2019 NDSHS technical information

All estimates contained in the 2019 NDSHS report are based on information obtained from people aged 14 and over from all states and territories. Most estimates presented in this report relate to people aged 14 and over, with selected estimates for people 18 and over where specified.

Methodology

Roy Morgan Research was commissioned by the AIHW to conduct the survey fieldwork. The survey was conducted from 8 April to 22 September 2019. This included a soft launch period from 8 April to 28 April, where a small number of SA1s were used to test the survey fieldwork procedures.

Sample design

As with previous NDSHS waves, the sample was selected using stratified, multistage random sampling. There were 15 strata in total, including the capital city and 'rest of state' for each state and territory, with the exception of the Australian Capital Territory, which operated as 1 stratum. To produce reliable estimates for the smaller states and territories, sample sizes were boosted in Tasmania, the Australian Capital Territory and the Northern Territory (to achieve a minimum of 1,000 completed questionnaires).

States and territories were offered the opportunity to increase their sample size to improve the reliability of estimates in their jurisdiction. In 2019, South Australia was the only jurisdiction that chose to boost their sample size, and requested an additional 1,000 completed surveys.

For capital city strata, statistical areas level 1 (SA1s) were selected with probability proportional to the number of private households calculated from the ABS release *3236.0 - Household and Family Projections, Australia, 2016 to 2041*. For the first time in 2019, the major regional centres of Illawarra, Newcastle and Lake Macquarie, Geelong, Cairns, Gold Coast, and Sunshine Coast also used this SA1 selection process, to reduce geographical clustering within the sample.

In all other areas in the 'rest of state' strata, statistical areas level 2 (SA2s) were selected for the first stage instead, as this had considerable efficiency benefits. SA2s for each stratum were selected with probability proportional to the number of households calculated from *3236.0 - Household and Family Projections, Australia, 2016 to 2041*. From within each selected SA2, SA1s were selected with probability proportional to the number of private households calculated in the same way.

A starting address within each selected SA1 was randomly selected, and interviewing started at the dwelling next door to this. Interviewers followed a comprehensive set of procedures to select a dwelling, including skip intervals, identifying eligible and ineligible addresses, and dealing with blocks of flats and units.

As in previous surveys, interviewers made 3 attempts to establish face-to-face contact with the selected dwellings. The selected respondent was the household member aged 14 or older who most recently celebrated their birthday. This was a departure from samples from 2004–2016, where the selected respondent was a household member aged 12 or older. In 2019, the NDSHS Technical Advisory Group made the decision to remove 12–13 year olds from the sample. There were some concerns over the reliability of the data collected as the majority of 12–13 year olds reporting that their parents were present while completing the survey and that this affected the honesty of their responses.

This population group is also captured through other drug and alcohol surveys such as the Australian Secondary Schools Alcohol and other Drug survey. If the selected respondent was aged 14 or 15, permission was sought from a responsible adult for them to complete the survey.

Limitations in the survey scope

The scope of the NDSHS is residential households. These are households containing at least one person aged 14 years or over who resides at that household permanently. This excludes institutional settings such as hospitals and nursing homes, non-permanent addresses such as motels and hostels, and other environments such as Defence Force barracks or prisons. It also excludes people without a permanent address, such as those experiencing homelessness.

Additionally, while the letter of introduction for the survey was available in multiple languages, the survey itself was only available in English. Interviews in other languages were not conducted, with the exception of Indigenous remote communities in the Northern Territory (see New methodology strategies introduced in 2019 for more information).

Survey mode

The 2019 survey was conducted using a multi-mode completion methodology, similar to the 2016 survey. Selected individuals could choose to complete the survey via a paper form, an online form or a telephone interview. In 2019, 25% of respondents chose to complete the survey online, an increase from the 22% of respondents that did so in 2016.

Survey modes have changed over time with survey waves. Table TI.1 provides a summary of the data collection methodologies and fieldwork timing since 1998, when AIHW began managing the survey. Changes to the methodology should be taken into consideration when making comparisons over time.

For households electing to complete the paper questionnaire, 3 attempts were made to personally collect the questionnaire. Interviewers also made reminder phone calls or sent an SMS to the selected respondent before each pick-up attempt. If they were still unable to pick up the questionnaire after three attempts, a reply paid envelope was left for the respondent to mail the completed questionnaire back to Roy Morgan Research.

For respondents electing to complete online, the survey link was provided to the respondent, and was accessible immediately by entering the form number provided on the paper survey. The online survey could also be accessed using a QR code provided on the physical survey form. Where an email address or mobile phone number was provided, an email or SMS invitation was also sent, generally the next day, which linked the respondent directly to their online survey. Up to 3 reminder emails were sent at 3-day intervals to encourage response. A final email or SMS reminder was sent approximately one month after the respondent was selected if the survey had not been completed.

For respondents electing to complete by telephone, the interviewer collected up to four separate times that would be suitable to contact the respondent for an interview. If contact was made at the household, but the respondent was not available, or if the time was no longer suitable for the respondent, an alternative time was arranged to conduct the interview.

If no response had been received from respondents electing to complete online or via phone after three attempts, the face-to-face interviewer visited the household to remind them to complete the survey, including providing the option to complete by paper. A reply paid envelope was also left, in case the respondent preferred to complete by paper.

Table TI.1: Data collection methodologies and fieldwork timing, 1998 to 2019

Year	Data collection methodology	Total complete questionnaires	Fieldwork conducted
1998	Personal interviews (40%) Drop and collect (60%)	10,030	June–September 1998
2001	Personal interviews (8%) Drop and collect (85%) CATI (8%)	26,744	June/July–November 2001
2004	Drop and collect (82%) CATI (18%)	29,445	June/July–November 2004
2007	Drop and collect (85%) CATI (15%)	23,356	June/July–November 2007
2010	Drop and collect (100%)	26,648	April–September 2010
2013	Drop and collect (100%)	23,855	July–December 2013
2016	Drop and collect, paper form (78%) Online survey (22%) CATI (0.3%)	23,722	June–November 2016
2019	Drop and collect, paper form (74%) Online survey (25%) CATI (0.3%)	22,274	April–September 2019

Note: CATI stands for Computer Assisted Telephone Interview.
Source: NDSHS 2019.

Mode effects

Selected individuals could choose to complete the survey via one of three tools (also known as the 'mode') in the 2016 and 2019 surveys—paper form, an online form or via a telephone interview. Certain types of respondents are more likely to choose to complete via the online mode but are likely to provide the same responses if they completed via paper form. However, it is possible that the mode that is used by a respondent could have an impact on the actual information provided, introducing a bias in the data and affecting comparability of data obtained via the different methods.

In 2016 and 2019, respondents who elected to use the online form had different demographic characteristics to respondents who used the paper form (see Table TI.5). Not only do demographic characteristics of respondents affect their choice of survey mode, they are also known to affect their likelihood of reporting drug use. Respondents using different modes were significantly different to each other in terms of sex, age, employment status, highest level of education attained, marital status, main language spoken at home, household status, remoteness, socioeconomic area and sexuality. These demographic characteristics need to be taken into account when assessing potential mode effects.

In 2016, it was observed that the mode that was used by a respondent had an impact on the actual information provided—people were less likely to report being daily smokers, or recently using cannabis, cocaine or pain-killers/opioids, if they completed the survey online. This mode effect may represent a bias in responses, and as the proportion of people using each mode has changed in 2019, it is important to monitor the prevalence of mode effects in the data.

Fourteen variables were tested for mode effects: daily smoking status (1 variable), alcohol consumption (3 variables), recent use of illicit drugs (8 variables) and drugs used for non-medical purposes (2 variables). Some drugs, such as kava and GHB, had too few recent users to conduct analysis. For all variables with sufficient sample size, the impacts of the significant socio-demographic variables were first tested, to understand their impacts on the responses.

Following this testing, logistic regression analysis was used to test for mode effects, controlling for the known demographics of respondents. After adjusting for significant socio-demographic factors, significant differences in prevalence rates between the online and paper respondents were found in 10 out of the 14 variables studied.

Modelling suggested no significant difference between paper and online completion for drinking status and lifetime risk status for alcohol consumption; recent use of inhalants; and recent injecting drug use.

For a majority of drug types, people were slightly more likely to report use in the paper form than the online form. The effect was particularly strong for use of meth/amphetamines: after controlling for socio-demographic factors, people were more than twice as likely to report using meth/amphetamines in the previous 12 months in the paper form than online. Similar, although weaker, mode effects were seen for daily smoking status; recent non-medical use of pain-killers/pain-relievers and opioids, and tranquillisers; and recent use of cannabis, cocaine, hallucinogens, ecstasy, and ketamine. The difference in the mode effect of paper and online forms may have had an impact on these estimates. However, other respondent characteristics that were not controlled for in the modelling could also have contributed to or caused these effects.

A significant effect in the opposite direction was observed for single occasion alcohol risk, where people who completed the online form were more likely to report drinking at risky levels than people using the paper form. However, the effect was the smallest observed, and given that the other alcohol variables were not significantly affected by survey mode, this effect should be interpreted with caution.

Removing the observed demographic effects still results in significant differences between online and paper responses. Part of this difference is likely to be due to mode effects:

- Questions are presented differently online—the text is the same, but only one question is presented at a time, and skip logic is automatically applied so that online respondents will not read or respond to questions that do not apply to them.
- Additionally, the two modes may generate different privacy concerns. People could complete a paper form that was delivered to, and retrieved in a sealed envelope from their home address, or an online form that may come from a computer they have logged into with an active internet connection. Respondents may have different privacy concerns about these different methods which may have an impact on the mode of completion they select.

However, differences in responses may also be partly caused by cohort effects:

- Not all demographic variables were asked for in the NDSHS, and people using the online form are likely to differ from people using the paper form in ways that are unknown.
- The model can only control for the explanatory information included in it. If there is relevant data missing from the model some of the reported mode effect could still be due to a cohort effect.

These differences between paper and online responses should be taken into account when considering 2019 estimates of drug use prevalence, especially when comparing them to other years. In 2016, the same multi-mode approach was used, and 22% of people completed the survey online, compared to 25% in 2019 (see Table TI.1). This increase in online respondents may have caused a slight decline in the prevalence estimates for smoking and illicit drug use, although not enough to account for the significant declines seen in daily smoking and non-medical use of pain-killers/pain-relievers and opioids. Older surveys used various collection methods, so caution should be exercised when comparing 2019 results to previous years.

Weighting

The sample was designed to provide a random sample of households within each geographic stratum. Respondents within each stratum were assigned weights to overcome imbalances arising in the design and execution of the sampling, as well as differences in response rates and to correct for over-sampled strata. The main weighting took into account geographical stratification, household size, age and sex.

The population estimates used for the weighting were based on the latest available age/sex profile using the latest published ABS Estimated Resident Population data (3101.0 – Australian Demographic Statistics, Mar 2019). The 3101.0 series provided the necessary level of age breakdown by State/Territory, but not by stratum. The stratum level population estimates were projected from the regional ERP series 3235.0 – Regional population by Age and Sex, Australia, 2018.

All estimates in the report are based on the weighted sample. Table TI.2 provides a comparison of the age and sex profile of both the sample and the estimated resident population.

Table TI.2: Comparison of the 2019 unweighted sample and estimated population distributions (per cent)

	Unweighted 2019 sample			Population estimates (weighted 2019 sample)		
Age	Males	Females	Total	Males	Females	Total
14–17	1.8	1.6	3.4	3.0	2.8	5.8
18–24	3.4	3.6	7.1	6.4	5.4	11.8
25–29	2.7	3.9	6.5	4.0	4.7	8.7
30–39	7.2	9.2	16.3	8.5	8.6	17.1
40–49	7.0	8.9	15.9	8.0	8.2	16.3
50–59	7.1	8.8	15.9	7.5	7.7	15.2
60–69	8.7	9.5	18.1	6.2	6.4	12.6
70–79	5.5	6.1	11.6	3.8	4.0	7.8
80+	2.3	2.8	5.1	1.9	2.8	4.8
14+	45.6	54.4	100	49.4	50.6	100

Note: Population estimates are based on ABS Estimated Resident Population data (3101.0 - Australian Demographic Statistics) and Population by Age and Sex data (3235.0 - Regional Population by Age and Sex, Australia).

Source: NDSHS 2019, ABS 2019.

Response rates

Overall, contact was made with 45,481 in-scope households, from which 22,274 questionnaires were categorised as being complete and useable. This represented a response rate for the 2019 survey of 49.0%. This was lower than the response rate for the 2016 survey (51.1%), but similar to the 2013 response rate of 49.1% (Table TI.3).

The response rate for the NDSHS was calculated using the total number of dwellings where contact was made as the number of eligible reporting units in the sample. If the entire eligible sample for the 2019 NDSHS is used—that is, it includes all cases of non-contact as part of the denominator (67,696 dwellings)—the response rate is reduced to 32.9%, meaning that about two-thirds of the sample did not receive, respond to or return a completed, useable questionnaire. Again, this is lower than the 2016 survey (34.7%), and similar to the 2013 survey (32.7%).

Table TI.3: Sample disposition and participation rates, by sample, 2010 to 2019

Disposition	2010	2013	2016	2019
Original sample	**81,708**	**75,992**	**70,935**	**69,741**
Not residential	*1,786*	*1,506*	*1,080*	*908*
Selected respondent not available	*604*	*789*	*784*	*648*
Other ineligible	*175*	*711*	*550*	*489*
Total out-of-scope households	2,565	3,006	2,414	2,045
Eligible sample	**79,143**	**72,986**	**68,521**	**67,696**
Less households not contacted	26,453	24,407	22,034	22,215
Eligible sample contacted	**52,690**	**48,579**	**46,487**	**45,481**
Refusals	*13,450*	*13,945*	*12,955*	*14,125*
Foreign/no English	*979*	*1,063*	*760*	*644*
Incapacitated	*370*	*341*	*237*	*220*
Other non-response	*325*	*258*	*797*	*833*
Total eligible respondents who did not complete	15,124	15,607	14,749	15,822
Less questionnaire not returned/unusable	10,918	9,117	7,966	7,385
Total completes	**26,648**	**23,855**	**23,772**	**22,274**
Proportion of the eligible sample contacted that completed the survey (per cent)				
Response rate	50.6	49.1	51.1	49.0

Source: NDSHS 2019.

Response rate differences by strata

Response rates tend to vary depending on the area that the households are located. This is important to take into account when interpreting jurisdictional results. A lower response rate may increase non-response bias, as a higher proportion of people opt out of completing the survey, and there may be differences between those people who refused to participate and the people who agree to complete the survey.

In 2019, the lowest response rate by a large margin occurred in Sydney, at 38.0%. This was significantly lower than the 2016 Sydney response rate of 41.8%, and substantially lower than the next lowest response rates in Brisbane (46.8%) and Melbourne (46.9%). Conversely, high response rates were obtained in Remainder Northern Territory (67.8%), Darwin (64.5%), and Hobart (63.2%). See Table TI.4 for further results.

Table TI.4: Response rates by state, 2010 to 2019 (per cent)

State	2010	2013	2016	2019
NSW	45.8	45.9	45.7	42.0
Vic	48.2	46.6	48.6	47.8
Qld	53.6	50.7	51.9	48.3
SA	53.5	48.4	56.4	56.8
WA	55.0	51.3	57.8	53.3
Tas	61.3	60.8	62.4	60.4
NT[(a)]	57.3	57.8	57.9	62.9
ACT	58.9	57.0	58.7	52.7

(a) Data from the 8 Indigenous remote communities interviewed in the Northern Territory in 2019 are excluded to maintain comparability over time.

Source: NDSHS 2019.

Non-response bias and non-sampling error

Survey estimates are subject to non-sampling errors that can arise from errors in reporting of responses (for example, failure of respondents' memories, incorrect completion of the survey form), the unwillingness of respondents to reveal their true responses, and higher levels of non-response from certain subgroups of the population.

The estimation methods used for the 2019 results take into account non-response and adjust for any underrepresentation of population subgroups in an effort to reduce non-response bias.

A limitation of the survey is that the data are self-reported, and people may not accurately report information relating to illicit drug use and related behaviours because these activities may be illegal. This means that results relating to illicit drugs may be under-reported. For many illicit drugs, any biases are likely to be relatively consistent at the population level over time, so would not have much of an effect on trend analysis. Changes to legislation involving drugs may lead to an increase or decrease in self-reported drug use, not only because of changes in drug taking behaviours, but also due to changes in how likely people may be to report those behaviours. However, legislation protecting people's privacy and the use of consistent methodology over time means that the impact of this issue on prevalence is limited.

However, some behaviours may become less socially acceptable over time which may lead to an increase in socially desirable responses rather than accurate responses. Media reporting stigmatising a drug may lead to under-reporting of use of that drug (Chalmers et al. 2014). Any potential increase in self-reported socially desirable behaviours needs to be considered when interpreting survey results over time.

Sampling error

All proportions that are calculated from survey data are estimates rather than true population proportions. This means they have a margin of error due to only a sample of the population being surveyed. This is called sampling error.

There are different ways of measuring sampling error associated with an estimate from a sample survey. The 2019 NDSHS uses both relative standard error and margin of error; these are included in the supplementary tables.

Relative standard error

The standard error (SE) is a measure of the dispersion of estimates calculated from all possible random samples from the same population. This can be estimated using the achieved single sample. The relative standard error (RSE) is the SE expressed as a percentage of the estimate, and provides an indication of the size of the SE relative to the size of the estimate.

Results subject to an RSE of between 25% and 50% should be considered with caution and those with an RSE greater than 50% should be considered unreliable for most practical purposes. Estimates that have an RSE of between 25% and 50% are marked in the supplementary tables with *; those with an RSE between 50% and 90% are marked with ** and those with an RSE greater than 90% have not been published. Only estimates with an RSE of less than 25% are considered sufficiently reliable for most purposes.

Margin of error

The Margin of Error (MoE) describes the distance from the population value that the sample estimate is likely to be within, at the 95% level of confidence. This means that the "true" proportion for the entire population would be within the margin of error around the reported estimate for 95% of possible samples.

Significance testing

When comparing two different estimates, it is important to determine whether the difference is likely to reflect a true difference in the underlying population or whether it may be due to sampling error. This process is called 'significance testing'. There are a number of variables that are used to calculate whether two estimates are significantly different—the size of the difference, the variability in the sample collected, which indicates the level of sampling error present, and the size of the sample. In this report, a difference is deemed to be statistically significant if the chance of seeing the observed difference under the null hypothesis was less than 5% ($p < 0.05$).

All time series tables, unless otherwise specified, have been tested for statistically significant changes between 2016 and 2019, but not for other comparisons (such as differences between sexes or between age groups). All increases or decreases described in the 2019 NDSHS report are statistically significant at the 95% level of confidence (unless otherwise specified). If a difference is statistically significant, it has been marked with a '#' symbol in the supplementary tables.

Sometimes, even large apparent differences may not be statistically significant. This is particularly the case in breakdowns of small populations because the small sample size means that there is not enough power to identify even large differences as statistically significant. Conversely, with a sufficiently large sample, small changes are more likely to be statistically significant.

Sample representativeness

No sample will ever be fully representative of the population, but if the sample is carefully designed and implemented, it will still be possible to draw conclusions about characteristics of the population. To assist in understanding the level of representativeness, the 2019 sample was compared to the known benchmark of the 2016 Census.

Comparison to the 2016 Census

Tables TI.7 and TI.8 show the weighted and unweighted estimates of respondents obtained from the survey and compare these with the 2016 Census. A comparison between the 2016 Census and the weighted NDSHS sample indicates that:

- a higher proportion of employed and unemployed people were captured in the sample, while a lower proportion of people not in the labour force were captured
- completion of Year 12 and post-graduate qualifications were over-represented
- couple families were over-represented, while single person households and single parent households were under-represented
- married people were over-represented
- people who did not speak English as their main language at home were under-represented
- outer regional geographical areas were slightly under-represented.

Comparison to 2016 sample

In comparison to the unweighted 2016 sample:

- a higher proportion of employed people responded to the 2019 survey
- a higher proportion of people that had completed year 12 responded to the survey in 2019, while a lower proportion of people whose highest year of school completion was year 10 or below responded
- a lower proportion of people whose highest qualification was a diploma or advanced diploma completed the survey in 2019.

New methodology strategies introduced in 2019

Interviewing in remote Indigenous communities

In 2019, the stratified, multistage random sampling of SA1s across Australia returned 8 remote Indigenous communities. Despite a random sampling technique being applied, by chance, all 8 Indigenous communities selected were located in the Northern Territory. Residents within those communities primarily spoke Aboriginal and/or Torres Strait Islander languages. In previous survey waves these SA1s would have been replaced by areas where English is predominantly spoken at home, as the NDSHS uses a self-completion questionnaire (completed via paper form or online survey) and was not available in languages other than English.

Instead of replacing these areas in the 2019 NDSHS, the decision was made to invest in surveying these communities as they are part of the Australian population and the collected data is likely to be of benefit to the people living there. The issue of all randomly selected communities being in one jurisdiction was noted. However, a decision was made to proceed as their selection was a result of the overall sampling strategy for the survey. Ensuring a broader selection of remote Indigenous communities would have required changes to the overall sampling frame for the survey, which were beyond the scope of this project and could raise issues about comparability of methodology with previous surveys.

While the respondents from these communities do not form a representative sample of Indigenous Australians, or of people living in remote Indigenous communities, the inclusion of their data does improve the overall representativeness of the results in the 2019 NDSHS. However, the methodology and data collection in these communities was different to the remaining sample, meaning that the results are not directly comparable. New field procedures were implemented and the following variations to the methodology were required to survey remote Indigenous communities:

- Members of the community were notified about the presence of the interviewer and the purpose of the survey prior to fieldwork commencing.
- As the survey was not translated, an Indigenous interviewer and a local interpreter were used and provided assistance as needed to help respondents complete the survey.
- The method for selecting each households/respondent was different as the usual household and respondent selection procedures were not possible to implement in these areas.
  - Due to the interviewer only being granted access to certain areas/parts within each community, the interviewer was unable to attempt contacting/approaching every third household in the area, and unable to select the respondent with the last birthday within each household.
  - In some cases, the community provided a purposive selection of respondents and in other cases, the interviewer/chaperone/interpreter purposively selected respondents. The interviewer/member of the community attempted to select a mix of respondents, in terms of age and sex.
- As a requirement of conducting the survey, respondents in these communities were reimbursed for their time spent completing the survey.

Comparability of the data in the 2019 NDSHS

Due to the differences in the sample selection process, and the unique circumstances of each of the communities, the data collected from the 8 remote Indigenous SA1s is not comparable to the data collected from Indigenous people surveyed in non-remote Indigenous communities or the non-Indigenous sample.

As this is the first year that these communities have been surveyed, including these data is likely to cause some differences between 2019 results and results from previous years. However, they also make the national results more representative of the Australian population. The number of respondents from remote Indigenous communities is small compared to the rest of the national sample size (144 compared with 22,130), so observed changes in national results since 2016 are likely to be caused by factors other than their inclusion.

However, smaller disaggregations, such as results pertaining to the Northern Territory, or to Indigenous Australians, are likely to be altered by the inclusion of data from remote Indigenous communities. To preserve trend data and comparisons between 2016 and 2019, data from remote Indigenous communities are excluded from results disaggregated by jurisdiction or Indigenous status in the report.

Questions presented in grid and non-grid formats

Some questions in the NDSHS have historically been presented in a "grid" format, such as question E16:

E16. Please record how often in the last 12 months you have had each of the following number of standard drinks in a day?
(Mark one response for each row below. Please ensure that you have marked a response for each amount, even if your answer is "Never" for that row.)

	Every day	5 – 6 days a week	3 – 4 days a week	1 – 2 days a week	2 – 3 days a month	About 1 day a month	Less often	Never
20 or more standard drinks a day	☐	☐	☐	☐	☐	☐	☐	☐
11 – 19 standard drinks a day	☐	☐	☐	☐	☐	☐	☐	☐
7 – 10 standard drinks a day	☐	☐	☐	☐	☐	☐	☐	☐
5 – 6 standard drinks a day	☐	☐	☐	☐	☐	☐	☐	☐
3 – 4 standard drinks a day	☐	☐	☐	☐	☐	☐	☐	☐
1 – 2 standard drinks a day	☐	☐	☐	☐	☐	☐	☐	☐
Some alcohol but less than 1 standard drink a day	☐	☐	☐	☐	☐	☐	☐	☐
None, i.e. no alcohol at all in a day	☐	☐	☐	☐	☐	☐	☐	☐

Presenting questions in this format saves on space in the survey form, but may also make the questions more difficult for respondents to understand. These questions can require a substantial amount of cleaning, and often have a large amount of missing data. However, changing the format of these questions may cause a break in the time series data.

In 2019, two grid type questions (E15 and E16) were split into individual questions for half of the online survey respondents, selected at random. The aim was to assess whether responses to the non-grid questions would be substantially different to the grid format questions, and whether these responses would need less cleaning.

Changes to sample weights

Initial analysis indicated that people did respond differently when the questions were presented individually (i.e. not in a grid). This presented an issue for the 2019 NDSHS alcohol results. Question E16 is used in the calculation of a person's drinking status, and in quantifying how much a person drinks for the purposes of calculating lifetime and single occasion risk according to the NHMRC 2009 alcohol guidelines. If people answer these questions differently due to the question presentation, then it can affect comparisons to historical drinking results.

To prevent this from affecting the comparability of the results to trend data, responses from non-grid responses were excluded from the analysis in the 2019 NDSHS report and supplementary tables. However, simply removing these responses could cause a systematic bias in the results. To avoid this issue, a new set of weights was introduced, where sample weights from non-grid E16 respondents were re-distributed among grid-style E16 respondents within the same strata. All analysis involving the Australian guidelines to reduce health risks from drinking alcohol use these alternate weights, rather than the standard person weights.

Future surveys

Changing questions from a grid to non-grid format appears to affect how some people answer these questions. However, if the data quality is improved or it provides a truer reflection of people's behaviours, then consideration needs to be given to the question format that should be used in future surveys, despite potentially causing a break in time series analysis.

Alcohol consumption is often underreported in self-report surveys, an effect that has been shown to occur with the NDSHS (Livingston & Callinan 2015). Further analysis of E16 results is required to make an assessment on which question format captures better data for use in future surveys. All data from questions E15 and E16, in grid and non-grid formats, are available to interested researchers through the Confidentialised Unit Record File. For further information, see the section "Access to the CURF".

Efforts to improve response rates

Several other strategies were also used in 2019 in an attempt to minimise cases of non-contact and non-response by the originally selected respondent.

Prize draw
In 2019, during the initial survey placement, respondents were informed that if they completed the survey, they would be eligible to enter 1 of 20 prize draws for a $500 EFTPOS card. Respondents could choose to opt out of the prize draw.

Follow-up phone call with selected respondent
In previous survey waves, if an interviewer made contact with a person in the dwelling but the selected survey respondent (the person aged 14 or older who had the most recent birthday) was not present, the questionnaire and information about the survey was left to be given to the selected respondent when they returned.

In 2019, the same process was followed, but the interviewer also collected a phone number for the selected respondent and attempted to call them up to two times to explain the purpose of the survey and how to complete it. This process can improve the number of returned surveys in two ways:

1. The selected respondent is told about the purpose and benefits of the survey, the prize draw and the privacy of the survey.
2. The selected respondent may also refuse the survey, allowing for a new survey to be distributed.

Questionnaire changes in 2019

The 2019 questionnaire was modelled on the 2016 version, to maintain maximum comparability and preserve trend data. However, some refinements were made to ensure that old questions remained relevant, and new questions could be implemented to address contemporary issues in the AOD sector. All changes to the questionnaire were tested through cognitive interviews.

This section describes the major changes made to the survey that may be likely to impact interpretations of results in the report, or multiple supplementary tables. A full list of questionnaire changes is available in the 2019 NDSHS technical report, provided by the fieldwork provider and is available on request.

Section A (Perceptions)
- Changed examples of 'Pain-killers/Pain-relievers and Opioids' from "Panadeine Forte, Neurofen Plus, Mersyndol, Disprin Forte, Morphine, Oxycodone" to "Oxycodone, Oxycontin, Endone, Morphine, Pethidine, Fentanyl, Durogesic, Tramadol, Codeine products such as Panadeine Forte". This affects questions A1, A2, A3 and A4.

Section B (General Health)
- Removed the 'Over the counter Pain-killers/Pain-relievers and Opioids' response option in question B3.

Section D (Tobacco)

- Updated response codes for question D22 (behaviours done to reduce or quit smoking), including use of e-cigarettes to help cut down or quit smoking tobacco cigarettes.
- Included a new question (D27) on the respondent's smoking status when they first used an electronic cigarette. This was done to assist in understanding whether respondents who were ex-smokers and also used e-cigarettes began using e-cigarettes before they quit or after they quit, and how many people had tried e-cigarettes despite never smoking tobacco cigarettes.

Section E (Alcohol)

- Included a new response code in question E10 (where do you usually obtain your alcohol) 'Brew it myself'.
- In question E16, changed final response codes from 'Less than 1 standard drink per day' to 'Some alcohol but less than 1 standard drink a day, and 'None' to 'None, i.e. no alcohol at all in a day'.
- Included a new question (E18) on when the respondent most recently had an alcoholic drink. This was included so that data could be captured from a higher proportion of drinkers. Previously this only asked about a drinking occasion if it occurred "yesterday". Wording in subsequent questions was also changed.
- Removed questions E21, E22, E23, E24, E25 and E27. These questions were taken from the AUDIT, which was replaced in 2019 with the ASSIST-Lite, which was included because there was interest in understanding what proportion of the population may be at risk of problem drug use and may need access to treatment services.
- Included a new question (E21) on whether respondent had tried to cut down, control or stop their drinking (ASSIST-Lite).
- Included a new question (E22) on whether anyone had expressed concern about the respondent's drinking (ASSIST-Lite).
- In question E25, removed the reference to 'you' from the question text, so that the question asks only if someone else had been injured because of the respondent's drinking.

Section F (Pain-killers/Pain-relievers and Opioids)

- Updated the examples of drugs included in the Section F introduction, from "Panadeine Forte, Nurofen Plus, Mersyndol, Disprin Forte, Morphine and Oxycodone" to "Oxycodone, Morphine, Codeine products such as Panadeine Forte".
- Removed "over-the-counter codeine products" from question F4b, and updated the examples of drugs used.
- Included the term 'non-medical' in question text for question F5, and updated the response codes to include a time period for comparability to the ASSIST-Lite:
  - Yes, in the last 3 months
  - Yes, in the last 12 months but not the last 3 months
  - No
- Included a new question (F12) on whether anyone had expressed concern about the respondent's non-medical use of Pain-killers/Pain-relievers and Opioids, from the ASSIST-Lite.

Section K (Meth/amphetamine)

- Updated question K10 to include number of tablets/pills/capsules.
- Included a new question (K14) on whether anyone had expressed concern about the respondent's use of Meth/amphetamine for non-medical purposes, from the ASSIST-Lite.

Section L (Marijuana/Cannabis)

- Included a new question (L7a) on whether the respondent had a strong craving, desire or urge to use Marijuana/Cannabis during the last 3 months, from the ASSIST-Lite.
- Included a new question (L7b) on whether anyone had expressed concern about the respondent's use of Marijuana/Cannabis, from the ASSIST-Lite.
- In question L12 (how have you used marijuana/cannabis), included a new response code 'Inhaled through a vaporising device'.
- Included a new question (L14) about whether the respondent had used Marijuana/Cannabis for medical purposes in the last 12 months.
- Included a new question (L15) about whether the medical Marijuana/Cannabis was prescribed by a doctor.

Section M (Heroin)

- Updated the response codes in question M4 to include a time period for comparability to the ASSIST-Lite:

– Yes, in the last 3 months

– Yes, in the last 12 months but not the last 3 months

– No

- Included a new question (M9) on whether anyone had expressed concern about the respondent's use of Heroin, from the ASSIST-Lite.

Section P (Hallucinogens)

- Updated the examples of drugs included in the Section P introduction.
- Included a new question (P8) on the forms of Hallucinogens the respondent had used.

Section TT (Other Synthetic Drugs)

- Section heading was updated from 'Other Psychoactive Substances" to 'Other Synthetic Drugs'.
- Section heading description and examples were updated.
- Included a new free-text question (TT3) on types of Other Synthetic Drugs/Emerging Psychoactive Substances used.

Section W (Experiences Using Illicit Drugs)

- The Experiences Using Illicit Drugs section was created from questions that were previously asked in Sections X and Y.
- Included a new question (W2B) asking about 'other' reasons the respondent continued to use illicit drugs. An additional response option was also added to W2A and W2B.

Section Z (Lifestyle)

- The list of response options in question Z8B, Z8C and Z8D (substances used while pregnant/ breastfeeding) were modified to include Marijuana/Cannabis as a stand-alone response code.

Section YY (Policy Support)

- Included two new statements in question YY1 about alcohol pricing correlating to alcohol content, and displaying health warnings on alcoholic containers.
- Updated the question text in question YY6 to refer to illicit drugs and harm minimisation, and changed the measures to refer to pill testing and supervised drug consumption facilities/rooms.

Questions relating to activities while under the influence of alcohol or illicit drugs

The NDSHS asks respondents to indicate whether they had undertaken any activities under the influence of alcohol, or while under the influence of illicit drugs. These activities include driving a motor vehicle, operating a boat, going to work, and verbally or physically abusing someone, among others.

These questions were unchanged between 2010 and 2016, and results for those years can be found in tables 4.36 and 4.37 of the 2016 NDSHS detailed findings available at www.aihw.gov.au/reports/illicit-use-of-drugs/2016-ndshs-detailed/data. In 2019 these questions were moved, and slightly altered. The questions were moved in an attempt to reduce respondent burden by only asking these questions to respondents who had drank alcohol or used illicit drugs in the previous 12 months. In the 2010, 2013 and 2016 versions of the survey, the placement of these questions meant the question was generally asked of all respondents, even if they had not consumed alcohol or used an illicit drug, and relied on the respondent to select the response option "I have not drank alcohol/used illicit drugs in the previous 12 months".

Moving these questions provided an opportunity to improve some of the known issues with how respondents answered these questions. Response options that were no longer relevant were removed and the format/structure of the questions was simplified (see 2016 NDSHS and 2019 NDSHS questionnaires for presentation of these questions). Previously, the questions were presented in a list, and respondents had to select 'yes' or 'no' for each activity. In the latest survey, the questions were only asked of people that had used alcohol and illicit drugs respectively, and the options were presented in a list with the instruction to "select all that apply". An option for "none of the above" was also added.

Moving these questions and/or modifying the format of these questions changed how respondents answered these questions. The 2019 survey estimates were systematically and significantly different to results seen in the previous three survey iterations. There were fewer people admitting to undertaking activities while under the influence of alcohol with the proportion for most activities declining by more than half. The proportion of respondents admitting to undertaking various activities while under the influence of illicit drugs also declined, but to a lesser extent. After discussion with the 2019 NDSHS Technical Advisory Group, it was agreed that the changes to these questions meant that the data were no longer comparable and resulted in a break to the time series. The AIHW has decided not to publish this data in 2019, as doing so may lead to incorrect conclusions that the data do not support. The questions will be returned to their previous format in the next iteration of the NDSHS.

Questions relating to alcohol use during pregnancy

The questions on drug use during pregnancy were updated in 2013 to provide a more accurate picture of drinking during pregnancy. However, these extra questions raised issues of interpretation of the way pregnant woman responded in the survey. Each question collects information about slightly different concepts which should be taken into consideration when interpreting these results. There have been no changes to the pregnancy questions since 2013.

Since 2004, the NDSHS has asked pregnant women the following question about their alcohol use 'In the last 12 months when you were pregnant, in general, did you drink more, less or the same amount of alcohol compared to when you were neither pregnant nor breastfeeding?' Pregnant women were able to select one of the following options: More, less, same amount, don't drink alcohol.

In the 2013 and following surveys, women were also asked whether they had used alcohol before and/or after knowledge of their pregnancy. The way in which pregnant women interpreted and answered these 2 questions differed and as such, the proportions reporting that they did use alcohol during pregnancy were different.

There are 2 plausible reasons as to why these results differ. Faced with a question about drinking 'in the last 12 months' it is not clear how a respondent who abstained for most of their pregnancy but did drink for a part of their pregnancy (before they knew they were pregnant) should respond. The pattern of responses suggests that some women answer in terms of social acceptability—it is more acceptable to acknowledge drinking before knowledge of pregnancy, but they felt that this did not 'count' as drinking during pregnancy.

This affected how some women responded to the question that asked if they drank more, less or the same amount of alcohol (see Table 8.14). While some women who said they drank alcohol before they knew they were pregnant said that they drank less, other pregnant women answered this question differently and said they 'don't drink alcohol'. Given that some pregnant women interpreted the question differently about whether they drank more, less, or the same amount, compared to when they were not pregnant, the measure about what women consumed before and after knowledge of pregnancy is likely to provide the most accurate estimate on the amount of alcohol consumed during pregnancy (see Table 8.16). However, Table 8.14 is useful for monitoring trends over time as this question has remained consistent since 2004.

Analysis changes and updates in 2019

Re-analysis of 2001–2007 data

In previous survey iterations, results from years earlier than 2010 were imported from published tables, and merged with results from later years that were analysed using SAS as the statistical software package. In 2019, all data tables involving trend data from 2001—2007 were reanalysed in SAS, keeping the process consistent with results from 2010 onwards. A number of discrepancies were discovered during the re-analysis of past data sets, and some other estimates have been updated or revised. Results in 2019 should be considered correct in cases where they conflict with previously published results.

Revisions to alcohol estimates

The code used to calculate a person's drinking status (whether a survey respondent is identified as a daily drinker, an ex-drinker etc.) is not based on a response to a single question. It is instead derived from several questions throughout Section E (Alcohol). The derivation code was reviewed in 2019 and inconsistencies in the code were identified.

These inconsistencies occur where:

- there is either missing data (some questions are answered in the Alcohol section but not all of them) or
- responses are contradictory (e.g. answer 'yes' to having an alcoholic drink of any kind but responses to the remaining alcohol questions indicate they have not drank).

In such cases, a person's self-perception of their drinking status was generally used to determine their drinking status. However, in 2019 it was observed that there was often a misalignment in a person's behaviour and their perception of their behaviour.

This issue was discussed with the Technical Advisory Group and it was agreed that a more conservative approach to calculating a person's drinking status should be taken. Data for people with these inconsistencies are now reported as missing, rather than trying to impute their drinking status based on answers to questions that do not involve drinking frequency.

Additionally, it was noted that a large proportion of drinkers were being categorised as 'Less than weekly' drinkers. In the 2019 calculations, an additional frequency category was included, disaggregating the less than weekly drinkers into at 'At least monthly but not weekly' and 'Less often than monthly' to provide further information on frequency of alcohol consumption among occasional drinkers.

The calculation of a person's drinking status also affects alcohol risk variables—lifetime and single occasion risk. The impact on the majority of the estimates is minor (changed by less than 1 percentage point), but the historical proportions published in 2019 will not match previously published data. However, the trends in alcohol consumption from previous years have remained unchanged.

Revisions to physical abuse estimates

Estimates of physical abuse by someone under the influence of alcohol or illicit drugs have been revised following a review of the methodology for their calculation in 2019. The revised estimates have resulted in slightly fewer people reporting that someone under the influence of alcohol or illicit drugs had physically abused them.

Logic edits are applied to the NDSHS data to resolve conflicts in responses to questions arising from inconsistencies in how people respond to questionnaire instructions and skip patterns. These are particularly an issue for questions completed in the paper mode as skips are built-in and automatically applied in the online and telephone modes.

Respondents to the survey are asked if they have been physically abused in the previous 12 months by someone under the influence of alcohol or illicit drugs (questions Y1 and Y9). They can answer either 'yes' or 'no' to these questions. Subsequent questions (questions Y8 and Y16) ask if any of the incidents of physical abuse involved sexual abuse, with the response options of 'yes', 'no' or 'not relevant (not physically abused)'. A respondent who has not experienced physical abuse would not usually be asked the question about sexual abuse, and in the online and telephone survey, this question is automatically skipped. But the nature of a self-complete paper form relies on the respondent to follow skips and only answer questions that are applicable to them and select the appropriate response option.

A conflict in responses results when a respondent answers 'no' or does not answer the question about physical abuse in the previous 12 months (questions Y1 and Y9), and answers no to whether that incident of physical abuse involved sexual abuse (questions Y8 and Y16). If they answer this secondary question as 'no', there is some uncertainty around whether an incident of physical abuse had occurred.

The edit applied to the 2010, 2013, and 2016 surveys resolved this conflict by revising the responses provided at Y1/Y9 to record an incident of physical abuse if a 'yes' or 'no' response was provided at Y8/Y16. In 2019, after a review of the edit methodology, and consultation with the Technical Advisory Group, a decision was made to revise this edit and change the response provided at the sexual abuse question (Y8/Y16) from 'no' to 'not relevant (not physically abused)' where the respondent answered 'no' to the first question about physical abuse (Y1/Y9) or to 'missing/ not answered' if no response was provided to the physical abuse question (Y1/Y9).

These revisions ensure that the application of the edit methodology is consistent across all modes of completion of the survey and gives primacy to responses to the first question rather than the secondary dependant question.

The change in methodology for calculating these estimates is applicable to data from the 2010, 2013, and 2016 surveys as well as 2019 data. Revised estimates relating to physical abuse will not match previously published data for 2013 and 2016. Revised estimates are not available for 2010 and the previously published 2010 estimates should not be used.

Terminology

Unbranded and illicit branded tobacco

Illicit tobacco includes both unbranded tobacco and branded tobacco products on which no excise, customs duty or GST was paid. Unbranded tobacco (commonly known as chop-chop) is finely cut, unprocessed loose tobacco that has been grown, distributed and sold without government intervention or taxation (ANAO 2002).

Illicit branded tobacco products include overseas-produced cigarettes (or packets of smoking tobacco) designed to comply with packaging laws in countries other than Australia but which make their way into Australia, without payment of customs duty, for sale to consumers in Australia.

Electronic cigarettes

Electronic cigarettes (also known as e-cigarettes, e-cigs, electronic nicotine delivery systems, electronic non-nicotine delivery systems, alternative nicotine delivery systems, personal vaporisers, e-hookahs, vape pens or vapes) are devices designed to deliver nicotine and/or other chemicals via an aerosol vapour that the user inhales (Greenhalgh & Scollo 2018). Most e-cigarettes contain a battery, a liquid cartridge and a vaporisation system and are used in a manner that simulates smoking (ACT Health 2019).

The 2019 NDSHS gives the following definition for electronic cigarettes, and all questions relating to electronic cigarette use are asked in reference to this definition.

"Electronic cigarettes or e-cigarettes are personal vaporising devices where users inhale vapour rather than smoke. The vapours usually contain flavourings and may contain nicotine as well".

This definition is broad enough to capture the use of most vaporising devices, but does not include heated tobacco products (sometimes referred to as heat-not-burn products). The 2019 NDSHS does not contain any questions about heated tobacco products.

Alcohol risk

2009 NHMRC guidelines

The alcohol risk data presented in the report and supplementary tables are reported against *The Australian guidelines to reduce health risks from drinking alcohol* released by the National Health and Medical Research Council (NHMRC 2009). Results referencing "lifetime risk" report against Guideline 1, and "single occasion risk" results are reported against Guideline 2. See Box TI.1 for further details.

Box TI.1: The 2009 *Australian guidelines to reduce health risks from drinking alcohol*

In summary, there are 4 guidelines:

- Guideline 1—reducing the risk of alcohol-related harm over a lifetime. For healthy men and women, drinking no more than 2 standard drinks on any day reduces the lifetime risk of harm from alcohol-related disease or injury.
- Guideline 2—reducing the risk of injury on a single occasion of drinking. For healthy men and women, drinking no more than 4 standard drinks on a single occasion reduces the risk of alcohol-related injury arising from that occasion.
- Guideline 3—children and young people aged under 18 years. For children and young people aged under 18 years, not drinking alcohol is the safest option, with those under 15 years of age at greatest risk of harm.
- Guideline 4—pregnancy and breastfeeding. For women who are pregnant, planning a pregnancy or breastfeeding, not drinking is the safest option.

2020 NHMRC guidelines

In December 2019, the NHMRC released draft revised *Australian guidelines to reduce health risks from drinking alcohol* (NHMRC 2019). These provide an update to the 2009 guidelines, in line with the most recent and highest quality evidence available (see box TI.2 for further details).

At the time of writing the 2019 NDSHS report, these guidelines have not been finalised, but were available for public consultation. The 2019 NDSHS findings have been reported against the 2009 NHMRC guidelines. NDSHS data will be re-analysed according to the 2020 NHMRC guidelines, and released once the guidelines are finalised.

Box TI.2: The 2020 *Draft Australian Guidelines to Reduce Health Risks from Drinking Alcohol*

In summary, there are 3 guidelines:

- Guideline 1—For healthy men and women, drinking no more than 10 standard drinks per week, and no more than 4 standard drinks on any one day, reduces the risk of harm from alcohol-related disease or injury.
- Guideline 2—Children and young people under the age of 18 should not drink alcohol, to reduce the risk of injury and other harms to their health.
- Guideline 3—Women who are pregnant or planning a pregnancy should not drink alcohol, to reduce the risk of harms to their unborn baby. For women who are breastfeeding, not drinking is safest option for their baby.

Illicit use of drugs

In the 2019 survey, as in the past, respondents were asked about their use of certain drugs that have legitimate medical uses. These include pharmaceuticals (pain-killers/pain-relievers and opioids, tranquillisers/sleeping pills, steroids, and methadone/buprenorphine), as well as medical use of meth/amphetamines and cannabis. The focus of the survey and corresponding data are on the use of these drugs for non-medical purposes.

The term 'illicit drugs' in this report includes the following: illegal drugs (such as cocaine), pharmaceutical drugs (such as pain-killers/opioids) when used for non-medical purposes (strictly an illicit behaviour), and other substances used inappropriately such as inhalants (see Box TI.3 for further details). Note that where each of these licit/illicit drugs is central to the analysis, it is their illicit use that is analysed.

Box TI.3: Definition of illicit use of drugs

'Illicit use of a drug' can encompass a number of broad categories including:

- Illegal drugs—drugs that are prohibited from manufacture, sale or possession in Australia—for example, ecstasy, cocaine, heroin and amphetamine type stimulants.
- Pharmaceuticals—drugs that are available from a pharmacy, over the counter or by prescription, which may be subject to non-medical use—for example, opioid-based pain relief medications, opioid substitution therapies, benzodiazepines and steroids.
- Other psychoactive substances, legal or illegal, that can potentially be used in a harmful way—for example, kava, synthetic cannabis and other synthetic drugs, or inhalants such as petrol, paint or glue (MCDS 2011).

Medical use and recent use of cannabis

Prior to 2016, Australian law generally considered cannabis as an illegal narcotic. However, in February 2016, the *Narcotics Drug Act 1967* was amended and medicinal cannabis products are available for specific patient groups under strict medical supervision. For the purposes of the NDSHS, marijuana/cannabis is not considered a pharmaceutical, and is not grouped with non-medical use of other drugs such as pain-killers and steroids. However, in 2019, two new questions were included regarding medical use of cannabis:

- Have you used Marijuana/Cannabis for medical purposes in the last 12 months?
- Was the medical Marijuana/Cannabis prescribed by a doctor?

People that reported only using marijuana/cannabis for medical purposes in the previous 12 months, and only using it when it was prescribed by a doctor, are not included in "recent use of cannabis" results. They are however still included in lifetime use results, as the questions regarding medical use of cannabis only refer to the previous 12 months. All other respondents that indicated using marijuana/cannabis for any reason in the previous 12 months are included in recent use results.

ASSIST-Lite

The Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) was developed by the World Health Organisation (WHO) to identify people whose substance use may be causing them harm. The ASSIST screens for harmful use of alcohol and tobacco, as well as illicit drugs and pharmaceuticals.

ASSIST scores are categorised as 'low risk', 'moderate risk' or 'high risk'. High risk scores are likely to indicate a substance dependence issue, while moderate risk scores indicate substance use that may be hazardous or harmful to the person's health.

The ASSIST-Lite is an abridged version of the ASSIST, consisting of 3–4 questions for each substance. It was incorporated into the NDSHS in 2019 to estimate how many people may show signs of substance dependence, or a pattern of use that may be hazardous to their health. Results also have implications for alcohol and other drug treatment services in Australia: people that receive a high risk score are likely to require specialist assessment and treatment for their substance use, while people that receive a moderate risk score are likely to benefit from a brief intervention or education of some kind.

It is worth noting that the questions included in the 2019 NDSHS are not exactly the same as the questions in the ASSIST-Lite (see Ali et al. 2013 for further information on the ASSIST-Lite). However, all differences were confirmed with the authors of the ASSIST-Lite, to ensure the questions in the NDSHS were comparable. Existing questions were used where it was agreed that they were equivalent, and some were altered to include equivalent response options.

Update to ASSIST-Lite scoring thresholds for risky cannabis use

Choosing cut-off points for moderate and high-risk scores in the ASSIST-Lite requires consideration of the impacts they may have in clinical settings. If they are set too low, the tool will give false positives, classifying people as moderate or high risk when their use is not risky. However, if they are set too high, they risk missing some people whose substance use may be harmful to their health.

Previous evidence indicated that the cannabis scoring in the ASSIST, and as a result the ASSIST-Lite, was classifying many people as moderate risk when their use of cannabis was not risky (Davis et al. 2009). This is partially due to the increase in the prevalence of medical cannabis, which may be used frequently without causing harm to the person using it. The ASSIST-Lite is being updated to increase the threshold for moderate risk from a score of 1 to a score of 2, while a score of 3 remains high risk (R Ali 2020, pers. comm., 18 May 2020). Cannabis results published in the NDSHS report and supplementary tables may not be comparable to other ASSIST or ASSIST-Lite results published elsewhere.

Emerging psychoactive substances

Emerging psychoactive substances (EPS), or new psychoactive substances, include substances not controlled by the 1961 Convention on Narcotic Drugs or the 1971 Convention of Psychotropic Substances, or substances that are relatively new to the recreational drug market and have mind-altering effects. EPS often mimic the effects of existing illicit psychoactive drugs such as cannabis, ecstasy (MDMA) and LSD, or have a chemical structure very similar to existing illicit substances. Other names given to this group of drugs include: research chemicals, analogues, legal highs, herbal highs, bath salts, novel psychoactive substances and synthetic drugs (NDARC 2016).

In 2019, the section of the survey on EPS was changed substantially, in ways that may have affected responses received. These changes were made to ensure the examples of synthetic drugs aligned with current trends in emerging substances.

In 2016 and prior years, the section on EPS was referred to as “Other Psychoactive Substances”, and asked the following question:

- Have you ever used any Other Psychoactive Substances? Other Psychoactive Substances include a range of drugs. Some of the more well-known substances include DMT, Mephedrone, Methylone, Meow Meow, MDPV, 2C-B, NBOMe, 25C, BZP, MDAI.

In 2019, the section was changed to "Other Synthetic Drugs", and the description of the substances and examples were updated:

- Other synthetic drugs, also known as Emerging Psychoactive Substances, are drugs that often mimic the effects of more established illegal drugs. These are sometimes referred to as research chemicals, analogues, or bath salts. Some of the more well-known examples include Mephedrone, NBOMe, Methylone, Flakka, MDPV, 2C-I, BZP, Carfentanyl and Krokodil.

Notably, the 2019 definition includes more examples, but does not include DMT, as DMT is now included in the section on hallucinogens. Trends in EPS should be interpreted with caution.

Presentation of estimates

Proportions are shown as percentages rounded to 1 decimal place when less than 20%, and rounded to a whole number when over 20%. All data presented in the body of the report are raw proportions and have not been age-standardised (unless indicated).

Means and Medians

In some cases, estimates are presented as medians as well as means. This has been done for tables when there was a concern that the means may be skewed by outliers. For example, when considering the average number of cigarettes that people smoke per week, a vast majority of people report numbers between 0 and 100. However, a small number of people do report numbers much greater than 100.

As the mean is a summary of all of the data points, it will be distorted by very large outliers. In contrast, the median is simply a description of the mid-point of all of the data—close to half of the responses will be below the median, and half will be above. As a result, the median is not affected greatly by a small number of outliers.

Throughout the report, medians are only used in cases where the mean was noticeably affected by outliers or a skewed distribution. All means and medians in the report have been indicated.

Population estimates

Population estimates are calculated by applying survey prevalence rates to the relevant population count and were based on the June 2019 ABS estimated resident population (see Table TI.10). Population estimates are shown to the nearest 100,000 or 10,000, depending on the size of the estimate.

Household estimates

Household estimates are similarly calculated by applying survey prevalence rates to the relevant household counts, which are calculated from on the ABS release *3236.0 Household and Family Projections, Australia, 2016 to 2041*. Series II projections are used, assuming a linear increase from June 2019 to June 2020 to estimate the projected number of households in September 2019. Additionally, only estimates from the geographical strata are used, so other territories are excluded. This method matches the number of households used in the sample weighting. Household estimates are shown to the nearest 100,000 or 10,000, depending on the size of the estimate.

Age standardisation

The age profile of Australians varies across jurisdictions, other geographic classifications, such as remoteness areas, periods of time and/or population subgroups (for example, between Indigenous and non-Indigenous populations). Age-standardisation is a process that accounts for the differences in the age compositions of 2 or more populations, to allow comparisons between these populations independent of their age structure.

Age-standardisation is important in this publication, as drug-related behaviours can be age related. Age-standardisation accounts for this by allowing comparisons between groups independent of their differing age profiles. A standard age composition is used against which subpopulations are standardised, in this case the age composition of the 30 June 2001 Australian estimated resident population.

Age-standardisation was applied to state and territory data and some social characteristics data. These are presented as age-standardised percentages in Chapter 7 'Drug use in geographic areas' and Chapter 8 'Priority population groups'. Age-standardisation was not applied to the majority of data presented in the body of the report. Age-standardisation was undertaken using the direct method.

Access to the CURF

A public-use CURF will be available to researchers through the Australian Data Archive (ADA) at the Australian National University, from September 2020 https://dataverse.ada.edu.au/dataverse/ndshs.

Some transformations will be made to the public-use CURF to protect respondent confidentiality. For a full list of transformations, please check the CURF supplementary material on the ADA website from September 2020.

Applications for research access to the master dataset, which contains all of the data items, or selected variables of interest not included in the CURF may be approved, subject to the agreement of the AIHW's Ethics Committee. Contact the Tobacco, Alcohol and Other Drugs unit by email at aod@aihw.gov.au for additional information.

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