



FASD & PREVALENCE IN AOTEAROA NEW ZEALAND

Summary

- No prevalence study of FASD has been conducted in Aotearoa NZ
- Various estimates of prenatal alcohol consumption (PAE) are available, but these all have some limitations
- FASD-CAN has considered Aotearoa NZ research studies, bench-marking against data available from international studies, and the Te Whatu Ora prevalence estimate, to reach a best available estimate of the prevalence of FASD in Aotearoa NZ as 2-5%, consistent with the estimate of 3-5% expressed by the Ministry of Health.

Introduction

Fetal Alcohol Spectrum Disorder (FASD) is understood to be one of the leading causes of neurodevelopmental disorders in Western countries. This analysis sets out what we know about the prevalence of FASD in Aotearoa New Zealand.

The most definitive way to determine its prevalence is the conduct of clinical studies – where a population is assessed using a comprehensive diagnosis for FASD or via case ascertainment studies. Such studies can be costly but have been conducted in multiple countries. In those studies, the prevalence values have ranged from 1.81% - 2.9% Canada¹; 5.5% Sweden; 1.8% Salford UK, 1-5% in USA², 4-7% in Croatia³, 4-7% in Italy⁴ and 6-21% in South Africa⁵. All studies have wide uncertainty values and acknowledge the estimates of prevalence are likely to be underestimates. Rates are known to be increased in high-risk populations including children in foster care, youth and adult involved in the Criminal Justice System and those within mental health treatment.

As yet, no prevalence studies have been performed in Aotearoa New Zealand. A study is underway in one high-risk group, rangatahi in youth justice. Instead, different approaches have been used to estimate prevalence, which are variously based on information about levels of prenatal alcohol exposure (PAE) and using a conversion factor to prevalence of FASD or a statistical modelling approach using comparisons to other countries taking account of their drinking patterns and prevalence of FASD.

Levels of exposure to alcohol in pregnancy in Aotearoa New Zealand

Different sources of information on the levels of PAE are available in Aotearoa New Zealand (see Table below). These differ in terms of the populations studied. Those studies which use self-report data acknowledge that people are likely to under-report, and the population may also not include heavy drinkers.

Several of these sources report some people continue to drink throughout pregnancy and some report binge drinking throughout pregnancy. Where the levels of PAE in different ethnic groups

¹ Popova et al, 2019 – authors noted this was likely to be an underestimate. Flannigan et al (2018) noted that a figure of 4% is more realistic

² May et al, 2018

³ Petkovic et al, 2010; Petkovic et al, 2013

⁴ May et al, 2011

⁵ May et al, 2013; Urban et al, 2015

have been examined, it is reported that a significantly higher number of Māori consume alcohol during pregnancy⁶.

Study	Details	Prevalence of Prenatal Alcohol exposure at any time during gestation
The Growing Up in New Zealand study (GUINZ)	Measured alcohol consumption during pregnancy in the years 2008 to 2010 ⁷ .	28%
New Zealand Health surveys	Conducted in 2012-2013 and 2018-2019 ⁸ .	18.9%
Pre-2006 research study ⁹		26.7%
Research based on post-partum interview ¹⁰		28%

Studies estimating Prevalence of FASD in Aotearoa New Zealand

Two studies estimated the prevalence of FASD using different estimates of PAE

- Lange et al (2017) used a level of drinking in pregnancy of 26.7%, based on studies from pre-2006 and used a conversion figure of one out of 13 individuals exposed to PAE will have FASD. On this basis they estimated the prevalence in Aotearoa New Zealand as 2.1% (CI 1.2%-3.3%).
- Romeo et al (2023) used the more recent 2012-2013 and 2018-2019 Health Survey data and used a statistical modelling approach from the levels of FASD reported in different countries who had published prevalence studies and their reported levels of PAE. They then calculated the prevalence of FASD in Aotearoa NZ using the average value relating PAE and FASD in these countries and the estimated level of PAE in Aotearoa NZ. This analysis used data from case ascertainment studies in 7 different countries published before 2015. They reported a prevalence of 1.3% (C.I. 0.9-1.9%) for the general population and 2.1% for Māori (C.I. 1.3%-2.9%). The findings for Māori were noted to not be statistically significantly different from Europeans. Levels were lower for Pasifika and Asian ethnicities. However, some of the international studies relied on were unreliable, most notably an early study from Australia that reported only one child in the country with FASD with Sentinel Facial Features.

Romeo et al also did a sensitivity analysis on their data, using more recent data from 4 countries (which generally were higher in prevalence than the previous studies used in the analysis and had 'improved methodology'). In this analysis, they used the average Health Survey data from 2012-2013 and 2018-2019 and estimated a prevalence of 1.1% (0.8-1.4%)

⁶ Romeo et al, 2023

⁷ Schoeps et al, 2018; Rossen et al, 2018; Chu et al, 2022

⁸ 2012-2013 <https://www.health.govt.nz/publications/alcohol-use-201213-new-zealand-health-survey#mig>; report on exposure to alcohol during pregnancy in 2018/2019 not found – quoted in Romeo et al

⁹ Lange et al, 2017

¹⁰ Ho and Jacquemard, 2009



for the general population and 1.7% (1.3%-2.3%) for Māori. Some of the more recent studies also reported 'less conservative estimates' and when these values were used the prevalence estimates were 3.9% (3.0-5%) for the general population and 6.3% (4.8%-8.0%) for Māori.

Romeo et al note various limitations of their study:

- Likely underestimation of use of alcohol in pregnancy
- The Health surveys may not include a representative sample of heavy drinkers
- The comparative countries may have a lower prevalence of drinking than Aotearoa NZ
- Differences in the diagnostic criteria for different studies

Additionally, we have noted the following:

- The confidence intervals (CI) in the data are wide
- The initial analysis, resulting in the prevalence estimate of 1.7%, used prevalence rates found in 7 different countries. It includes data from Australia which was based on Fetal Alcohol Syndrome (FAS) only, which contributes to an underestimate of prevalence of FASD.
- The upper values obtained by Romeo et al when a sensitivity analysis was undertaken to account for possible underestimation are consistent with Te Whatu Ora's estimated prevalence range of 3-5%.

Analysis

Te Whatu Ora uses a prevalence range of 3-5% based on an unreported analysis of the PAE in NZ compared with other countries. In Canada with similar rates of PAE, a prevalence of 4% is widely accepted (e.g. by CanFASD).

Lange et al estimated a prevalence of FASD as 2.1% (noting the use of older pre-2006 alcohol consumption data is relevant to prevalence amongst young adults living with FASD today – see comment below).

The research of Romeo et al gave a conservative estimate for prevalence of FASD of 1.7% (95% confidence interval of 1.0%-2.7%). The authors considered this to be an underestimate, noting the possible contributors to under-estimation described above.

A single point estimate can be made by using the approach of Popova et al (2023), which estimated that one in 13 pregnancies which are prenatally alcohol exposed may result in a child with FASD. If this figure is applied to the estimates of pre-natal alcohol exposure in NZ from the Health survey and GUINZ study, the estimates would be 1.45% and 2.15% respectively. However, real rates of drinking in pregnancy are expected to be higher than what is self-reported due to a variety of factors, including stigma.

Differences between these studies are attributable to the different time periods for assessing alcohol consumption, different methodologies and different populations. The results can be weighed up to give a 'ball-park' estimate of FASD prevalence. Each study has limitations and the need for an active case ascertainment study in Aotearoa NZ has been acknowledged. In the absence of such a study an estimate of prevalence can be made using the values of Romeo et al as the lower estimate, and data from other countries (listed above) to provide the upper level of estimate. On this basis **FASD-CAN's position is that a prevalence range of 2-5% is the best current estimate of FASD in Aotearoa.**



Based on these values FASD is at least twice as prevalent as Autism Spectrum Disorder, and probably significantly more prevalent.

Prevalence differs with age

Prevalence estimates based on surveys or studies of drinking in pregnancy will give an estimate of incidence i.e. the number of new cases of FASD which will arise in a population at a certain time. But they will not reflect the prevalence of FASD throughout the population, due to changing patterns of drinking. Specifically, knowledge of the risks of consuming alcohol during pregnancy is still growing, and many adults living today were born in a time when the extent of knowledge of the risks was low. Additionally, FASD is known to be associated with a shorter life-span due to both medical and extraneous factors (accidental injuries, being victimised, substance abuse, and the mental and physical health consequences) which is another factor contributing to the variation of prevalence in different age cohorts.

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