

Trends in birth rates for teenagers in Queensland, 1988 to 1997: an analysis by economic disadvantage and geographic remoteness

ABSTRACT

OBJECTIVE: To investigate trends in the birth rate for teenagers in Queensland, stratified by geographic remoteness and economic disadvantage.

METHOD: This was an analysis of routine data for the period 1988 to 1997. The number of births were obtained from the Queensland Perinatal Data Collection. Population data (the denominators for the rates) were obtained from the Australian Bureau of Statistics. Economic disadvantage was based on place of usual residence of the mother. Because of differences in physical, social and psychological development, the data were analysed in three age groups: 13 to 14 years, 15 to 17 years and 18 to 19 years.

RESULTS: Birth rates to teenagers who live in disadvantaged areas were 2 to 4 times higher than the rates for all of Queensland and 10 to 20 times higher than the rates in affluent areas. The trend analysis showed that the rates are decreasing in urban-affluent areas (about 2.5% per year), while they have remained stable, but extremely high in disadvantaged-remote areas, and are increasing (about 5% per year) in disadvantaged-urban areas.

CONCLUSIONS: The relatively low and stable rates for all of Queensland have hidden marked variations in the trends for areas defined according to economic disadvantage and remoteness. The rates were especially high and showed no improvement over time in remote disadvantaged areas, which have a large Indigenous population.

IMPLICATIONS: In some areas of Queensland births to teenagers is a pressing problem, especially because it can perpetuate a cycle of limited educational opportunities, social isolation and reliance on welfare.

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Introduction

The rate of births to teenagers is a commonly used health statistic in many countries.¹ It is not a valid indicator of the effectiveness of measures to reduce teenage pregnancy because it does not include induced abortions.² Nevertheless, when analysed by geographic area it can help administrators allocate resources for antenatal care and postnatal support.³

Appropriate allocation of resources is important because the financial and human costs of teenagers bearing children are substantial. Teenaged mothers are more likely than their contemporaries to have limited career opportunities, rely on welfare, be socially isolated, and have future unintended pregnancies. Their children do not fare as well as the children of older women. They are at increased risk of developmental delay, academic difficulties, behavioural disorders, substance abuse and of becoming teenage parents themselves.⁴ Babies born to teenaged mothers, especially those younger than 15 years, have a high risk of poor outcomes such as low birthweight, preterm birth and death.⁴ Not surprisingly, the National Health and Medical Research Council (NH&MRC) has recommended that teenage mothers receive special services and that these be located in the areas of greatest need.⁵ The purpose of this study was to examine the variation in the trends of births to teenagers stratified by economic disadvantage and remoteness for the period 1988 to 1997.

Methods

Data on births to teenagers were obtained from the Queensland Perinatal Data Collection for the 10 years 1988 to 1997. Because of differences in physical, social and psychological development, the data were analysed in three age groups: 13 to 14 years, 15 to 17 years and 18 to 19 years. Population data (the denominators for the rates) for each single-year-of-age were obtained from the Australian Bureau of Statistics.⁷

Statistical local areas (SLAs) were the building blocks of the geographic areas used in this study. SLAs are part of the ABS Australian Standard Geographic Classification⁸ and were the smallest spatial units for which data on both the numerator (births) and denominator (population) were available. They correspond either to local government areas (LGAs), or to suburbs in larger LGAs. SLAs cover the State without gaps or overlaps. There are 446 SLAs in Queensland with a median population of 5359 (range: 236 to 65457).

Using the ABS index of economic disadvantage, the SLAs were ranked from the most to least disadvantaged.⁹ The ABS index is based on the percentage of people in the SLA with low income, low educational attainment or who are unemployed or employed in relatively unskilled occupations. The top 10% was assigned to the *disadvantaged* group, the bottom 10% to the *affluent* group and the middle 80% to the *intermediate* group. The middle 80% was not further subdivided because:

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TABLE: ANNUAL PERCENTAGE CHANGE IN THE RATE OF BIRTHS TO TEENAGERS FOR DIFFERENT GEOGRAPHIC AREAS IN QUEENSLAND, 1988 TO 1997

| Age (years) | Geographic area | Annual percentage change | 95% confidence interval |
|-------------|-----------------------------------|--------------------------|-------------------------|
| 13 to 14 | Urban, affluent | -2.5 | -39.6 to 57.5 |
| | Urban, intermediate | 2.3 | -5.5 to 10.6 |
| | Urban, disadvantaged ¹ | 16.8 | 0.7 to 35.6 |
| | Rural, intermediate | -0.2 | -7.7 to 7.9 |
| | Rural, disadvantaged | -1.4 | -16.0 to 15.9 |
| | Remote, intermediate | -6.2 | -33.3 to 32.1 |
| | Remote, disadvantaged | 0.8 | -10.3 to 13.4 |
| | Queensland | 1 | -3.0 to 6.0 |
| 15 to 17 | Urban, affluent ¹ | -5.8 | -10.8 to -0.5 |
| | Urban, intermediate | 0.6 | -0.4 to 1.7 |
| | Urban, disadvantaged ¹ | 4.4 | 2.2 to 6.6 |
| | Rural, intermediate | -0.8 | -2.0 to 0.4 |
| | Rural, disadvantaged | -0.7 | -4.3 to 3.0 |
| | Remote, intermediate | 0.4 | -3.9 to 4.9 |
| | Remote, disadvantaged | -1.6 | -4.6 to 1.5 |
| | Queensland | -0.8 | -1.9 to 0.9 |
| 18 to 19 | Urban, affluent ¹ | -5.3 | -8.4 to -2.2 |
| | Urban, intermediate | 0.3 | -0.4 to 1.0 |
| | Urban, disadvantaged ¹ | 5.1 | 3.6 to 6.5 |
| | Rural, intermediate | 0.1 | -0.7 to 0.9 |
| | Rural, disadvantaged | -0.1 | -2.7 to 2.5 |
| | Remote, intermediate | -0.7 | -3.5 to 2.1 |
| | Remote, disadvantaged | 0.2 | -2.4 to 2.9 |
| | Queensland | 0 | -0.1 to 0.9 |

1. Statistically significant at the 0.05 level.

- (1) many of these SLAs were not homogenous and included neighbourhoods with markedly different socio-economic characteristics; and
- (2) the relative ranking of some of these SLAs changed over time.

In contrast, the top and bottom 10% were relatively homogeneous and their rankings did not change significantly over time. Remoteness was based on the *Rural, Remote & Metropolitan Area Classification (RRMA)*.¹⁰

There were potentially nine geographic categories – three remoteness by three economic disadvantage categories. However, all of the affluent SLAs were urban;

this reduced the number of geographic categories to seven.

A Poisson regression model with a linear term for year was used to estimate the annual percentage change in the rate of births to teenagers. The trend was assessed as statistically significant if the 95% confidence interval for the annual percentage change did not include zero.

Results

There are more than 3200 births to teenagers in Queensland each year. These are not evenly distributed across the State. For example, urban-affluent SLAs had the lowest rates (one-fifth of the state rate), while disadvantaged-remote SLAs had the highest rates (about four times the state rate). The rates were also high in urban-disadvantaged SLAs and rural areas (about two times the state rate).

The trends also varied markedly across areas. Of most concern, the urban-disadvantaged area had a statistically significant increasing trend for each of the three age groups (see table). In contrast, the urban-affluent area had a statistically significant decreasing trend for all three age groups. The point estimates of the trends for the age group '13 to 14 years' should be interpreted cautiously because there were only a small number of births in this group. This is reflected in the wide 95% confidence intervals.

In short, there was a 20-fold variation in rates across Queensland. The areas with high rates had increasing or stable trends, while the area with the lowest rates (urban-affluent) had decreasing trends (see figure).

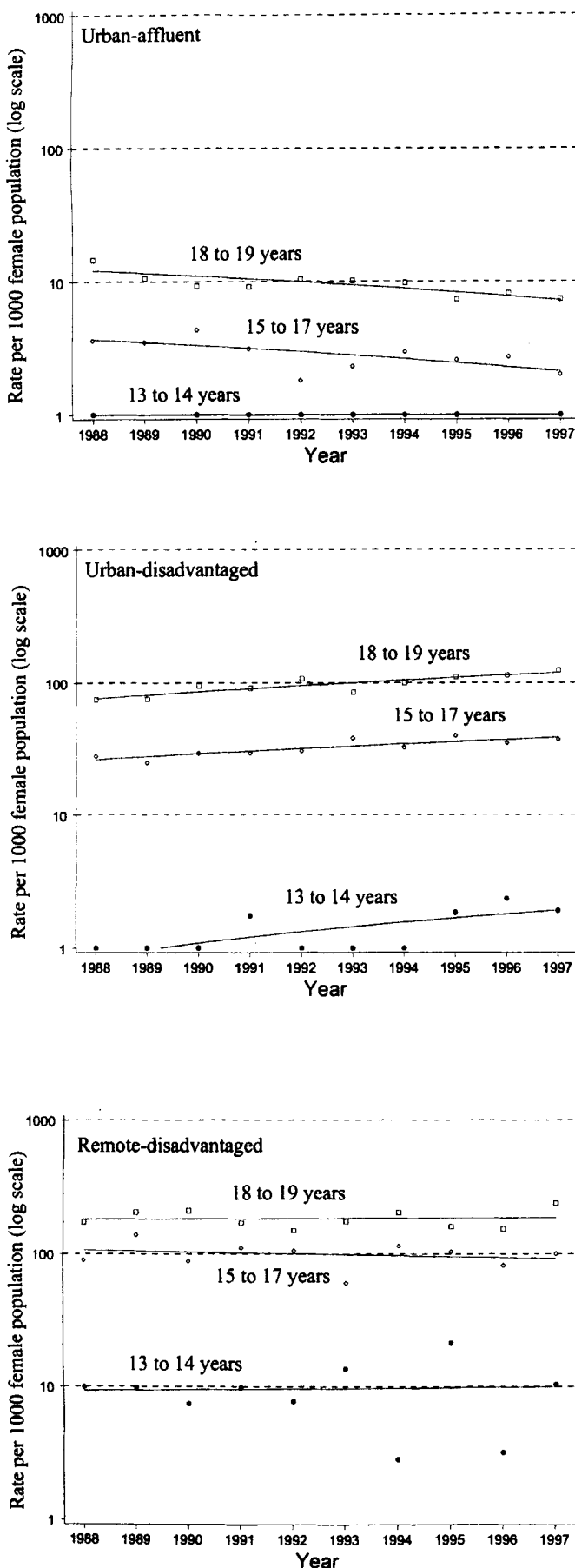
Discussion

Variations in rates according to economic disadvantage have been reported elsewhere. For example, a study conducted in NSW found that the highest rates were in the economically disadvantaged areas of western Sydney and the far west.¹¹ A similar pattern has been observed in the United Kingdom¹² and the United States.¹

The new information that this study provides is that the rates in areas defined according to economic disadvantage and remoteness are diverging over time. That is, rates of birth to teenagers are decreasing in urban-affluent areas, while they have remained at extremely high levels in disadvantaged remote areas, and are increasing in urban-disadvantaged areas. Policy-makers should be aware of this divergence in rates; especially in light of NH&MRC recommendations that special services for teenage mothers should be located in areas of greatest need.

It would have been useful to also have data on induced terminations so that we could assess trends in teenage pregnancies, as well as teenage births. Unfortunately, reliable data on terminations are available only from South Australia and the Northern Territory, where induced terminations are notifiable by law. We could have obtained data from the Health Insurance Commission on the number of Medicare claims for induced terminations. Unfortunately, an important proportion of teenagers, perhaps as high as 20%, decide not to lodge a claim for the procedure.¹³ Because the extent of this bias is difficult to

FIGURE: TRENDS IN BIRTHS TO TEENAGERS IN QUEENSLAND



estimate, we decided that it was not helpful to use such data to assess trends in pregnancy rates across different areas in Queensland.

Consequently, we do not know whether the high birth rates to teenagers in disadvantaged and remote areas are owed to more pregnancies or less terminations, although we suspect that it is a combination of the two. A study in South Australia found that teenagers in affluent areas were more likely to have a termination than teenagers in disadvantaged areas.¹⁴ Along similar lines, a recent government report from the United Kingdom found that disadvantaged teenagers, who become pregnant, see no reason not to proceed with the pregnancy. They have low expectations of education and employment and see childbirth, not termination, as the best option.¹⁵

At the most recent Census, 62% of the population in the remote-disadvantaged SLAs identified as Indigenous.⁷ Examination of trends in the birth rate for Indigenous teenage mothers would be a useful extension of this present study. One technical problem, which would hinder such an analysis, is the large intercensal increases in number of people who identify as Indigenous. This makes interpretation of trends in rates problematic. For example, between the 1991 and 1996 Censuses, the count of Indigenous people in Queensland increased by 30%. This is too large to be explained by demographic factors (births, deaths, and migration into and out of Queensland). For urban areas in Queensland the increase was a staggering 70%. Much of the increase has been attributed to an increasing propensity of Indigenous people in urban areas to identify as such in the Census. In contrast, for remote Indigenous communities in Queensland, the increase was only 3.7%, which is about the increase that would be expected based on trends in births, deaths and migration.¹⁶

In short, population data for Indigenous people (the denominators needed to calculate the rates for teenage births) have increased markedly over time in non-remote areas. This makes the results of any analysis of routine data on births to teenage Indigenous mothers difficult to interpret.

Murray and Lopez point out that poor local information about a health problem 'is often interpreted in policy debates to mean that the problem is unimportant, which generates a self-perpetuating phenomenon'.¹⁷ The relatively low and stable rates for all of Queensland would suggest that teenagers having babies is not a pressing problem. However, in this study we found that the birth rates for teenagers who live in disadvantaged areas are 2 to 4 times higher than the rates for all of Queensland and 10 to 20 times higher than the rates in affluent areas. Further, relative to the rates in affluent-urban areas, the rates in disadvantaged areas are getting worse. Therefore, for some areas in Queensland teenagers having babies is a pressing problem, especially as it can perpetuate a cycle of limited educational opportunities, social isolation and reliance on welfare.

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