

*A Social Health Atlas of Young South Australians (2<sup>nd</sup> ed.):*

Supplement 1

***Smoking rates among pregnant women  
under 25 years of age***

August 2003

**Headline points**

- Over the four-year period from 1998 to 2001, more than one third of women aged under 25 years in South Australia smoked during pregnancy.
- Over half of Indigenous women smoked during pregnancy, compared with just over one fifth for non-Indigenous women.
- Variations are evident across the State, with higher proportions of women smoking during pregnancy in the country than in Adelaide.
- Younger pregnant women (aged 15 to 19 years) were more likely to smoke than those aged 20 to 24 years.
- The highest proportions of women smoking during pregnancy are found in the most disadvantaged areas, with the lowest proportions in the most well off areas.

**Health consequences of smoking during and after pregnancy**

- Tobacco smoking during pregnancy is an important yet preventable factor that adversely affects the unborn infant in a number of ways.
- Smoking doubles the risk of having a low birthweight baby and significantly increases the risk of the baby dying before or during birth.
- There is an increased risk of miscarriage or stillbirth; physical defects; premature birth and, therefore, less chance of the baby surviving; and of problems during the birth.
- Babies whose mothers smoke are more likely to find it harder to fight infections; to be restless and irritable; to have learning problems later in life; and are almost three times more likely to die of cot death.

**Sources**

US Department of Health and Human Services. The health benefits of smoking cessation. Rockville, MD: Office on Smoking and Health, 1990. (DHHS Publication No. (CDC) 90-8416.)

Walsh RS, Lowe JB and Hopkins PJ. Quitting smoking in pregnancy. *MJA* 2001; 175: 320-323.

# Smoking rates among pregnant women aged under 25 years, 1998-2001

## Adelaide

Over the four years from 1998 to 2001, 3,552 women living in Adelaide aged under 25 years reported smoking during pregnancy (smoking at their first antenatal visit); this is just over one third (35.4%) of pregnant women in this age group. The corresponding figure for Indigenous women was substantially higher (58.0%). The smoking status of pregnant women varies by age (Table 1). In Adelaide, similar proportions of pregnant women aged 15 to 19 years smoked (43.8%) or did not smoke (47.8%) during pregnancy. The difference was more substantial among pregnant women aged 20 to 24 years, with 60.0% non-smokers.

**Table 1: Smoking status of pregnant women by age, Adelaide, 1998-2001**

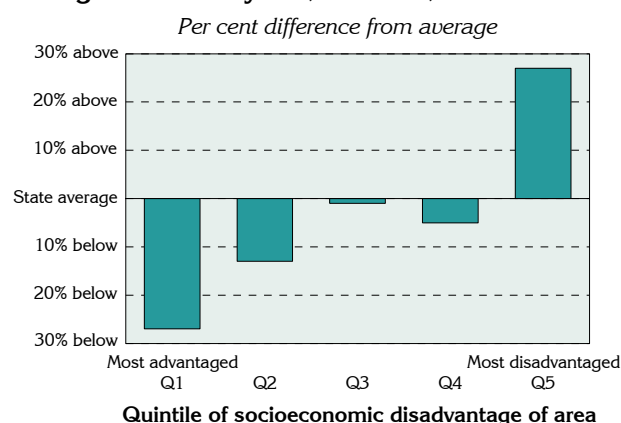
	15-19 yrs		20-24 yrs	
	Adelaide	SA	Adelaide	SA
Smokers	43.8	45.1	33.3	35.0
Non-smokers	47.8	47.1	60.0	58.8
Quit	8.4	7.8	6.7	6.2
Total	100.0	100.0	100.0	100.0

Per cent

Source: Calculated from data supplied by DHS

There is a clear socioeconomic gradient in the proportion of women smoking during pregnancy in Adelaide (Figure 1)<sup>1</sup>, with the lowest rates in the most advantaged areas (Quintile 1, 27% below the State average), increasing at each level of disadvantage to the highest rates in the most disadvantaged areas (Quintile 5, with a smoking rate 27% above the State average).

**Figure 1: Smoking rates among pregnant women aged under 25 years, Adelaide, 1998-2001**



Quintile of socioeconomic disadvantage of area

Source: Calculated from data supplied by DHS

<sup>1</sup> Quintiles are based on the ABS Index of Relative Socio-Economic Disadvantage, a composite measure of socioeconomic disadvantage: details of the index and of the calculation of rates by quintile can be found on pages 24 and 334, respectively, of *A Social Health Atlas of Young South Australians* (2<sup>nd</sup> ed.).

Thus there were 74% more women smoking during pregnancy in the most disadvantaged areas than in the most well off areas. Readers should note that the standardisation process takes account of differences in smoking rates by age, so the differences shown between the quintiles in Figure 1 are 'real' differences, over and above any effect that might exist because the pregnant women in the most disadvantaged areas are younger (and have higher rates of smoking) than those in the most well off areas. This also applies to the mapped data.

Smoking rates during pregnancy show a distinct pattern across Adelaide (Map 1), with the highest rates recorded in a number of the inner north-west postcodes, as well as in the outer northern suburbs. The lowest rates were largely found in a number of postcodes around the city to the east, north-east and south-east.

Smoking rates among pregnant women aged under 25 years in the postcode areas of *Largs Bay* (47% above), *Adelaide* (41% above), *Port Adelaide* and *Elizabeth* (both 40% above) and *Osborne* (34% above) were more than 30% above the State average. Relatively high rates were also recorded in the outer northern postcode area of *Elizabeth North* (28% above average); in the inner northern areas of *Highbury* (29% above), *Klemzig* (28% above) and *Ingle Farm* (16% above); and in the north-western suburbs of *Ferryden Park* (28% above), *Blair Athol* (25% above), *Rosewater East* (18% above) and *Gepps Cross* (17% above)<sup>2</sup>.

In contrast, the lowest proportions were found in postcode areas in the Adelaide Hills at *Belair* (with 78% below average) *Eden Hills* (74% below) and *Blackwood* (51% below); and in nearer the city in *Norwood* (70% below), *Kingswood* (69% below), *Unley* (54% below), *St Peters* (52% below) and *Edwardstown* (51% below).

The largest numbers of young women who smoked during pregnancy were recorded in *Elizabeth North* (329 women), *Salisbury* (287), *Elizabeth* (241), *Smithfield* (191) and *Morphett Vale* (161).

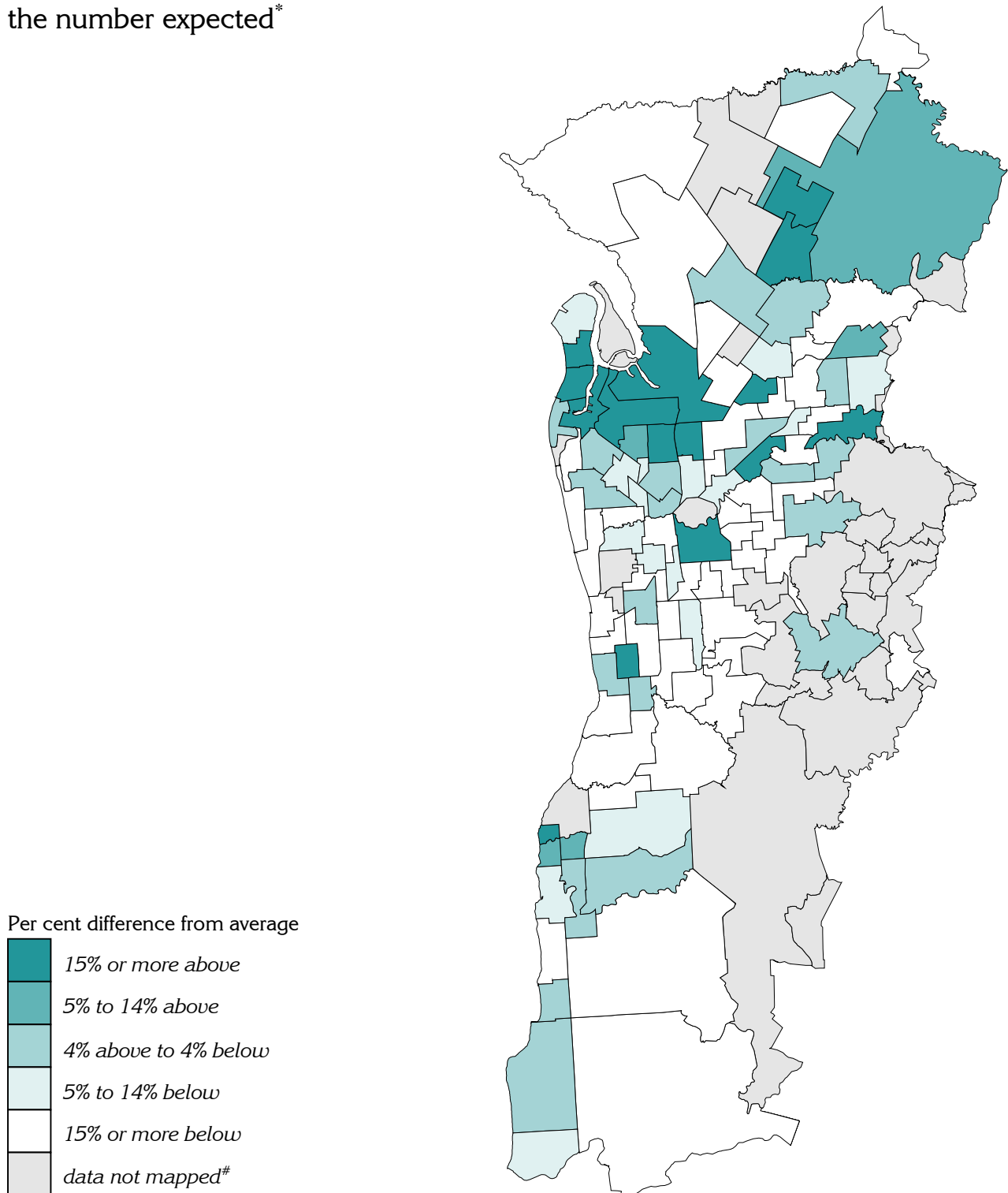
The correlation analysis indicates an association at the postcode level between women who smoked during pregnancy and socioeconomic disadvantage (Table A1).

<sup>2</sup> Pregnant women in *MacDonald Park* had the highest smoking rate; however this was based on only five women smokers over the four years.

# Map 1

## Smoking rates among pregnant women aged under 25 years, Adelaide, 1998-2001

total number of pregnant women at these ages in each postcode compared with the number expected\*



\*Expected numbers were derived by indirect age standardisation

<sup>#</sup>Data were not mapped because either the postcode has a population of less than 100, only a small part of the postcode is located in Adelaide, or there were fewer than five expected pregnant smokers.

Source: Calculated from data supplied by DHS

Details of map boundaries are in Appendix 1.2

A Social Health Atlas of Young South Australians, 2003: Supplement 1

# Smoking rates among pregnant women aged under 25 years, 1998-2001

## Country<sup>3</sup> South Australia

Over the four year period from 1998 to 2001, 1,962 women living in the country and aged under 25 years smoked during pregnancy. This represents 39.9% of pregnant women in this age group; the corresponding figure for Indigenous women was substantially higher, at 57.0%.

The smoking status of pregnant women in the country varies by age (Table 2). While there were similar proportions of pregnant women aged 15 to 19 years who smoked (47.6%) or did not smoke (45.7%) during pregnancy, the difference was more substantial among pregnant women aged 20 to 24 years, with 56.0% non-smokers in this age group.

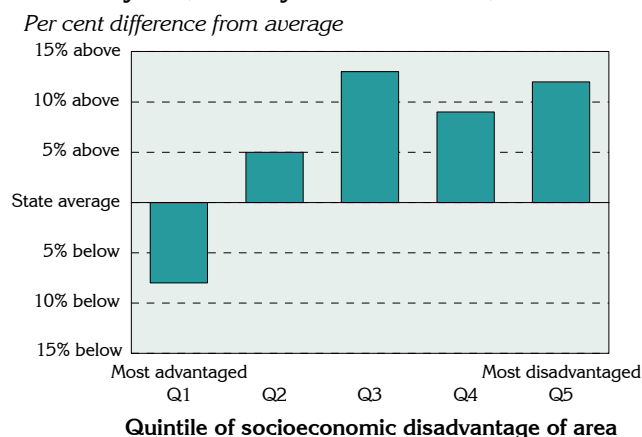
**Table 2: Smoking status of pregnant women by age, 1998-2001**

	Per cent			
	15-19 yrs		20-24 yrs	
	Country	SA	Country	SA
<b>Smokers</b>	47.6	45.1	38.9	35.0
<b>Non-smokers</b>	45.7	47.1	56.0	58.8
<b>Quit</b>	6.7	7.8	5.2	6.2
<b>Total</b>	100.0	100.0	100.0	100.0

Source: Calculated from data supplied by DHS

There is a socioeconomic gradient in the proportion of women smoking during pregnancy in country South Australia, with the lowest rates in the most advantaged areas (Quintile 1, 8% below the State average) and the highest in the most disadvantaged areas (Quintile 5, with a smoking rate 12% above the State average) (Figure 2).

**Figure 2: Smoking rates among pregnant women aged under 25 years, country South Australia, 1998-2001**



Source: Calculated from data supplied by DHS

Overall, there were 22% more women smoking during pregnancy in the most disadvantaged country areas when compared with the most well off areas. Readers should note that the standardisation process takes account of differences in smoking rates by age, so the differences shown between the quintiles in Figure 2 (and the in the map) are 'real' differences, over and above any effect that might exist because the pregnant women in the most disadvantaged areas are younger (and have higher rates of smoking) than those in the most well of areas.

The highest smoking rates for pregnant women in this age group were primarily in areas<sup>4</sup> located in the western, mid northern, lower south-eastern and Riverland regions (Map 2). These include the SLAs of Barunga West (46% above average), Wakefield (34% above), Mount Remarkable (32% above), Yorke Peninsula North (25% above) and Port Augusta (20% above) in the mid north; Berri (40% above), Unincorporated Riverland (33% above), Loxton Waikerie – East (32% above), Baramba (28% above) and Renmark (22% above) in the Riverland; Franklin Harbor (38% above), Unincorporated West Coast (21% above), Port Lincoln (21% above), Ceduna (20% above) and Lower Eyre Peninsula (20% above) in the west; and Wattle Range – West (30% above), Lacepede (25% above) and Naracoorte (22% above) in the lower south-east.

SLAs with rates of women smoking during pregnancy at least 15% below the State average included Robe (58% below average), Adelaide Hills Balance (50% below), Flinders Ranges (40% below), Le Hunte (24% below), Alexandrina – Strathalbyn (24% below), Streaky Bay (23% below) and Yorke Peninsula – South (15% below).

The largest number of women aged under 25 years who smoked during pregnancy were recorded in the towns of Whyalla (174 women), Port Augusta (145), Mount Gambier (136), Murray Bridge (124), Port Pirie (104) and Port Lincoln (102).

There were weak correlations with the indicators of socioeconomic disadvantage and weak inverse correlations with the indicators of high socioeconomic status at the SLA level.

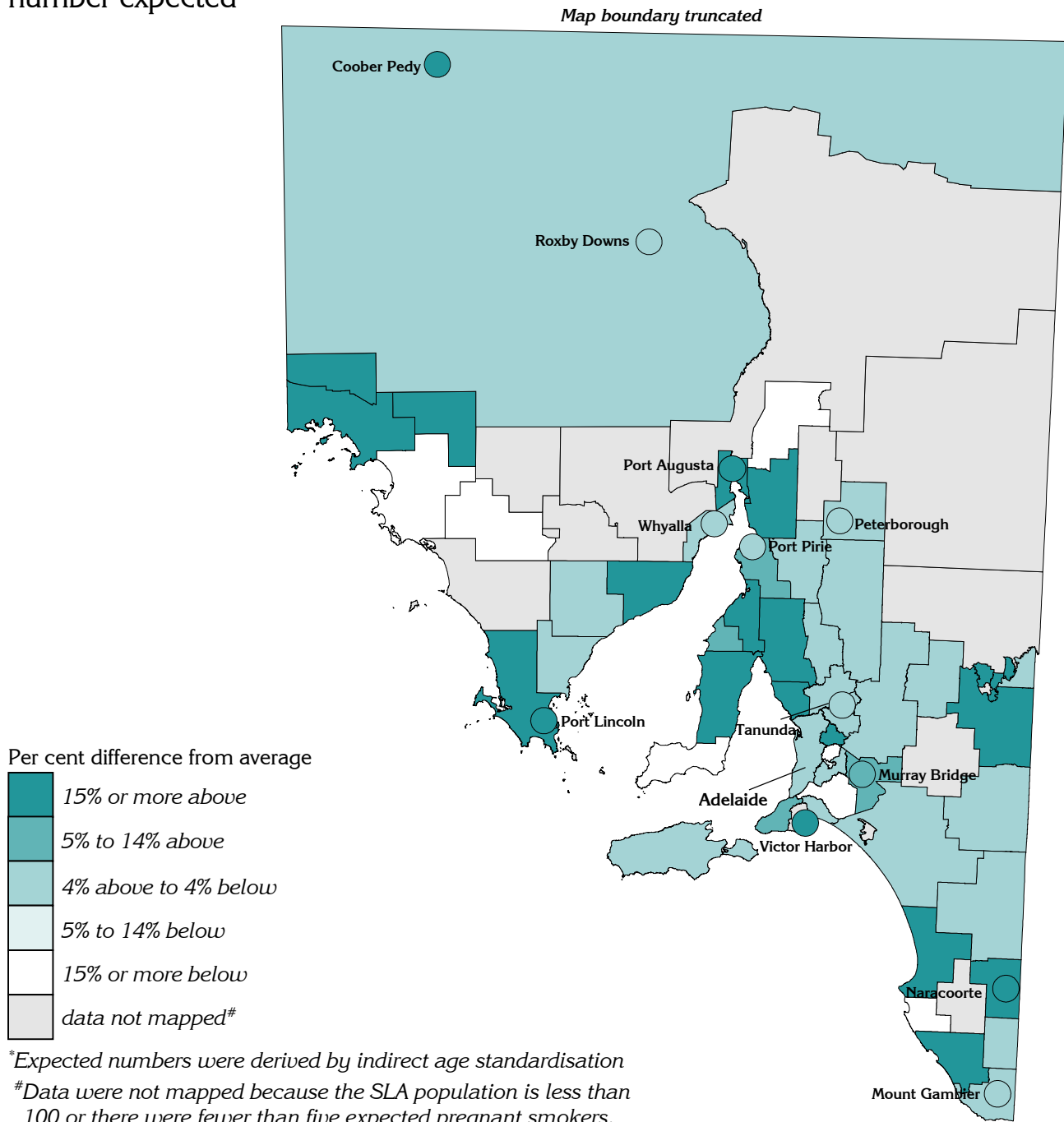
<sup>3</sup> For ease of reading, the area of the State outside of Adelaide is referred to as 'the country', or 'country South Australia'. The authors acknowledge that this general term includes a wide range of areas, from large and small towns to the rural, remote and very remote parts of the State.

<sup>4</sup> The areas mapped here are Statistical Local Areas (SLAs). SLAs in these country areas are, in a majority of cases, based on (and equal to) local government areas.

## Map 2

# Smoking rates among pregnant women aged under 25 years, South Australia, 1998-2001

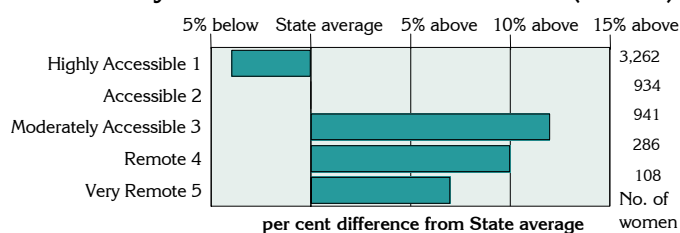
total number of pregnant women at these ages in each SLA compared with the number expected\*



Source: Calculated from data supplied by DHS

Details of map boundaries are in Appendix 1.2

### Accessibility/Remoteness Index of Australia (ARIA+)



The rate of women aged under 25 years smoking during pregnancy increases from 4% below average in the Highly Accessible areas to 12% above in the Very Remote areas. However, the rates then drop to 10% above average in the Remote category and further to 7% above in the Very Remote class.

Source: Calculated on ARIA+ classification

# Smoking rates among pregnant women aged under 25 years, 1998-2001

In both Adelaide and the country areas of South Australia, more than half of pregnant women aged under 25 years did not smoke during pregnancy (Table 3: see Tables 1 and 2 for differences by age group). This figure was higher in Adelaide, with at a rate of 56.2% compared with 51.8% in the country. The proportion of women who quit smoking before their first antenatal visit was also higher in Adelaide (7.0%). More than half (57.5%) of Indigenous women smoked during pregnancy, with 4.3% quitting before their first antenatal visit.

**Table 3: Smoking status among pregnant women aged under 25 years, South Australia, 1998-2001**

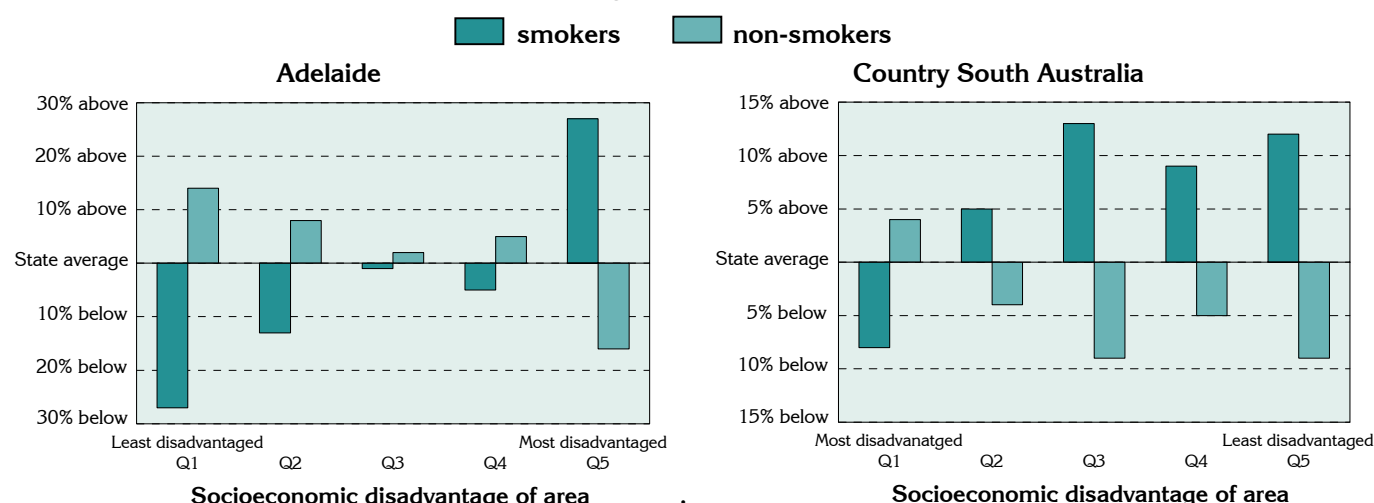
Area of residence of pregnant women	Non-smokers		Quit smoking		Smokers		Total <sup>1</sup>	
	No.	%	No.	%	No.	%	No.	%
Adelaide	5,638	56.2	701	7.0	3,552	35.4	10,029	100.0
Country	2,555	51.8	267	5.4	1,967	39.9	4,934	100.0
<b>South Australia: Total</b>	<b>8,193</b>	<b>54.8</b>	<b>968</b>	<b>6.5</b>	<b>5,519</b>	<b>36.9</b>	<b>14,963</b>	<b>100.0</b>
: Indigenous	288	34.6	36	4.3	478	57.5	832	100.0

<sup>1</sup>Includes smoking status not stated: 1.4% in Adelaide, 2.9% in Rest of State, 1.8% for Total and 3.6% for Indigenous.

Source: Calculated from data supplied by DHS

The smoking status of pregnant women aged under 25 years is reversed when examined by quintile of socioeconomic disadvantage of area (Figure 3). Non-smokers predominate in the most well off areas (14% above average in Adelaide and 4% above in the country) in the (Quintile 1), and smokers predominate in the most disadvantaged areas (27% above average in Adelaide and 12% above in the country).

**Figure 3: Smoking status among pregnant women aged under 25 years, by quintile of socioeconomic disadvantage of area, 1998-2001**



Source: Calculated from data supplied by DHS

**Appendix Table A1: Correlation coefficients, South Australia, 1998-2001**

Variable	Adelaide	Rest of State
Children aged 0 – 14 years: living in single parent families	0.56	0.38
Children aged 0 – 14 years: living in low income families	0.54	0.26
Children aged 0 – 14 years: living in low dwellings without a motor vehicle	0.51	0.21
Young females aged 15 – 24 years: unemployed	0.53	0.02
Young Indigenous people aged 15 – 24 years	0.50	0.11
Young people aged 15 – 24 years: full-time students	-0.56	0.13
Index of Relative Socio-Economic Disadvantage <sup>1</sup>	-0.62	-0.29

Note: Correlation coefficients of plus or minus 0.71 or above are considered to be strong; those of plus or minus 0.5 to 0.70 are considered to be moderate; and those of below 0.5 are considered to be small.

<sup>1</sup>See footnote 1 on page 2 for details of the Index of Relative Socio-Economic Disadvantage.

Source: Calculated from data supplied by DHS

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