

Termination of pregnancy: associations with partner violence and other factors in a national cohort of young Australian women

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As a response to unwanted and unplanned pregnancy, termination of pregnancy (also known as induced abortion) is one of the most common and safe surgical procedures, but it remains a controversial issue and a focus for public health policy debate in Australia as elsewhere. Because termination remains in the criminal codes of most Australian States, the data are limited. First, there are data on claims from the national health insurance system (Medicare) for procedures that might result in termination (but also include those undertaken for other reasons) and data on hospital separations (which do not include day procedures). The data from these sources are unreliable for a variety of reasons.¹ Second, surveys of women's lifetime experience rely on women's self-report of the event. Third, Western Australia and South Australia require notification of termination of pregnancy and therefore have data with good coverage of the termination rate expressed as terminations per 1,000 women in their State.^{2,3} In 2004 in Western Australia, the termination rate among women aged between 15 and 44 years was 18.2, compared with 16.7 for South Australia.

None of these forms of Australian data has shed adequate light on women at risk of termination to inform national policies to reduce unwanted pregnancy rates. The lack of national data on termination represents a gap in health statistics.⁴

In Australia, as elsewhere, there is considerable concern about the rate of

teenage pregnancy, termination and teenage birth. Teenage fertility (births to women aged 15 to 19 years) decreased by 42% from 27.6 babies (per 1,000 teenage women) in 1980 to 16.0 in 2005.⁵ In 1999, the teenage fertility rate was estimated to be 18.1 per 1,000 women aged 15-19. This is a lower rate than in many developed countries, but not as low as some European countries, e.g. the Netherlands. However, the adolescent conception rate was estimated to be 45.5 per 1,000 and the difference between the conception and birth rate was accounted for by terminations.⁶ There is no detail about factors associated with termination among these young women.

A British study of teenage pregnancy found that women with higher socio-demographic characteristics were terminating pregnancies, while those from a more disadvantaged background were continuing to term.⁷ A more recent British study found that while overall termination rates had risen (17.5 per 1,000 women aged 15-44 in 2003, 17.8 in 2004), the rate among teenage women had declined slightly (18.2 among women below 18 to 17.8 in 2004).⁸ In contrast, a United States (US) study found that teenage terminations were more likely among black and Hispanic women, unmarried women, those with low income and those with Medicaid cover. While overall and teenage (15-17 years) termination rates had declined, the rate among poor teenagers had risen between 1994 and 2000 in the US.⁹

Births to teenage mothers are more

Abstract

Objective: To examine the associations between termination and other reproductive events, socio-demographic characteristics and experience of violence among a community-based national sample of young Australian women.

Methods: Using multiple logistic regression, we analysed data from the Younger cohort of the Australian Longitudinal Study on Women's Health comprising 14,776 young women aged 18-23 in survey 1 (1996), of whom 9,683 aged 22-27 also responded to survey 2 (2000). We stratified respondents into those aged below 20 and those who were older at survey 1. We compared the characteristics associated with terminations among teenage women in 1996 (survey 1) with those of women aged over 20 in 1996 who had not then reported a termination and who responded to survey 2 in 2000. Finally, we compared the characteristics of women reporting terminations, births, preterm births and miscarriages.

Results: Women reporting teenage terminations were more likely to be in a de facto relationship (OR=1.94, 95% CI 1.17-3.21), less well educated (OR=2.32, 95% CI 1.44-3.74), have no private health insurance, and be a victim of partner violence (OR=3.11, 95% CI 1.76-5.49). Women reporting later terminations were also more likely to be abused by a partner (OR=3.52, 95% CI 2.14-5.81). The relationship with violence held for the other reproductive events.

Conclusion and Implications: Partner violence is a strong predictor of termination and other reproductive outcomes among young Australian women. Education has a protective effect. Prevention and reduction of partner violence may reduce the rate of unwanted pregnancy.

Key words: Teenage pregnancy, domestic violence, young Australian women.

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complicated; their babies suffer problems such as preterm birth, low birthweight and congenital abnormalities.¹⁰

In our previous study, we found a strong association between partner violence and high rates of pregnancy, miscarriages and terminations.¹¹ There have been other studies that have indicated an association between partner violence and preterm birth.¹² There is increasing evidence overseas about the links between violence and adverse reproductive outcomes for women, including high rates of termination.¹³⁻¹⁶ Women experiencing violence and abuse can be subject to coercive sex and unprotected intercourse, leading to a higher rate of unplanned and unwanted pregnancies.¹²

In order to contribute to further understanding of termination in Australia and elsewhere, we undertook this analysis of the 1996 and 2000 surveys of the Younger cohort of the Australian Longitudinal Study of Women's Health (ALSWH) to examine:

- The factors associated with termination of pregnancy in teenagers, and in those who have their first termination of pregnancy at age 20 and over.
- The factors associated with termination of pregnancy and other pregnancy outcomes among young Australian women.

Methods

The ALSWH has been described elsewhere.¹⁷ Briefly, the project involves three age cohorts of women who were aged 18-23 (the Younger cohort), 45-50 years (the Mid-age cohort) and 70-75 years (the Older cohort) when first surveyed in 1996. They will be followed longitudinally for at least 20 years. Participants

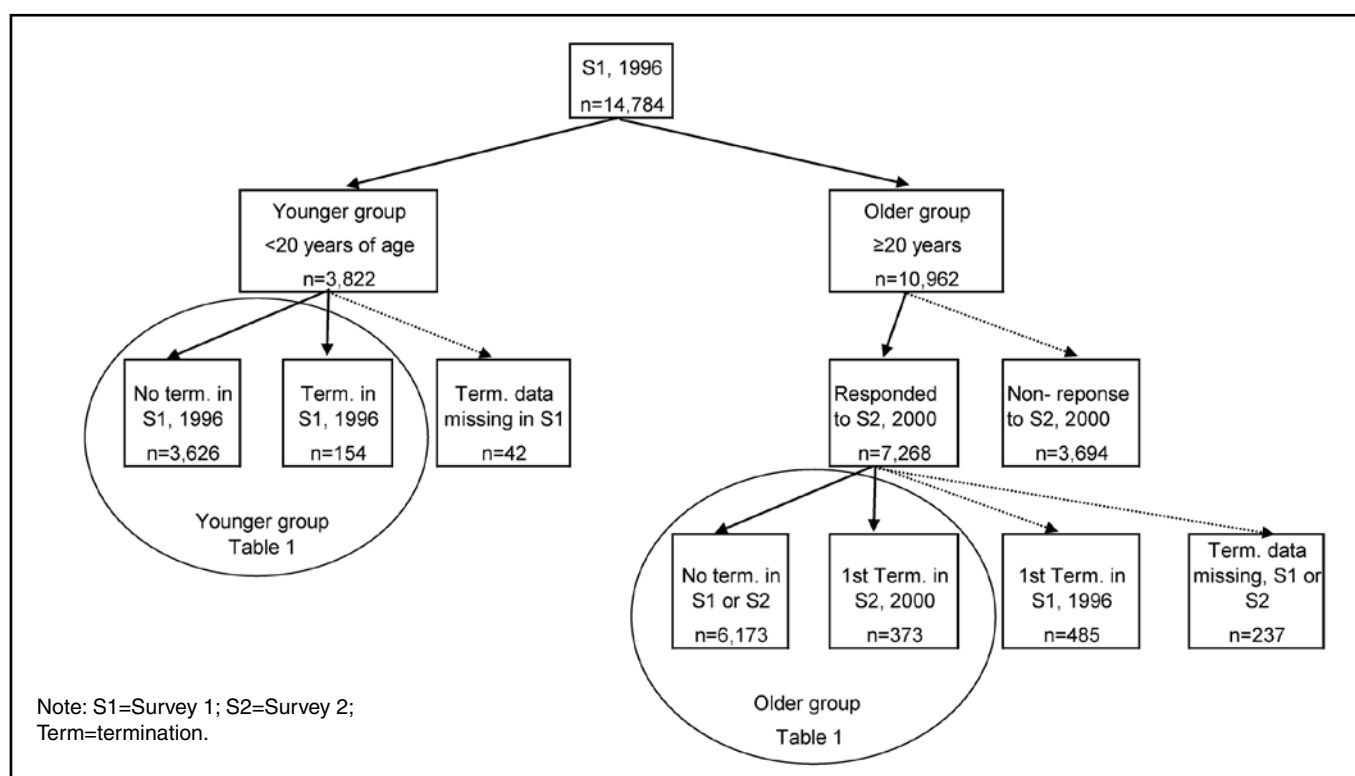
respond to mailed surveys covering aspects of physical and emotional health, health service use, demographics, time use, health behaviours, life events, and other variables to develop a comprehensive picture of women's health in its social context. About 36,000 women aged 18-23, selected from the Australian national health insurance database, were eligible for the Younger cohort. Data for 14,779 women who responded to Survey 1 in 1996 and linked with data for 9,683 who responded Survey 2 in 2000 were used for this analysis. The project as a whole has ethics clearance from the human research ethics committees at the University of Newcastle and University Queensland, Australia. The Human Research Ethics Committee of La Trobe University (Reference 01/140), Melbourne, Australia, gave approval for the secondary data analysis in this study.

Because the survey over-sampled women living in rural and remote areas, probability weights were calculated to reflect the population distribution of Australian women in the age group studied. In all cases, numbers (n) and percentages reported have been adjusted for the area weighting. All reported odds ratios (ORs) and 95% confidence intervals (95% CIs) are adjusted for the socio-economic variables listed below.

Reproductive events

The questionnaires for Survey 1 and Survey 2 asked women to list how many times they had (a) been pregnant, (b) had a miscarriage, (c) had a termination and (d) given birth at term or (e) given birth at less than 37 weeks (preterm). For this paper, the responses were

Figure 1: Flowchart of data used in Table 1 for the comparison of association between violence, socio-demographic variables and first termination before and after 20 years of age. Data from Survey 1 (1996) and Survey 2 (2000) of the Younger cohort of the Australian Longitudinal Study on Women's Health.



dichotomised into 'ever' and 'never' as multiple events (within any particular reproductive event category) were rarely reported and the power for detecting significant associations was low.

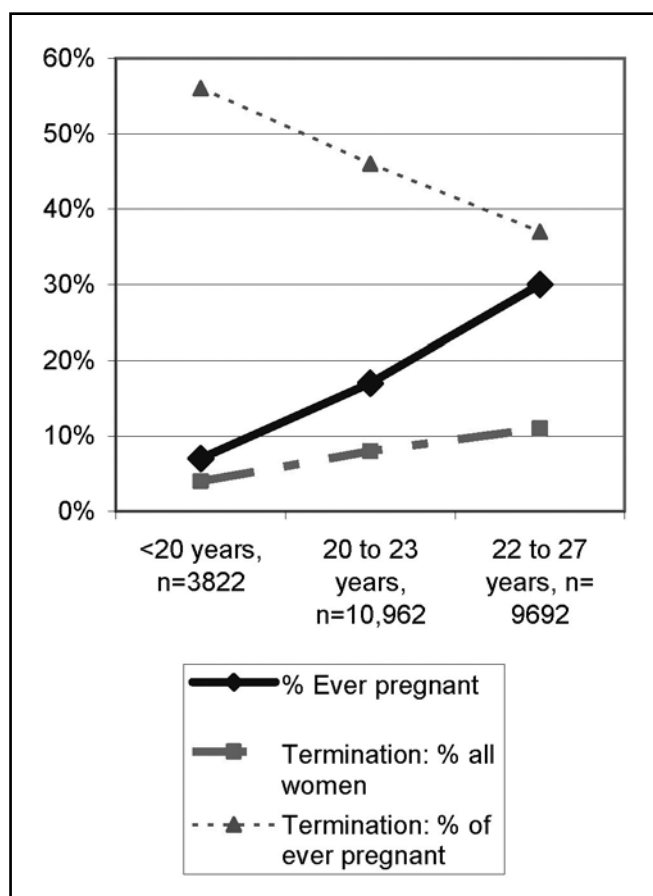
We linked the termination data from women's responses in the two surveys and were thus able to distinguish those who reported their first termination in 2000 from those who first reported termination in 1996. Moreover, because of the interest in teenage pregnancy, we determined the socio-demographic factors and violence status associated with teenage terminations by selecting only those women who were aged 19 years and under in Survey 1. In addition, we examined these factors reported in 2000 (Survey 2) in the subgroup of women aged 24-27 who had been over 20 in 1996 (Survey 1) and who had not reported a termination at that time. We excluded those over 20 in 1996 who reported having had a termination in Survey 1 as we did not know at what age they had their first termination (see Figure 1).

Using the data for all women from Survey 2, we also compared the associations of socio-demographic factors and violence with reported termination and separately with other reported reproductive events (see Table 2).

Socio-demographic factors

We included the following socio-demographic variables of interest: marital status, age, highest education level, private health insurance cover, country of birth, area and State of residence. While Indigenous (Aboriginal and Torres Strait Islander) status

Figure 2: Relationship between pregnancy and termination by age group.



was included in the analyses, associations are not reported in accordance with ALSWH requirements to ensure results cannot be misinterpreted, as the ATSI sample is not representative.

Composite variable for violence

Intimate partner violence, often called domestic violence, is a complex, multi-dimensional set of coercive behaviours, most often measured by acts of physical and sexual violence. However, women who are physically abused by intimate partners are often abused in other ways, for instance psychologically or economically. Three short questions about violence were asked in this survey:

- In the last 12 months, have you been pushed, grabbed, shoved, kicked or hit?
- In the last 12 months, have you been forced to take part in unwanted sexual activity?
- Have you ever been in a violent relationship with a partner/spouse?

These were combined to produce a composite variable with five mutually exclusive categories determined, after preliminary cross-tabulations, to indicate the presence of violence. The categories were also of sufficient size to provide reliable estimates:

- No violence.
- Recent physical or sexual violence (in the last 12 months) but no partner violence – recent non-partner violence.
- Partner violence but no recent violence.
- Partner and recent violence.
- Missing responses on any of the three questions.

This variable was included with the socio-demographic variables in all models. Associations were estimated using multiple logistic regression and are reported as adjusted odds ratios. Missing data (less than 3% for any variable) were modelled using an indicator variable and are not reported here. All analyses used survey commands in Stata 8.¹⁸

Results

Trends among young Australian women in the proportion and ratios of termination of pregnancy from 1996-2000

In Survey 1 (1996), 3,822 women were aged under 20 and 10,962 were aged 20-23. Seven per cent of women under 20 had been pregnant and 56% of these reported having terminations. In the older group, 17% had ever been pregnant and 46% reported terminations. Overall, only 14% of women in Survey 1 reported ever being pregnant and half had terminated these pregnancies. By Survey 2 (2000), 30% of women had ever been pregnant and 37% had had a termination (11% of the sample). Figure 2 shows that while with increasing age the proportion of women having pregnancies or terminations increased, the ratio of women who reported terminations compared with those who had ever been pregnant decreased.

Factors associated with termination of pregnancy among teenage compared with young Australian women aged 20 and over

Table 1 reports differences in socio-demographic and violence

characteristics among the teenage group in Survey 1 and among the older group in Survey 2 who had not reported a termination in Survey 1.

Among the teenage group, 154/3,780 (4%) reported terminations (data on terminations were missing for 42 women); 10% of those reporting having more than one. Among the older group, 373/6,546 (6%) reported terminations, 12% of whom reported having more than one.

Violence

Most notably, women in both groups who reported experiencing violence had greater odds of reporting pregnancy terminations. Women reporting recent non-partner violence were more likely to report a termination (OR=1.46, 95% CI 0.93-2.29 for teenage women and OR=1.85, 95% CI 1.13-3.04 for older women).

Women reporting having ever experienced a violent partner had significantly higher odds of terminations in both age groups,

Table 1: Comparison of association between violence, sociodemographic variables and first termination before and after 20 years of age. Data from Survey 1 (1996) and Survey 2 (2000) of the Younger Cohort of the Australian Longitudinal Study on Women's Health.

Variables	n	Variable column %	Data from survey 1, 1996, women aged <20 years at Survey 1, first abortion in Survey 1			OR	95% CI
			Termination				
			No	Yes	% Yes		
	3,780						
Violence							
No violence	2,761	75	2,679	82	3	1	
Recent non-partner violence	679	18	647	32	5	1.46 0.93-2.29	
Partner violence but not recent	149	4	135	15	10	2.07 1.08-3.97	
Partner and recent violence	159	4	137	22	14	3.11 1.76-5.49	
Marital status							
Single	3,394	90	3,281	113	3	1	
Married	110	3	103	7	6	1.08 0.44-2.66	
De facto	248	7	217	32	13	1.94 1.17-3.21	
Widowed/separated/divorced	10	0	9	1	13	2.36 0.25-21.9	
Education level							
None/Year 10	468	12	410	58	14	2.32 1.44-3.74	
HSC	1,174	31	1,127	47	4	1	
App/certificate/degree	324	9	300	24	8	1.86 1.07-3.24	
Studying	1,801	48	1,778	24	1	0.49 0.26-0.92	
Employment status							
Full-time	719	19	678	41	6	1	
Part-time or casual	719	19	680	39	5	1.18 0.72-1.94	
Unpaid/home duties	118	3	103	16	13	1.48 0.74-2.97	
Studying	1,801	48	1,778	24	1	— ^a	
Unemployed	308	8	289	19	6	0.80 0.44-1.45	
Disabled/other	57	2	47	10	17	2.70 1.18-6.18	
Health insurance							
No private cover	2,368	63	2,236	132	6	1	
Has private cover	1,328	35	1,307	21	2	0.43 0.26-0.72	
Country of birth							
Australian born	3,535	94	3,387	148	4	1	
European born	56	1	52	3	6	1.53 0.36-6.44	
Asian born	160	4	159	1	1	0.30 0.04-2.35	
Area of residence							
Urban	2,812	74	2,712	99	4	1	
Rural	857	23	811	46	5	1.09 0.77-1.54	
Remote	89	2	82	6	7	0.76 0.33-1.78	
State of residence							
New South Wales	1,112	29	1,063	49	4	1	
Victoria	980	26	953	27	3	0.72 0.42-1.24	
Queensland	683	18	657	27	4	0.85 0.52-1.40	
South Australia	319	8	304	16	5	1.12 0.58-2.15	
Western Australia	356	9	331	25	7	1.61 0.91-2.83	
Tasmania	114	3	113	1	1	0.16 0.04-0.67	
Northern Territory	27	1	25	2	7	1.29 0.31-5.40	
Austn Capital Territory	56	1	54	1	2	0.87 0.11-6.76	

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whether or not there was also recent violence. The odds of termination for women who reported ever experiencing partner violence were more than twice those of non-abused women (OR=2.07, 95% CI 1.08-3.97; OR=2.65, 95% CI 1.96-3.60 respectively). Women who reported partner and recent physical or sexual violence had even higher odds (OR=3.11, 95% CI 1.76-5.49; OR= 3.52, 95% CI 2.14-5.81 respectively).

Marital status

The majority of the teenage group (n=3,394) were single, but when compared with these women those who were in a de facto relationship had twice the odds of reporting terminations (OR=1.94, 95% CI 1.17-3.21). Only 52% of the older group were single and compared with these women, married women had significantly lower odds of having a termination (OR=0.42, 95% CI 0.29-0.60).

Table 1 (continued from previous page)

Variables	n	Variable column %	Termination			OR	95% CI
			No	Yes	% Yes		
			Data from Survey 2, 2000, women aged ≥20 years at Survey 2, first abortion recorded in Survey 2				
	6,547						
Violence							
No violence	5,272	81	5,036	236	4	1	
Recent non-partner violence	274	4	251	24	9	1.85	1.13-3.04
Partner violence but not recent	665	10	585	80	12	2.65	1.96-3.60
Partner and recent violence	156	2	129	27	17	3.52	2.14-5.81
Marital status							
Single	3,379	52	3,166	214	6	1	
Married	1,762	27	1,715	46	3	0.42	0.29-0.60
De facto	1,236	19	1,134	101	8	1.24	0.93-1.64
Widowed/separated/divorced	134	2	125	10	7	0.78	0.38-1.63
Education level							
None/Year 10	566	9	521	44	8	1.06	0.69-1.64
HSC	1,264	19	1,178	86	7	1	
App/certificate	1,476	23	1,382	95	6	0.96	0.68-1.34
Degree or higher	3,027	46	2,887	140	5	0.59	0.41-0.85
Occupation							
Manager/professional	2,836	43	2,677	158	6	1	
Para-professional	421	6	397	24	6	0.84	0.51-1.39
Trade/clerical	1,876	29	1,775	101	5	0.73	0.52-1.02
Blue collar	337	5	317	20	6	0.77	0.44-1.34
Never paid work	175	3	160	16	9	0.97	0.49-1.90
Other	564	9	533	31	5	0.75	0.45-1.26
Health insurance							
No private cover	4,291	66	4,018	273	6	1	
Has private cover	2,154	33	2,058	96	4	0.78	0.59-1.03
Country of birth							
Australian born	6,193	95	5,856	336	5	1	
European born	69	1	64	6	8	1.36	0.45-4.15
Asian born	235	4	210	25	10	2.18	1.28-3.69
Area of residence							
Urban	4,681	71	4,391	290	6	1	
Rural	1,394	21	1,321	73	5	0.85	0.65-1.12
Remote	211	3	205	6	3	0.36	0.18-0.73
State of residence							
New South Wales	1,800	27	1,692	109	6	1	
Victoria	1,711	26	1,607	104	6	0.94	0.69-1.29
Queensland	1,273	19	1,201	72	6	0.92	0.66-1.28
South Australia	505	8	484	21	4	0.68	0.40-1.16
Western Australia	620	9	575	45	7	1.24	0.82-1.88
Tasmania	161	2	156	5	3	0.44	0.15-1.31
Northern Territory	66	1	61	5	8	1.70	0.60-4.78
Austn Capital Territory	170	3	161	9	5	0.81	0.35-1.90

Note:

(a) Factor fitted in education level above.

Total numbers for variables vary due to missing response, column percentages do not include missing category.

Education

About half the teenage group was still studying at Survey 1 and a similar proportion of the older group had attained tertiary qualifications at Survey 2. Women in both these education groups had significantly lower odds of having terminations (OR=0.49, 95% CI 0.26-0.72 and OR=0.59, 95% CI 0.41-0.85 respectively). In the teenage group, those who had left school with fewer formal qualifications had significantly higher odds of having had a termination compared with those who had obtained a Higher School Certificate (OR=2.32, 95% CI 1.44-3.74).

Employment and occupation

Occupation and employment measures were reported differently between surveys. In the teenage group, women in the 'disabled or other' employment category had almost three times the odds of reporting terminations as women employed full-time (OR=2.70, 95% CI 1.18-6.18). In the older group, women had moved from studying to various occupational categories. There were no statistically significant differences between the proportions of women having terminations among occupational categories.

Table 2: Comparison of association between violence, socio-demographic variables and various pregnancy outcomes, data from Survey 2 of the Younger Cohort of the Australian Longitudinal Study on Women's Health, 2000.

	n (%)	Termination			Birth			Preterm birth			Miscarriage		
		%	OR	95% CI	%	OR	95% CI	%	OR	95% CI	%	OR	95% CI
Total	9,692 (100)	11			17			1			6		
Variables													
Violence													
No violence	7,616 (81)	9	1		14	1		1	1		5	1	
Recent non-part. viol.	460 (5)	15	1.75	1.29-2.38	10	0.98	0.67-1.44	1	0.87	0.25-3.05	5	1.31	0.81-2.13
Part. viol. not recent	1,059 (11)	23	2.56	2.12-3.10	31	2.20	1.82-2.67	3	2.12	1.39-3.24	14	2.66	2.12-3.34
Part. and recent viol.	288 (3)	33	3.75	2.78-5.05	35	3.34	2.37-4.71	4	3.15	1.53-6.49	22	5.29	3.72-7.52
Marital status													
Single	5,394 (56)	10	1		5	1		1	1		3	1	
Married	2,197 (23)	9	0.83	0.68-1.00	39	12.1	10.2-14.3	3	4.67	2.88-7.56	11	3.45	2.75-4.32
De facto	1,859 (19)	16	1.43	1.20-1.71	18	3.19	2.64-3.86	2	2.69	1.57-4.62	8	2.01	1.57-2.59
Wid/sep/divorced	193 (2)	21	1.21	0.81-1.80	54	11.1	7.85-15.7	6	5.28	2.33-12.0	17	2.82	1.78-4.45
Age													
<24 years	2,423 (25)	9	1		9	1		1	1		5	1	
24-27 years	7,269 (75)	12	1.48	1.24-1.76	19	1.70	1.41-2.04	2	1.75	1.04-2.93	7	1.12	0.88-1.41
Education level													
None/Year10	877 (9)	21	1.36	1.08-1.71	49	2.41	1.96-2.96	4	1.70	1.06-2.75	15	1.58	1.22-2.04
HSC	2,121 (23)	15	1		24	1		2	1		8	1	
App/certificate	2,176 (23)	12	0.81	0.66-0.99	18	0.63	0.53-0.76	2	0.86	0.54-1.38	8	0.93	0.74-1.19
Degree or higher	4,201 (45)	7	0.52	0.43-0.63	5	0.20	0.16-0.24	0	0.31	0.17-0.56	2	0.37	0.28-0.48
Health insurance													
No private cover	6,418 (67)	13	1		19	1		2	1		7	1	
Has private cover	3,119 (33)	8	0.71	0.59-0.84	10	0.54	0.46-0.64	1	0.88	0.58-1.33	4	0.76	0.61-0.95
Country of birth													
Australian born	9,168 (95)	11	1		17	1		1	1		6	1	
European born	116 (1)	16	1.56	0.84-2.88	13	1.35	0.67-2.73	0	–		5	1.05	0.38-2.90
Asian born	340 (4)	11	1.16	0.75-1.77	14	1.58	1.01-2.48	1	1.02	0.29-3.62	4	0.97	0.50-1.90
Area of residence													
Urban	6,952 (75)	12	1		13	1		1	1		5	1	
Rural	2,063 (22)	11	0.79	0.67-0.93	27	1.78	1.54-2.05	2	1.24	0.85-1.79	8	1.11	0.92-1.34
Remote	305 (3)	10	0.66	0.45-0.96	32	2.10	1.53-2.87	3	1.77	0.88-3.56	13	1.84	1.27-2.68
State of residence													
New South Wales	2,698 (29)	12	1		17	1		1	1		6	1	
Victoria	2,567 (27)	12	0.98	0.81-1.19	12	0.78	0.64-0.95	1	0.90	0.52-1.57	5	1.02	0.78-1.33
Queensland	1,821 (19)	10	0.71	0.58-0.88	20	1.05	0.86-1.27	2	1.11	0.67-1.83	7	1.14	0.87-1.48
South Australia	743 (8)	9	0.69	0.51-0.94	16	0.84	0.63-1.11	2	1.53	0.79-2.96	6	1.07	0.74-1.53
Western Australia	930 (10)	15	1.19	0.92-1.53	21	1.25	0.97-1.61	2	1.12	0.59-2.15	7	0.97	0.71-1.34
Tasmania	239 (3)	10	0.68	0.42-1.11	24	0.99	0.66-1.50	2	1.30	0.56-3.05	7	0.98	0.57-1.67
Northern Territory	101 (1)	16	1.14	0.63-2.05	32	1.95	1.06-3.59	4	2.45	0.87-6.93	16	2.06	1.08-3.96
Aust. Capital Territory	247 (3)	8	0.64	0.37-1.11	11	1.02	0.60-1.72	1	0.61	0.08-4.67	5	1.07	0.53-2.15

Note:

Total numbers for variables vary due to missing response, column percentages do not include missing category.

Health insurance status

In the teenage group, women who had private health insurance had significantly lower odds (OR=0.43, 95% CI 0.26-0.72) of reporting a termination than women who did not have private insurance. This was similar for women in the older group, although it did not reach statistical significance.

Country of birth and area of residence

There were no differences in the broad categories of country of birth for the teenage group reporting terminations. However, in the older group, Asian-born women were more likely to report a termination (OR=2.18, 95% CI 1.28-3.69).

Women in the older group living in remote areas of Australia had significantly lower odds (OR=0.36, 95% CI 0.18-0.73) of reporting a termination than women living in urban areas.

Termination, violence, socio-economic status and other pregnancy outcomes

Table 2 shows the socio-demographic and violence factors and the association with having a termination of all women responding to Survey 2 aged 22-27 years. The strongest associations were with any reported violence, most notably partner violence.

Termination, violence and socio-economic status

Not surprisingly, the socio-demographic and violence associations with termination are similar to those shown for the older group in Table 1. Termination was also more likely to be reported in the older group. Termination was more likely to be reported by women in all other marital groups compared with married women and by women with less education. The odds of termination were significantly lower among women with private health insurance compared with those without, and among women living in remote or rural areas compared with women living in urban areas.

Other pregnancy outcomes, violence and socio-economic status

The other sections of Table 2 enable a comparison of associations between socio-demographic variables and violence with other reproductive events, namely birth, preterm birth and miscarriage. Note that the comparison group for each of these is women who did not have the event and that women reporting preterm births are a subset of those reporting births.

There is a similar pattern of associations for birth, preterm birth or miscarriage with all socio-demographic or violence variables. Women who are older, have less education, do not have private health insurance and, most notably, who report having experienced partner violence are significantly more likely to report these events.

However, women who live in the Northern Territory compared with those in New South Wales and those who live in rural or remote areas compared with living in urban areas are more likely to report other pregnancy outcomes than termination of pregnancy.

Discussion

Termination of pregnancy (also termed induced abortion) remains a focus of concern in the Australian political and social policy arenas as it is in other countries. Public health and social policy aimed at improving women's health and fertility control in Australia requires effective information about which women are more vulnerable to unplanned or unwanted pregnancy. The only previous national data available to describe Australian women's characteristics suggested that they were likely to be better educated.¹⁹ However, as women in that study were aged from 16-59 this could represent a cohort effect. The only other available socio-demographic information – based on official notifications of terminations of pregnancy in South Australia – suggested that younger women who had terminations were more likely to be disadvantaged.²⁰

Our analysis of a representative national population-based sample showed that young Australian women were less likely to terminate a pregnancy the older they became. It also suggests that women in rural and remote areas were less likely to terminate a pregnancy, which may indicate a lack of access to contraception and abortion services. However, young Australian women reporting terminations and all other pregnancy outcomes were likely to be disadvantaged, i.e. less well educated, not privately insured (another marker of socio-economic disadvantage) and a victim of violence, especially partner violence, compared with the majority of women in this age group who had never been pregnant. Partner violence is the strongest predictive factor of pregnancy termination among young Australian women.

Similar to other developed countries, the average age for Australian women to marry in 2000 was 27 and their age at first birth was also 27, while the average age of all mothers giving birth was 29.²¹ The majority of women in our cohort were younger than 27. When compared with married women, women in de facto relationships were more likely to have terminations and less likely to give birth or miscarry. This may represent an effect of age and/or women's decisions about fertility control and their ability to parent in their current relationship and environment.

There are some limitations to this study. As postal surveys are more likely to obtain responses from women in higher socio-economic groups and those less victimised, and women are providing self-reports of their terminations and violence from partners (both sensitive issues), the study is likely to have under-estimated the impact of social disadvantage and violence on termination among younger women. These under-estimations are likely to have been exacerbated by attrition of the sample between Surveys 1 and 2.²² This under-reporting is known to bias towards null effects. Missing data in the study at about 3% or less for any variable do not represent a major source of bias. While the questions about partner violence are not detailed, our findings are consistent with other studies examining associations between partner violence and reproductive outcomes.^{12,13}

There is a consistency and strength of association between termination and young women's experience of violence, especially from partners. This relationship with violence against women is

consistent across birth, preterm birth and miscarriage even in the teenage group. Victimized young women are more likely to become pregnant, miscarry, seek terminations, and report preterm and term births compared with women who report no violence in their lives. These findings emphasise the extent to which partner violence plays a role in pregnancy rates and pregnancy outcomes, especially termination, among younger women. We found that younger women seeking termination were more likely to be from lower socio-demographic groups. A recent Australian study estimated that teenagers were 1.5 times more likely than other women to travel further than 100 kilometres to seek a termination. Such an additional economic and social burden for teenage women already having to find the costs of termination could exacerbate other difficulties that they may be facing.²³

Glander et al. argued that a past or present abusive relationship influences a women's decision to terminate a pregnancy. The abusive relationship, they argued, appeared to affect the reason for the termination decision and the dynamics of the decision-making process. When reproductive decisions could be influenced by the abusive male partner, some abused women may exclude the partner from the termination decision in order to reclaim control over their reproductive lives.¹⁶

The emphatic association with partner violence in this and other studies and the association between termination and a low level of education, particularly in the teenage group, strongly indicates that efforts to prevent partner violence could reduce the levels of unwanted pregnancy among this population. Such efforts should include an increase in education and health promotion among disadvantaged young people about beneficial relationships, particularly those free of violence, and making effective contraception, emergency contraception and legal termination services affordable and accessible. Prevention and reduction of partner violence should be an essential component for any public health policy seeking to reduce the rates of unwanted pregnancy and termination.

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