, how often have you had a strong desire or urge to use alcohol?	Never <input type="checkbox"/> 0	Once or Twice <input type="checkbox"/> 1	Monthly <input type="checkbox"/> 2	Weekly <input type="checkbox"/> 3	Daily or Almost Daily <input type="checkbox"/> 4
2.d	In the past three months, how often has your use of alcohol led to health, social, legal or financial problems?	Never <input type="checkbox"/> 0	Once or Twice <input type="checkbox"/> 1	Monthly <input type="checkbox"/> 2	Weekly <input type="checkbox"/> 3	Daily or Almost Daily <input type="checkbox"/> 4
2.e	During the past three months, how often have you failed to do what was normally expected of you because of your use of alcohol?	Never <input type="checkbox"/> 0	Once or Twice <input type="checkbox"/> 1	Monthly <input type="checkbox"/> 2	Weekly <input type="checkbox"/> 3	Daily or Almost Daily <input type="checkbox"/> 4
2.f	Has a friend or relative or anyone else ever expressed concern about your use of alcohol?	No, Never <input type="checkbox"/> 0	Yes, in the past 3 months <input type="checkbox"/> 6		Yes, but not in the past 3 months <input type="checkbox"/> 3	
2.g	Have you ever tried and failed to control, cut down or stop using alcohol?	No, Never <input type="checkbox"/> 0	Yes, in the past 3 months <input type="checkbox"/> 6		Yes, but not in the past 3 months <input type="checkbox"/> 3	
Alcoholic Beverages Score:						

Q.3 Cannabis (marijuana, pot, grass, hash, etc.)

3.a	In your life have you ever used cannabis (marijuana, pot, grass, hash, etc.)?	No - Go to Q4	Yes
		0	1
3.b	In the past three months, how often have you used cannabis?		
	Never <input type="checkbox"/> 0	Once or Twice <input type="checkbox"/> 1	Monthly <input type="checkbox"/> 2
		Weekly <input type="checkbox"/> 3	Daily or Almost Daily <input type="checkbox"/> 4
3.c	In the past three months, how often have you had a strong desire or urge to use cannabis?		
	Never <input type="checkbox"/> 0	Once or Twice <input type="checkbox"/> 1	Monthly <input type="checkbox"/> 2
		Weekly <input type="checkbox"/> 3	Daily or Almost Daily <input type="checkbox"/> 4
3.d	In the past three months, how often has your use of cannabis led to health, social, legal or financial problems?		
	Never <input type="checkbox"/> 0	Once or Twice <input type="checkbox"/> 1	Monthly <input type="checkbox"/> 2
		Weekly <input type="checkbox"/> 3	Daily or Almost Daily <input type="checkbox"/> 4
3.e	During the past three months, how often have you failed to do what was normally expected of you because of your use of cannabis?		
	Never <input type="checkbox"/> 0	Once or Twice <input type="checkbox"/> 1	Monthly <input type="checkbox"/> 2
		Weekly <input type="checkbox"/> 3	Daily or Almost Daily <input type="checkbox"/> 4
3.f	Has a friend or relative or anyone else ever expressed concern about your use of cannabis?		
	No, Never <input type="checkbox"/> 0	Yes, in the past 3 months <input type="checkbox"/> 6	Yes, but not in the past 3 months <input type="checkbox"/> 3
3.g	Have you ever tried and failed to control, cut down or stop using cannabis?		
	No, Never <input type="checkbox"/> 0	Yes, in the past 3 months <input type="checkbox"/> 6	Yes, but not in the past 3 months <input type="checkbox"/> 3
Cannabis Score:			

Q.4 Cocaine (coke, crack, etc.)

4.a	In your life have you ever used cocaine (coke, crack, etc.)?	No - Go to Q5	Yes
		0	1
4.b	In the past three months, how often have you used cocaine?		
	Never <input type="checkbox"/> 0	Once or Twice <input type="checkbox"/> 1	Monthly <input type="checkbox"/> 2
		Weekly <input type="checkbox"/> 3	Daily or Almost Daily <input type="checkbox"/> 4
4.c	In the past three months, how often have you had a strong desire or urge to use cocaine?		
	Never <input type="checkbox"/> 0	Once or Twice <input type="checkbox"/> 1	Monthly <input type="checkbox"/> 2
		Weekly <input type="checkbox"/> 3	Daily or Almost Daily <input type="checkbox"/> 4
4.d	In the past three months, how often has your use of cocaine led to health, social, legal or financial problems?		
	Never <input type="checkbox"/> 0	Once or Twice <input type="checkbox"/> 1	Monthly <input type="checkbox"/> 2
		Weekly <input type="checkbox"/> 3	Daily or Almost Daily <input type="checkbox"/> 4
4.e	During the past three months, how often have you failed to do what was normally expected of you because of your use of cocaine?		
	Never <input type="checkbox"/> 0	Once or Twice <input type="checkbox"/> 1	Monthly <input type="checkbox"/> 2
		Weekly <input type="checkbox"/> 3	Daily or Almost Daily <input type="checkbox"/> 4
4.f	Has a friend or relative or anyone else ever expressed concern about your use of cocaine?		
	No, Never <input type="checkbox"/> 0	Yes, in the past 3 months <input type="checkbox"/> 6	Yes, but not in the past 3 months <input type="checkbox"/> 3
4.g	Have you ever tried and failed to control, cut down or stop using cocaine?		
	No, Never <input type="checkbox"/> 0	Yes, in the past 3 months <input type="checkbox"/> 6	Yes, but not in the past 3 months <input type="checkbox"/> 3
Cocaine Score:			

Q.5 Amphetamine type stimulants (methamphetamine, speed, ecstasy, etc)

5.a	In your life have you ever used amphetamine type stimulants (methamphetamine, speed, ecstasy, etc.)?	No - Go to Q6 0	Yes 1
5.b	In the past three months, how often have you used amphetamine type stimulants? Never <input type="checkbox"/> 0 Once or Twice <input type="checkbox"/> 1 Monthly <input type="checkbox"/> 2 Weekly <input type="checkbox"/> 3 Daily or Almost Daily <input type="checkbox"/> 4		
5.c	In the past three months, how often have you had a strong desire or urge to use amphetamine type stimulants? Never <input type="checkbox"/> 0 Once or Twice <input type="checkbox"/> 1 Monthly <input type="checkbox"/> 2 Weekly <input type="checkbox"/> 3 Daily or Almost Daily <input type="checkbox"/> 4		
5.d	In the past three months, how often has your use of amphetamine type stimulants led to health, social, legal or financial problems? Never <input type="checkbox"/> 0 Once or Twice <input type="checkbox"/> 1 Monthly <input type="checkbox"/> 2 Weekly <input type="checkbox"/> 3 Daily or Almost Daily <input type="checkbox"/> 4		
5.e	During the past three months, how often have you failed to do what was normally expected of you because of your use of amphetamine type stimulants? Never <input type="checkbox"/> 0 Once or Twice <input type="checkbox"/> 1 Monthly <input type="checkbox"/> 2 Weekly <input type="checkbox"/> 3 Daily or Almost Daily <input type="checkbox"/> 4		
6.f	Has a friend or relative or anyone else ever expressed concern about your use of amphetamine type stimulants? No, Never <input type="checkbox"/> 0 Yes, in the past 3 months <input type="checkbox"/> 6 Yes, but not in the past 3 months <input type="checkbox"/> 3		
6.g	Have you ever tried and failed to control, cut down or stop using amphetamine type stimulants? No, Never <input type="checkbox"/> 0 Yes, in the past 3 months <input type="checkbox"/> 6 Yes, but not in the past 3 months <input type="checkbox"/> 3		
Amphetamine Type Stimulants Score:			

Q.6 Inhalants (nitrous, glue, petrol, paint thinner, etc.)

6.a	In your life have you ever used amphetamine type inhalants (nitrous, glue, petrol, paint thinner, etc.)?	No - Go to Q7 0	Yes 1
6.b	In the past three months, how often have you used inhalants? Never <input type="checkbox"/> 0 Once or Twice <input type="checkbox"/> 1 Monthly <input type="checkbox"/> 2 Weekly <input type="checkbox"/> 3 Daily or Almost Daily <input type="checkbox"/> 4		
6.c	In the past three months, how often have you had a strong desire or urge to use inhalants? Never <input type="checkbox"/> 0 Once or Twice <input type="checkbox"/> 1 Monthly <input type="checkbox"/> 2 Weekly <input type="checkbox"/> 3 Daily or Almost Daily <input type="checkbox"/> 4		
6.d	In the past three months, how often has your use of inhalants led to health, social, legal or financial problems? Never <input type="checkbox"/> 0 Once or Twice <input type="checkbox"/> 1 Monthly <input type="checkbox"/> 2 Weekly <input type="checkbox"/> 3 Daily or Almost Daily <input type="checkbox"/> 4		
6.e	During the past three months, how often have you failed to do what was normally expected of you because of your use of inhalants? Never <input type="checkbox"/> 0 Once or Twice <input type="checkbox"/> 1 Monthly <input type="checkbox"/> 2 Weekly <input type="checkbox"/> 3 Daily or Almost Daily <input type="checkbox"/> 4		
6.f	Has a friend or relative or anyone else ever expressed concern about your use of inhalants? No, Never <input type="checkbox"/> 0 Yes, in the past 3 months <input type="checkbox"/> 6 Yes, but not in the past 3 months <input type="checkbox"/> 3		
6.g	Have you ever tried and failed to control, cut down or stop using inhalants? No, Never <input type="checkbox"/> 0 Yes, in the past 3 months <input type="checkbox"/> 6 Yes, but not in the past 3 months <input type="checkbox"/> 3		
Inhalants Score:			

Q.7 Sedatives or sleeping pills (Valium, Serepax, Rohypnol, etc)

7.a	In your life have you ever used sedatives or sleeping pills (Valium, Serepax, Rohypnol, etc.)?	No - Go to Q8 0	Yes 1
7.b	In the past three months, how often have you used sedatives or sleeping pills? Never <input type="checkbox"/> 0 Once or Twice <input type="checkbox"/> 1 Monthly <input type="checkbox"/> 2 Weekly <input type="checkbox"/> 3 Daily or Almost Daily <input type="checkbox"/> 4		
7.c	In the past three months, how often have you had a strong desire or urge to use sedatives or sleeping pills? Never <input type="checkbox"/> 0 Once or Twice <input type="checkbox"/> 1 Monthly <input type="checkbox"/> 2 Weekly <input type="checkbox"/> 3 Daily or Almost Daily <input type="checkbox"/> 4		
7.d	In the past three months, how often has your use of sedatives or sleeping pills led to health, social, legal or financial problems? Never <input type="checkbox"/> 0 Once or Twice <input type="checkbox"/> 1 Monthly <input type="checkbox"/> 2 Weekly <input type="checkbox"/> 3 Daily or Almost Daily <input type="checkbox"/> 4		
7.e	During the past three months, how often have you failed to do what was normally expected of you because of your use of sedatives or sleeping pills? Never <input type="checkbox"/> 0 Once or Twice <input type="checkbox"/> 1 Monthly <input type="checkbox"/> 2 Weekly <input type="checkbox"/> 3 Daily or Almost Daily <input type="checkbox"/> 4		
7.f	Has a friend or relative or anyone else ever expressed concern about your use of sedatives or sleeping pills? No, Never <input type="checkbox"/> 0 Yes, in the past 3 months <input type="checkbox"/> 6 Yes, but not in the past 3 months <input type="checkbox"/> 3		
7.g	Have you ever tried and failed to control, cut down or stop using sedatives or sleeping pills? No, Never <input type="checkbox"/> 0 Yes, in the past 3 months <input type="checkbox"/> 6 Yes, but not in the past 3 months <input type="checkbox"/> 3		
Sedatives/Sleeping Pills Score:			

Q.8 Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)

8.a	In your life have you ever used hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)?	No - Go to Q9 0	Yes 1
8.b	In the past three months, how often have you used hallucinogens? Never <input type="checkbox"/> 0 Once or Twice <input type="checkbox"/> 1 Monthly <input type="checkbox"/> 2 Weekly <input type="checkbox"/> 3 Daily or Almost Daily <input type="checkbox"/> 4		
8.c	In the past three months, how often have you had a strong desire or urge to use hallucinogens? Never <input type="checkbox"/> 0 Once or Twice <input type="checkbox"/> 1 Monthly <input type="checkbox"/> 2 Weekly <input type="checkbox"/> 3 Daily or Almost Daily <input type="checkbox"/> 4		
8.d	In the past three months, how often has your use of hallucinogens led to health, social, legal or financial problems? Never <input type="checkbox"/> 0 Once or Twice <input type="checkbox"/> 1 Monthly <input type="checkbox"/> 2 Weekly <input type="checkbox"/> 3 Daily or Almost Daily <input type="checkbox"/> 4		
8.e	During the past three months, how often have you failed to do what was normally expected of you because of your use of hallucinogens? Never <input type="checkbox"/> 0 Once or Twice <input type="checkbox"/> 1 Monthly <input type="checkbox"/> 2 Weekly <input type="checkbox"/> 3 Daily or Almost Daily <input type="checkbox"/> 4		
8.f	Has a friend or relative or anyone else ever expressed concern about your use of hallucinogens? No, Never <input type="checkbox"/> 0 Yes, in the past 3 months <input type="checkbox"/> 6 Yes, but not in the past 3 months <input type="checkbox"/> 3		
8.g	Have you ever tried and failed to control, cut down or stop using hallucinogens? No, Never <input type="checkbox"/> 0 Yes, in the past 3 months <input type="checkbox"/> 6 Yes, but not in the past 3 months <input type="checkbox"/> 3		
Hallucinogens Score:			

Q.9 Opioids (heroin, morphine, methadone, codeine, etc.)

9.a	In your life have you ever used opioids (heroin, morphine, methadone, codeine, etc.)?	No - Go to Q10 0	Yes 1
9.b	In the past three months, how often have you used opioids? Never <input type="checkbox"/> 0 Once or Twice <input type="checkbox"/> 1 Monthly <input type="checkbox"/> 2 Weekly <input type="checkbox"/> 3 Daily or Almost Daily <input type="checkbox"/> 4		
9.c	In the past three months, how often have you had a strong desire or urge to use opioids? Never <input type="checkbox"/> 0 Once or Twice <input type="checkbox"/> 1 Monthly <input type="checkbox"/> 2 Weekly <input type="checkbox"/> 3 Daily or Almost Daily <input type="checkbox"/> 4		
9.d	In the past three months, how often has your use of opioids led to health, social, legal or financial problems? Never <input type="checkbox"/> 0 Once or Twice <input type="checkbox"/> 1 Monthly <input type="checkbox"/> 2 Weekly <input type="checkbox"/> 3 Daily or Almost Daily <input type="checkbox"/> 4		
9.e	During the past three months, how often have you failed to do what was normally expected of you because of your use of opioids? Never <input type="checkbox"/> 0 Once or Twice <input type="checkbox"/> 1 Monthly <input type="checkbox"/> 2 Weekly <input type="checkbox"/> 3 Daily or Almost Daily <input type="checkbox"/> 4		
9.f	Has a friend or relative or anyone else ever expressed concern about your use of opioids? No, Never <input type="checkbox"/> 0 Yes, in the past 3 months <input type="checkbox"/> 6 Yes, but not in the past 3 months <input type="checkbox"/> 3		
9.g	Have you ever tried and failed to control, cut down or stop using opioids? No, Never <input type="checkbox"/> 0 Yes, in the past 3 months <input type="checkbox"/> 6 Yes, but not in the past 3 months <input type="checkbox"/> 3		
Opioids Score:			

Q.10 Other – specify _____

10.a	In your life have you ever used any other drug for non-medical purposes? Specify _____	No - Go to Q11 0	Yes 1
10.b	In the past three months, how often have you used _____? Never <input type="checkbox"/> 0 Once or Twice <input type="checkbox"/> 1 Monthly <input type="checkbox"/> 2 Weekly <input type="checkbox"/> 3 Daily or Almost Daily <input type="checkbox"/> 4		
10.c	In the past three months, how often have you had a strong desire or urge to use _____? Never <input type="checkbox"/> 0 Once or Twice <input type="checkbox"/> 1 Monthly <input type="checkbox"/> 2 Weekly <input type="checkbox"/> 3 Daily or Almost Daily <input type="checkbox"/> 4		
10.d	In the past three months, how often has your use of _____ led to health, social, legal or financial problems? Never <input type="checkbox"/> 0 Once or Twice <input type="checkbox"/> 1 Monthly <input type="checkbox"/> 2 Weekly <input type="checkbox"/> 3 Daily or Almost Daily <input type="checkbox"/> 4		
10.e	During the past three months, how often have you failed to do what was normally expected of you because of your use of _____? Never <input type="checkbox"/> 0 Once or Twice <input type="checkbox"/> 1 Monthly <input type="checkbox"/> 2 Weekly <input type="checkbox"/> 3 Daily or Almost Daily <input type="checkbox"/> 4		
10.f	Has a friend or relative or anyone else ever expressed concern about your use of _____? No, Never <input type="checkbox"/> 0 Yes, in the past 3 months <input type="checkbox"/> 6 Yes, but not in the past 3 months <input type="checkbox"/> 3		
10.g	Have you ever tried and failed to control, cut down or stop using _____? No, Never <input type="checkbox"/> 0 Yes, in the past 3 months <input type="checkbox"/> 6 Yes, but not in the past 3 months <input type="checkbox"/> 3		
Other Substance Score:			

11. Drugs by injection

11.	Have you ever used any drug by injection No, Never <input type="checkbox"/> 0 Yes, in the past 3 months <input type="checkbox"/> 6 Yes, but not in the past 3 months <input type="checkbox"/> 3
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ASSIST SCORE SUMMARY

		Score
Q.1	Tobacco products (cigarettes, chewing tobacco, cigars, etc)	
Q.2	Alcoholic beverages (beer, wine, spirits, etc.)	
Q.3	Cannabis (marijuana, pot, grass, hash, etc.)	
Q.4	Cocaine (coke, crack, etc.)	
Q.5	Amphetamine type stimulants (methamphetamine, speed, diet pills, ecstasy, etc	
Q.6	Inhalants (nitrous, glue, petrol, paint thinner, etc.)	
Q.7	Sedatives or Sleeping Pills (Valium, Serepax, Rohypnol, etc.)	
Q.8	Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)	
Q.9	Opioids (heroin, morphine, methadone, codeine, etc.)	
Q.10	Other - specify	

Scoring and interpretation: The ASSIST can be administered to screen for problem/risky use of a number of substances (tobacco, alcohol, cannabis, cocaine, amphetamine-type stimulants (including ecstasy), inhalants, sedatives, hallucinogens, opioids and 'other drugs'). For each substance there are eight identical questions about frequency of use, efforts to reduce use, and risky behaviours. To calculate a score, for each substance sum responses (a-g). For tobacco the total minimum score possible is 0; and the total maximum score possible is 31 (i.e. range: 0-31). For all other drugs, the total minimum score possible is 0, and the total maximum score possible is 39 (i.e. range: 0-39).

ASSIST score interpretation

Risk level	Alcohol	All other substances
Lower risk	0-10	0-3
Moderate risk	11-26	4-26
High risk	27+	27+

A global score may also be obtained by summing items (questions 1-7) for all substances together. The minimum global score possible is 0, with 414 the maximum total score possible (i.e. range: 0-414).

Tool Citation: WHO Group. The Alcohol, Smoking and Substance Involvement Screening Test (ASSIST): development, reliability and feasibility. *Addiction*, 2002. 97(9): 1183-1194.

More Information: Fischer, J.A., Roche, A.M., and Duraisingam, V. *Alcohol, Smoking and Substance Involvement Screening Test (ASSIST): description, strengths and knowledge gaps*. AOD Screening and Withdrawal Tools Collection. 2021, National Centre for Education and Training on Addiction (NCETA), Flinders University: Adelaide, South Australia.

Appendix 4: Alcohol Use Disorders Identification Test (AUDIT)

Please tick (✓) one box for each question

Q1. How often do you a drink containing alcohol?				
Never (skip to Q's 9-10)	Monthly or less	2-4 times a month	2-3 times a week	4 times a week or more often
<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Q2. How many drinks containing alcohol do you have on a typical day when you are drinking?				
1-2	3 or 4	5 or 6	7,8 or 9	10 or more
<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Q3. How often do you have six or more drinks on one occasion?				
Never	Less than monthly	Monthly	Weekly	Daily or almost daily
<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Q4. How often during the last year have you found that you were not able to stop drinking once you had started?				
Never	Less than monthly	Monthly	Weekly	Daily or almost daily
<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Q5. How often during the last year have you failed to do what was normally expected from you because of drinking?				
Never	Less than monthly	Monthly	Weekly	Daily or almost daily
<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Q6. How often during the last year have you been unable to remember what happened the night before because you had been drinking?				
Never	Less than monthly	Monthly	Weekly	Daily or almost daily
<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Q7. How often during the last year have you needed an alcoholic drink first thing in the morning to get yourself going after a night of heavy drinking?				
Never	Less than monthly	Monthly	Weekly	Daily or almost daily
<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Q8. How often during the last year have you had a feeling of guilt or remorse after drinking?				
Never	Less than monthly	Monthly	Weekly	Daily or almost daily
<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Q9. Have you or someone else been injured as a result of your drinking?				
No	Yes, but not in the last year		Yes, during the last year	
<input type="checkbox"/> 0	<input type="checkbox"/> 2		<input type="checkbox"/> 4	
Q10. Has a relative, friend, doctor, or another health professional expressed concern about your drinking or suggested you cut down?				
Never	Yes, but not in the past year		Yes, during the past year	
<input type="checkbox"/> 0	<input type="checkbox"/> 2		<input type="checkbox"/> 4	
Total Score:				

Scoring and interpretation: The AUDIT consists of ten questions. Questions 1 to 8 are each scored 0, 1, 2, 3, or 4 points. Questions 9 and ten are each scored 0, 2, or 4 points. A total score is obtained by summing points obtained for each of the ten questions. The minimum total score possible is 0, and the maximum total score possible is 40 (i.e. Total score range: 0-40).

AUDIT score interpretation

Score	Interpretation
8-15	Simple advice focused on reducing hazardous drinking
16-19	Brief counselling and continued monitoring
20 or more	Warrant further diagnostic evaluation for alcohol dependence

Tool citation: Saunders, J.B., Aasland, O.G., Amundsen, A., et al. Alcohol consumption and related problems among primary health care patients: WHO Collaborative Project on Early Detection of Persons with Harmful Alcohol Consumption I. *Addiction*, 1993. 88(3): 349-362.

Further Information: Fischer, J.A., Roche, A.M., and Duraisingam, V. *Alcohol Use Disorders Identification Test (AUDIT): description, strengths and knowledge gaps*. 2021, National Centre for Education and Training on Addiction (NCETA), Flinders University: Adelaide, South Australia.

Appendix 5: Alcohol Use Disorders Identification Test–Consumption (AUDIT-C)

Please tick (✓) one box for each question

Q1. How often do you have a drink containing alcohol?				
Never	Monthly or less often	2-4 times a month	2-3 times a week	4 times or more a week
<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Q2. How many units of alcohol do you drink on a typical day when you are drinking?				
1 or 2	3 or 4	5 or 6	7 to 9	10 or more
<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/>
Q3. How often have you had six or more units (if female) or eight or more (if male) on a single occasion in the last year?				
Never	Less than monthly	Monthly	Weekly	Daily or almost daily
<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Total Score:				

Scoring and interpretation: The AUDIT-C comprises three questions. Each question is scored on a five-point scale (i.e., 0,1,2,3, or 4). A total score is calculated by summing the responses to all the three questions. The total minimum possible score is 0, and the maximum possible score is 12 (i.e. range: 0-12).

AUDIT-C score interpretation

Sex	Score	Interpretation
Females	3 or more	Likely to indicate hazardous drinking, and potentially alcohol dependence
Males	4 or more	likely to indicate hazardous drinking, and potentially alcohol dependence

Tool citation: Bush, K., Kivlahan, D.R., McDonell, M.B. et al. The AUDIT alcohol consumption questions (AUDIT-C): an effective brief screening test for problem drinking. *Archives of Internal Medicine*, 1998. **158**(16): 1789-1795.

Further information: Fischer, J.A., Roche, A.M., and Duraisingam, V. *Alcohol Use Disorders Identification Test - Consumption (AUDIT-C): description, strengths and knowledge gaps*. 2021, National Centre for Education and Training on Addiction (NCETA), Flinders University: Adelaide, South Australia.

Appendix 6: Drug Use Disorders Identification Test (DUDIT)

Please tick (✓) one box for each question

Q1. How often do you use drugs other than alcohol?				
Never <input type="checkbox"/> 0	Once a month or less often <input type="checkbox"/> 1	2-4 times a month <input type="checkbox"/> 2	2-3 times a week <input type="checkbox"/> 3	4 times a week or more often <input type="checkbox"/> 4
Q2. Do you use more than one type of drug on the same occasion?				
Never <input type="checkbox"/> 0	Once a month or less often <input type="checkbox"/> 1	2-4 times a month <input type="checkbox"/> 2	2-3 times a week <input type="checkbox"/> 3	4 times a week or more often <input type="checkbox"/> 4
Q3. How many times do you take drugs on a typical day when you use drugs?				
0 <input type="checkbox"/> 0	1-2 <input type="checkbox"/> 1	3-4 <input type="checkbox"/> 2	5-6 <input type="checkbox"/> 3	7 or more <input type="checkbox"/> 4
Q4. How often are you influenced heavily by drugs?				
Never <input type="checkbox"/> 0	Less often once a month <input type="checkbox"/> 1	Every month <input type="checkbox"/> 2	Every week <input type="checkbox"/> 3	Daily or almost every day <input type="checkbox"/> 4
Q5. Over the past year, have you felt that your longing for drugs was so strong that you could not resist it?				
Never <input type="checkbox"/> 0	Less often once a month <input type="checkbox"/> 1	Every month <input type="checkbox"/> 2	Every week <input type="checkbox"/> 3	Daily or almost every day <input type="checkbox"/> 4
Q6. Has it happened, over the past year, that you have not been able to stop taking drugs once you started?				
Never <input type="checkbox"/> 0	Less often once a month <input type="checkbox"/> 1	Every month <input type="checkbox"/> 2	Every week <input type="checkbox"/> 3	Daily or almost every day <input type="checkbox"/> 4
Q7. How often over the past year have you taken drugs and then neglected to do something you should have done?				
Never <input type="checkbox"/> 0	Less often once a month <input type="checkbox"/> 1	Every month <input type="checkbox"/> 2	Every week <input type="checkbox"/> 3	Daily or almost every day <input type="checkbox"/> 4
Q8. How often over the past year have you needed to take a drug the morning after heavy drug use the day before?				
Never <input type="checkbox"/> 0	Less often once a month <input type="checkbox"/> 1	Every month <input type="checkbox"/> 2	Every week <input type="checkbox"/> 3	Daily or almost every day <input type="checkbox"/> 4
Q9. How often over the past year have you had guilty feelings or a bad conscience because you used drugs?				
Never <input type="checkbox"/> 0	Less often once a month <input type="checkbox"/> 1	Every month <input type="checkbox"/> 2	Every week <input type="checkbox"/> 3	Daily or almost every day <input type="checkbox"/> 4
Q10. Have you or anyone else been hurt (mentally or physically) because you used drugs?				
Never <input type="checkbox"/> 0	Yes, but not in the past year <input type="checkbox"/> 1	Yes, during the past year <input type="checkbox"/> 2		
Q11. Has a relative or a friend, a doctor or a nurse, or anyone else, been worried about your drug use or said to you that you should stop using drugs?				
Never <input type="checkbox"/> 0	Yes, but not in the past year <input type="checkbox"/> 1	Yes, during the past year <input type="checkbox"/> 2		
Total Score:				

Scoring and interpretation: The DUDIT comprises 11 questions. Score the first nine questions 0, 1, 2, 3, or 4. The last two questions are scored 0, 2, or 4. A total score is calculated by summing the points obtained for each question. The minimum total score possible is 0, and the maximum total score possible is 44 (i.e. total score range: 0-44). Higher scores reflect higher drug dependence.

DUDIT Recommended general population cut-off scores

Sex	Cutoff Score
Males	6
Females	2

Tool citation: Bergman, A.H., Bergman, H., Palmstierna, T., et al. *DUDIT: The Drug Use Disorders Identification Test: manual*. 2003, Stockholm, Sweden: Karolinska Institute.

Further information: Fischer, J.A., Roche, A.M., and Duraisingam, V. *Drug Use Disorders Identification Test (DUDIT): description, strengths and knowledge gaps*. 2021, National Centre for Education and Training on Addiction (NCETA), Flinders University: Adelaide, South Australia.

Appendix 7: Indigenous Risk Impact Screen (IRIS)

Please tick (✓) one box for each question

Alcohol and Other Drug Risk		
Q1.	In the last 6 months have you needed to drink or use drugs more to get the effects you want?	No <input type="checkbox"/> 1 Yes, a bit more <input type="checkbox"/> 2 Yes, a lot more <input type="checkbox"/> 3
Q2.	When you have cut down or stopped drinking or using drugs in the past, have you experienced any symptoms, such as sweating, shaking, feeling sick in the tummy/vomiting, diarrhoea, feeling really down or worried, problems sleeping, aches and pains?	Never <input type="checkbox"/> 1 Sometimes when I stop <input type="checkbox"/> 2 Yes, every time <input type="checkbox"/> 3
Q3.	How often do you feel that you end up drinking or using drugs much more than you expected?	Never/Hardly ever <input type="checkbox"/> 1 Once a month <input type="checkbox"/> 2 Once a fortnight <input type="checkbox"/> 3 Once a week <input type="checkbox"/> 4 More than once a week <input type="checkbox"/> 5 Most days/Every day <input type="checkbox"/> 6
Q4.	Do you ever feel out of control with your drinking or drug use?	Never/Hardly ever <input type="checkbox"/> 1 Sometimes <input type="checkbox"/> 2 Often <input type="checkbox"/> 3 Most days/Every day <input type="checkbox"/> 4
Q5.	How difficult would it be to stop or cut down on your drinking or drug use?	Not difficult at all <input type="checkbox"/> 1 Fairly easy <input type="checkbox"/> 2 Difficulty <input type="checkbox"/> 3 I couldn't stop or cut down <input type="checkbox"/> 4
Q6.	What time of the day do you usually start drinking or using drugs?	At night <input type="checkbox"/> 1 In the afternoon <input type="checkbox"/> 2 Sometimes in the morning <input type="checkbox"/> 3 As soon as I wake up <input type="checkbox"/> 4
Q7.	How often do you find that your whole day has involved drinking or using drugs?	Never/Hardly ever <input type="checkbox"/> 1 Sometimes <input type="checkbox"/> 2 Often <input type="checkbox"/> 3 Most days/Every day <input type="checkbox"/> 4
Alcohol and Other Drug Risk Score (Q1-Q7):		

Mental Health and Emotional Wellbeing Risk		
Q8.	How often do you feel down in the dumps, sad or slack?	Never/Hardly ever <input type="checkbox"/> 1 Sometimes <input type="checkbox"/> 2 Most days/Every day <input type="checkbox"/> 3
Q9.	How often have you felt that life is hopeless?	Never/Hardly ever <input type="checkbox"/> 1 Sometimes <input type="checkbox"/> 2 Most days/Every day <input type="checkbox"/> 3
Q10.	How often do you feel nervous or scared?	Never/Hardly ever <input type="checkbox"/> 1 Sometimes <input type="checkbox"/> 2 Most days/Every day <input type="checkbox"/> 3
Q11.	Do you worry much?	Never/Hardly ever <input type="checkbox"/> 1 Sometimes <input type="checkbox"/> 2 Most days/Every day <input type="checkbox"/> 3
Q12.	How often do you feel restless and that you can't sit still?	Never/Hardly ever <input type="checkbox"/> 1 Sometimes <input type="checkbox"/> 2 Most days/Every day <input type="checkbox"/> 3

Q13. Do past events in your family, still affect your well-being today (such as being taken away from family)?	Never/Hardly ever	<input type="checkbox"/> 1
	Sometimes	<input type="checkbox"/> 2
	Most days/Every day	<input type="checkbox"/> 3
Mental Health and Emotional Wellbeing Score (Q8-Q13):		

Scoring and interpretation: Two risk scores are obtained with the IRIS: AOD risk; and mental health and emotional wellbeing risk.

IRIS score interpretation

AOD risk score:	<ul style="list-style-type: none"> Comprises seven questions (questions 1 – 7) Calculated by summing responses to questions 1 to 7. The minimum total score possible is 7, and the maximum total score possible is 28 (i.e. total score range: 7-28) A score of 10 or more is likely to indicate risky AOD drug use.
Mental health and emotional wellbeing risk score:	<ul style="list-style-type: none"> Comprises six questions (questions 8 – 13) Calculated by summing responses to questions 8-13. The minimum total score possible is 6, and the maximum total score possible is 18 (i.e. total score range: 6-18) A score of 11 or more is likely to indicate high risk for mental health and emotional wellbeing.

Tool citation: Schlesinger, C., Ober, C., McCarthy, M., et al. The development and validation of the Indigenous Risk Impact Screen (IRIS): a 13-item screening instrument for alcohol and drug and mental health risk. *Drug and Alcohol Review*, 2007. 26(2): 109-117.

Further information: Fischer, J.A., Roche, A.M., and Duraisingam, V. *An overview of the Indigenous Risk Impact Screen (IRIS): description, strengths and knowledge gaps*. 2021, National Centre for Education and Training on Addiction (NCETA), Flinders University: Adelaide, South Australia.

Appendix 8: Fagerström Test for Nicotine Dependence (FTND)

Please tick (✓) one box for each question

Q1. How soon after waking do you smoke your first cigarette?	Within 5 minutes	<input type="checkbox"/> 3
	6-30 minutes	<input type="checkbox"/> 2
	31-60 minutes	<input type="checkbox"/> 1
	After 60 minutes	<input type="checkbox"/> 0
Q2. Do you find it difficult to refrain from smoking in places where it is forbidden? e.g., church, library, etc.	Yes	<input type="checkbox"/> 1
	No	<input type="checkbox"/> 0
Q3. Which cigarette would you hate most to give up?	First in the morning	<input type="checkbox"/> 1
	Any other	<input type="checkbox"/> 0
Q4. How many cigarettes a day do you smoke?	10 or less	<input type="checkbox"/> 0
	11-20	<input type="checkbox"/> 1
	21-30	<input type="checkbox"/> 2
	31 or more	<input type="checkbox"/> 3
Q5. Do you smoke more frequently in the morning?	Yes	<input type="checkbox"/> 1
	No	<input type="checkbox"/> 0
Q6. Do you smoke even if you are sick in bed most of the day?	Yes	<input type="checkbox"/> 1
	No	<input type="checkbox"/> 0
Total Score:		

Scoring and interpretation: The FTND comprises 6 questions. Questions 1 and 4 are scored on four-point scales (i.e., 0,1,2, or 3 points). The remaining questions (i.e., questions: 2, 3, 5 and 6) are each scored '0' or '1' point. A total score is calculated by summing the responses to all six questions. The minimum total score possible is 0, and the maximum possible total score possible is 10 (i.e. total score range: 0-10).

FTND score interpretation

Score	Interpretation
1-2	Low level of dependence
3-4	Low to moderate dependence
5-7	Moderate dependence
8 or more	high dependence

Tool citation: Fagerström, K.O. Measuring degree of physical dependence to tobacco smoking with reference to individualization of treatment. *Addictive Behaviors*, 1978. **3**(3-4): 235-241.

More information: Fischer, J.A., Roche, A.M., and Duraisingam, V. *Fagerstrom Test for Nicotine Dependence (FTND): description, strengths and knowledge gaps*. 2021, National Centre for Education and Training on Addiction (NCETA), Flinders University: Adelaide, South Australia.

Appendix 9: Drug Abuse Screening Test–10 (DAST-10)

Please tick (✓) one box for each question

Q1	Have you used drugs other than those required for medical reasons?	Yes <input type="checkbox"/> 1	No <input type="checkbox"/> 0
Q2	Do you use more than one drug at a time?	Yes <input type="checkbox"/> 1	No <input type="checkbox"/> 0
Q3	Are you always able to stop using drugs when you want to?	Yes <input type="checkbox"/> 0	No <input type="checkbox"/> 1
Q4	Have you had "blackouts" or "flashbacks" as a result of drug use?	Yes <input type="checkbox"/> 1	No <input type="checkbox"/> 0
Q5	Do you ever feel bad or guilty about your drug use?	Yes <input type="checkbox"/> 1	No <input type="checkbox"/> 0
Q6	Does your spouse (or parents) ever complain about your involvement with drugs?	Yes <input type="checkbox"/> 1	No <input type="checkbox"/> 0
Q7	Have you neglected your family because of your use of drugs?	Yes <input type="checkbox"/> 1	No <input type="checkbox"/> 0
Q8	Have you engaged in illegal activities in order to obtain drugs?	Yes <input type="checkbox"/> 1	No <input type="checkbox"/> 0
Q9	Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs?	Yes <input type="checkbox"/> 1	No <input type="checkbox"/> 0
Q10	Have you had medical problems as a result of your drug use (e.g., memory loss, hepatitis, convulsions, bleeding, etc.)?	Yes <input type="checkbox"/> 1	No <input type="checkbox"/> 0
Total Score			

Scoring and interpretation: The DAST-10 comprises ten questions. All ten questions are each scored 'yes' or 'no'. Score 1 point for each question answered "Yes," except for question 3 for which a "No" receives 1 point. A total score is calculated by summing the points obtained for each DAST-10 question. The minimum total score possible is 0, and the maximum total score possible is 10 (i.e. total score range: 0-10).

DAST-10 score interpretation

Score	Interpretation
0	No problems
1-2	Low level of problems
3-5	Likely to meet DSM criteria
6-8	'Substantial' dependence
9-10	'Severe' dependence

Tool citation: Skinner, H.A. The Drug Abuse Screening Test. *Addictive Behaviors*, 1982. **7**(4): 363-371.

Further information: Fischer, J.A., Roche, A.M., and Duraisingam, V. *Drug Abuse Screening Test 10 (DAST-10): description, strengths and knowledge gaps*. 2021, National Centre for Education and Training on Addiction (NCETA), Flinders University: Adelaide, South Australia.

Appendix 10: Smoking, Nutrition, Alcohol Consumption, Physical Activity and Emotional Wellbeing (SNAPE) Survey

Survey	Questions										
Smoking	How soon after waking do you smoke your first cigarette?										
	Do you find it hard to stay in a place where you aren't allowed to smoke?										
	Which cigarette would be hardest to give up?										
	How many cigarettes do you smoke in a day?										
Alcohol	How often did you have a drink containing alcohol in the past year?										
	How many drinks did you have on a typical day when you were drinking in the past year?										
	How often did you have six or more drinks on one occasion in the past year?										
Depression	Have you been feeling slack, not wanted to do anything?										
	Have you been feeling unhappy, depressed, really no good, that your spirit was sad?										
	Have you found it hard to sleep at night, or had other problems with sleeping?										
	Have you felt tired or weak, that you have no energy?										
	Have you not felt like eating much, even when there was food around?										
	Have you been eating too much food?										
	Have you been feeling bad about yourself, that you are useless, no good, that you have let your family down?										
	Have you felt like you can't think straight or clearly, that it's hard to learn new things or concentrate?										
	Have you been talking or moving around really slow?										
	Have you felt that you can't sit still, that you move around too much?										
Have you been thinking about hurting yourself or killing yourself?											
Depression: Additional culture-based questions	In the last two weeks have you felt that your spirit was weak?										
	Have you been drinking more grog or smoking more ganja than you usually do?										
	Have you been feeling homesick, lonely for family or home?										
	Have you felt your anger building up inside you, ready to explode?										
	Do you think you have too much worry?										
	Have you felt that you can't stop thinking about the things that cause you worry?										
	Have you felt cranky, irritable or always in a bad mood?										
Diet quality survey											
	Never or rarely	<1/week	1/week	2-3/week	4-6/week	1/day	2/day	3/day	4-5/day	>6/day	>1/day
Vegetables											
Fruit											
Fresh fish											
Milk-based drinks											
Juice											
Coffee or tea											
Water											
Homemade meals											
Takeaway											
Snacks											
Diet soft drinks/cordials											
Regular soft drinks/cordials											
Physical activity questions											
During the last 7 days, how much time did you spend sitting on a week day (h)											
During the last week, on how many days did you walk at least 10 min at a time?											