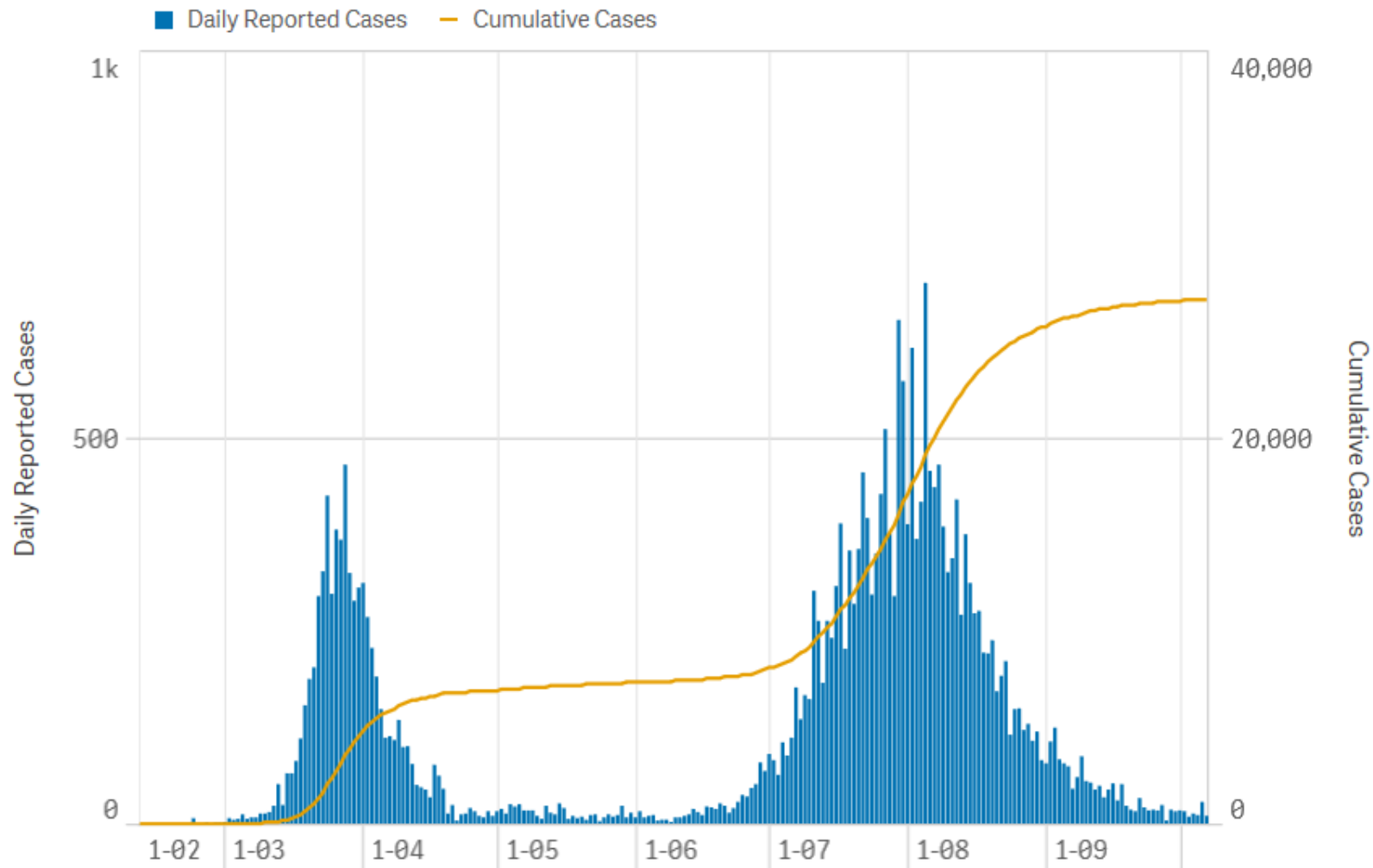


***A Bayesian Network Analysis of the Australian National Surveys of the Household Impact of COVID-19***

Christine Ji

The University of Sydney

Source: Department of Health, States & Territories Report 7/10/2020



# COVID-19 Infection in Australia (March – Oct 2020)

Australian  
Department of  
Health, States &  
Territories

# ABS Household Impacts of COVID 19 Survey



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[Home](#) > [Statistics](#) > [People](#) > [People and communities](#) > [Household Impacts of COVID-19 Survey](#) > [August 2020](#)

## On this page

- [Key statistics](#)
- [Emotional and mental wellbeing](#)
- [Precautions](#)
- [Returning to activities](#)
- [Household financial stress and stimulus payments](#)
- [Job status](#)
- [What's next?](#)
- [Data downloads](#)
- [History of changes](#)
- [Methodology](#)
- [Media releases](#)

**Latest release**

[Data download](#)

## Household Impacts of COVID-19 Survey

Insights into the prevalence and nature of impacts from COVID-19 on households in Australia

Reference period [August 2020](#)

Released [31/08/2020](#)    Next release [12/10/2020](#)

[Previous releases](#)

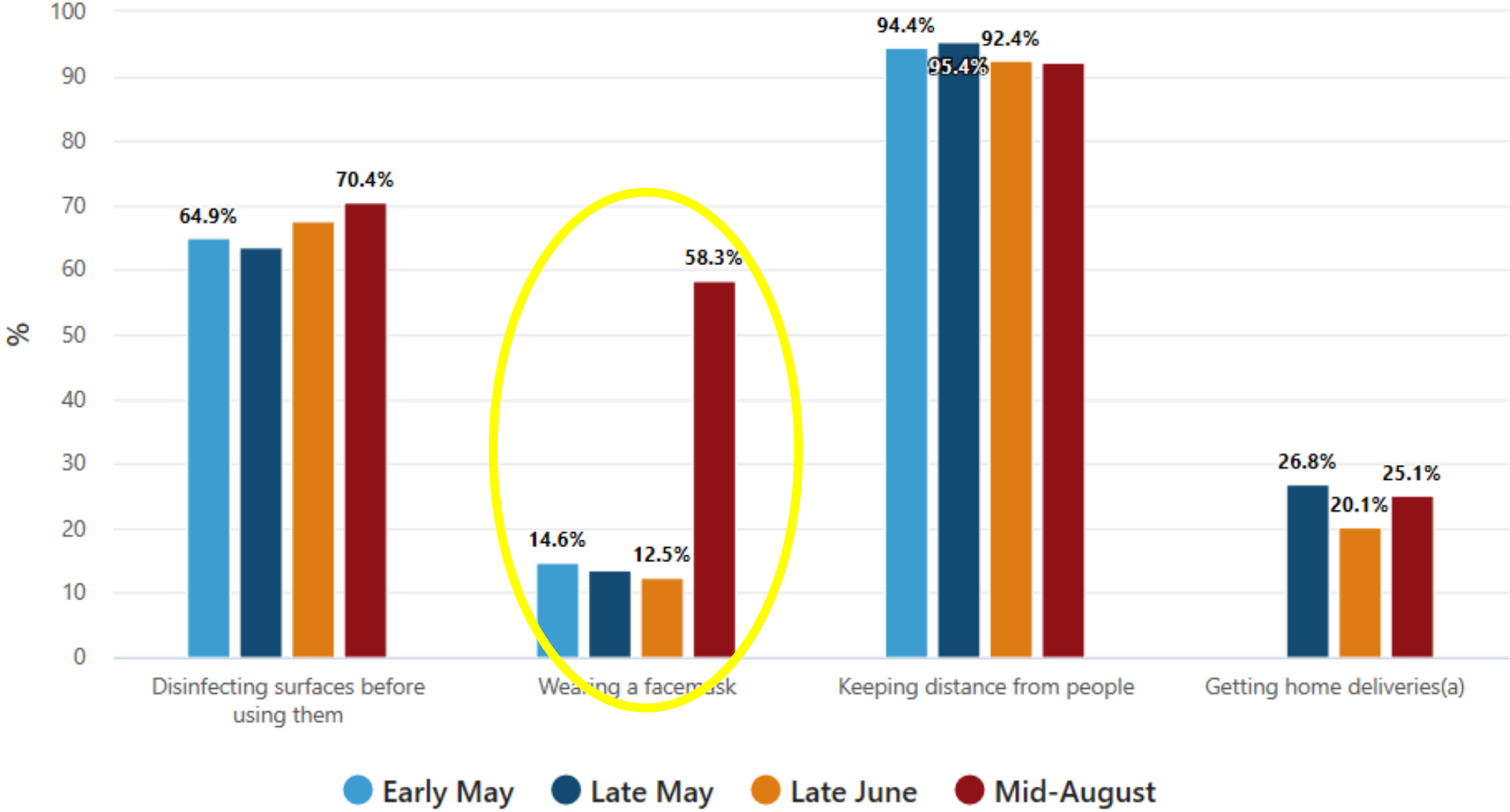
### Key statistics

- In mid-August, almost half (46%) Australians felt nervous at least some of the time.
- 58% of people reported wearing facemasks due to COVID-19, including all Victorians.
- Fewer people (77%) said they can raise \$2,000 in a week compared with 88% in mid-June.

# Concerns and Precautions Taken Due to the Spread of COVID-19

Whether concerned about personal health due to spread of COVID-19
Not concerned
Neither concerned nor unconcerned
Concerned
Very concerned
Total persons aged 18 years and over
Actions taken in the last four weeks due to spread of COVID-19
Wore a facemask
Sought advice from a medical professional
Avoided public transport
Avoided public spaces (and public events)
Kept distance from people
Cancelled personal gatherings (e.g. with friends or family)
Changed or cancelled travel plans
Worked from home
Stopped working (e.g. cancelled shifts)
Kept children home from school or childcare
Purchased additional household supplies
Purchased additional medical supplies
Self-isolated (stayed at home)

# Persons aged 18 years and over, selected precautions taken in the last week due to the spread of COVID-19



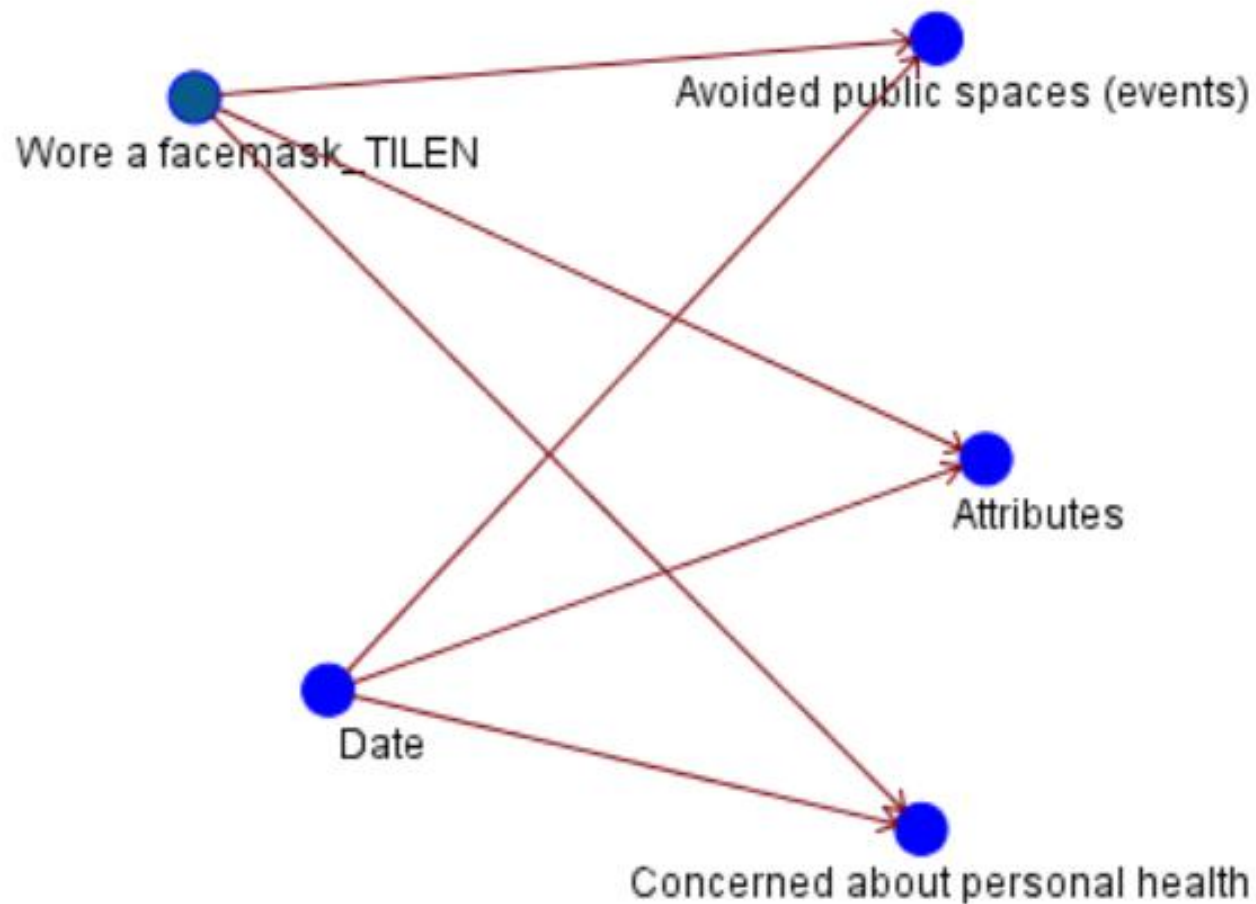


The Research Question –  
*when/how Australian  
population segments are  
using masks as a  
preventative measure during  
the COVID-19 spread*



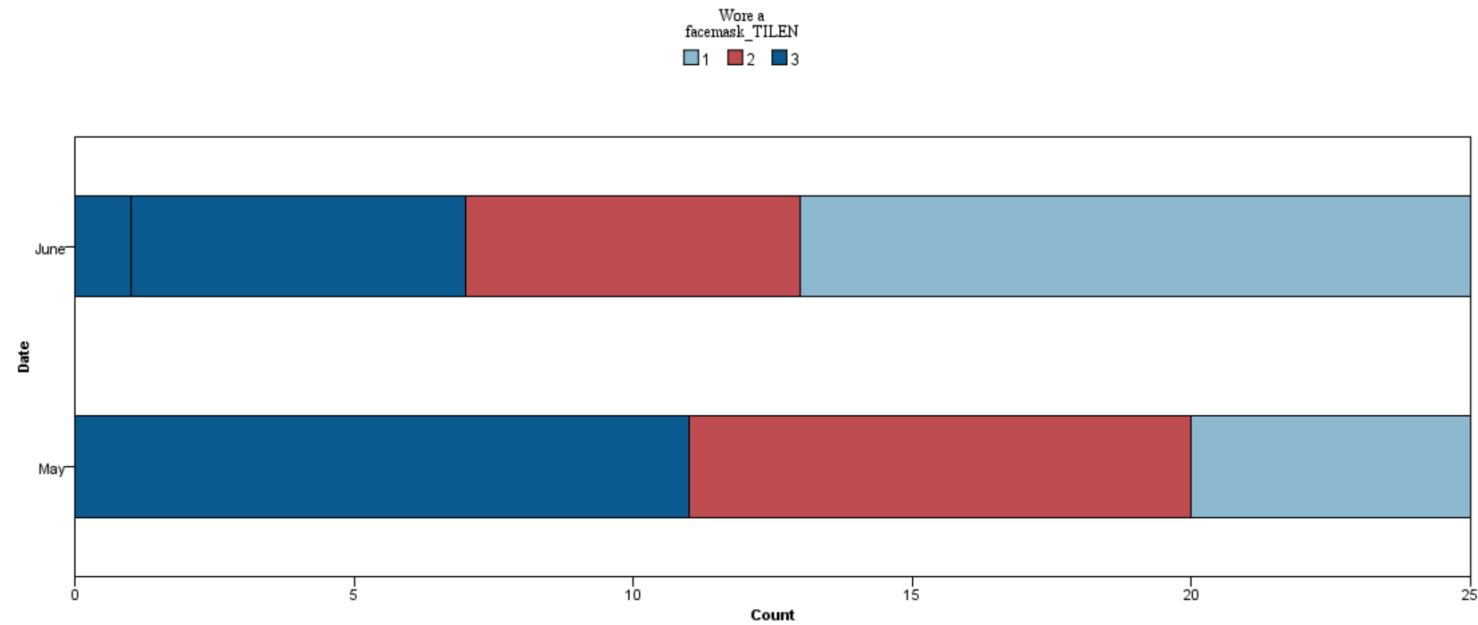
# Bayesian Network

- Type
- Predictors
  - Target



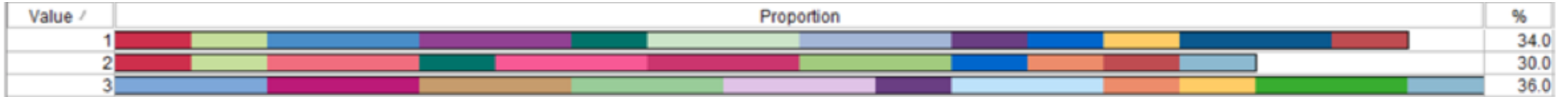
# The use of masks among Australians

	Lower	Upper
1	$\geq 11.8$	$< 24.6$
2	$\geq 24.6$	$< 27.9$
3	$\geq 27.9$	$\leq 42$





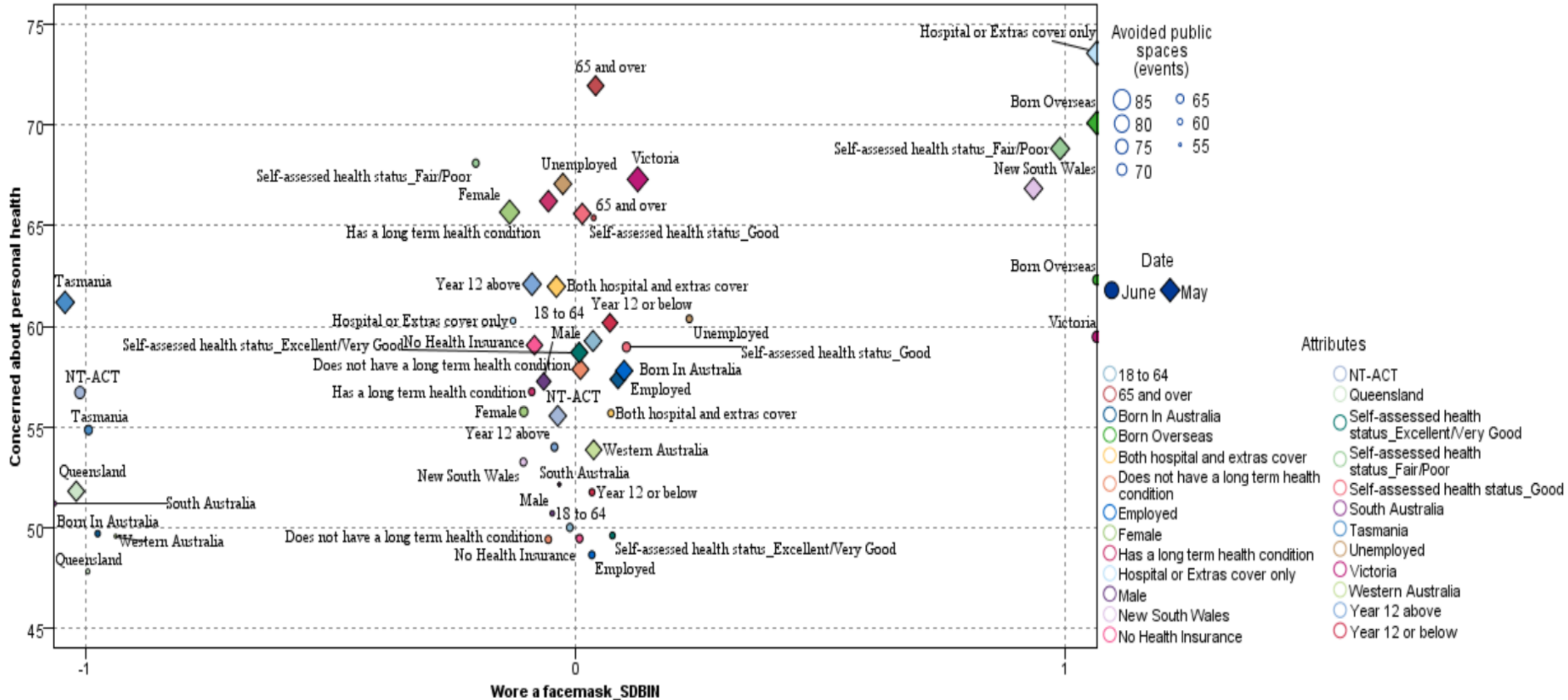
# The use of masks among Australians



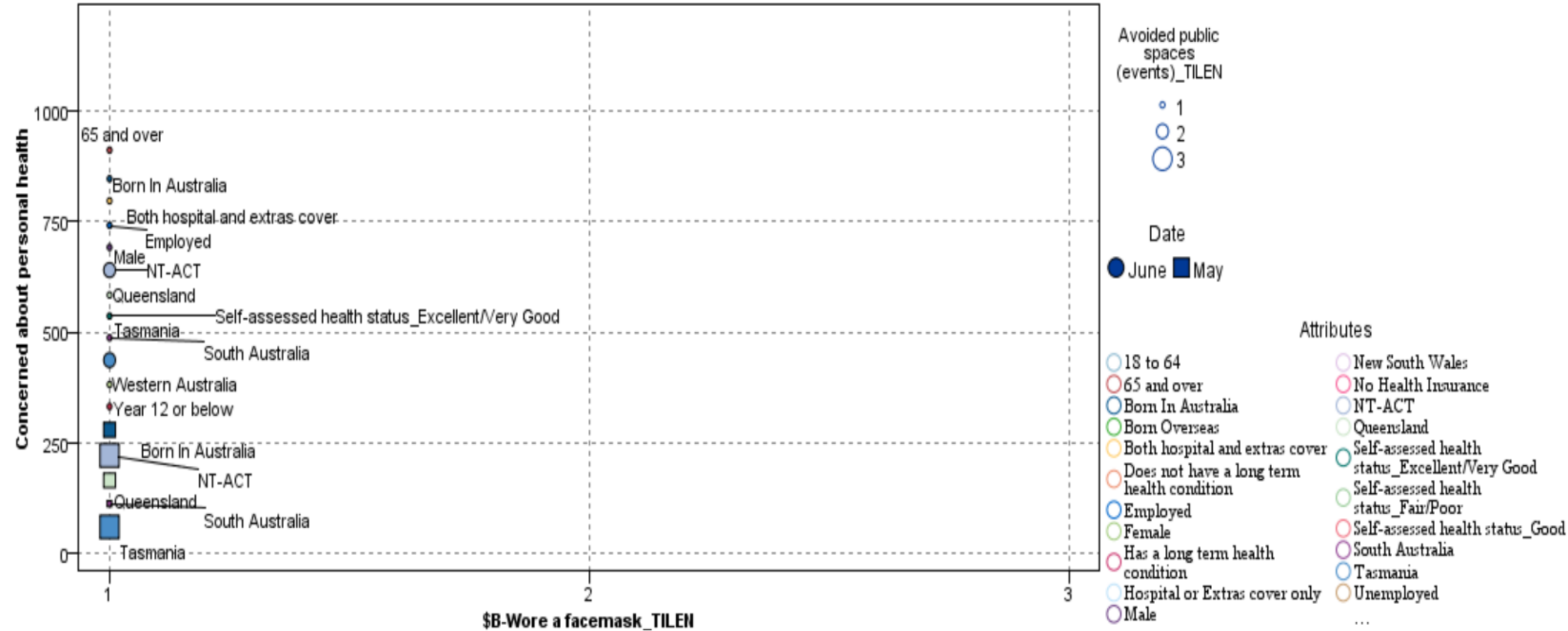
## Attributes



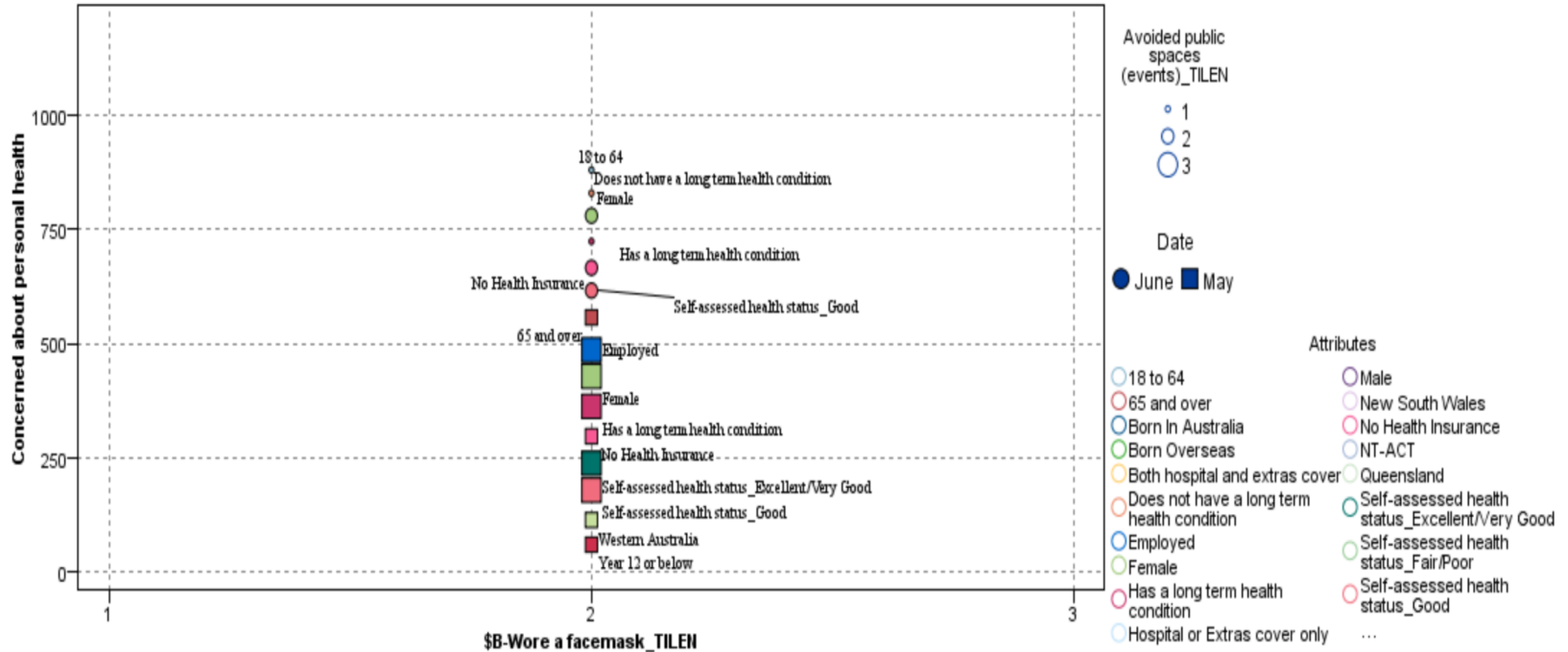
# BBN Analysis of Mask Use in May and June



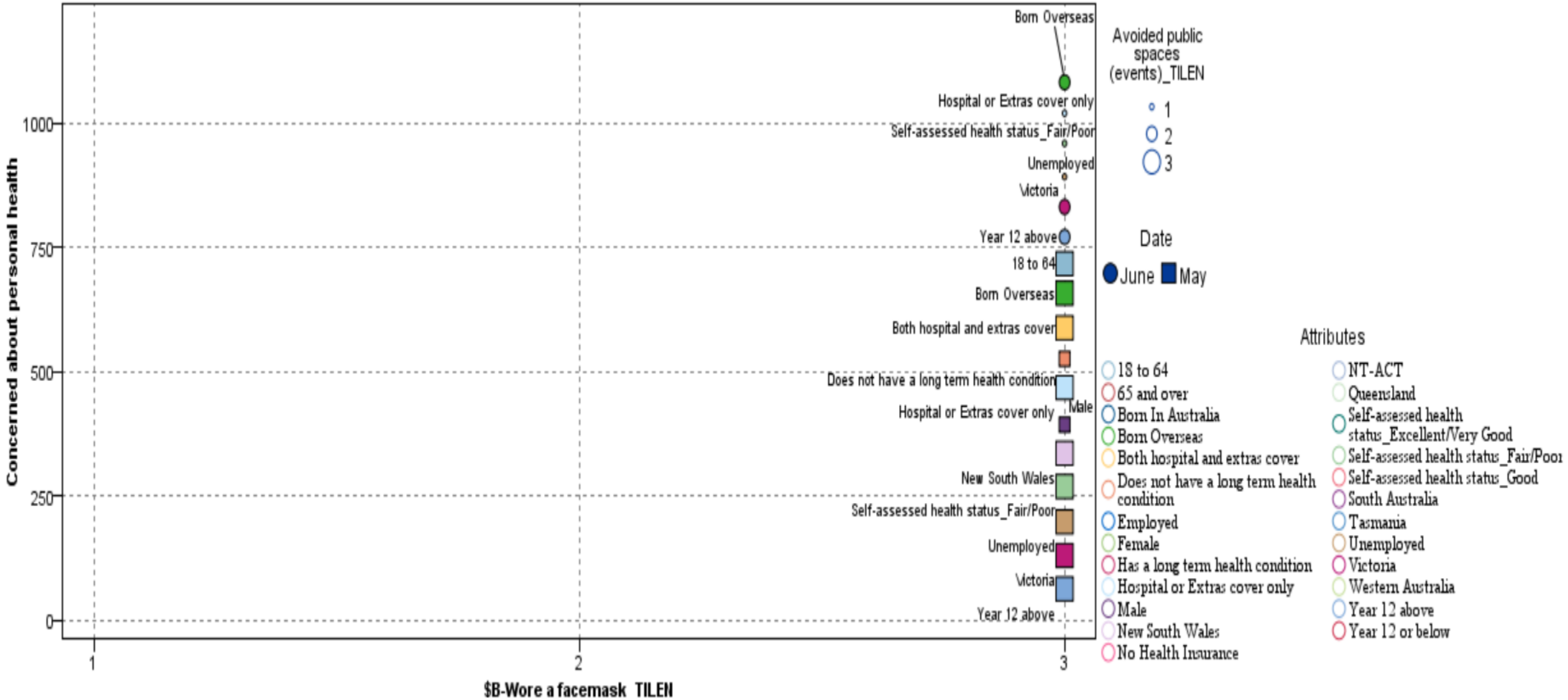
# Lowest Level of Mask Use among Australians (11.8%-24.6%)



# The Middle Level of Mask Use among Australians (24.6%-27.9%)

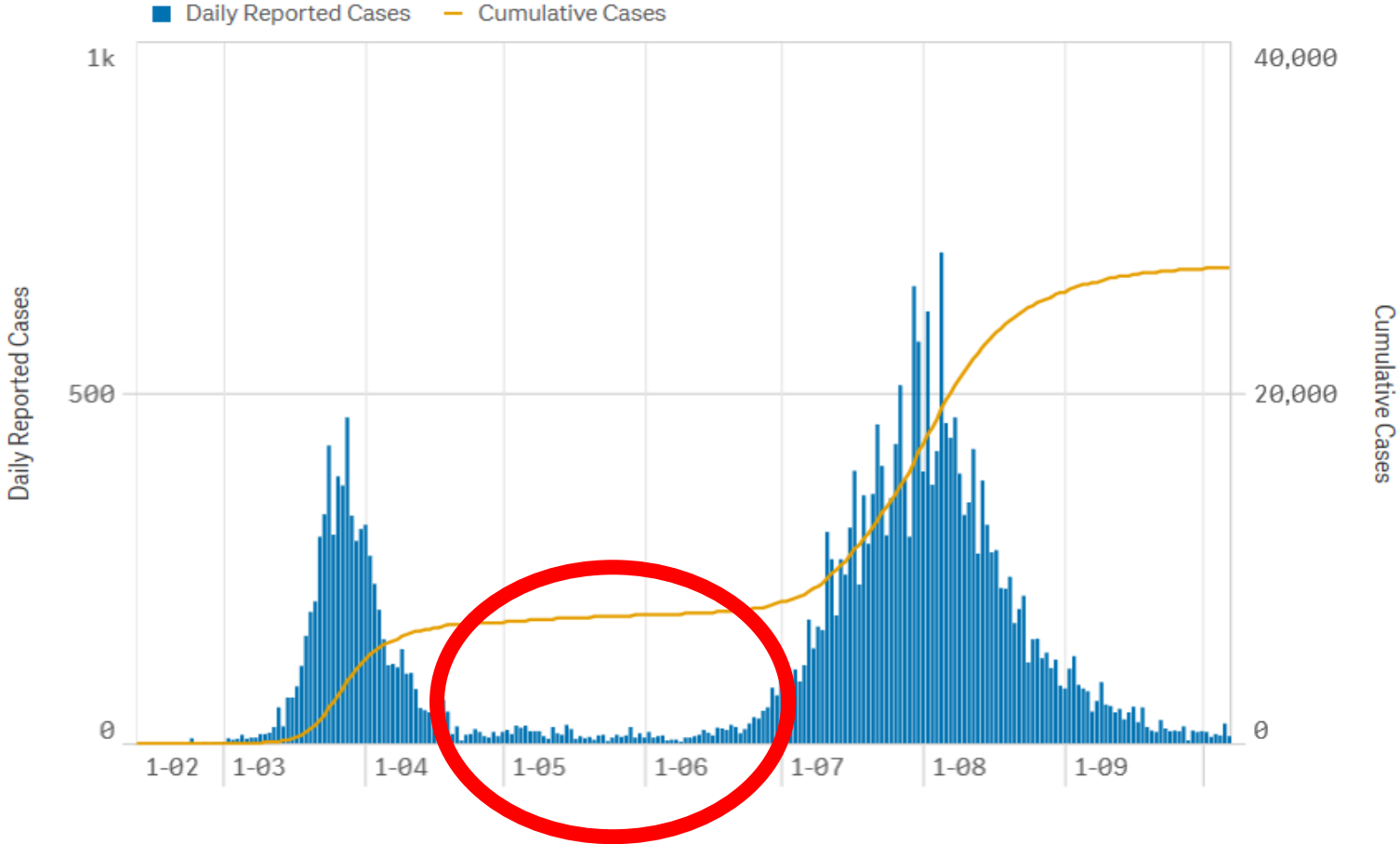


# The Highest Level of Mask Use among Australians (27.9%-42%)



# Discussions – Impact of Mask Use in May-June on Second Waves in Australia

Source: Department of Health, States & Territories Report 7/10/2020



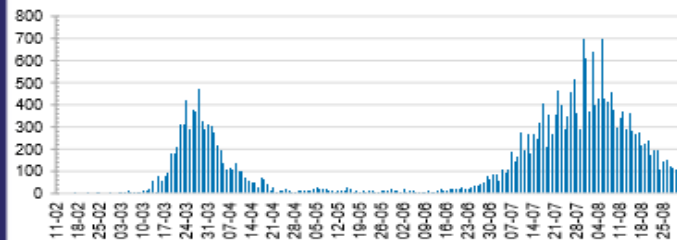




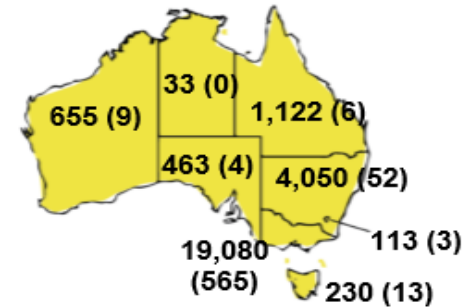
**CURRENT STATUS OF CONFIRMED CASES**



**DAILY NUMBER OF REPORTED CASES**



**CASES (DEATHS) BY STATE AND TERRITORIES**



**27**



CURRENT CASES  
INTENSIVE CARE UNITS (ICU)

ACT	NSW	NT	QLD	SA	TAS	VIC	WA
0	6	0	0	0	0	21	0

**481**



CURRENT CASES  
ADMITTED TO HOSPITALS

ACT	NSW	NT	QLD	SA	TAS	VIC	WA
0	9	0	18	0	1	453	0

**6,214,453**



TOTAL TESTS  
CONDUCTED

**0.4%** POSITIVE

ACT	NSW	NT	QLD
76,109	2,171,487	35,598	895,789
POSITIVE	POSITIVE	POSITIVE	POSITIVE
0.1%	0.2%	0.1%	0.1%

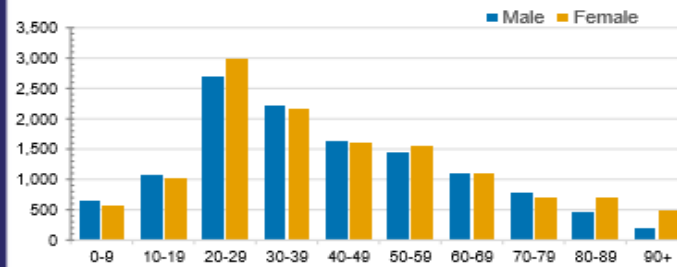
SA	TAS	VIC	WA
377,651	87,718	2,224,887	345,214
POSITIVE	POSITIVE	POSITIVE	POSITIVE
0.1%	0.3%	0.9%	0.2%

**CASES IN AGED CARE SERVICES**

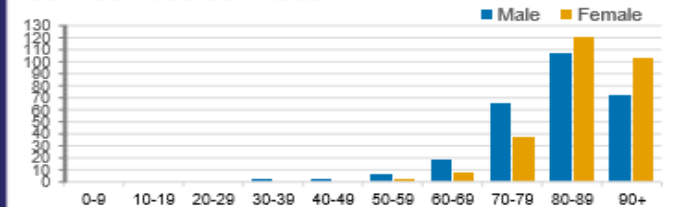
Confirmed Cases	Australia	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Residential Care Recipients	1882 [542] (450)	0	61 [32] (29)	0	1 (1)	0	1 (1)	1819 [510] (419)	0
In Home Care Recipients	79 [53] (7)	0	13 [13]	0	8 [8]	1 [1]	5 [3] (2)	51 [28] (4)	1 (1)

Cases in care recipients [recovered] (deaths)

**CASES BY AGE GROUP AND SEX**

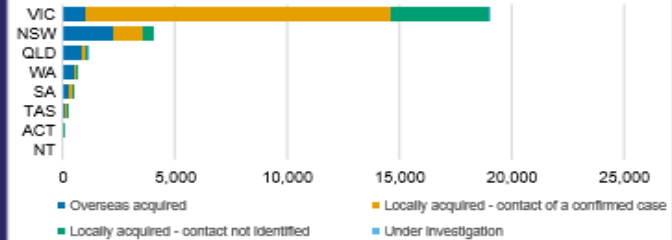


**DEATHS BY AGE GROUP AND SEX**



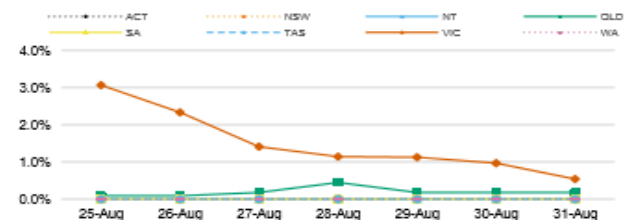
**CASES BY SOURCE OF INFECTION**

Australia (% of all confirmed cases)



**PUBLIC HEALTH RESPONSE MEASURE**

Proportion of total cases under investigation



# How Australians at Risk Behaved (from May to June)

Population Segments	Mask Use	Concern Level	Avoiding Public Space
Male	Dropped from highest (27.9% - 42%) to lowest level (11.8% - 24.6%) of mask use	Dropped from 57.4% to 51.4% (-6%)	Dropped from 71% to 59% (-12%)
<b>Female (at higher risks of infection)</b>	Remain at the middle level (24.6% - 27.9%)	Dropped from 65.8% to 56% (-9.8%)	Dropped from 79.2% to 66.8% (-12.4%)
<b>Victoria (highest risk)</b>	Remain at the highest level (31.2% - 34.5%)	67.3% to 60.4% (-6.9%)	80.4% to 69.5% (-10.9%)
NSW (higher risk)	Remain at the highest level (27.8% - 34.2%)	67% to 53.2% (-13.8%)	76.7% to 63.8% (-12.9%)
SA (low)	Remain at the lowest level (18.4% - 20.5%)	52.6% to 50.5% (-2.1%)	55.1% to 57.9% (+2.8%)

# Mask Use in Australia During Stabilising Period of COVID-19 Spread

- There is a relatively higher and more consistent use of masks among females and people living the state of Victoria, but they remain the populations being most affected by COVID-19 in terms of infection rate
- A relatively sharper decrease (from May to June) in concern levels and the avoidance of public space was observed among populations at higher risk of contracting the disease.
- The use of mask, despite being effective during rapidly deteriorating periods of COVID-19 spread, due attention should be given to the management of psychological and behavioural measures as well such as concern levels and less exposure to public events/activities.



Stay home if  
you are unwell

