VIOLENCE AGAINST YOUNG AUSTRALIAN WOMEN AND REPRODUCTIVE HEALTH

FINAL REPORT TO THE OFFICE FOR THE STATUS OF WOMEN: CROSS SECTIONAL AND TRANSITIONAL ANALYSES OF SURVEYS 1 AND 2, YOUNGER COHORT, AUSTRALIAN LONGITUDINAL STUDY ON WOMEN'S HEALTH

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women's health australia

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VicHealth

Women's voices from the study talking about violence and the impact on their lives:

I had a very violent drunk as a father and I was sexually assaulted by a friend of our family. I've lost a boyfriend because I didn't accept what he wanted and I've been involved in a car accident 8 years ago. That's why I'm always in continuous pain and I'm not in a relationship because I'm scared to love someone and I find it hard to get on with men because of all the problems I've had in my life

I'm 19 years old & have 7 & 1/2 month son. I lived with my ex-boyfriend for 2 years in which he was extremely abusive both physically & verbally…a year ago I took out an AVO (Apprehended Violence Order) on him. I finally woke up to myself and had him arrested for assault a month ago. I actually thought my life was crumbled but then I never felt such a heavy weight lifted from my shoulders. My ex-boyfriend led me to believe I was fat, ugly & no one would want me, but I now know I can live without him especially when I noticed the instant happiness my son has shown. The only problem is I am always worried. We have a court hearing in December and I want sole custody of my son. I don't know where to start or who to speak to. I'm so scared of what lay ahead of me. I just want my son and I safe and happy.

When I had my 16th birthday in a maternity ward I was very unhappy. It took me 12 months to 2 years to work out why. My child was born as a result of child/sexual abuse with a lot of emotional abuse. When I moved out of home with the help of my boyfriend, now husband, I jumped on an emotional roller-coaster. I was scared, had nightmares, stressed, so I took out a domestic violence order against him because he kept hassling me. My friends, parents-in-law to be, and husband to be were very supportive. After numerous visits to various counsellors and a shrink I started on the road to recovery.

Summary

This report describes measures associated with violence against young Australian women, with an emphasis on reproductive health. While there is already some clinical evidence from Australia, and community-based surveys from overseas, the Australian Longitudinal Study on Women's Health (ALSWH) provides the first Australian evidence at a population level on this topic.

Data from Survey 1 (1996) and Survey 2 (2000) of the Younger cohort of ALSWH provide the raw material for this analysis. Over 14,000 young Australian women – aged 18-23 in 1996 and 22-27 in 2000 - responded to a wide-ranging survey on their health, well-being and personal circumstances.

Cross-sectional analyses of the two surveys and the transitional analysis are reported here. Women were categorised into four mutually exclusive groups:

- **1. No violence: women in category 1 report not having experienced any violence**
  75% at Survey 1; 82% at Survey 2
- **2. Recent non-partner violence (physical or sexual violence from people other than intimate partners in the last twelve months)**
  13% at Survey 1; 5% at Survey 2
- **3. Ex- partner violence (women who report a history of partner violence but no violence in the last twelve months)**
  6% at Survey 1; 7% at Survey 2
- **4. Partner violence together with current or recent physical or sexual violence**
  5% at Survey 1; 3% at Survey 2

Overall, 24% of young women reported violence in Survey 1 and 15% in Survey 2. While the majority of women remained in the same categories, more women freed themselves of violence (13.6%) than became abused by 2000 (7.1%). However, women abused by partners in 1996 were less likely to respond at all in 2000. Experience of violence, particularly violence by partners, was associated with significantly poorer reproductive and pregnancy outcomes and reproductive risks, as well as with a range of demographic factors, poor mental and physical health, unhealthy behaviours such as drinking and smoking, and low social support. These factors are listed in detail below. As women separate and are more removed from the violence, some aspects of their physical health and their overall mental health improves. This improvement is associated with greater social support, although it is not clear which factor precedes which. Nevertheless, the survey, both cross-sectionally and through women's linked data, also provides strong evidence of the beneficial effect of social support in enhancing victimised women's mental wellbeing and being free of violence. It also emphasises the protective effect of education and the aspirations of abused women for further education.

The data demonstrate that partner violence in particular is associated with a worrying level of health problems, many of which have far-reaching implications for these women's health and the health of their children. While some health problems improve when women separate, others such as STDs persist and still place women at risk, indicated by high abnormal Pap smear rates, even in this young age group. Women's active help-seeking from health services increases as women's experience with violence intensifies, but also increases as they leave the violence behind them. It confirms that

young women victims are less satisfied than others at present with the support they receive from their GPs and that there is a need for GPs to be better supported and skilled to assist them more effectively. The findings indicate a need for concerted efforts to prevent violence against women, to educate health service providers in the identification of violence and the many serious risks associated with it, and to provide appropriate and effective early interventions, especially in partner violence. Further research on the relationship between violence and pregnancy and associated issues is recommended.

Cross-sectionally, this report shows that experience of violence, particularly violence by partners, is associated with:

- **Other abusive experiences**
  - Emotional violence
  - Fear of family members
- **Demographic variables**
  - Younger age
  - Lower education
  - No paid work
  - De facto relationship
  - Separation and divorce
  - Living in a remote community
  - Indigenous background
  - NOT being of Asian background
- **Reproductive outcomes**
  - More pregnancies
  - More miscarriages
  - More terminations
  - More preterm births
  - More stillbirths
- **Other reproductive variables**
  - Earlier age at first intercourse
  - Earlier age at first birth
  - Less effective use of contraception
  - Higher rates of vaginal discharge
  - Higher rates of HPV and Hepatitis C
  - Abnormal Pap smears
- **General health**
  - Worse general physical and mental health
  - Higher rates of depression, anxiety, self harm and suicidal ideation
  - Higher rates of problematic or disordered eating
  - Higher rates of smoking and heavy alcohol use
  - Higher rates of sleeping difficulty
- **Other factors**
  - Lower levels of social support
  - Higher use of health services
  - Higher educational aspirations
  - Lower aspirations for marriage

The patterns of change

This report includes a linked analysis of women's records from Survey 1 and Survey 2 data, allowing an exploration of the effects of changes in women's experiences of violence on their reproductive health and on their wider health and wellbeing. When women's records are linked, their patterns in transition confirm that women who were able to separate or leave the violence behind were characterised by:

- An increase in mental wellbeing
- Increased social support
- A reduction in fear
- A reduction in disordered eating
- A reduction in smoking, drinking and drug-taking
- A reduction in some STDs, such as Herpes
- Slightly increased rates of abnormal Pap tests
- Being separated or divorced
- Not being from an Asian background
- Past patterns of drug misuse
- Difficulty sleeping
- An increased use of health services
- A desire for full time work or to be self-employed and to be in a stable de facto relationship
- Aspirations for further education

Women who experience increased levels of violence are characterised by:

- Aboriginal or Torres Strait Islander background
- Previous non-partner violence (possibly child abuse)
- Being separated or divorced
- Increased fear
- Partner's increased use of condoms or 'choosing not to' use contraception
- Pregnancies especially before, but also after 1996
- Decreased social support
- Poorer mental health
- More eating disorders
- Less use of family planning and sexual health services
- Lower aspirations for marriage

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Introduction and background

It is now commonly accepted that violence against women, particularly intimate partner violence, damages women's health and has a serious affect on the women, their families, communities and the health system (Campbell JC 2002).

Violence against women, that is, intimate partner violence (physical, sexual and/or emotional), rape and sexual assault, is most commonly experienced by younger women. In the 1996 Australian Bureau of Statistics (ABS) Women's Safety Survey, while 7.1% of Australian women experienced some violence in the last twelve months, 19% of women aged between 18 and 24 experienced violence. This compares with 6.8% of women aged 35-44 and 1.2% of older women (Australian Bureau of Statistics 1996).

Types of violence experienced by young women.

The 2002 World Report on Violence and Health outlined the research problems involved in establishing accurate data on violence against women, particularly partner violence, and reviewed current evidence for the outcomes from violence by intimate partners. The debate about defining and measuring violence is current in Australia (Hegarty K and Roberts G 1998). The authors of the WHO report found that, globally, physical violence in intimate relationships is often accompanied by psychological abuse, and in a third to over a half of cases by sexual violence also (World Health Organisation (WHO) 2002).

In the 1996 ABS Women's Safety Survey, 5.9% of women had experienced physical violence and 1.9% sexual violence in the previous twelve months. The great majority had experienced violence from a male, who was either a former or current partner. 23.9% of women who experienced violence from their current male partner, and 10.9% who experienced violence from their previous partner, reported that they currently lived in fear (Australian Bureau of Statistics 1996). 8.8% experienced some form of emotional abuse. Women who had experienced violence during a relationship were significantly more likely to have experienced emotional abuse than those who had not (59% compared with 4%) (Australian Bureau of Statistics 1996). However, the fact that increasing levels of physical violence were accompanied by increasing levels of emotional abuse and sexual violence make it difficult to disentangle the health effects of the different types of violence (McNutt L-A, Carlson BE et al. 2002).

Characteristics of women experiencing violence in Australia and overseas.

Risk markers for partner violence among women are very consistent. Such markers include youth, marital status (either de facto or separated and divorced), low levels of education and low income, and have been found across many studies (Stewart and Cecutti 1993; Webster J, Sweett S et al. 1994; Goodwin MM, Gazmararian JA et al. 2000; Hedin LW and Janson PO 2000; Martin SL, Mackie L et al. 2001; Hegarty K and Bush R 2002).

In the ABS study, a national random survey, more Australian-born women experienced violence (8.3%) than those from either another English-speaking country (6.9%) or a non-English speaking country (7.5%). 29.5% of victimised women had separated, but a further 40% wished to but had not yet been able to. For 65% of victimised women, violence did not occur after separation, but for 35% it continued. Women said they were more at risk of physical than sexual violence. While 10% had experienced sexual violence, 42% reported physical violence in their previous relationship. The ABS report did not provide a breakdown of rates of violence against women by State of residence.

Reproductive health outcomes of violence against women

Violence against women leads to many serious reproductive outcomes (Campbell JC 2002). These can include unwanted and unplanned pregnancies, a greater proportion of abortions (terminations) than among non-victimised women, poor birth outcomes, sexually transmitted diseases, including HIV infection, and homicide of both mother and child.

The 2002 WHO report points out that women who live with violent partners have a difficult time protecting themselves from unwanted pregnancy or disease. Violence can lead to unwanted pregnancies and STDs including HIV infection. Violence can interfere with a woman's ability to use contraception effectively. Several studies show that partner violence is more common in families with many children. For many years, researchers thought that having many children increases the likelihood of partner violence, however, a recent cohort study in Nicaragua suggested that the violence preceded having many children, and partner violence may be a risk factor for having many children (World Health Organisation (WHO) 2002). There is little evidence indicating if this is true in other countries and other circumstances.

Violence during pregnancy

Meta-analyses of studies of violence in pregnancy show that on average between four and nine percent of pregnant women are victimised during their pregnancy or before the pregnancy and after the birth (Gazmararian JA, Lazorick S et al. 1996). PRAMS (the US-based Pregnancy Risk Assessment Monitoring System) undertook the largest survey of pregnancies and violence, involving over 40,000 women who had delivered in several US states in the previous two to six months. They found that 3.2% of women reported violence from partners in the year prior to the pregnancy, 1.5 % during the pregnancy only, and 4.1% during both periods (Goodwin MM, Gazmararian JA et al. 2000). These rates are similar to those found in a Canadian survey (Stewart and Cecutti 1993). A later study of one US state also noted that prior abuse was the greatest predictor of abuse during pregnancy, but of the 7% (n=190) of women abused in the year prior to pregnancy, 26.3% were abused during and after; 27% during, but not after, 6.8% had no abuse during the pregnancy but were abused afterwards; and 40% were abused neither during pregnancy nor postpartum (Martin SL, Mackie L et al. 2001).

The 1996 ABS study is a cross-sectional study and thus cannot answer the question of whether violence preceded pregnancy or childbirth either. 1.9% of respondents had experienced sexual violence in the previous year and 18% in their lifetimes, but no questions were asked about pregnancy outcomes. 7.3% of women aged 18-24 had been victimised. 42% of women who experienced violence from a former partner experienced violence during the pregnancy, and 20% reported that this had been the first time their partner had victimised them (Australian Bureau of Statistics 1996).

Webster et al.'s earlier (1994) study of over 1000 women presenting to a Brisbane antenatal clinic found that 8.9% experienced violence in the current pregnancy. Almost a third (29.7%) had experienced violence at other times (Webster J, Sweett S et al. 1994). The high rate of violence against pregnant teenagers (44%) was notable in the Brisbane study.

Violence, unintended and unwanted pregnancies and abortion

The PRAMS study found that women with unwanted or mistimed pregnancies reported high rates of violence from partners either in the previous year (12.6%) or during the pregnancy (15.3%). Women with unwanted pregnancies had two and a half times the risk of experiencing partner violence than women with intended pregnancies (Goodwin MM, Gazmararian JA et al. 2000).

Jasinski et al (2001) conducted a linked analysis of two rounds of the US National Survey of Families and Households (n=2,484) examining trends around intended and unintended pregnancy/births and violence against women (Jasinski J 2001). Unfortunately, their data included only intact couples, so were missing the data for women separated or divorced. They also only asked about moderate physical violence, so probably under-estimated violence. Within these limitations, the study found violence from male partners dropped from 11.5% in Wave 1 to 8.9% in Wave 2, with 3.6% persistently violent across the two waves. 7.2% of male partners ceased using violence and 5.1% commenced. It is unclear whether these reports are from women or the men themselves. Men who commenced violence were significantly more likely (relative risk ratio [rrr]=2.85) to be cohabiting in both waves, as were men who were persistently violent (rrr=4.7). Men who ceased violence by Wave 2 were significantly more likely to have had a pregnancy or birth in Wave 1. Unwanted or unintended pregnancies and births were likely to be associated with persistent violence or its commencement (Jasinski J 2001). These data suggest that violence can precede and continue during the pregnancy, that intention and desire for the child are important and that for some men, pregnancy may influence them to stop their violence.

Women who experience violence from partners may have birth control methods compromised or sabotaged (Wingood GM and DiClemente RJ 1997; Centre for Impact Research 2000). A national US women's study of over 3000 women found 13.6% reported rape in their lifetimes, and 5% a rape-related pregnancy. Almost half the perpetrators were husbands or boyfriends, and young women experienced the most violence. Women kept the babies in 32% of rape-related pregnancies, 50% aborted and 6% gave the babies up for adoption, while 12% miscarried (Holmes MM, Resnick HS et al. 1996). Leung et al found rates of violence among women who were seeking abortions (28%) much higher compared with women not seeking abortions (8%) (Leung TW, Leung WC et al. 2002). One study has noted that some victimised women, who experience less violence during pregnancy, may attempt to remain pregnant to protect themselves (Mezey GC and Bewley S 1997).

Smith et al found that 3.4% of young Australian women aged 16-19 and 14.9% of women aged between 20 and 29 reported terminations (Smith AMA, Rissel CE et al. 2003). However, there are no analyses of Australian data to date which suggest whether victimised Australian women experience rates of unwanted, unintended or terminated pregnancies similar to those found overseas.

Violence and birth outcomes

While an Australian clinical study found no differences in birth outcomes between victimised and non-victimised women (Webster J, Chandler J et al. 1996), two meta-analyses have concluded that victimised women had adverse pregnancy outcomes and, in particular, are more likely to give birth to a baby with low birth weight (Petersen, Gazmararian et al. 1997; Murphy CC, Schei B et al. 2001).

Violence and pregnancy related femicide

Intimate partners are estimated to have killed 40-60% of women murdered in North America (Campbell JC 2002). In the last few years, maternal mortality surveillance has uncovered evidence that maternal deaths may be pregnancy related, indeed homicide was the leading cause of pregnancy-associated death in one US state (Frye V 2001; Horon IL and Cheng D 2001). A detailed examination of pregnancy-related maternal deaths in another US state found that over half of 41 injury-related maternal deaths were thought to be the result of partner violence. The obstetric provider was suspicious of partner violence in only a third of femicides committed by an intimate partner, suggesting that obstetricians may not be aware of the associated risks (Parsons LH and Harper MA 1999).

Violence and sexually transmitted diseases

Campbell argues that *'gynaecological problems are the most consistent, longest lasting and largest physical health difference between battered and non-battered women'*. One study cited in her review found that gynaecological problems were three times greater than average for victims of partner violence, and that there was a dose-response relationship with greater severity of violence (Campbell JC 2002). She argues that forced sex, prevalent in about 40-45% of cases of partner violence and poorly studied in most research, can explain this higher prevalence. We examine this possibility in the Australian data below.

Summary of reproductive health outcomes

The evidence summarised above indicates that violence against women is associated with the following negative reproductive outcomes:

- Physical, sexual and emotional violence during pregnancy
- Sexually transmitted infections
- Unwanted/unplanned pregnancies
- Increased rates of abortion (terminations)
- Poor birth outcomes, including low birth weight
- Potential homicide of mother (and child)

The evidence, however, comes almost entirely from overseas research and there is little evidence on the Australian situation.

Health status, behaviours, health service use and satisfaction of women who have been victimised

Mental and physical health

Women report that mental health consequences are the most long lasting and damaging of those that result from partner violence. For some women, this can be compounded by the burdens they carry from childhood violence (Taft A 2003). Depression and post-traumatic stress disorder, often co-existing, are the most common mental disorders among victimised women and evidence exists that the more severe the violence, the worse the symptoms. A WHO review of gender and mental health found that women are twice as likely as men to suffer from depression, and that violence against women is one of the major causes (Astbury J and Cabral M 2000). Golding's meta-analysis of violence against women and mental health found that the further women moved away from the violence,

the better their mental health (Golding JM 1999; Taft A 2003). In the Lancet, Campbell cites a large US study which found that the 'revolving door' of entry and exit from mental health services by women is very costly to health systems (Campbell JC 2002; Taft A 2003).

Recent partner violence, past partner violence and child abuse (especially childhood sexual abuse) are associated with an increased likelihood of women reporting multiple physical symptoms. Recent partner violence is associated with health damaging behaviours (eg smoking, binge drinking) and non-specific illness symptoms beyond the effects of previous child abuse, past partner violence and poverty (McNutt L-A, Carlson BE et al. 2002). Golding found that victimised women were several times more likely than non-victimised women to misuse alcohol. 18.5% of women who had experienced partner violence misused alcohol in comparison with between 4.6 and 8.2% in the general community. Almost nine percent of victimised women misused licit or illicit drugs and they were five and a half times as likely to do so as other women. (Golding JM 1999). Some of the poor birth outcomes noted above are strongly correlated with health-damaging behaviours, such as smoking, poor eating habits and binge-drinking, that are common methods women use to cope with their experiences (McFarlane, Parker et al. 1996). Substance use, unhealthy weight control, risky sexual behaviour and suicidality are more prevalent among American adolescents who have experienced violence from dating partners, suggesting that both violence and associated harm commences when women are young (Silverman JG, Raj A et al. 2001).

Health services use

As victimised women suffer poor health, they are frequent attenders at both primary care, especially GP services, and hospitals. In Australia, Hegarty estimated that GPs are commonly unaware that they see one or two women per week who have been recently victimised (Hegarty K and Bush R 2002). Webster et al found between 4% and 9% of antenatal patients were victimised in their current pregnancies and one in five had been victimised during their lifetimes (Webster J, Sweett S et al. 1994). Roberts et al found that women were the majority of emergency department patients among the 14% who reported they had been victimised (Roberts GL, O'Toole BI et al. 1993).

Women's views of health services

There is very little research on victimised women's views of health services. There are several qualitative studies both in Australia and overseas reporting women's dissatisfaction with family doctors, but also with mental health services (Easteal and Easteal 1992; Head and Taft 1995; Humphreys C and Thiara R 2002). To date, the major criticisms of health services in their treatment of victimised women have originated from feminist research on the quality of care or from surveys of clinical samples, rather than population level studies (Stark and Flitcraft 1996).

The role and impact of social support

Very recently, Coker et al. demonstrated the differential impact of violence on the mental health of victimised women, depending on the frequency and severity of violence experienced and on the mediating effects of social support (Coker AL, Smith PH et al. 2002). They distinguished differences in levels and types of violence: forced sexual violence (severe violence, including physical and emotional abuse); physical violence (no sexual, possible psychological violence); and psychological violence alone. There is a

distinct pattern of effects, with women experiencing severe violence reporting almost three times as much mental health disorder, women with physical violence almost twice as much, and psychologically victimised women 1.7 times as much, as those who are not victimised. Victimised women with higher levels of social support were less likely to report current poor mental and physical health than victimised women with lower social support, irrespective of the severity or frequency of the violence. The authors conclude that the presence of social support makes a significant difference, especially to suicide attempts (Coker AL, Smith PH et al. 2002).

In summary, while the overseas literature contains population-level evidence of substantial damage from violence against women to their reproductive, other physical and mental health behaviours, little is visible in the Australian literature. While sound studies have been undertaken of the prevalence of victims of violence in Australian general practice, there is no evidence of women's satisfaction with their care, neither is there Australian evidence of any effect of social support. There are hardly any cohort studies, which are able to shed any light on the differential impact of violence on women's health over time.

What remains to be examined in Australian women, and the issues at stake.

There are no data in Australia about some of the emerging trends identified in the overseas literature:

- How do Australian women who report violence differ in sociodemographic characteristics from those who do not?
- What are the reproductive outcomes of violence against young Australian women? Do Australian women who report violence experience more pregnancies, miscarriages, premature, still or live births than women not victimised? Are they over-represented among women seeking abortions?
- Does a national community sample of Australian women who have experienced violence have mental and physical health as poor as those identified in clinical samples (ie GPs and hospital clinics)?
- Does social support, where it is experienced by these younger women, ameliorate the effects of violence on their mental and physical health, as has been described in one study overseas?
- Do victimised women access preventive health services, such as Pap smears and family planning, and other health services in the same numbers as those not victimised?
- What are the views of victimised women about their health care?
- How does violence impact on women's income and employment?
- Is pregnancy-related violence implicated in Australian femicides?
- If women free themselves of violence or become exposed to violence at a later date, what impact does this have on their physical and mental health and reproductive outcomes?

This study addresses many, but not all of these questions.

The Australian Longitudinal Study on Women's Health

The Australian Longitudinal Study on Women's Health (also known as Women's Health Australia or WHA) examines the relationship between biological, physiological, social and lifestyle factors and women's physical health, emotional well-being, and use of and satisfaction with health services. 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, and who will be followed longitudinally for twenty years. Women were selected from the Australian national health insurance database (Medicare), which includes all citizens and permanent residents. The sampling strategy was stratified random, with systematic over-sampling of women from rural and remote areas. Survey 1 of the Younger cohort was mailed to 39,000 women aged 18-23. Of these 36,067 were eligible and 14,779 (41%) responded (Brown WJ, Bryson L et al. 1998). Survey 2 of the Younger cohort was conducted in 2000 when the women were aged 22-27 years old. As young women are very mobile, 9,683 responded. Survey 3 was mailed in early March 2003 and is currently underway.

Violence against young women and reproductive health in the Young cohort of WHA: cross-sectional and linked analyses.

This study aims to analyse Survey 1 (1996) and Survey 2 (2000) data from the Younger cohort to investigate the impact of violence (mainly, but not only, by intimate partners) on young women's reproductive and general health.

This final report integrates two stages of the analysis. The first stage includes a cross-sectional analysis of each survey to provide general description of the socio-demographic characteristics (urban/rural divide, education, employment status and occupation, marital status, country of birth and Aboriginal or Torres Strait Islander status) of the young women who have and have not suffered violence.

The second stage examined the changes and transitions in violence and the other variables of interest (listed below) between the two surveys, to determine what impact any changes in victimisation and socio-economic status had on young women's reproductive and other health outcomes.

We analysed the differences between young women who were and were not physically or sexually assaulted by partners and others in:

- Sexual health, including age at first period (menarche) and first intercourse, and whether violence impacts on contraceptive use
- Reproductive health, pregnancies, miscarriages, abortions and births (stillbirths and preterm births reported at Survey 2) and age at first birth
- Physical and mental health status
- Social support
- Health service use and satisfaction with GPs
- Aspirations for their marital, education and family futures at age 35

Methods

Data files containing cleaned and coded data from the two surveys were prepared by staff of the Research Centre for Gender and Health at the University of Newcastle. We identified the variables of interest and in some cases recoded or combined them to provide robust and consistent groupings.

Measures of violence: composite variables

It is common among studies of domestic violence and other forms of violence against women in Australia and overseas to include only physical and sexual violence, as these conform to legal definitions of violence. However, researchers who have worked with victimised women are increasingly recommending that definitions of intimate partner violence include emotional, social and financial violence (Hegarty K, Hindmarsh ED et al. 2000). As this project was about violence against young women, our composite variables are limited to questions asking about physical and sexual violence from anyone in the last twelve months and violence from a partner in order to compare them with other prevalence studies. We do report on other forms of violence, but the physical and sexual violence variables are the ones used to determine and compare all the outcomes of interest.

The process of creating a composite variable to categorise women's experiences of violence is complex, and is outlined in Appendix A. The results presented in this study use the final outcome of this process, which classifies women into four mutually exclusive categories:

1. No violence
2. Recent physical/sexual violence not from a partner (recent non-partner violence)
3. Ever having had partner violence (ex-partner violence)
4. Partner and recent (physical or sexual) violence

In more descriptive terms, we assume:

- women in Category 1 report not having experienced any violence (this does *not* include those who did not answer the relevant questions)
- women in Category 2 are likely to have experienced recent violence (< 12 months ago) from people other than intimate partners (most likely from other family members, acquaintances)
- those in Category 3 have previously experienced partner violence and are now either (a) with another partner, (b) separated from their abusive partner (they may still experience harassment) or (c) with the same partner but not experiencing current physical or sexual violence
- women in Category 4 are those who are likely still to be in abusive relationships and report partner and recent physical or sexual violence

Composite health outcome variables were similarly constructed for a number of factors: harmful behaviours, reproductive outcomes and other questions with multi-factorial answers. The benefit of using combination outcome variables is that one statistical model can be fitted – using multinomial logistic regression - in assessing the impact of explanatory variables.

Thus, the impact of socio-demographic characteristics on violence was assessed, as were the effects of violence on the health outcomes, with many categorical levels (eg: once, twice, three times or more) by modelling our composite violence variable on these outcomes. Where the health outcome was continuous (e.g. SF-36 Mental and Physical Health Component score) we used linear regression modelling.

Creating transition variables

These variables can only be created from the responses of women who responded to both surveys: i.e. 9683 women. The first transition we examined was that of violence. The table below outlines the composition and inclusion criteria of the variable describing the women whose abuse status remained the same and those whose status altered.

Label for type of violence	Explanation
1. Same⇔	Women who reported * no violence * non-partner physical or sexual violence, * ex (previous) violence from a partner * partner and recent violence whose status did not alter between surveys 1 and 2
2. Non-P to none ⇓	Women who reported non-partner violence in 1996 but no violence in 2000
3. Any to ex-P ⇓	Women who reported either non-partner or partner and recent violence in 1996, but ex-partner violence in 2000
4. None to Non-P ⇑	Women who reported no violence in 1996 but non-partner violence in 2000
5. None to ex-P ⇑	Women who reported no violence in 1996 but ex-partner violence in 2000
6. New partner violence⇑	Women who reported *no violence * non-partner violence * ex-partner violence but who reported partner and recent violence in 2000
7. Missing	Women whose data was missing for one or both abuse questions

The assumption underlying the category ‘Ex-P’ is that women who report ever having had a violent relationship with a partner, but who do not report recent physical or sexual abuse, are most likely to have separated or to have a non-violent relationship with their partner. The caveat with this category is that we do not know whether they are experiencing psychological abuse or harassment.

We created composite transition variables for all the remaining variables of interest and these are included in the Transition tables in Appendix 2.

Weighting the analysis

The surveys were conducted using over-sampling of rural and remote areas. The probability weights were calculated on the response rates to Survey 1, to reflect the

population distribution of Australian women in the age group studied (Brown WJ, Bryson L et al. 1998). These same weights were used in the Survey 2 analysis since attrition between surveys was found to be independent of women's living area (Research Centre for Gender and Health 2000). Probability weighting (1.378876 for urban, 0.516451 for rural and 0.713972 for remote) was incorporated into the analyses using the survey analysis subset of commands in Stata.

In the main body of the report we have usually presented the results in terms of percentages of women in each category and relative risk ratios (rrr) for effects within each survey. P-values have been included with the use of asterisks as indicated below. P-values and 95% confidence intervals are included in the appendices. All results presented have been adjusted for the sampling weights and where indicated for socio-economic factors and in a few cases where indicated, for the impact of health damaging behaviours on birth outcomes. The linked analysis, which examines the transitions between the two surveys, used the same methods.

> ***Relative risk ratios*** (rrr) can be regarded in the same way as odds ratios. They represent the ratio of the relative risk for each group of women for the outcome of interest relative to each other. Each relative risk calculates the risk that those who are exposed to each form of violence will have the outcome. We indicate the 'p' value (<0.05), with asterisks, where the more there are, the higher the significance of the findings. The p-values and the CI or Confidence Intervals, which show the degree of precision of the obtained value, are both contained in Appendices 1 and 2.

Results show the effect of one explanatory variable on the outcome of interest (this is a univariate analysis). However, to account for the association between explanatory variables, or confounding, some results are presented where mutual adjustment for variables has been carried out (multivariate analyses). To indicate whether the result is significant, the following asterisks are used:

* $0.01 \leq p \leq 0.05$;
** $0.001 \leq p \leq 0.01$;
*** $p \leq 0.001$;
M significance marginal $0.05 \leq p \leq 0.07$

Relative risk ratios (or odds) are indicated in brackets and the level of significance is indicated with asterisks as shown above. All the confidence intervals and significance levels are detailed in the Appendices. If the confidence intervals are wide, and caution should be exercised in interpreting results, this is stated in the text. Odds ratios are calculated by determining the ratio of two odds for a particular outcome (e.g. an adverse birth) associated with a risk (such as violence). Technically 'odds' refer to the ratio of the number of times an outcome occurs to the number of times it does not. References to the Tables corresponding to results are indicated in the text. App 1 refers to Appendix 1 and App 2, Appendix 2.

Results

Response rates

In 1996, Survey 1 was sent to 39,000 women, and 36,067 women were found to be eligible. 14,779 women between 18 and 23 years of age responded, a response rate of 41%. Survey 2 was sent in 2000 to all 13,721 women who provided contact details and consented to further contact. 9,683 responded (a response rate of 70.6%).

Was there any difference between responders to Survey 1 and Survey 2?
After controlling for all socio-demographic factors, women who reported ex-partner violence (rrr=1.38***) or partner and recent violence (rrr=1.36***) at Survey 1 were significantly more likely to be non-respondents to Survey 2, compared with women who had not experienced violence. Women responding to Survey 1 only were also significantly more likely to have low educational levels, to be unpaid, in home duties, unemployed or disabled, to be divorced or separated, and to be of indigenous, Asian or European origin. (Table 1, App2)

What forms of violence did young women report in Survey 1 compared with Survey 2?

Table 1 shows the distribution of reported violence in the four categories from the two surveys. The categories listed are mutually exclusive. The impact of the dropout rate for women who have been victimised is apparent. Whilst the percentage reporting no violence has increased from 75% to 82%, recent non-partner violence in the last 12 months, and partner and recent violence in the last 12 months, has decreased from 13% to 5%, and 5% to 3%, respectively. However, ex-partner violence has remained relatively constant (6.4% - 7.1%) over the time period.

Table 1. Distribution of reported violence: Surveys 1 and 2.

	Survey 1, 1996 Age: 18-23 years		Survey 2, 2000 Age: 22-27 years	
	N (adj)	**% adj**	N (adj)	**% adj**
1. No violence	11,127	**75.3**	7978	**82.3**
2. Recent non-partner violence	1864	**12.6**	492	**5.3**
3. Ex-partner violence	943	**6.4**	685	**7.1**
4. Partner and recent violence	713	**4.8**	255	**2.6**
Missing	136	**0.9**	281	**2.9**
Total	14784	**100.0**	9691	**100.0**

The overall percentage of women experiencing any form of violence at Survey 1 was 24%, while at Survey 2 it was 15%. Even in this young age group, in 1996, 11% had already experienced violence from a partner, while interestingly; this had dropped in 2000 to 10%. Only ex-partner violence has increased.

Table 2 (Table 2, App2) outlines the numbers and proportions of women who responded to Survey 2 in 2000 and how their reported experiences of violence had altered from 1996.

Table 2. Distribution of reported violence transitions between Surveys 1 and 2.

Violence transition status	Number	%
Same: No violence	6629	68.4
Same: Recent non-partner violence	159	1.6
Same: Ex-partner violence	450	4.6
Same: Partner and recent violence	89	0.9
Total: no change	**7326**	**75.5**
Reduced: Recent non-partner violence in 1996 but not in 2000	932	9.4
Reduced: Non-partner violence in 1996, Ex-partner violence 2000	91	0.9
Reduced: Partner and recent violence 1996 but ever partner in 2000	297	3.1
Total: violence reduced	**1320**	**13.6**
Increased: No violence in 1996 but non- partner violence in 2000	298	3.1
Increased: No violence in 1996 but Ex-partner violence in 2000	217	2.2
Increased: No violence in 1996 but partner & recent violence in 2000	85	0.9
Increased: Non-partner in 1996 but partner & recent violence in 2000	52	0.5
Increased: Ex-partner in 1996 but partner & recent violence in 2000	60	0.6
Total: violence increased	**712**	**7.3**
Missing	333	3.4
Total	**9692**	**100**

Adjusted percentages rounded

In summary:

- More women experienced reduced violence (13.6%) than experienced increased violence (7.3%).
- The majority were not abused (68.4%) but 7.1% of victims did not change their violence status.
- Fewer than 1% remained in a violent partner relationship.
- While 4.7% of women reported ever having a violent relationship with a partner (and no recent violence) in 1996 and 2000, we do not know if they remained with the same partner or became free of another violent partner in the intervening period.
- 2.2% (n=217) went in and potentially out of a violent relationship with a partner, who had reported no violence in 1996.
- 2% (n=194) moved from no or non-partner or Ex-partner violence into a relationship with recent violence

Demographic characteristics of victimised women in the two Surveys: how do women who report violence differ from those who don't?

In Table 3, we report the differences between women according to their age, urban/rural divide, education, employment status and occupation, marital status, country of birth and indigenous status. The significant differences are detailed, while 'ns' indicates non-significant differences. Further detail appears in Appendix 1 (Tables A4 -1 to 9). The differences are those that have been noted in many cross-sectional surveys in the developed world.

Factors associated with violence of any kind are:

- Increased age (each year) increases odds for partner violence as it decreases the odds for violence by someone else
- Having no education, or only up to Year 10, significantly increases the odds of partner violence across both surveys. Having a higher degree or diploma is protective for all forms of violence
- Being unpaid is protective for 'non-partner violence' and increases the odds for partner violence, while being unemployed, on a disability pension or 'other employment category' significantly increases the odds for all forms of violence, but especially for current partner violence
- Being in a de facto relationship or - more notably - separated/divorced or widowed increases the odds of being in a currently abusive partnership, while in comparison, being married is protective for odds of being victimised by anyone. Being in a de facto relationship increases the odds of *not* being victimised by someone other than your partner
- There are no significant differences between urban and rural women in the risks of ex-partner violence and partner and recent violence in either survey. Rurality is protective for non-partner violence, but living in a remote community slightly increases the odds of non-partner violence and Ex-partner violence in Survey 1, and both forms of partner violence in Survey 2
- Being of Aboriginal and Torres Strait Islander descent in this adjusted analysis is not significantly associated with violence by someone other than a partner, but shows a significantly increased risk for partner violence
- Asian birth in this analysis is significantly protective against all forms of violence

State-by-state analysis

In 1996, when women were aged 18-23, rates of violence in each State were examined. Compared with New South Wales, there were significantly decreased odds of partner violence in Victoria (rrr=0.72**), and even lower in the ACT (rrr=0.39*). There were no other significant differences. By 2000, when women were four years older, there were significantly increased odds of ex-partner violence for women in Queensland (rrr=1.34*) and the Northern Territory (rrr=2.10*). These differences disappeared when the analysis was adjusted for other sociodemographic factors.

Table 3. Socio-demographic factors associated with categories of violence, Surveys 1 and 2: Adjusted relative risk ratios from the multivariate analysis

	Survey 1 – 1996						Survey 2 – 2000					
	2.Recent violence not from partner		3. Parner only		4. Partner & recent		2. Recent violence not from partner		3. Partner only		4. Partner & recent	
Factor	rrr		rrr		Rrr		rrr		rrr		rrr	
Age, per year	**0.84**	**	**1.15**	**	1.01	ns	0.93	M	**1.11**	**	1.01	ns
Highest qualification	Ref. category is Year 12 (HSC)											
None or yr 10	1.04	ns	**1.82**	**	**2.30**	**	0.91	ns	**1.64**	**	**2.14**	**
Degree/Diploma	**0.80**	*	**0.50**	**	**0.59**	**	**0.63**	**	**0.41**	**	**0.46**	**
Employment status*	Ref. category is Full time work											
Unpaid	0.98	ns	**1.51**	**	**2.19**	**						
Student	1.04	ns	**0.67**	**	0.75	ns						
Unemployed	**1.49**	**	**1.53**	**	**2.36**	**						
Disabled/other	**1.68**	**	**1.60**	*	**2.48**	**						
Occupation	Ref. category is Manager/Professional											
Para professional							0.99	ns	**1.43**	*	1.02	ns
Trade/clerk/sales							**0.72**	*	1.12	ns	0.93	ns
Unpaid work							1.04	ns	1.18	ns	**2.75**	**
Other							0.99	ns	1.30	ns	**2.31**	**
Marital status	Ref. category is Single											
Married	**0.58**	**	0.92	Ns	**0.61**	**	**0.39**	**	**0.55**	**	**0.23**	**
De facto	0.90	ns	**1.53**	**	**1.37**	**	**0.68**	**	**1.35**	**	1.32	ns
Sep/div/wid	1.38	ns	**2.22**	**	**5.27**	**	0.97	ns	**4.35**	**	**4.22**	**
Region	Ref. category is Urban											
Rural	**0.86**	**	1.02	Ns	0.95	ns	**0.78**	*	1.09	ns	1.00	ns
Remote	**1.31**	*	**1.46**	*	1.12	ns	1.00	ns	**1.48**	*	1.02	ns
ATSI†	1.27	ns	**1.85**	**	**2.03**	**						
Asian birth†	Ref. category is Australian born											
	0.50	**	0.66	Ns	**0.31**	**						

Employment status, Aboriginal or Torres Strait Islander (ATSI) and Asian country of birth not asked in Survey 2.
Significance: * $0.01 \leq p \leq 0.05$; ** $0.001 \leq p \leq 0.01$; *** $p \leq 0.001$; M significance marginal $0.05 \leq p \leq 0.07$

Relative risk ratios are by comparison with group 1 ("no violence"). Significant effects are shown in **bold.**

What are the demographic characteristics of women who reported reduced or increased levels of violence?

The following sociodemographics status differences between women abused and those not abused are detailed in Table 3, App 2.

1. Non-partner violence

Having non-partner violence in 1996 had a strong and significant association (rrr=3.5***) with reporting it again in 2000. Reporting non-partner violence in 2000 was less likely among those with higher education (rrr=0.68*) or a trade, clerical or sales occupation

(rrr=0.74*), those who were married (rrr=0.41***), in de facto relationships (rrr=0.63**), or living in rural areas (rrr=0.77*).

2. Ex-partner violence

Non-partner violence in 1996 also had a strong association (rrr=2.82***) with ex-partner violence in 2000. Other significant associations were: lower odds of having a higher degree or diploma (rrr=0.50***) or being married (rrr=0.48***) in 2000. However, there were strong positive associations with being separated or divorced (rrr=6.95***) and living in a remote area (rrr=1.89*).

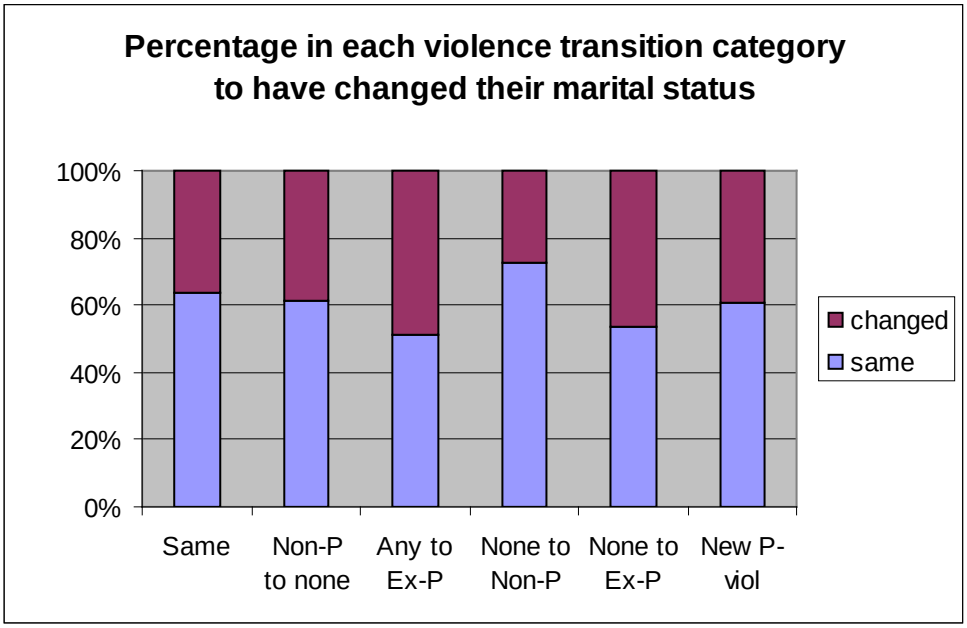
3. Partner and recent violence

Reporting non-partner violence in 1996 was again a predictor for partner and recent violence in 2000 (rrr=3.76***). But other associations include having no/only year 10 schooling (rrr=1.7*) being unpaid (rrr=2.25*); separated or divorced (rrr=7.49***) or of indigenous origin (rrr=3.16**). Women had less likelihood if they had a degree/diploma (rrr=0.50**).

Change in marital status

While the great majority of women (7,327) did not change their violence status in 2000, as Figure 1 (Table 4.1, App 2) indicates, some did. Women whose violence decreased altered their marital status most often.

Figure 1: Change in marital status by transition category



Women who moved from non-partner violence to none were significantly more likely to have changed their marital status (rrr=1.66***). They were less likely to be married (rrr=0.47***) in a de facto relationship (rrr=0.73***), separated, widowed or divorced (rrr=0.15***) than single in 2000.

Those whose violence dropped most (**'any to ex-P'**) in 2000 had greater odds than those who didn't change of separating (rrr 2.13***). They were now less likely to be married (rrr=0.37***) and more likely to be separated or divorced (rrr=2.55**).

Women who were free of violence in 1996 but suffered non-partner violence in 2000 (**'None to Non-P'**) were less likely to be married (rrr=0.46***), or in a de facto relationship (rrr=0.63*) than single.

Women who were free of violence in 1996 but had partnered a violent man and separated by 2000 (**'None to ex-P'**) were more likely to have changed their marital status (rrr=1.83*) and were more likely to be separated or divorced (rrr=3.54**) and less likely to be married (rrr=0.36**).

Women whose violence increased (**new P-viol**) to one with a violent partner in 2000 did not show significant changes in marital status. They were less likely to be married (rrr=0.37**) and much more likely to be separated or divorced (rrr=5.72***), suggesting that the recent violence may be more likely to be from a violent ex-partner or new partner.

Moving geographic regions (Table 4.2, App 2)

We have already determined that women living in remote, compared with urban, regions are more likely (rrr=1.31), while women living in rural regions are slightly less likely (rrr=0.86), to report experiencing violence. Women who reported a decrease in non-partner violence from 1996 to 2000 were less likely (rrr=0.84*) to live in a rural area and had no greater likelihood to have changed regions than women whose experience remained the same. Women who reported a reduction in violence from current to ex-partner violence by 2000 were significantly more likely to be rural than urban (rrr=1.51***) or remote than urban (1.81*).

Indigenous status and violence transitions (Table 4.3 App 2)

In comparison with non-Indigenous women, there appear to be two groups of ATSI women. Indigenous women were more likely to free themselves of violent partners ('any to ex-P' rrr=2.65**, 'None to ex-P' rrr=2.80*). However, a stronger effect is that women of indigenous background were also more likely to move into partner and recent violence in 2000 (rrr=5.82***) than others.

The impact of country of birth on change in abuse status (Table 4.4, App 2)

Asian-born (rrr=0.48**) or European-born women (rrr=0.26*) were significantly less likely to have changed their violence status. Asian women (rrr=0.27*) in particular were much less likely to be able to free themselves of violence between 1996 and 2000. This suggests that women of Asian and European background are not receiving access to resources to free themselves in comparison with Australian born women, although it should also be remembered that Asian-born women were less likely to have experienced violence in the first place. It appears that the small number of Asian-born women who do experience violence have difficulty freeing themselves.

In summary, women who have been assaulted or victimised by people other than partners (a number of whom will have been abused as children or young women) appear more likely to be vulnerable to all forms of violence four years later. Education clearly provides a protective effect against any violence, and married women are less likely to be assaulted by partners and others. Women in rural areas appear less likely to free themselves from non-partner violence and Asian and European-born women appear less likely to be able to rid themselves of any violence. Indigenous women show more variability and change than do women from ethnic minorities. Proportionally more women who reduced their violence became separated or divorced, in comparison with women whose level of

violence stayed the same. Some of these women, however, are also experiencing increased violence as a result.

How violence related to other forms of abuse

Emotional abuse

Women were asked in both surveys if anyone close to them had called them names or put them down or made them feel bad recently. Table 4 (Table 2, App 1) shows the differences between women who were victimised and those who were not. The relative risk ratios indicate the increased likelihood of experiencing emotional abuse. For example, women in the 'partner and recent violence' category were 5.4 times as likely to report emotional abuse at Survey 1, and 7.8 times as likely at Survey 2, as women who had experienced no violence.

Table 4. Relationship between violence category and reports of emotional abuse: percentages and relative risk ratios in each violence category

	Survey 1, 1996		Survey 2, 2000	
Emotional abuse?	**Yes (%)**	**rrr**	**Yes (%)**	**rrr**
1. No violence	29.2	**1.0**	18.7	**1.0**
2. Recent non-partner violence	58.0	**3.5*****	47.2	**3.9*****
3. Ex-partner violence	37.5	**1.5*****	37.1	**2.6*****
4. Partner and recent violence	69.1	**5.4*****	64.3	**7.8*****
Overall	35.3		22.1	

Overall, the percentage of women who had been emotionally victimised has dropped between the two surveys from 35% to 22%. However, the patterns of violence remain the same: women with current partner violence suffer disproportionate and significantly higher rates of emotional abuse, and the relative risk ratios for emotional abuse among women with all forms of violence have risen significantly.

Fear of someone in the family

In both surveys, women were asked if they were afraid of anyone in their family. Asking about fear of one's partner is regarded as one of the most reliable questions in assessing for current intimate partner abuse. Table 5 (Table A3, App 1) shows the increased likelihood of violence for all categories of victimised women at both Survey 1 and Survey 2. Figure 2 (Table 5, App 2) shows the percentage change in levels of fear between surveys for those women who reported increased or reduced violence compared with women whose experiences remained the same.

Table 5. Relationship between violence category and "being afraid of someone in the family": percentages with relative risk ratios.

	Survey 1, 1996		Survey 2, 2000	
Fear of someone in the family	**Yes (%)**	**rrr**	**Yes (%)**	**rrr**
1. No violence	5.2	**1.0**	3.0	**1.0**
2. Recent non-partner violence	14.9	**3.2*****	8.1	**2.9*****

3. Ex-partner violence	13.0	**2.7*****	5.4	**1.9*****
4. Partner and recent violence	18.5	**4.2*****	13.7	**5.2*****
Overall	7.6		3.6	

Significance: * 0.01 ≤ p ≤ 0.05; ** 0.001 ≤ p ≤ 0.01; *** p ≤ 0.001

There are noteworthy differences between Surveys 1 and 2 among women who report fear of someone in their family. 7.6% of women report being afraid at Survey 1, whereas only 3.6% are afraid at Survey 2. Women with ex-partner violence are more afraid than women with no violence; however, in both surveys, women with partner and recent violence have the highest odds for fearfulness, and these have increased. Women assaulted by someone else are also more likely to be afraid of someone in their family but, like women with ex-partner violence, the odds have decreased. This suggests that by Survey 2, some women have moved out of home, some have separated, but others are now with partners and more likely to fear them, whereas at Survey 1, some women were reporting fear of other members of the family. Between the two surveys, some women who have left abusive relationships are no longer afraid, whereas those who entered them have increased their fear.

Figure 2

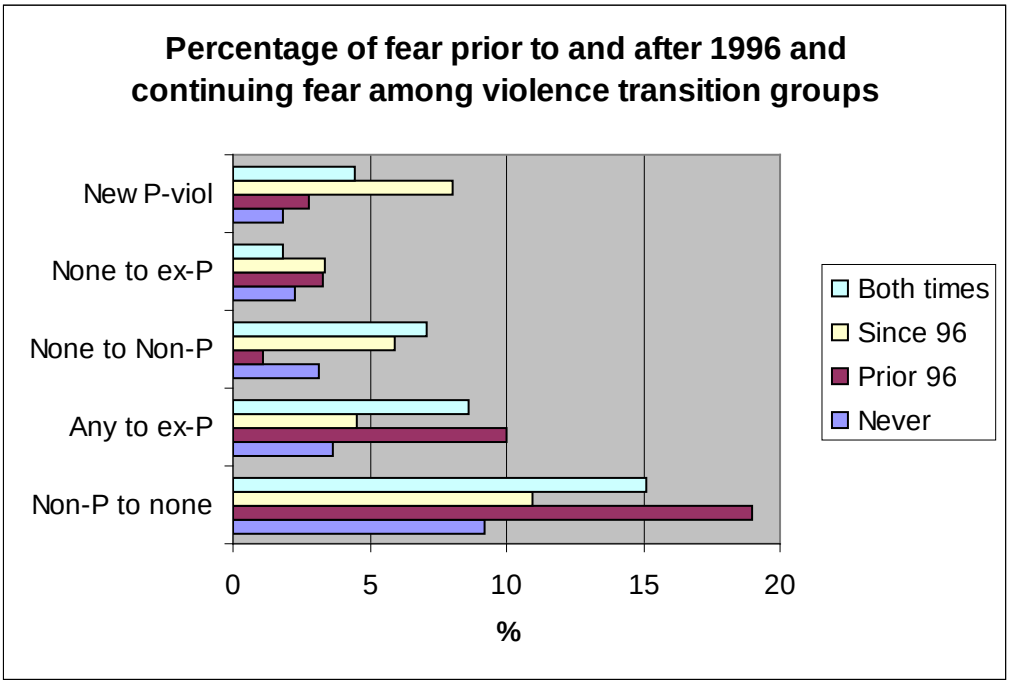


Figure 2 illustrates that in every transition category where the violence has decreased, the fear has also decreased ('Non-P to none, Any to ex-P, 'None to ex-P') whereas where the violence (especially partner and recent violence) has increased, so have the percentages experiencing fear since 1996 (new partner violence, 'None to Non-P'). However, because the question asked was about fear of anyone in the family, we cannot assume that the fear is of the same person – or whether that person is an intimate partner. It is interesting that the highest percentages overall are among those women who experienced non-partner violence in 1996, but not in 2000. The quote below from a respondent sheds some light on this:

I have not spoken to my family in over 1 year as my father sexually assaulted me when I was 14 and about 1 year ago. I had him charged. He was found guilty by a jury but is currently out on appeal. He made several death threats to me, including telling two police detectives that he should shoot me

Fear and emotional abuse have strong associations with all forms of violence but especially with partner and recent violence. These may have an impact on women's mental health, which is considered later in this report. Next, however, we examine how violence affects women's choices about contraception.

Contraceptive behaviour in both surveys and changes during the transition period

Table 6 (Table A9, App 1) summarises rates of contraceptive use in the four groups. Fewer than 50% of women used the pill, although this was the most common form of contraception at Survey 1. By Survey 2, more women have shifted to using condoms, with this trend more significant among those who experienced recent violence from partners and others. In Survey 1, compared with women who have not been victimised, women with any partner violence are less likely to report they 'don't need to use' contraception now and women with partner and recent violence even less likely to say they don't need it. Many women who say they don't need contraception are not in a current sexual relationship. Women reporting ex-partner violence are more likely to say they 'choose not to' use contraception. Women who experienced non-partner violence and women with partner and recent violence are at greater odds of using condoms (or other methods), compared with non-victimised women. These findings are consistent across Surveys 1 and 2.

Table 6. Relationship between violence category and contraceptive use: percentages in each violence category, with relative risk ratios.

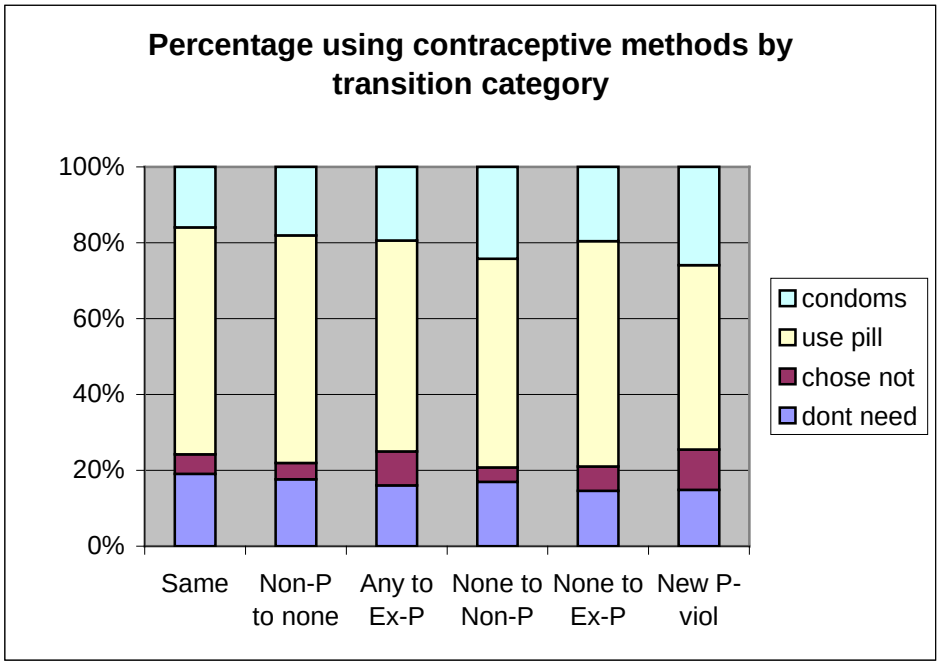
	Survey 1, 1996							
Contraceptive behaviour	**Don't need to**		**Choose not to**		**Pill**		**Condoms & other**	
	(%)	**rrr**	**(%)**	**rrr**	**(%)**	**-ref**	**(%)**	**rrr**
1. No violence	31.6	**1.0**	2.0	**1.0**	43.4		23.0	**1.0**
2. Non-partner violence	29.7	**1.0** ns	2.1	**1.2** ns	40.2		28.0	**1.3** ***
3. Ex-partner violence	22.4	**0.7** ***	4.1	**1.9** ***	47.0		26.6	**1.1** ns
4. Partner and recent violence	18.0	**0.5** ***	5.6	**2.7** ***	45.0		31.5	**1.3** **
	Survey 2, 2000							
1. No violence	17.8	**1.0**	4.7	**1.0**	42.2		33.7	**1.0**
2. Non-partner violence	17.0	**1.1** ns	3.5	**0.9** ns	36.4		42.5	**1.5** ***
3. Ex-partner violence	13.8	**0.8** m	6.6	**1.4** m	42.2		36.7	**1.1** ns
4. Partner and recent violence	13.1	**1.1** ns	10.3	**3.2** ***	28.6		46.2	**2.0** ***

Significant relative risk ratios are shown in **bold**.

Figure 3 (Table 6, App 2) shows the changing patterns of contraceptive use across the differing transition groups. The overall shift to increased condom use may reflect increasing concern about sexually transmissible infections and HIV/AIDS. It is important to note that there is no option in the survey to respond that women feel coerced (rather than choose) not to use contraception.

What effects do changes in violence have on women's contraceptive behaviours?

Figure 3



Within each group, the pill is the most commonly used form of contraception. However, less reliable barrier methods such as condoms are more widely used among women whose experience of violence has increased – 'New P- viol' (23.4%) and 'None to Non-P' (22.6%). There are inconsistent patterns among those who 'choose' not to use contraception, including both those whose experience of violence has increased – 'New P-viol' (9.6%) - and those whose experience of violence has reduced to ex-partner violence (8.2%).

There are few significant differences among the choices women make about their contraception by transition group. Compared with women whose status remained the same, women who have reported any form of violence in 1996, but ex-partner violence in 2000 ('Any to ex-P') i.e. women whose violence has decreased, are now significantly more likely to use condoms rather than the pill (rrr=1.56*).

Women who 'choose' not to use contraception are more likely (rrr=3.00**) than women who use the pill to report partner and recent violence. Women who use neither pills nor condoms, but 'other' methods, are more likely to report ex-partner violence (rrr=1.54*).

The relationships between contraceptive behaviours and violence may have an effect on women's pregnancy rates and reproductive outcomes, and we consider these below.

NB: Tables TA5-9, Appendix 1, have been superseded by the re-analyses of pregnancy and pregnancy outcomes presented in Appendix 2.

How does violence affect young Australian women's reproductive outcomes?

The following quote by a respondent to the 1996 survey vividly illustrates the lived experience of some of the associations detailed below.

> *When I had my16th birthday in a maternity ward I was very unhappy. It took me 12 months to 2 years to work out why. My child was born as a result of child/sexual abuse with a lot of emotional abuse. When I moved out of home with the help of my boyfriend, now husband, I jumped on an emotional roller-coaster. I was scared, had nightmares, stressed, so I took out a domestic violence order against him because he kept hassling me. My friends, parents-in-law to be, and husband to be were very supportive. After numerous visits to various counsellors and a shrink I started on the road to recovery.*

How does violence affect young Australian women's pregnancy rates?

There is a distinct pattern of reproductive outcomes according to women's exposure to violence. Table 7 (Table 7, App2) shows that violence has a strong and significant association with pregnancy. In 1996, women who were experiencing partner and recent violence were much more likely to report pregnancy. Pregnancy (one or more) was also significantly associated with non-partner and ex-partner violence. However, proportionally, while 14% and 15% of women with no or non-partner violence reported one or more pregnancies, many more, 38% and 46% of women with ex-partner or partner and recent violence reported pregnancies.

Table 7. Relationship between violence category and pregnancy at Survey 1: percentages in each violence category, with relative risk ratios.

	N	*Sample %*	n(adj)	*Within viol. group %*	rrr†	95% Conf. Int	p-value
No violence (ref)	**11,128**	***75.3***					
No pregnancy			9,476	*85.2*			
Pregnancy			1,562	*14.0*	1.00		
Missing			88	*0.8*	1.00		
Recent non-partner violence	**1,864**	***12.6***					
No pregnancy			1,568	*84.1*			
Pregnancy			287	*15.4*	**1.36***	1.14 - 1.62	0.001
Missing			10	*0.5*	0.69	0.36 - 1.35	0.28
Ex-partner violence	**943**	***6.4***					
No pregnancy			565	*59.9*			
Pregnancy			356	*37.7*	**2.55***	2.10 - 3.09	<0.001
Missing			23	*2.4*	3.48*	2.11 - 5.74	<0.001
Partner + recent violence	**713**	***4.8***					
No pregnancy			377	*52.8*			
Pregnancy			327	*45.8*	**3.96***	3.18 - 4.93	<0.001
Missing			10	*1.4*	2.23*	1.15 - 4.34	0.02
Missing violence data	**136**	***0.9***					
Total	**14,784**	***100.0***					

†Adjusted for age, education, employment status, marital status, region, Aboriginal or Torres Strait Islander identity (ATSI), country of birth. *Statistically significant at p=0.05

By 2000, this association had increased for all categories of violence. Compared with women who were not abused, all the associations between pregnancy and violence were significant, but as previously, the strongest association was for the women reporting partner and recent violence. By 2000, many more women had had pregnancies. While 25% and 27% of women with no or non-partner violence had been pregnant, 52% of women with ex-partner and 63% with partner and recent violence had been pregnant (see Figure 4).

Figure 4

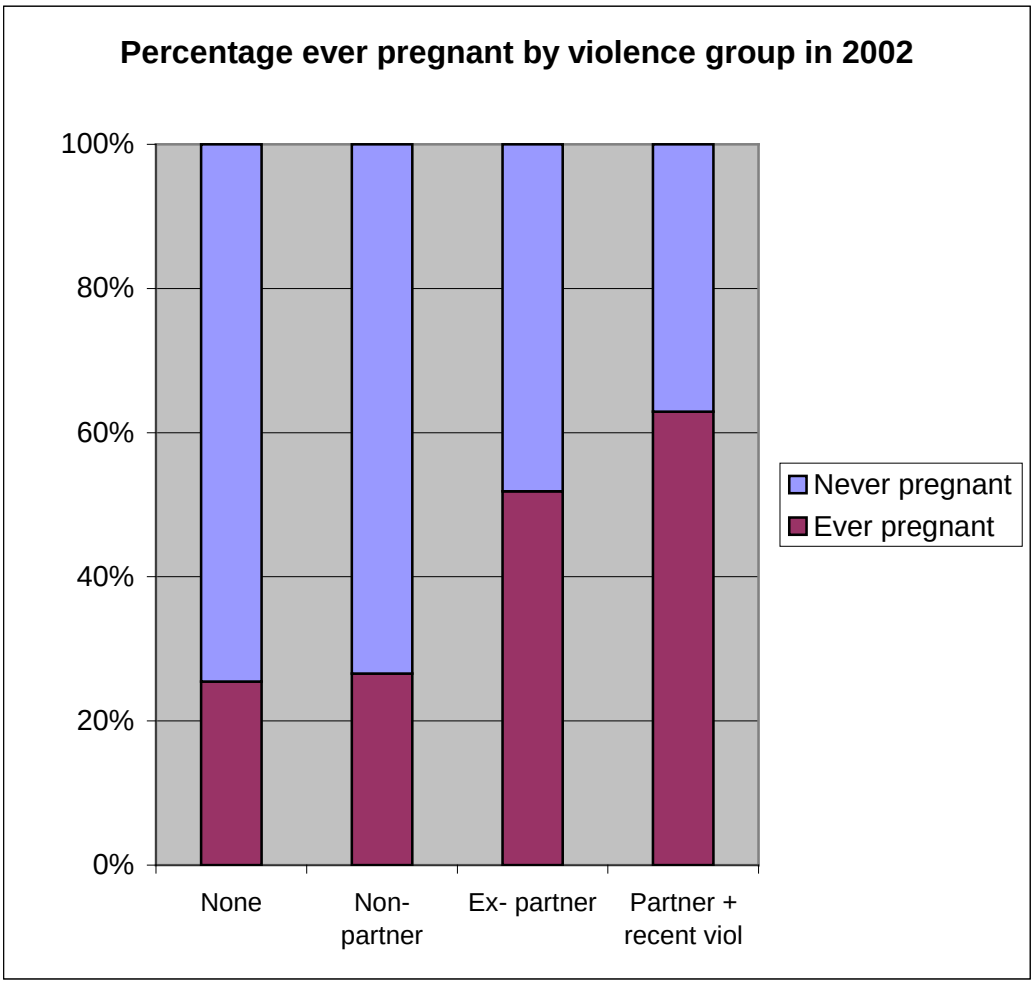


Table 8 shows that women with partner and recent violence have the highest odds (almost five times that of women who have not been victimised) of having been pregnant.

Table 8. Relationship between violence category and pregnancy Survey 2: percentages in each violence category, with relative risk ratios.

	N	*Sample %*	N (adj)	*Within viol. group %*	rrr†	95% Conf. Int	p-value
No violence (ref)	**7,616**						
No pregnancy			5,659	*74.3*			
Pregnancy			1,935	*25.4*	1.00		
Missing			22	*0.3*	1.00		
Recent non-partner violence	**460**						
No pregnancy			337	*73.2*			

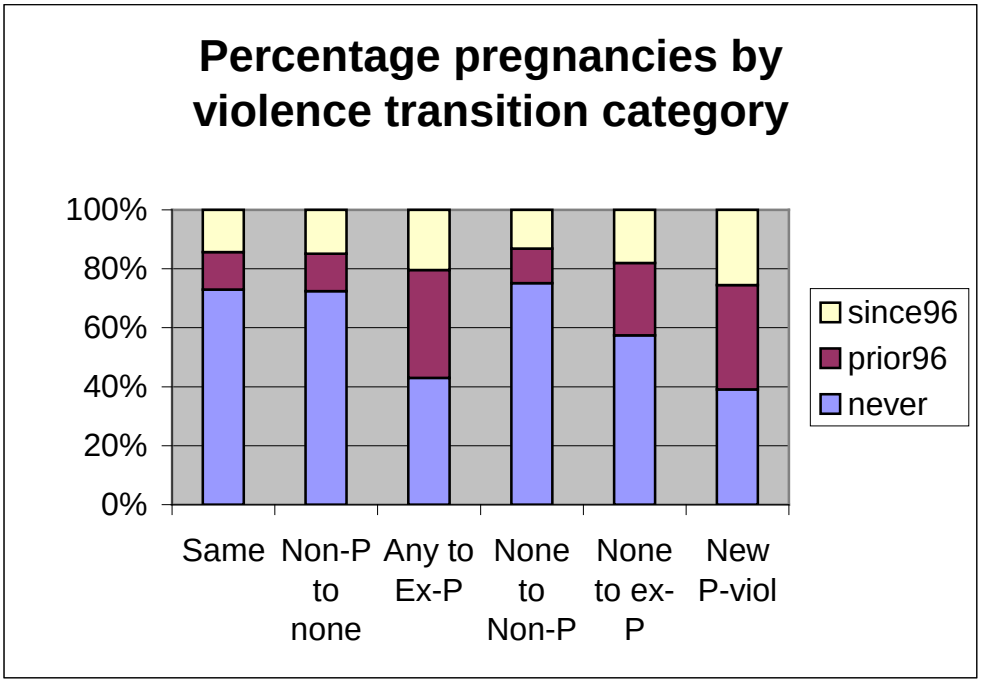
Pregnancy			122	*26.5*	**1.35***	1.03 - 1.76	0.032
Missing			1	*0.0.3*	1.07	0.15 - 8.95	0.882
Ex-partner violence	**1,059**	***6.4***					
No pregnancy			507	*47.8*			
Pregnancy			547	*51.6*	**2.70***	2.29 - 3.19	<0.001
Missing			6	*0.5*	2.94*	1.06 - 8.15	0.039
Partner + recent violence	**288**						
No pregnancy			107	*37.0*			
Pregnancy			181	*62.8*	**4.74***	3.45 - 6.51	<0.001
Missing			0.5	*0.2*	1.32	0.16 - 10.66	0.793
Missing violence data	**268**	***0.9***					
Total	**9691**	***100.0***					

†Adjusted for age, education, occupation, marital status, region, Aboriginal or Torres Strait Islander identity (ATSI), country of birth. * Statistically significant at p=0.05

How does the change in victim status affect women's pregnancy rate?

There are no significant differences in pregnancy status associated with changes in violence status, as the effect is so persistent. However, as Figure 5 (Figure 5, App 2) illustrates, a larger percentage of women who report an increase in partner abuse in 2000 have experienced pregnancies prior to 1996 and after 1996 also. When we link women's records, those who report any form of partner violence are significantly associated with one or more pregnancies, notably before 1996 (ex-partner violence - rrr=4.40***; partner and recent violence – rrr=8.98***). The effect is weaker in 2000 (ever partner violence - rrr=1.91***; partner and recent violence – rrr=3.55***).

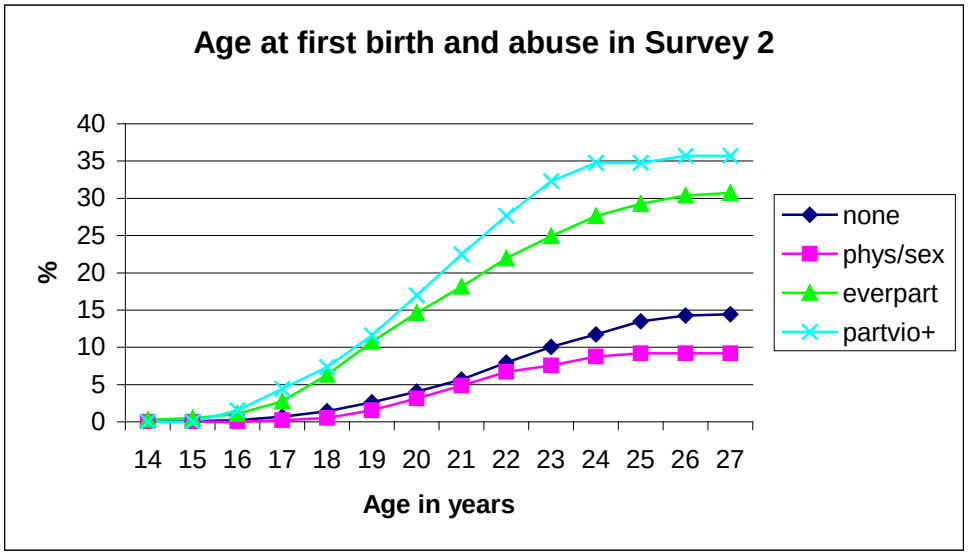
Figure 5: Pregnancies prior to and after 1996 by transition group



The transitional and survey year data indicate that many women experiencing partner violence in 2000 have a stronger likelihood than women with no or non-partner violence of having been pregnant prior to 1996. We cannot make any assumptions about which

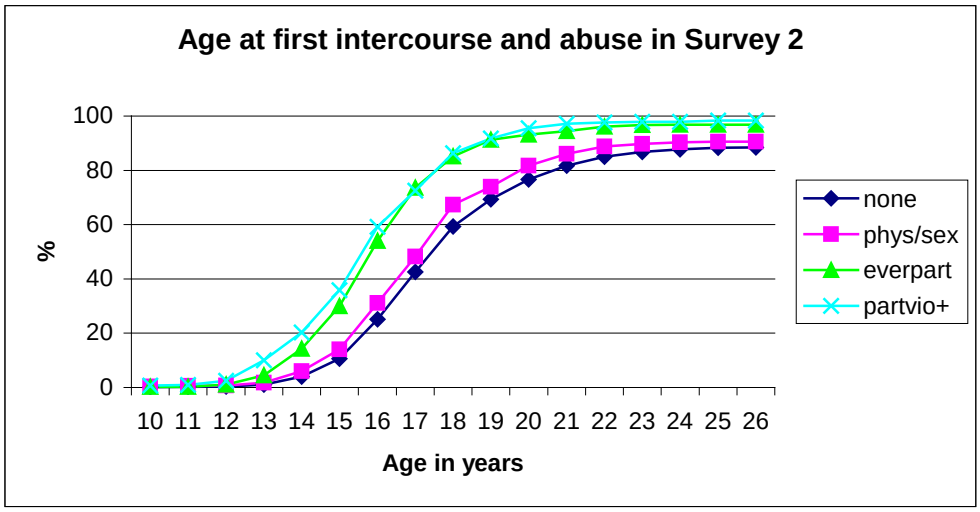
direction this association moves – that is, whether the violence or the pregnancy precedes the other. What is intriguing in Figure 5, is that double the percentage of women moving from no violence in 1996 to ex-partner violence in 2000 have reported pregnancies prior to 1996 (24%), compared with those who stay the same (12.7%) and the Non-P to none group (12.6%). Unsurprisingly, as many will have separated, 36.1% of those whose violence preceded 1996 ('any to ex-P') reported pregnancies in that period, while only 20.5% reported pregnancies after 1996. Notably, 35.5% of women who moved from none or any to new partner violence reported one or more pregnancies by 1996 and 25.5% between 1996 and 2000. We can make no assumptions about what is occurring. One possible factor may be that these women may have pregnancies at an early age. Age at first birth according to violence category is illustrated in Figure 6 (Figure 6, App 2).

Figure 6



It is clear from this chart that at every age, the percentage of women giving birth is greater in the partner violence categories. The highest percentages are among those women with partner and recent violence. In Figure 7 (App 2), we considered the age at which women reported first intercourse, and this adds complexity to the picture. A higher percentage of women in the two partner violence categories report intercourse before 16 (the legal age) and prior to puberty. Like the quotes at the beginning of the report, this suggests a strong likelihood of childhood sexual abuse.

Figure 7



We also examined the association between violence and age at menarche (first period) but there were no significant associations (Figures 6 and 7, App 2). In the end we can make no conclusions from cross-sectional data, but these data suggest a complex picture with a number of vulnerabilities, such as prior childhood sexual abuse, earlier age at first intercourse leading to earlier pregnancies for some women, which may make them vulnerable to violence and poor health, as the respondents below suggest:

> *I have a lot of nightmares because I was sexually abused when I was 8 years old. My family do not know.*
>
> *Have been sexually abused at ages 10 and 15 and raped at age 17. Used to drink very heavily and suffer a form of agoraphobia. Received extensive counselling over [the] last 6 months and have now dealt with my past and am looking forward to my future*
>
> *[I experienced] sexual abuse from the ages of 5-9 years by someone close to the family. Parents never knew about it. I have only ever told 2 people. Most of the time it is erased from my memory, only remember some of it. I knew it was wrong, but trusted and loved the person doing it to me. If my family ever found out they would be totally destroyed. My father also died of a heart attack when I was 14 years old I have never had any counselling with any of these problems and I don't believe I ever will. But I do believe I have a problem, I am promiscuous and I have had a lot of sexual partners, too many for my age.*

For some women, as the literature suggests, the violence may precede the pregnancies. In either case, the reproductive burden for these young women, in addition to violence, is considerable. We consider below the further outcomes of these pregnancies.

How does violence affect young Australian women's rates of pregnancy losses – miscarriage, terminations and birthing rates?

In Survey 1, 1996, only questions about pregnancy losses (terminations, miscarriages) and live births were asked about. Table 9 (App 2) illustrates how, in comparison with women reporting no violence, women with any violence have significantly greater odds for miscarriages and terminations, separately and together, with or without births. The effect, as before, is stronger among women reporting partner and recent violence. These data have been fully adjusted to take into account the effect of socio-demographic factors.

TTable 9. Relationship between violence category and pregnancy outcomes 1996: Adjusted percentages in each violence category, with relative risk ratios.

	n(adj)	*Sample %*	N(adj)	*Within viol. group %*	(adj) rrr†	95% Conf. Int	p-value
No violence (ref)	**1562**	***10.6***					
Birth only			550	*35.2*			
Miscarriage only			111	*7.1*	1.00		
Termination only			383	*24.5*	1.00		
Misc + termination			24	*1.5*	1.00		
Birth + miscarriage			91	*5.8*	1.00		
Birth + termination			89	*5.7*	1.00		
Birth + misc + term			19	*1.2*	1.00		
Missing pregnancy outcome			296	*19.0*	1.00		
Recent non-partner violence	**287**	***1.9***					
Birth only			58	*20.1*			
Miscarriage only			26	*9.1*	**2.00***	1.15 - 3.47	0.01
Termination only			103	*35.9*	**2.44***	1.62 - 3.68	<0.001
Misc + termination			8	*2.9*	**3.31***	1.30 - 8.45	0.01
Birth + miscarriage			13	*4.6*	1.37	0.69 - 2.73	0.37
Birth + termination			17	*6.1*	1.73	0.94 - 3.20	0.08
Birth + misc + term			3	*1.0*	1.53	0.44 - 5.35	0.50
Missing pregnancy outcome			58	*20.2*	1.61*	1.04 - 2.51	0.03
Ex-partner violence	**356**	***2.4***					
Birth only			115	*32.2*			
Miscarriage only			23	*6.6*	1.16	0.68 - 1.98	0.59
Termination only			87	*24.6*	1.43	0.97 - 2.12	0.07
Misc + termination			3	*0.8*	0.64	0.19 - 2.14	0.47
Birth + miscarriage			36	*10.2*	**1.73***	1.09 - 2.74	0.02
Birth + termination			32	*8.9*	1.58	0.98 - 2.55	0.06
Birth + misc + term			10	*2.7*	**2.37***	0.98 - 5.69	0.05
Missing pregnancy outcome			50	*14.0*	1.05	0.69 - 1.59	0.81
Partner + recent violence	**327**	***2.2***					
Birth only			95	*29.0*			
Miscarriage only			48	*14.6*	**2.85***	1.74 - 4.66	<0.001
Termination only			75	*22.8*	1.47	0.95 - 2.27	0.08
Misc + termination			17	*5.3*	**4.60***	2.26 - 9.35	<0.001
Birth + miscarriage			30	*9.3*	**1.76***	1.09 - 2.84	0.02
Birth + termination			18	*5.4*	0.99	0.55 - 1.79	0.97
Birth + misc + term			14	*4.2*	**4.12***	1.89 - 9.00	<0.001
Missing pregnancy outcome			30	*9.3*	0.73	0.45 - 1.20	0.22
Missing violence (not birth) data	**30**	***0.2***					
Total	**2561**	***17.3***					

*Statistically significant at p=0.05. Adjusted for age, marital status, area, education, employment, ATSI status, country of birth.

In 2000, as well as other pregnancy outcomes, questions about women's rates of stillbirth and premature births were asked for the first time. Table 10 (Tables 9 and 10, App2) includes all pregnancy outcomes: a term birth only (the reference group); one or more term births and one or more losses (i.e. miscarriage or termination); a premature (<36 weeks) birth with or without term birth; a premature birth with or without losses; a stillbirth with or without losses; those currently pregnant for the first time; and those with inconsistent or missing data.

There are many other factors which might impact on these outcomes, so in our calculations, we have included/adjusted for the socio-demographic variables of age, marital status, education, occupation, Indigenous status, country of birth, area of residence and whether women reported an eating disorder, drank at low or harmful levels, or smoked.

There are no significant relationships between non-partner violence and reproductive outcomes in 2000, but the associations persist for women with either form of partner violence. The details of adverse pregnancy outcomes, including reports of premature and stillbirth, in addition to miscarriage or termination, are indicated in Table 10.

It is clear that when all the other factors, such as socio-demographic status and eating disorders are considered, partner violence still has an independent impact on women's pregnancy outcomes in 2000.

Women who have ever had a violent relationship with a partner are significantly more likely to have a term birth and a loss (rrr=1.93***), or a premature birth and a loss (rrr=2.39*), or a stillbirth with or without a term birth or a loss (rrr=2.55*). They are significantly more likely to have an eating disorder (rrr=2.3***) and to be smokers (rrr=1.94**).

Women who experience partner and recent violence are more like to have a term birth and a loss (rrr=2.42***). They are also more likely to have an eating disorder (rrr=2.9**) and to smoke (rrr=2.3***).

These data suggest significant and sustained detrimental effects of partner violence (but not non-partner violence) on adverse pregnancy outcomes. Next we examine the transition effects to see if they shed any light on the differences.

Table 10. Relationship between violence category and pregnancy outcomes 2000: Adjusted percentages in each birth outcome category, with relative risk ratios.

	Sample		*Within viol.*				
	n(adj)	***%***	N(adj)	*group %*	(adj) rrr[†]	95% Conf. Int	p-value
No violence (ref)	**1935**	***20***					
Term birth only			658	*34.0*			
Term and loss			286	*14.8*			
Loss only			640	*33.1*	1.00		
Prem+/-term			55	*2.8*	1.00		
Prem+/-loss			28	*1.4*	1.00		
Stillbirth+/-			18	*0.9*	1.00		
1st pregnancy			134	*6.9*	1.00		
Missing pregnancy outcome			116	*6.0*	1.00		
Recent non-partner violence	**122**	***1.3***					
Term birth only			25	*20.5*			
Term and loss			15	*12.3*	1.09	0.54 2.23	0.81
Loss only			70	*57.4*	1.30	0.70 2.44	0.41
Prem+/-term			1	*0.8*	0.22	0.30 1.69	0.15
Prem+/-loss			1	*0.8*	0.89	0.11 7.37	0.91
Stillbirth+/-			1	*0.8*	1.77	0.20 15.34	0.61
1st pregnancy			2	*1.6*	0.5	0.12 1.94	0.31
Missing pregnancy outcome			7	*5.7*			
Ex-partner violence	**547**	***5.6***					
Term birth only			132	*24.1*			
Term and loss			136	*24.9*	**1.93*****	1.43 2.62	<.0001
Loss only			191	*34.9*	1.14	0.82 1.59	0.42
Prem+/-term			11	*2.0*	1.01	0.53 1.95	0.97
Prem+/-loss			20	*3.7*	**2.39***	1.72 4.89	0.02
Stillbirth+/-			11	*2.0*	**2.55***	1.14 5.73	0.02
1st pregnancy			18	*3.3*	0.88	0.48 1.61	0.68
Missing pregnancy outcome			27	*4.9*			
Partner + rec violence	**181**	***1.9***					
Term birth only			36	*19.9*			
Term and loss			51	*28.2*	**2.42*****	1.48 3.97	<.0001
Loss only			77	*42.5*	1.25	0.73 2.13	0.41
Prem+/-term			5	*2.8*	1.28	0.42 3.84	0.66
Prem+/-loss			7	*3.9*	2.44	0.88 6.78	0.09
Stillbirth+/-			0	*0.0*	0	0 0	0
1st pregnancy			1	*0.6*	0.29	0.03 2.22	0.24
Missing pregnancy outcome			3	*1.7*			
Missing violence (not birth) data	**96**	***1.0***					
Total	**2881**	***29.7***					

*Statistically significant at p=0.05. Adjusted for age, education, occupation, marital status, area of residence, ATSI status, country of birth, eating disorders, harmful drinking and smoking.

The transitions in violence and their associations with pregnancy outcomes

Table 11 (Table 11, App2) outlines the numbers and percentages in the linked data of women whose violence did not alter and those in the violence transition groups (who have had a pregnancy) and all their possible birth outcomes. Overall, 6781 women had never been pregnant. 882 women had delivered term births. 163 women were pregnant for the first time at the time of the survey. The great majority of these women had experienced no changes in their violence status and within this category; the majority had not experienced any violence. There are few statistically significant differences, but notably high percentages among some partner violence groups in their adverse outcomes.

Among women who reported increased violence to non-partner violence in 2000 (None to Non-P), twelve percent of pregnancies (n=36) resulted in term births and losses. They were much more significantly likely (rrr=23.7**) to report term and losses than just a term birth. Women who reduced non-partner violence to none in 2000 ('Non-P to none') (n=113) also reported 12% of pregnancies, which resulted in term births and losses. They were also more likely (rrr=1.65*) to report a term birth and losses than a term birth, but the effect of the violence resulted in much lower odds. There are large percentages of women in partner violence categories (Any to ex-P and New-P-viol) who report both term births and losses and premature births, but these are not statistically significant.

In summary, while the first survey in 1996 revealed that abused women are pregnant and give birth more often than non-abused women, the 2000 survey revealed that abused women suffer more adverse outcomes among these births. It is clear that while the violence retains its independent significance, smoking, having an eating disorder and drinking at harmful levels also play a significant role and are closely associated. While women in partner violence categories have more losses and more births than women not victimised, women who experienced violence from others are also at significant risk.

Women in partner abuse categories appear to have the highest burden, but the transition data shed little light on these effects. It is worrying that outcomes appear poor (premature birth and loss) and the odds being significantly high for women who are no longer with violent partners, suggesting prior, but perhaps persistent, harm. The significant likelihood of ATSI or European women being among the small numbers who have a stillbirth needs further investigation.

Table 11. Numbers of women (adjusted) and pregnancy outcomes in each violence transition category

	No birth	**Term**	**Term+loss**	**Loss (miscarriage +abortion) only**	**Prem+/- term**	**Prem+/- loss**	**Stillbirth +/-**	**1st pregnancy**	**Missing Preg**	**Total**	**Missing Viol data**
									---	---	
Same	5307	670	316	660	54	39	20	132	25	**7327**	106
%	***72.4***	***9.1***	***4.3***	***9.0***	***0.7***	***0.5***	***0.3***	***0.2***			
Non-P to none	675	62	41	113	6	1	1	10	1	**932**	21
%	***72.4***	***6.6***	***4.4***	***12.1***	***0.7***	***0.2***	***0.2***	***1.1***			
Any to ex-P	165	49	58	84	4	3	7	6	1	**389**	13
%	***42.4***	***12.5***	***14.9***	***21.7***	***0.9***	***0.8***	***0.5***	***0.8***			
None to Non-P	222	15	14	36	1	1	1	2	1	**298**	4
%	***74.4***	***5.1***	***4.7***	***12.1***	***0.2***	***0.5***	***0.5***	***0.8***			
None to ex-P	122	22	21	32	2	7	1	5	0	**217**	4
%	***56.2***	***10.6***	***9.6***	***14.7***	***0.9***	***3.4***	***0.6***	***2.2***			
New P-viol	77	26	36	46	4	5	0	1	0	**196**	2
%	***39.1***	***13.2***	***18.2***	***23.2***	***2.1***	***2.3***	***0***	***0.1***			
Missing	215	38	21	34	2	1	3	7	2	333	11
Total	**6781**	**882**	**507**	**1005**	**72**	**57**	**34**	**163**	**30**	**9692**	**161**

Figures and percentages have been rounded.

We next examine women's overall sexual health and whether violence has a detrimental impact on other aspects of women's reproductive health.

How does violence affect young Australian women's sexual health?

Vaginal discharge

Table 12 (A10 App 1) shows that, compared with women who were not victimised, women who had experienced violence had elevated odds for saying they had a vaginal discharge in the last twelve months, but women with non-partner and ex-partner violence had higher odds before 1996, the most significant odds were among the women reporting partner and recent violence for both years.

Table 12: Relationship between violence category and recent vaginal discharge: percentages in each violence category, with relative risk ratios.

Vaginal discharge in last 12 months?	Survey 1, 1996		Survey 2, 2000	
	Yes (%)	rrr	Yes (%)	rrr
1. No violence	3.7	**1.0**	4.3	**1.0**
2. Non-partner violence	5.2	**1.7** **	5.9	**1.4** ns
3. Ex-partner violence	6.1	**1.7** **	5.6	**1.3** ns
4. Partner and recent violence	6.7	**1.9** ***	8.1	**2.0** **

When data are linked, some women no longer experiencing violence from non-partners (Non-P to none) in 2000 were at higher odds of vaginal discharge before 1996 (rrr=1.49*), and some after (rrr=1.75**), but not during both periods. Women reporting ex-partner violence were at greater odds (rrr=2.44*) of vaginal discharge since 1996. Women with partner and recent violence were more likely (rrr=3.83*) to have vaginal discharges both before and after to 1996 (Table 12, App2).

Sexually Transmissible Infections

Herpes virus

As Table 13 (Table A11, App1) shows, in both surveys, women in both partner violence categories have higher odds of ever having been diagnosed with the Herpes virus, while women with recent non-partner violence had no significant differences when compared with non-victimised women in either year.

Table 13. Relationship between violence category and herpes infection: percentages in each violence category, with relative risk ratios.

Herpes infection	Survey 1, 1996		Survey 2, 2000			
	'ever'		Recent <4yrs		Past	
	(%)	rrr	(%)	rrr	(%)	rrr
1. No violence	0.8	**1.0**	1.6	**1.0**	0.9	**1.0**
2. Non-partner violence	1.0	**1.2** ns	2.3	**1.5** ns	0.9	**1.0** ns

3. Ex-partner violence	2.3	**2.8*****	2.7	**1.7***	3.0	**3.4*****
4. Partner and recent violence	2.5	**3.1*****	3.6	**2.3***	2.2	**2.6***

Overall the numbers of women in these categories are small (Table 13, App2). Women in the ex-partner violence category are more likely (rrr=3.80**) to report being diagnosed with Herpes prior to 1996. Women in the 'Any to ex-P' group are significantly less likely to report Herpes since 1996 (rrr=0.39*) than those whose experience remained the same, suggesting they may have reduced their risk by separating.

Hepatitis C and Human Papilloma Virus

A question about women's knowledge of their Hepatitis C status was added to Survey 2, and Table 14 (Table A12, App 1) shows that women in both partner violence categories have much higher odds of having been diagnosed recently with Hepatitis C, while women recently victimised but not by a partner had no significant differences when compared with non-victimised women. The partner violence association was not significant in the past, but is very obvious in the recent four years, especially for women with partner and recent violence.

Table 14. Relationship between violence category and Hepatitis C infection: percentages in each violence category, with relative risk ratios.

	Survey 2, 2000 Recent, last 4 years		**Survey 2, 2000 Past, > 4 years ago**	
Hepatitis C infection?	**Yes (%)**	**rrr**	**Yes (%)**	**rrr**
1. No violence	0.2	**1.0**	0.5	**1.0**
2. Non-partner violence	0.7	**3.0**ns	0.2	**0.4**ns
3. Ex-partner violence	1.0	**4.7*****	1.0	**2.2**ns
4. Partner and recent violence	2.4	**11.0*****	0.7	**1.6**ns

Table 15 shows similar patterns of results for Human Papilloma Virus (HPV) infection, in Surveys 1 and 2.

Table 15. Relationship between violence category and HPV infection: percentages in each violence category, with relative risk ratios.

HPV infection	**Survey 1, 1996 'ever'**		**Survey 2, 2000 Recent <4ys ago**		**Past**	
	(%)	**rrr**	**(%)**	**rrr**	**(%)**	**rrr**
1. No violence	2.5	**1.0**	3.2	**1.0**	1.6	**1.0**
2. Non-partner violence	2.9	**1.2**Ns	6.0	**1.9****	2.1	**1.3**ns
3. Ex-partner violence	5.7	**2.4*****	5.0	**1.6***	4.3	**2.8*****
4. Partner and recent violence	8.4	**3.9*****	8.9	**3.0*****	3.3	**2.2***

There are no significant differences between women whose violence status changed and those whose circumstances remained the same; however, when women's records are

linked, women reporting partner violence were significantly more likely to report HPV diagnoses prior to 1996 than non abused women (rrr=2.81***; rrr=3.,32*), while women with non-partner violence were more likely (7.01**) to report HPV diagnoses both before and since 1996 (Table 15, App2).

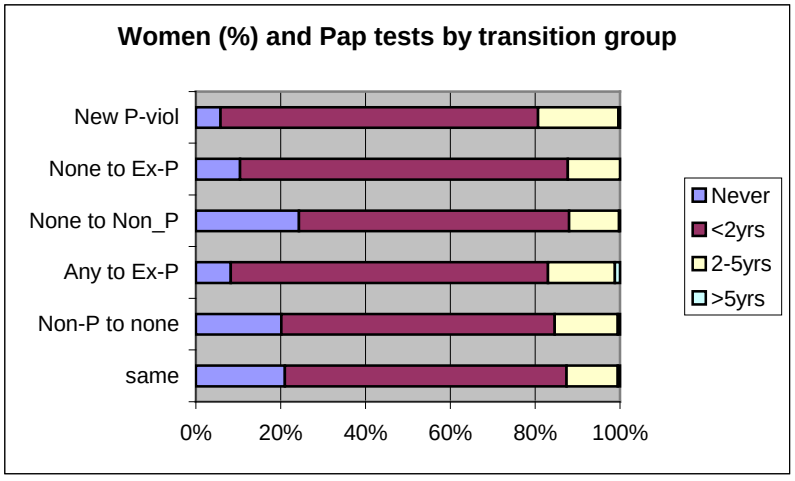
Pap tests and abnormal results in 1996 and 2000 and changes in victim status

As has been demonstrated, women who have experienced partner violence have increased odds for HPV, which puts them at proportionally greater risk of cervical cancer. Pap tests are important in the detection and treatment of pre-cancerous changes. Table 16 (Table A14, App 1) shows that women who have experienced violence are more likely to have been screened than those without any violence (many of whom are not at risk because they have never had sexual intercourse). But while the majority of victimised women have been screened less than two years ago on both surveys, nevertheless a small, but worrying proportion of these women remained unscreened or inadequately screened.

Table 16. Relationship between violence category and Pap tests: percentages in each violence category, with relative risk ratios.

	Survey 1, 1996									
Had a pap test?	**Never**		**<2 yrs ago**		**2-5 yrs ago**		**>5 yrs ago**		**Not sure**	
	(%)	**ref**	**(%)**	**ref**	**(%)**	**rrr**	**(%)**	**rrr**	**(%)**	**rrr**
1. No abuse	51.3		43.1	**1.0**	4.7	**1.0**	0.2		0.3	**1.0**
2. Non-partner violence	52.8		42.4	**1.0**	4.4	**0.9** ns	0.1	**0.5** ns	0.2	**0.5** ns
3. Ex partner abuse	25.1		65.7	**3.1** ***	8.3	**3.6** ***	0.6	**6.4** **	0.5	**2.8** *
4. Partner and recent violence	23.4		65.3	**3.3** ***	8.8	**4.1** ***	3.7	**4.3** *	1.1	**6.3** ***
	Survey 2, 2000									
1. No abuse	21.1	**1.0**	64.9		12.2	**1.0**	0.5		0.4	**1.0**
2. Non-partner violence	21.4	**1.0** Ns	64.1		12.1	**1.0** ns	1.1	**2.3** ns	0.5	**1.3** ns
3. Ex partner abuse	7.1	**0.3** ***	77.1		14.5	**1.0** ns	0.7	**1.3** ns	0.5	**1.0** ns
4. Partner and recent violence	5.7	**0.2** ***	72.3		18.2	**1.3** ns	0.5	**0.9** ns	2.2	**5.4** ***

Figure 9: percentage of women having Pap tests by violence transition group



When women's records are linked (Table 16, App2), women moving from non-partner violence to none are more likely (rrr=1.30*) to have had a test between 2 and 5 years ago. Overall, women with non-partner violence are considerably more (rrr=4.64) likely to have had their most recent test more than 5 years ago, while those with increased violence ('None to Non-P', rrr=0.96*) are less likely.

Women who report ex-partner or recent partner violence are significantly more likely to have had a test less than two years ago than never to have had one and women reporting ex-partner significantly less likely (rrr=0.35***) never to have had one, suggesting vigilance on many victimised women's part.

The importance of regular screening is demonstrated in Table 17 (Table A15, App1), which shows that women in both partner violence categories have greatly increased probability of having had an abnormal Pap smear. While the percentage having abnormal smears has increased, the odds of women having an abnormal smear have reduced, but remain higher than among non-victimised women.

Table 17. Relationship between violence category and abnormal Pap results: percentages in each violence category, with relative risk ratios.

	Survey 1, 1996		Survey 2, 2000	
Ever abnormal pap test?	**Yes (%)**	**rrr**	**Yes (%)**	**rrr**
1. No violence	8.0	**1.0**	17.2	**1.0**
2. Non-partner violence	8.2	**1.0**ns	23.2	**1.5****
3. Ex-partner violence	17.4	**4.4*****	31.5	**1.8*****
4. Partner and recent violence	21.0	**5.7*****	32.0	**1.9*****

The linked data (Table 17, App2) show that the associations with partner violence are strong, especially before 1996. The significant transitional differences are for women in the 'Any to ex-P' group to have greater odds of reporting abnormal pap tests since 1996 (rrr=1.64*), compared with women whose status remained the same, suggesting a long term effect on gynaecological health. Women reporting non-partner violence (rrr=3.45*) and those reporting ex-partner violence (rrr=2.05*) have increased odds of an abnormal Pap smear before 1996 and women reporting ex-partner (rrr=1.57**) and partner and recent violence (rrr=2.24*) of being diagnosed with an abnormal Pap smear after 1996.

The physical and mental health of young Australian women reorting violence

Women in these surveys answered questions from a widely used measure of health and wellbeing, the SF36. This scale provides summary scores indicating overall physical and mental health, with higher scores indicating better functioning. Table 18 presents the means for the physical health component score of the SF-36 among the four groups of women. These results have been standardised such that a population norm would be 50.0.

Young women's physical health

Table 18 illustrates the mean decrease across the four groups defined by increasing levels of violence and that victimised women are less healthy physically. Women with ex-partner violence have poorer physical health than women with non-partner violence.

Table 18. Relationship between violence category and SF-36 Physical Health Component score.

	Survey 1, 1996	Survey 2000
	SF36 Physical Health Component score	
1. Not victimised	50.72	50.50
2. Non-partner violence	48.87	48.60
3. Partner violence	47.59	47.19
4. Partner and recent violence	45.81	45.47

When we linked the data, there were no significant differences for women whose violence status altered and those who remained the same, unlike the patterns for women's mental health detailed further below.

Mental health and the impact of changes in transition

General mental wellbeing

Table 19 (Table A16, App1) presents the mean scores for mental health in 1996 and 2000, for the four groups of women. Again the mean scores decrease across the four groups defined by levels of exposure to violence. However, while the scores decrease compared with non-victimised women, it is noteworthy that women with recent violence have lower scores (i.e. women with non-partner violence and partner and recent violence) than women with ex-partner violence, across both surveys. It is encouraging that at a population level, women with ex-partner violence (who are more likely to be separated or divorced) have better mental health than other victimised women sustained at both periods. This suggests the beneficial effect of distance from the violence.

Table 19. Relationship between violence category and SF-36 Mental Health Component score.

	Survey 1, 1996	Survey 2, 2000
	SF36 Mental Health Component score	
1. Not victimised	51.08	50.91
2. Other phys/sexual violence < 12mths	47.43	45.95
3. Ex-partner violence	48.14	47.64
4. Partner and recent violence recent violence	43.32	43.09

In 2000, the survey sought women's accounts of several other forms of mental disorders both in the past (over four years ago), and recently (in the previous four years). Table 20 Table A17:1-4, App1) summarises the other forms of mental distress and the odds for each group, by comparison with women who are violence free. Women who have experienced any violence are consistently at greater likelihood than other women of recent maternal and other depression, anxiety, self-harm and suicidal ideation.

Table 20. Odds ratios for other mental health problems, by violence category, compared with non-victimised women: Survey 2.

Ever had mental health	Maternal Depression				Depression			
problems?	Past >4 years ago		Recent		Past>4 years ago		Recent	
	Yes (%)	rrr	Yes (%)	rrr	Yes (%)	rrr	Yes (%)	rrr
1. No violence	0.7	**1.0**	1.4	**1.0**	0.8	**1.0**	10.0	**1.0**
2. Non-partner violence	0.5	**0.7**ns	2.7	**1.9***	0.8	**1.1**ns	18.5	**2.0*****
3. Ex-partner violence	2.5	**4.0*****	6.2	**4.7*****	1.7	**2.7****	21.4	**2.5*****
4. Partner and recent violence	2.6	**4.1****	6.4	**4.9*****	0.9	**1.8**ns	34.9	**4.9*****

Ever had mental health	Anxiety disorder				Suicidal thought and actions			
problems?	Past>4 years ago		Recent		Self-harm past 6 months		Thoughts recent week	
	Yes (%)	rrr	Yes (%)	rrr	Yes (%)	rrr	Yes (%)	rrr
1. No violence	1.0	**1.0**	4.2	**1.0** 1	1.5	**1.0**	6.1	**1.0**
2. Non-partner violence	1.1	**1.1*****	9.0	**2.2*****	9.2	**7.3*****	13.0	**2.5*****
3. Ex-partner violence	1.5	**1.5**ns	9.0	**2.3*****	4.5	**3.3*****	12.2	**2.2*****
4. Partner and recent violence	4.1	**4.6*****	15.0	**4.2*****	11.0	**10.4*****	23.0	**5.3*****

Considering the increased likelihood that women experiencing partner violence will have adverse birthing outcomes, women with partner violence also reported a higher likelihood of experiencing maternal depression, although women with non-partner violence also had a marginally increased likelihood of recent maternal depression. Depression and anxiety are considerably raised in women with partner and recent violence; however, these women follow the same pattern of having the highest odds of almost all forms of mental disorder, in line with the overseas literature.

Women who have been recently victimised by partners and non-partners have greatly raised odds (compared with women who are not victimised) for reporting that they had engaged in deliberate self-harm in the past six months. Although all victims have higher odds than non-victimised women for suicidal thoughts in the last week, women recently assaulted are more likely than those with ex-partners. These are very worrying figures.

> *I was sexually, mentally & physically abused by mother's ex-boyfriend from the age of 11-16 years. That is all going through court now & a lot of emotional problems are stemming from it.*

Most women had greater odds of mental disorder in the past four years than over four years ago, except for women with ex-partner violence whose likelihood for depression

was greater over four years ago. These trends are consistent with their overall mental health scores. When we examine women individually (that is by linking their data from both surveys) we can see these trends more clearly.

Transitional mental health data

In the linked records (Tables 20-1to 4, App2), women with ex-partner violence are more likely (rrr=2.01*) to report maternal depression since 1996, compared with women who don't report any, but this may well be explained by higher rates of births. Women no longer abused by non-partners ('Non-P to none') were more likely (rrr=1.67*) to report being depressed prior to 1996. Importantly, women in all 3 victim categories have higher odds of reporting depression since 1996 (rrr=2.50***; 2.26***; 5.20***), but only those with ex or recent partner violence report depression both before and after 1996 (rrr=3.57***; 12.8***). The impact of partner violence on depression appears to be both strong and sustained.

The likelihood of anxiety does not vary significantly among the transition groups, but is more likely to be reported among women with partner and recent violence prior to 1996 (rrr=4.21*). Since 1996, the odds are raised for those with non-partner violence (rrr=2.65**), those with ex-partner violence (rrr=2.08**), but even higher among partner and recent violence victims (rrr=3.84***). For anxiety at both periods, the odds are raised only for those with non-partner and ex-partner violence but these figures are not reliable, as the numbers are small and the confidence intervals wide.

Women whose non-partner violence decreased ('Non-P to none') are significantly more likely to report deliberate self-harm in the previous 6 months (rrr=2.84***) and are slightly more likely to report suicidal thoughts in the past week (rrr=1.60**) compared with women whose violence did not change. Women with recent violence (i.e. non partner violence and partner and recent violence) are much more significantly likely to report both past six-month (rrr=14.07***; 24.63***) and present suicidal ideation (rrr=2.82***; 7.19***) compared with those with ex-partner violence (rrr=3.07***; 1.80**). The effects of recent violence on suicidal ideation are very strong.

> *I was always scared of dying but it's nice and peaceful when you're dead. Because that's all I wanted, I wanted peace and it was nice where I was and then I woke up and I thought, Oh, no I'm back here again. Because I hated life. (Head and Taft, 1995)*

<u>Problematic eating behaviours</u>

> *I was mentally and emotionally abused by a past "boyfriend" although it was not physical, it caused dramatic health problems including drastic weight loss of about 20kg within a two-month period*

Disordered eating was assessed in different ways at Survey 1 and at Survey 2 (Table A18, App1), but in each case it was possible to categorise women according to whether they reported problematic eating behaviours such as vomiting on purpose after eating, or fasting for at least a day to control their weight or shape (see Table 21). In both surveys, women with any form of violence have greater odds of problematic eating behaviours than those without any experience of violence.

Table 21. Percentage classified with problematic eating behaviours, by violence category, and relative risk ratios compared with non-victimised women: Surveys 1 and 2.

	Survey 1, 1996 'ever'		Survey 2, 2000 In last 12 months	
Eating problems?	**Yes (%)**	**rrr**	**Yes (%)**	**rrr**
1. No violence	24.6	**1.0**	15.3	**1.0**
2. Non-partner violence	38.2	**1.9*****	24.7	**1.8*****
3. Ex-partner violence	37.6	**1.9*****	31.1	**2.5*****
4. Partner and recent violence	54.8	**3.7*****	36.9	**3.2*****

*Significant relative risk ratios are shown in **bold**.*

Linking the data (App 2, p x) reveals clear indication of the effects of violence. Women whose violence has decreased ('Non-P to none', 'Any to ex-P') are both more likely (rrr=1.52***; 1.96***) to report eating disorders before 1996, compared with those experiencing no violence. Conversely, women whose experience of violence increased in the intervening period ('None to ex-P') are more likely to report disordered eating since 1996 (rrr=2.43**). Inexplicably, women who entered a new relationship with a violent partner (New P-viol) are less likely (rrr=0.39*) to report disordered eating since 1996, as well as (rrr=0.36**) both before and after 1996.

Women reporting any form of violence are significantly more likely to report disordered eating before and after 1996 and at both periods, with the exception of those with ex-partner violence, who are not at higher risk since 1996.

Harmful health behaviours including licit and illicit drug misuse

Data on specific drug misuse were only collected in 2000. We first examine the associations between violence and the use of licit drugs (tobacco and alcohol) in the two surveys. Tables 22 and 23 (Tables 20&21, App1) illustrate specific differences between victimised and non-victimised women in smoking and harmful drinking. At both Survey 1 and Survey 2, women with all forms of violence were more likely to fall into the high categories of smoking. The more severe the violence, the greater the percentage of women in high smoking categories at each survey. High risk drinking is also significantly greater among women who have experienced violence, with the effect particularly strong for those experiencing partner and recent violence.

Table 22. Smoking and violence category: Percentages at Surveys 1 and 2.

	Survey 1, 1996				Survey 2, 2000			
Smoking	**10-20 per day**		**>20 per day**		**10-20 per day**		**>20 per day**	
	(%)	**rrr**	**(%)**	**rrr**	**(%)**	**rrr**	**(%)**	**rrr**
1. No violence	5.9	**1.0**	9.0	**1.0**	6.7	**1.0**	3.2	**1.0**
2. Non-partner violence	8.5	**2.0*****	15.7	**2.4*****	8.6	**1.7****	4.8	**1.9****
3. Ex-partner violence	14.6	**4.7*****	17.3	**3.6*****	19.1	**6.2*****	11.3	**7.6*****
4. Partner and recent violence	18.5	**8.8*****	30.1	**9.3*****	16.0	**5.5*****	17.1	**12.1*****

We examined whether women in the transition categories increased or decreased their smoking according to whether the violence increased or decreased. We found both expected and unexpected patterns among transition groups, consistent with the fact that women may respond differently to the changes in their circumstances and may also be affected by other incidents the data cannot account for.

Women who experienced a decrease in violence were more likely to decrease their smoking ('Non-P to none', rrr=2.01***) and ('Any to ex-P', rrr=2.03***) than remain the same. Additionally, women reporting non-partner (rrr=2.19***) and ex-partner violence (rrr=1.86***) were more likely to reduce their smoking, as were women with partner and recent violence (rrr=2.74***). Conversely, women in the 'Non-P to none' group (rrr=1.42**), and those experiencing non-partner (rrr=1.83*) ex-partner (rrr=1.83*) and partner and recent violence (rrr=2.00*) were more likely increase their smoking. Patterns in transition are clearer with drinking behaviours.

Table 23. High-risk drinking and violence category: Percentages at Surveys 1 and 2.

	Survey 1, 1996		Survey 2, 2000	
Hazardous & harmful drinking?	**Yes (%)**	**rrr**	**Yes (%)**	**rrr**
1. No violence	1.8	**1.0**	3.4	**1.0**
2. Non-partner violence	4.3	**3.2*****	8.5	**2.5*****
3. Ex-partner violence	3.8	**2.2*****	8.0	**2.7*****
4. Partner and recent violence	36.8	**5.6*****	12.2	**4.5*****

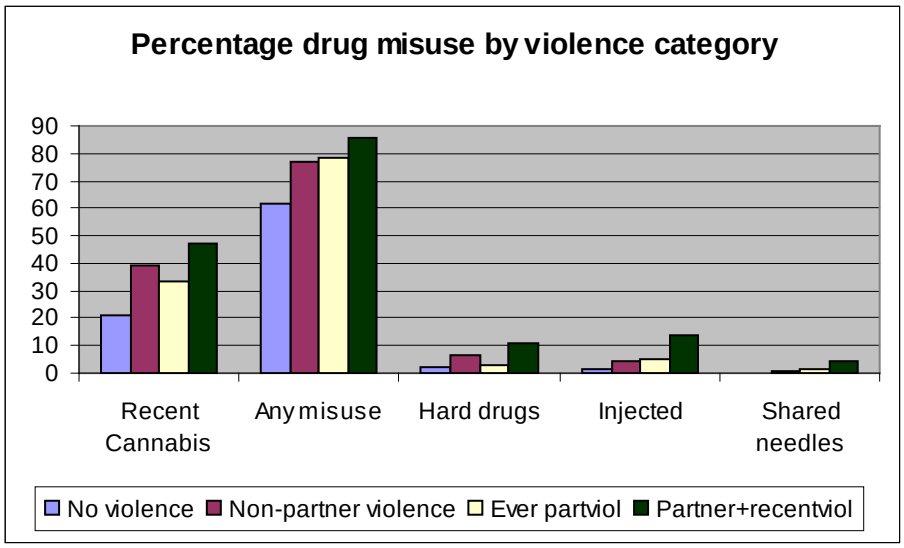
*Significant relative risk ratios are shown in **bold**.*

While the significant association with hazardous and harmful drinking is clear for all groups of women experiencing violence, especially those with partner and recent violence, women show beneficial trends when they distance themselves from violence. It is notable that at a population level, all women decrease their drinking as they age (Table 23, App2). When women are linked in the data, all three groups of victimised women have significantly high odds for harmful drinking: non-partner (rrr=2.28**) ex-partner (rrr=1.70**) and partner and recent violence (rrr=2.90**). Women who report a reduction in violence – Non-P to none (rrr=1.82***) and Any to ex-P (rrr=1.60*) have raised odds of also reducing their drinking. Conversely, women whose violence has decreased ('Non-P to none') are significantly less likely than others (rrr=0.80*) to increase their drinking.

Drug misuse

In Figure 11, we illustrate the percentage of women who use different forms of drugs according to the violence they have experienced. It is clear that a higher percentage of women who have experienced violence use illicit drugs than among women who have not. The 'hard drugs' category includes cocaine or heroin.

Figure 10: Percentage of women misusing drugs by violence category



When we linked the data (Tables 10,1-7, App2), women who had freed themselves of violence were those most likely to have been drug-users. Those free of non-partner violence ('Non-P to none') were more likely than others to have ever misused drugs (1.89***); ever injected themselves with illicit drugs (2.27**); ever shared needles (3.61*); ever mixed drugs with alcohol (1.73***); ever used marijuana (1.73***); or used marijuana in the previous 12 months (1.28*). Women who freed themselves of violent partners ('Any to ex-P') were also more likely to have ever injected drugs (2.75**); shared needles (9.53**); mixed drugs with alcohol (1.47*); or ever used marijuana (1.97***). Again, paradoxically, women who entered a relationship with a violent partner after 1996 (New P-viol) are less likely (rrr=0.48*) to have used marijuana in the previous 12 months.

These were the only transition groups to show significant differences from women who remained in the same violence categories. Women in all three violence categories were, in comparison with non-victimised women, significantly more likely to be among ever drug misusers, injecting drug users, those who shared needles, mixed drugs and alcohol and used marijuana. Women with partner and recent violence had stronger associations in every category, while the associations for women with ex-partner violence were less strong than for women in any of these categories. This suggests that women may use these drugs to cope with their experience of violence and the greater distance from violence, the less the tendency to use drugs.

Sleeping difficulty

Table 24 (Table A22, App1) shows that sleeping difficulty is a problem which is also significantly more likely to be reported by women who have experienced violence, with relative risk ratios higher for those with more severe violence experiences. Sleeping difficulty, like smoking, drinking, and poor general health, appears to be frequently associated with violence.

Table 24. Reporting sleeping difficulty "often" and violence category: Percentages at Surveys 1 and 2.

	Survey 1, 1996		Survey 2, 2000	
Sleeping difficulties	**Yes (%)**	**rrr**	**Yes (%)**	**rrr**
1. No violence	7.6	**1.0**	8.3	**1.0**
2. Non-partner violence	15.0	**2.1*****	17.3	**2.3*****
3. Ex-partner violence	15.6	**2.3*****	17.3	**2.3*****
4. Partner and recent violence	23.0	**3.7*****	26.7	**4.0*****

Significance: * $0.01 \leq p \leq 0.05$; ** $0.001 \leq p \leq 0.01$; *** $p \leq 0.001$

However, in contrast to drinking and drug-taking, it appears to be harder to improve sleeping after violence (Table 24, App2). Compared with women who have never had sleeping problems, women who had moved from non-partner violence to none were more likely to have sleep problems before 1996 (rrr=1.66**), after 1996 (rrr=1.47*), and at both times (rrr=2.06**). Women from the 'Any to ex-P' group have odds of 2.02* of reporting difficulty sleeping throughout the entire period.

> *I've put a phone in and I take my mobile to bed every night. I keep [internal] doors wide open so I can hear through all the house and I sometimes don't sleep anyway…I have panic attacks…all my [external] doors have bolts and clip-ons and locks and bolts and more bolts and all my windows are nailed shut (Mary) (Humphreys and Thiara, 2002)*

Women whose violence from others increased ('None to Non-P') were less likely (rrr=0.42*) to have sleeping problems both before and after 1996.

When we link women's records, women from all violence groups are more likely to report sleeping problems, before and after 1996 separately and at both times, with the exception of the non-partner violence group after 1996. It is quite clear that violence against young women is associated with sleep disorders.

The importance of social support and its effect on women's health

Overseas evidence suggests that social support may help women to cope with gendered violence (Coker, Smith et al 2002). Table 25 (Table A23, App1) summarises the level of social support experienced by women in different violence categories, showing that those who have experienced violence are more likely to have low levels of social support. The questions about social support in Surveys 1 and 2 differed; however, they could both be classified as none or little, fair, or excellent. Those women who did say that they had good social support scored, on average, 1.7 points higher on the Mental Health Component score of the SF-36, suggesting that social support could help to buffer the negative effects of violence on mental well-being.

Table 25. Social support and violence category: Percentages at Survey 2.

Social support	None or little		Fair		Excellent
	(%)	rrr	(%)	rrr	(%) - ref
			Survey 1, 1996		
1. No violence	20.6	**1.0**	21.4	**1.0**	58.0
2. Non-partner violence	28.6	**1.6** ***	21.9	**1.2** **	49.4
3. Ex-partner violence	27.4	**1.6** ***	23.9	**1.3** **	48.7
4. Partner and recent violence	36.2	**2.7** ***	25.8	**1.8** ***	38.0
			Survey 2, 2000		
1. No violence	10.3	**1.0**	22.6	**1.0**	66.6
2. Non-partner violence	19.7	**2.6** ***	31.9	**1.9** ***	48.3
3. Ex-partner violence	16.8	**1.9** ***	24.9	**1.3** *	57.3
4. Partner and recent violence	32.6	**5.5** ***	29.2	**2.3** ***	38.0

When we link women's records (Tables 25, 1-2, App2), the influence of social support in helping women free themselves of violence is even clearer. We examined whether changes in social support affected violence or changes in violence affected social support.

In the linked analysis of mental health scores, the most significant differences were that, irrespective of their violence category, women with more social support were two and a half points higher on the SF36 Mental Health scale than those whose social support remained the same. Those who had less social support were lower on the scale by a similar amount.

When we examined how changes in violence affected social support, we found that compared with women whose levels of violence remained the same, women with recent non-partner violence (rrr=1.57*) and those with partner and recent violence (1.93*) are more likely to report decreasing levels of social support. More importantly, women whose violence decreased ('Non-P to none' and 'Any to ex-P') have odds of 1.28 ** and 1.39* respectively, of saying their social support has increased.

When we examined how changes in social support affected violence, women with increased social support were more likely to be free of non-partner violence (rrr=1.26**), or to have moved from recent violence to ex-partner abuse (rrr=1.76***).

Women with increased social support were also significantly likely to be among those with ex-partner violence (rrr=1.38**). On the other hand women with decreased social support were more likely to have increased non-partner (rrr=1.61**); none to ex-partner (1.49**); recent to ex-partner violence (rrr=1.60**); or new partner violence (rrr=1.80**). Women with decreased social support were more likely to include women from all three violence groups.

Increased social support therefore is clearly associated with freeing oneself from violence, and decreased social support with recent violence, from partners and others. The

association appears to work in both directions. For women with ex-partner violence (many of whom have left relationships), the association is in both directions within the group, suggesting this group may both have increased and decreased opportunities for social support. Nevertheless, this association remains significant whichever way we examine it and remains consistent for most groups of women experiencing violence. It emphasises the importance of social support for women victims.

Health service use and women's views of general practice

Table 26 summarises a number of different measures of health service use, including use of general practice, specialists, family planning and sexual health services (Table A24, App 1). The overall pattern shows increased use of GPs, specialists and other services for women in all violence categories, by comparison with women who have never been victimised. It illustrates that as violence grows in frequency or severity, women increasingly seek help from health services.

Table 26. Health service use and violence category: Percentages at Surveys 1 and 2.
NB: the comparison value for GP visits is for 1-2 visits.

	Survey 1		Survey 2			
	rrr		rrr	P value	rrr	P value
GP visit in last 12 months			**GP visit for routine checks**		**GP visit for all other reasons**	
Not at all						
Other phys/sex	1.02	ns	1.03	ns	0.91	ns
Ex Partner violence	0.78	ns	**0.57**	***	0.73	m
Partner & recent	**0.53**	*	0.84	ns	0.82	ns
3 or 4 times						
Other phys/sex	**1.32**	***	**1.43**	**	**1.41**	**
Ex Partner violence	**1.41**	***	**1.33**	**	**1.25**	*
Partner & recent	**2.00**	***	**1.63**	**	**1.82**	***
5 or 6 times						
Other phys/sex	**1.64**	***	0.91	ns	1.16	ns
Ex Partner violence	**1.84**	***	**1.54**	*	**1.54**	***
Partner & recent	**2.37**	***	**3.02**	***	**1.67**	*
7 or more times						
Other phys/sex	**1.60**	***	0.68	ns	**2.78**	***
Ex Partner violence	**2.36**	***	1.37	m	**1.89**	***
Partner & recent	**4.41**	***	1.53	ns	**3.40**	***
Specialist visit in last 12 months			**Specialist visit for routine tests**		**Specialist visit for other reasons**	
Not at all						
Other phys/sex	1.13	ns	1.11	ns	0.92	ns
Ex Partner violence	1.15	ns	**1.44**	**	1.05	ns
Partner & recent	**1.48**	***	**2.64**	***	**1.83**	***
3 or 4 times						
Other phys/sex	1.20	ns	1.62	m	1.26	ns
Ex Partner violence	**1.33**	*	**2.71**	***	**1.51**	*
Partner & recent	**1.76**	***	1.43	ns	**1.81**	*
5 or 6 times						
Other phys/sex	0.90	ns	1.05	ns	1.16	ns
Ex Partner violence	**1.68**	*	**2.14**	*	**2.17**	***
Partner & recent	**2.12**	**	-		**3.62**	***

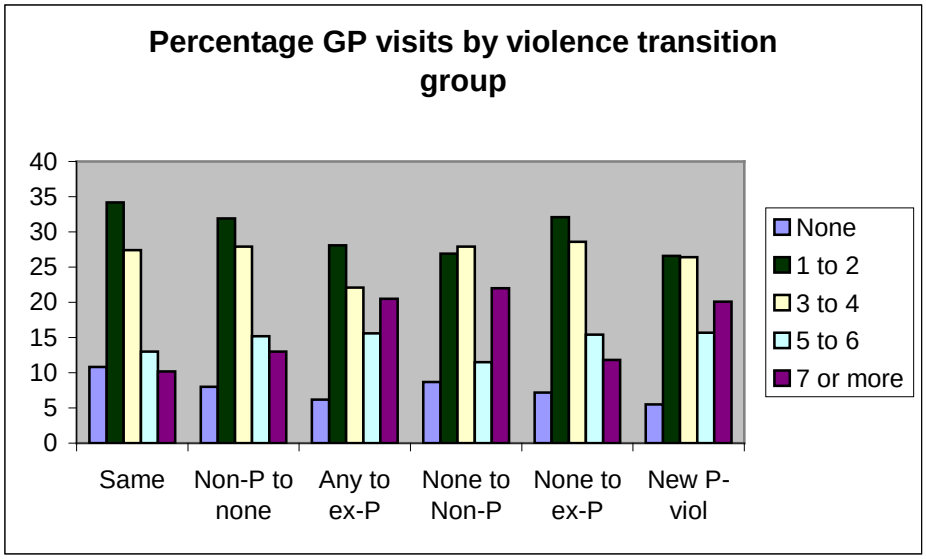
7 or more times						
Other phys/sex	**1.58**	**	0.54	ns	**2.82**	***
Ex Partner violence	**2.11**	***	1.50	ns	1.32	ns
Partner & recent	**3.59**	***	1.96	ns	2.05	m
Visit to family planning service for own health in last 12 months						
Yes						
Other phys/sex	**1.51**	***	1.17	ns		
Ex Partner violence	**1.61**	***	1.09	ns		
Partner & recent	**2.23**	***	**2.52**	***		
Visit to sexual health service for own health in last 12 months						
Yes						
Other phys/sex	**1.75**	***	**1.79**	*		
Ex Partner violence	**1.92**	***	**2.51**	***		
Partner & recent	**3.44**	***	**4.31**	***		

GP services

Hegarty (2002) demonstrated that victimised women attend Australian GP services in greater numbers than women who are not abused. Table 26 also demonstrates that in 1996 women with partner and recent violence were more likely to attend 7 or more times in the course of a year.

In 2000, the questions sought to separate the reasons why women attend. It distinguished whether women attend for routine checkups (Pap tests or pregnancy checks) or for all other reasons. Women who have experienced violence, especially if it was partner and recent violence, are more likely attend more than seven times in a year. Figure 11 outlines the differences in the number of GP visits when violence changes or remains the same.

Figure 11. GP use and violence transitions



We used the most common category, 1-2 visits per year, as our comparison group. The percentages of women who visit the GP slightly more are mostly those whose violence has increased, but they are most numerous among those who visit 7 or more times.

When we examine trends statistically, there are no significant differences between violence groups in the proportion who do not use the GP at all. However, compared with

women who present once or twice a year, women with recent non-partner violence (rrr=1.62*) and those with partner and recent violence (rrr=3.68***) are more likely to go 3 to 4 times. Women who reduce their experience of violence ('Non-P to none) are more likely to go 4-5 times (rrr=1.28*). Surprisingly, those whose violence has reduced (Non-P to none, rrr=1.49**; Any to ex-P, rrr=1.6*) are more likely to make 7 or more visits (Table 26-1, App2). Women in all three violence groups (rrr=3.20***; 1.67**, 6.45***) have significantly raised odds of attending 7 or more times, compared with those who attend once or twice and women not abused.

Clearly the health effects of violence described above motivate women to attend more often than women who are do not experience violence. However, the linked transition data suggests that women are more likely to attend often, but after the violence has decreased rather than when it has increased.

Women's views of GP care

Qualitative studies have drawn attention to a perceived lack of satisfaction with GPs among women seeking help from domestic violence services (Head and Taft, 1995), but this has not been assessed in a population sample. In the two surveys, women were asked about their most recent visit to the GP. They were asked to rate their satisfaction with various aspects of GP care on a scale from 1 (Excellent) 2 (Very good) 3 (Good) 4 (Fair) to 5 (Poor). Tables 27 to 30 show the percentages of women in each violence category and how they rated their GP care in relation to selected aspects of GP care, which may be important to women who have suffered violence. They confirm that women victims of recent violence are more likely to view their care as 'fair' or 'poor', compared with other women. Ex-victims of partner violence were occasionally likely to view their care more favourably.

Women's views of the amount of time they spent with their doctor

In 1996 Table 27, App2), compared with the majority assessment of the amount of time GPs spent with them as 'good', women reporting ex-partner violence had a higher likelihood (rrr=1.36**) of rating it as 'excellent', but women reporting non-partner violence had higher odds for rating it as 'fair' (rrr=1.19*) or (rrr=1.43**) 'poor'. Alternatively, some women reporting ex-partner violence (rrr=1.88***) and those reporting partner and recent violence (rrr=1.90***) were also more likely to rate it 'poor', than rate it as 'good'.

By 2000, women reporting ex-partner violence were still a little more likely to rate the amount of time spent with the GP (rrr= 1.36*) as 'excellent' than 'good', but women who experienced recent non-partner violence (rrr=1.74*) or partner and recent violence (rrr=2.47**) were still more likely to rate it as 'poor'.

Table 27: Women's satisfaction with the amount of time their doctor gave them

	Excellent		**Very good**		**Good**		**Fair**		**Poor**	
	1996	*2000*	*1996*	*2000*	*1996*	*2000*	*1996*	*2000*	*1996*	*2000*
None	24.9	17.2	26.2	30.4	28.3	34.3	15.6	14.7	5.0	3.5
Non-partner	21.8	17.8	24.9	26.0	27.9	32.2	18.4	18.4	7.0	5.6
Ex-partner	29.1	21.1	22.1	26.5	24.4	31.0	16.3	16.9	8.1	4.5
Both	23.2	18.0	20.1	26.3	27.7	30.0	19.2	17.5	9.2	7.6

The doctor's explanation of women's problems and treatment

In 1996 (Table 28, App2), compared with most women, who rated the GP's explanation as 'excellent', women reporting non-partner violence were more likely (rrr=1.29**) to rate it as 'fair', and also more likely (rrr=1.63***) to assess it as 'poor', as were women reporting ex-partner violence (rrr=1.46*) and partner and recent violence (rrr=2.06***).

By 2000, compared with the majority rating of 'very good', women experiencing non-partner violence (rrr=1.54**), ex-partner violence (rrr=1.31*) and partner and recent violence (rrr=2.28) were more likely to rate the explanation as 'fair', while women who reported non-partner violence were also most likely (rrr=2.09***) to assess it as 'poor'.

Table 28: Women's satisfaction with their GP's explanation of their problem or treatment

%	Excellent		Very good		Good		Fair		Poor	
	1996	2000	1996	2000	1996	2000	1996	2000	1996	2000
None	32.2	23.9	27.8	31.4	21.7	27.3	13.2	12.9	5.2	4.4
Non-partner	28.8	22.5	27.7	26.2	20.1	27.1	15.2	16.6	7.5	7.7
Ex-partner	31.8	25.6	25.9	27.8	20.1	25.9	13.8	15.1	7.4	5.6
Both	30.1	25.1	25.0	22.3	19.2	24.4	15.8	21.6	9.9	5.9

The GP's interest in how women felt about treatment or test or advice

In 1996, the majority of women rated their GP's interest in their responses to care as 'excellent'. However, women reporting more recent assaults, that is women reporting non-partner violence (rrr=1.34**) or partner and recent violence (rrr=1.35*) were more likely to see it as 'fair' and also non-partner (rrr=1.69***) and partner and recent violence (rrr=1.98***) as 'poor'.

By 2000, when the majority rating had dropped to 'very good', women reporting non-partner violence had a higher likelihood of rating it as either 'fair' (rrr=1.60**) or as 'poor' (rrr=2.22***), higher than the likelihood of women reporting partner and recent violence (rrr=1.43*) to rate it as 'poor'.

Table 29: Women's satisfaction with their GP's interest in their response to advice and treatment

%	Excellent		Very good		Good		Fair		Poor	
	1996	2000	1996	2000	1996	2000	1996	2000	1996	2000
None	29.0	24.2	26.5	27.4	23.5	27.4	15.2	14.8	5.9	6.2
Non-partner	26.2	22.1	24.2	22.3	22.1	25	18.4	19.3	9.0	11.3
Ex-partner	30.1	26.6	23.0	25.5	20.1	23.2	18.1	16.3	7.8	8.3
Partner+	26.8	26.2	23.0	26	20.4	17.8	19.0	20.3	10.8	9.5

The GP's personal manner (courtesy, respect, sensitivity, friendliness)
In 1996 (Table 30, App2), most women thought their GPs' personal manner was 'excellent'. Women reporting ex-partner violence were more likely (rrr=0.82*) to consider it 'very good', rather than excellent, while women reporting non-partner violence (rrr=1.38**) and those reporting partner and recent violence (rrrr=1.42**) are more likely to assess it as 'fair. Non-partner violence victims are also more likely (rrr=1.73***) and victims of partner and recent violence (rrr=1.83**) are more likely to consider it 'poor'.

By 2000, the majority of women were still rating their recent doctors' personal manner as 'excellent', but victims of violence, whether ex-partner (rrr=1.34*) or partner and recent violence (rrr=1.72**), were more likely to rate them as 'fair' and non-partner (rrr=2.34***) even more likely to say 'poor'.

Table 30: Women's satisfaction with their GPs' personal manner

%	**Excellent**		**Very good**		**Good**		**Fair**		**Poor**	
	1996	2000	1996	2000	1996	2000	1996	2000	1996	2000
None	39.9	37.3	28.4	29.9	19.5	21.3	9.4	8.7	2.7	2.8
Non-partner	37.0	35	27.9	25.4	18.6	24.0	12.1	9.5	4.4	6.1
Ex-partner	42.8	38.4	24.9	28.8	17.9	17.4	11.2	12.1	3.1	3.4
Partner+	39.3	40.1	25.6	20.5	17.0	18.1	13.2	16.4	4.9	4.3

In summary, while the range of views about GP care is diverse, in relation to: the amount of time spent with them; GPs' explanations of their problems; interest in women's own responses to advice and treatment; and the GP's personal manner, women who have been victims of violence, especially recently, are significantly more likely to view their doctors' care less favourably than other women. Such views must be seen in the context of a recent visit, rather than a general overall rating, when the doctor may not have been their usual doctor. Nevertheless, it suggests that more needs to be done to assist GPs to support victims of violence more effectively.

Other health services: family planning and sexual health services

Having established above that young women who have experienced physical or sexual violence from partners or others are more likely to terminate pregnancies and suffer higher rates of STDs , it is not surprising to find that they are also more frequent users of sexual health and family planning services. Figure 12 illustrates this, while Table 28 reports the frequencies by victimisation category.

Figure 12: Use of family planning and sexual health services 1996 and 2000

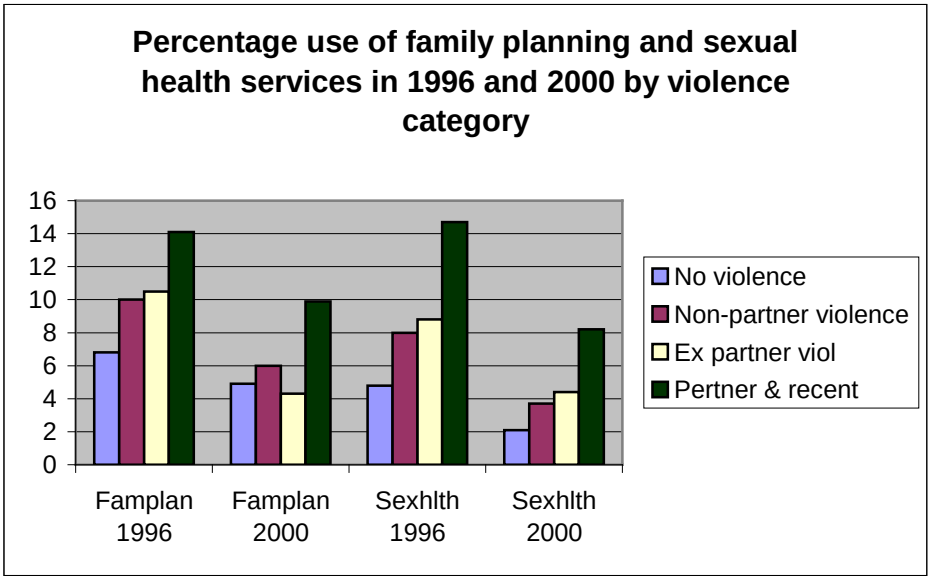


Table 31 demonstrates that women with partner and recent violence attend at twice the rate of those who report ex-partner violence (and are likely to be now separated or divorced).

Table 31: Use of Family planning and Sexual health services: % Reporting use by violence category

	% Family planning 1996	% Family planning 2000	% Sexual health 1996	% Sexual health 2000
No violence	6.8	4.9	4.8	2.1
Non-partner violence	10	6	8	3.7
Ex-partner violence	10.5	4.3	8.8	4.4
Partner and recent violence	14.1	9.9	14.7	8.2

It is clear from these data that those women who have experienced violence use health services in greater proportions than women who have not been assaulted. Women actively seek help for family planning and care of their sexual health. This may explain the higher rate of detection of sexually transmitted diseases and abnormal Pap smears. Women appear to be aware that their health is at risk and to take action accordingly.

Family planning services

When women's records are linked (Figure 12,App 2), the only significant differences are among women who reduce their experience of violence ('Non-P to none'), who are more likely (rrr=1.68**) to have been to family planning services prior to 1996, while women who report increased violence (New P-viol) have lower odds of using the services (rrr= 0.32*) before 1996. Women free of non-partner violence are also at greater odds of using services both before and since 1996 (rrr=1.85*). Women from all three groups are significantly more likely to among groups who attended before 1996. Women who have

partner and recent violence are significantly likely to be among the groups prior to 1996* and at both periods*.

Sexual health
Absolute numbers who have attended sexual health clinics are small (Figure 12, App2), but women who have reduced their experience of violence ('Non-P to none', 'Any to ex-P') are significantly more likely (1.64**, 1.66*) to have used the service prior to 1996, while women whose violence has increased are less likely ('None to ex-P', 0.26**).

Future aspirations

We wanted to understand whether women's aspirations for their futures differed between victimised and non-victimised women and changed over time. Table 32 (Table A25, App1) shows that there are few significant differences in victimised and non-victimised women's aspirations for working status at age 35. However, the differences that do exist, reflect the heterogeneity of victimised women's attitudes.

Work aspirations

Women victimised by someone other than a partner have less likelihood of aspiring to be a home-maker or to be employed part-time, compared with non-victimised women, however women who have experienced violence from an ex-partner have greater odds.

Table 32. Aspirations for work status at age 35 and violence category

Aspirations for work when 35	F/T (%) - ref	P/T (%)	rrr	Home (%)	rrr	Other (%)	rrr
Survey 1, 1996							
1. No violence	58.3	31.2	**1.0**	4.0	**1.0**	4.3	**1.0**
2. Non-partner violence	61.5	28.4	**0.9** *	2.5	**0.6** **	5.8	**1.3** *
3. Ex-partner violence	53.5	32.3	**1.1** ns	6.0	**1.6** **	6.3	**1.6** **
4. Partner and recent violence	59.4	28.9	**0.9** ns	3.9	**1.0** ns	5.7	**1.3** ns
Survey 2, 2000							
1. No violence	45.0	28.7	**1.0**	5.1	**1.0**	1.7	**1.0**
2. Non-partner violence	50.8	22.5	**0.7** *	3.8	**0.7** ns	1.3	**1.0** ns
3. Ex-partner violence	45.6	21.9	**0.8** *	5.2	**1.0** ns	3.4	**1.2** ns
4. Partner and recent violence	47.3	19.5	**0.7** *	2.6	**0.5** ns	3.1	**1.4** ns

*Significant relative risk ratios are shown in **bold**.*

When women's records are linked (Table 32, App2), women free of non-partner violence ('Non-P to none') and women who have moved to ex-partner violence ('any to ex-P') are both more likely to want full rather than part-time work at 35 (1.28**; 1.61*), while women who moved from no violence to recent non-partner violence are less likely to now aspire to it (rrr=0.54*). Women with non-partner violence are more likely to want full-time work (rrr=1.32**). Women who moved from non-partner violence to none are also more likely to be among women aspiring to be self-employed (rrr=1.36**) than be working part-time. Women experiencing non-partner violence (rrr=2.22**), ex-partner violence (rrr=1.45*) and partner and recent violence rrr=(2.14*) are also significantly more likely to wish for self-employment.

Marital status aspirations

By contrast, Table 33 (Table A26, App1) shows that there are more consistent differences in aspirations for relationship status at 35. Women who have experienced violence, especially if it is current partner violence, have greater odds of aspiring to be in stable de facto relationships rather than to be married, at both surveys. Women assaulted by someone other than a partner have much greater odds at Survey 2 of aspiring to be single.

Table 33. Aspirations for relationship status at age 35 and violence category

			Survey 1, 1996			
Aspirations for marital status when 35	**Mar (%)**	**- ref**	**D F (%)**	**rrr**	**Sgle (%)**	**rrr**
1. No violence	84.8		9.1	**1.0**	1.0	**1.0**
2. Non-partner violence	78.6		15.0	**1.8** ***	1.0	**1.1** ns
3. Ex-partner violence	82.3		11.0	**1.2** ns	1.4	**1.4** ns
4. Partner and recent violence	73.5		17.6	**2.2** ***	1.0	**1.1** ns
			Survey 2, 2000			
1. No violence	87.4		10.6	**1.0**	0.7	**1.0**
2. Non-partner violence	80.1		17.2	**1.8** ***	2.6	**4.3** ***
3. Ex-partner violence	83.1		14.8	**1.5** ***	0.5	**0.8** ns
4. Partner and recent violence	76.1		21.9	**2.4** ***	0.8	**1.4** ns

Consistent with the cross-sectional data, linked data (Table 33, App2) reveal that women who have freed themselves from non-partner violence and those with ex-partner violence are more likely (rrr=1.46**, 1.66*) to wish for stable de facto relationships at 35 rather than marriage. Women with recent non-partner or partner and recent violence are more likely (rrr=2.21***, 4.21***) to aspire to stable de facto relationships than to be married. However, in contrast, women in the partner and recent violence category are more likely to aspire to be single (rrr=5.53*) than to be married.

Aspirations for children

Table 34 (Table A27, App1) shows risk ratios, relative to wanting 1-2 children at Survey 1 and to wanting 2 children at Survey 2, for motherhood at age 35. Women who experienced non-partner violence are at significantly greater odds of wanting no children in 1996 and 2000, compared with non-victimised women. Women with partner and recent violence have no significant differences in either year.

Table 34. Aspirations for childbearing at age 35 and violence category

			Survey 1,1996			
Aspirations for children when 35	**None (%)**	**rrr**	**1 or 2 (%)**	**- ref**	**>2 chn (%)**	**rrr**
1. No violence	6.8	**1.0**	54.5		23.0	**1.0**
2. Non-partner violence	8.1	**1.2** *	52.7		22.3	**1.0** ns
3. Ex-partner violence	4.3	**0.7** Ns	51.4		25.1	**1.2** ns
4. Partner and recent violence	7.2	**1.1** Ns	50.8		21.6	**1.0** ns

1. No violence	7.5	**1.0**	68.8	22.3	**1.0**
2. Non-partner violence	10.7	**1.4** *	68.1	19.8	**0.9** ns
3. Ex-partner violence	6.1	**0.8** ns	67.0	25.6	**1.2** ns
4. Partner and recent violence	9.6	**1.4** ns	62.0	26.9	**1.3** ns

There are no significant differences between women whose violence has changed compared with those who have not (Table 34, App2). When data are linked, women who experienced partner and recent violence are significantly more likely to want no children than one or two (rrr=2.03*) at age 35.

Aspirations for education

Table 32 (Table A28, App1) indicates that, at both surveys, women recently victimised but not by a partner and those with recent partner violence are significantly likely to wish for more education, which has been shown to be protective against partner violence.

Table 35. Aspirations for more education by age 35 and violence category

			Survey 1,1996			
Aspirations for education when 35	**More (%)**	**rrr**	**Same (%)**	**- ref**	**Unsure (%)**	**rrr**
1. No violence	62.2	**1.0**	6.2		16.4	**1.0**
2. Non-partner violence	66.9	**1.7** ***	4.0		13.1	**1.2** ns
3. Ex-partner violence	59.2	**0.8** ns	7.3		14.8	**0.8** ns
4. Partner and recent violence	64.8	**2.0** **	3.2		11.4	**1.4** ns
			Survey 2, 2000			
1. No violence	59.5	**1.0**	14.1		25.8	**1.0**
2. Non-partner violence	69.9	**1.6** **	10.4		19.6	**1.0** ns
3. Ex-partner violence	67.1	**1.3** *	12.0		20.5	**0.9** ns
4. Partner and recent violence	74.0	**3.3** ***	5.3		20.8	**2.2** *

*Significant relative risk ratios are shown in **bold**.*

In linking the data, we find that women now free of non-partner violence ('Non-P to none') and those now free of partner violence ('Any to ex-P') are significantly more likely to aspire to more education (rrr=1.38**, 1.61*). At the same time, those with recent non-partner violence (rrr=2.14*) and those with partner and recent violence (rrr=7.06**) are also more likely to desire to be better educated. This pattern emphasises the importance of this aspiration and population trend among women experiencing recent violence.

Discussion and policy relevant findings

The findings in this study have confirmed strong and clear patterns among women who suffer different forms of violence. They confirm and describe the damage which partner violence inflicts, not only on women's physical and mental health but also on their pregnancy outcomes. The scale of potential harm described in this report has serious implications for preventive public health measures in general practice, mental health, sexual, reproductive and birthing services. It also confirms the beneficial effect of social support, women's aspirations for the beneficial effects of higher education, and the importance of breaking the isolation, which many victimised women experience.

While limited in the questions asked, the analysis at both a univariate and multivariate level has illustrated socio-demographic patterns associated with different forms of violence and the effects of the patterns of violence against women on their physical and mental health, reproductive health, STDs, health service use and aspirations. It has also emphasised the beneficial role of social support. It has confirmed the disproportionate amount of violence experienced by those in lower socio-demographic groups. It has also provided multivariate analysis and adjusted odds for birth outcomes when taking account of socio-demographic variables and damaging health behaviours. It has told of the benefits of change, but also of the sustained damage among women who are able to free themselves of violence. It has told a sobering story.

Which young Australian women are vulnerable to violence and what kind of violence?

This analysis has confirmed that women who experience violence from someone other than an intimate partner have considerably less health damage than women victimised by intimate partners. However, they are worse off than women who have never been victims of violence, and generally the more recent the violence, the greater the harmful effect on mental health. Those women who managed to free themselves from non-partner violence by 2000 have the most dynamic and sustained improvements in health status, experiencing decreases in their drinking, drug-taking, eating disorders and improvements in their mental health.

While it appeared from the cross-sectional analysis that the proportions of women victimised have reduced between the two surveys, the linked analysis confirmed that women victimised by partners were more likely to drop out of the survey. Of those who continued to participate, it is heartening that 13.6% had freed themselves from violence. Yet at the same time, 7.1% had remained in assaultive relationships and another 7.3% had gone into them. Women who report partner violence and recent violence report more emotional abuse (over 60% of these women) and fear of someone close (almost 1 in 5), confirming that partner violence is a complex multi-dimensional experience, with serious mental health sequelae.

This analysis confirms the pattern found in other developed countries, that young women with low education levels and low employment status are at the highest risk for partner violence. If disability or unemployment is added, the risks for all forms of violence are increased. Contrary to popular belief, rural women in general are not at risk of greater violence, indeed in some cases, such as that of non-partner violence, living in a rural area appears to reduce the odds. On the other hand, women in remote communities are at higher odds of violence, especially if they are of indigenous descent. Indigenous women's

status, however, appears quite dynamic, and it is encouraging to see that some groups of young indigenous women are freeing themselves from violent relationships, but it is of great concern to see that indigenous women are five times more likely than other women to move into newly assaultive partner relationships in 2000.

In these surveys, Asian-born women have lower levels of reported violence, perhaps because specific aspects of the culture of Asian-Australian women protect them. Nevertheless, the linked analysis provided evidence that Asian-born and European-born women who had experienced violence were significantly less likely than Australian-born women to be able to free themselves from that violence, and more likely to remain victimised. This emphasises the need to provide better access to services for women from culturally and linguistically diverse backgrounds, and to be sensitive to culturally appropriate methods for women to be able to reduce the violence to themselves and their children.

In relation to geographic differences across Australian States, the smaller likelihood of violence in rural areas explains apparent State-by-State differences. When an adjusted analysis was undertaken, the small differences between states disappeared, but the availability of data on a State-by-State basis could provide baselines from which states may wish to evaluate their violence prevention strategies.

How does this violence impact on their sexual and reproductive health?

This unique dataset has provided rare and clear Australian evidence those women who have ever experienced partner violence, and those who still may be, have significantly more pregnancies than women who experience no violence, or who have experienced violence from someone other than a partner. It also confirms that these pregnancies are more likely to result in abortions, miscarriages, preterm and stillbirths, than for other women. This independent effect of violence is confirmed even when social class, poverty and risk behaviours (smoking, binge drinking) are accounted for. Women who have remained in the relationship have higher odds for poor pregnancy outcomes, but there is still an elevated risk among those who report ever having had an abusive partner. The data confirm the suggestion in the 2002 World Report on Violence and Health that partner violence is significantly associated with having more pregnancies and more children than other women. However, the fact that more women who are victimised are pregnant more often prior to 1996 suggests that either or both the violence and the pregnancies occurred prior to this time. The sustained patterns of association with early intercourse and age at first birth paint a complex picture of early risk and vulnerability within this association that needs to be further explored.

The data also reveal that young Australian women may have difficulty using contraception effectively. Less than half the young women in these surveys use the pill, and many say their partners use condoms, which are less reliable although possibly easier to access and provide a potentially effective barrier to STD infection. Such a decision may not really indicate a woman's choice, but those of her partner. The odds are low but significant, that women with current partner violence are more likely to 'choose' not to use contraception, but it is difficult to interpret the meaning of this category in an abusive context.

As Campbell outlined (Campbell 2002) and this survey confirms, women who have experienced partner violence have a greater risk of gynaecological problems, such as

vaginal discharges, Herpes, Hepatitis C and HPV. The serious risks of these conditions, especially now the role of HPV in cervical cancer is understood, and the role of Hepatitis C in poor obstetric outcomes (such as the impact of obstetric cholestasis on preterm and stillbirth), give rise to concern. The raised odds for HPV, the very high odds for Hepatitis C, and other data indicate that the gynaecological damage from previous violence can impact on women's pregnancy outcomes, and continue to do so even among women who have freed themselves from violence.

While the associations with some STDs such as Hepatitis C appear to fall considerably over time, others such as Herpes and HPV appear to be sustained. It is encouraging that women who have experienced violence do attend sexual health and family planning services more frequently, as their worse health requires it, although this may be both costly to the women and to the health system. The data add urgency to the need to better train and equip GPs, family planning, ante and postnatal, and abortion services to identify and support victimised women to leave abusive relationships or minimise the harm to themselves.

Victimised women appear to be clearly aware that they have additional risk and attend for Pap smears more often than non-victimised women, but they may require careful supervision, given the increased odds that the intervals between screenings may be long for some women and that the Pap smears will be abnormal. Additionally, for many women who are sexually abused, whether in childhood or adulthood, having a Pap smear can be traumatic as it may reawaken fears of violation. Again, the education of general practitioners, obstetrician and gynaecologists, and nursing staff about the risks for 'ever'-victimised women should be encouraged.

How does violence impact on women's physical and mental health?

Mental health

Consistent with other surveys from overseas, these data confirm the impact of any violence, but especially partner violence, on women's mental health. As the women themselves tell us, this effect is greater than that on their physical health. This report shows that partner-victimised women have four times the likelihood of experiencing maternal and other depression or anxiety, and ten times the likelihood of recent self-harm and current suicidal ideation, compared with non-victimised women. This is new and compelling evidence of the scale of emotional distress and disability associated with violence. It has urgent implications for early intervention for both the women and their children, so that both are safe from harm and women are able to enhance their ability to nurture themselves and their children. Slightly lower odds obtain for women who have previously been in a violent relationship, but their depression, anxiety and suicidal ideation remain elevated. Women victimised by other people still have double the odds of mental disorders. It is encouraging that mental health data suggest women who are further from the violence in time have improved mental health scores.

Eating disorders have only recently been associated with partner violence. These Australian data confirm that women with any form of violence, but again especially those with current partner violence, have a significantly high risk (six times the odds) for recent disordered eating at Survey 1. The odds are lowered, but the relative strength of association among the groups remains the same, at Survey 2 four years later. The data also suggest that women can reduce this disorder if they become free of the violence.

They underscore the need for mental health professionals and GPs to be aware of the risk of violence when women present for treatment for these disorders.

Women's physical health is also affected, and their elevated rates of self-harm through excessive smoking, drinking and drug-taking are quite clear. If the violence is reduced or eliminated, some harmful behaviours diminish.

The role of social support

Social support is a complex concept. However, the data are abundantly clear about the benefit of social support on women's improved health, especially mental health. It is quite clear from the linked analysis that it plays a significant role in women's ability to free themselves of violence or alternatively, that it results in better mental health. These data strengthen the argument for strategies to provide support to women at risk, such as community education about how to understand and help victimised women and the active provision of support strategies such as friends and family, mentors and peer support.

What pattern of health service use does this analysis demonstrate and what conclusions can be drawn?

Victimised women are more likely to attend GPs, specialists, family planning and sexual health services more often than others – a pattern noted in other studies. GPs are especially important, as they are universal, affordable and accessible services. However, this analysis confirms that on a population basis, abused women are significantly less satisfied than other women with the care provided by their GPs. This is especially important for recently abused women. This trend should be monitored. More importantly, GPs should be upskilled and supported to provide more effective and supportive care to women victims of violence.

The pattern of help seeking belies the notion of women as passive victims, and emphasises the active help-seeking women make. These data confirm women's greater need for medical attention, as well as highlighting the continuing cost to women themselves, the inflated and unnecessary costs of their symptom-relief to the health system and the community at large.

Do victimised women's aspirations differ for their lives at 35?

The odds are small, but victimised women do have significantly different aspirations. Victimised women are less likely to wish for the bonds of marriage, but for stable de facto relationships and in accordance with the protective effect of education, more likely to aspire to better education. Women's wishes for the beneficial protection which education provides remain when women's data are linked and are especially prominent among women suffering from partner and recent violence.

Conclusion and implications

These first Australian data about young women and the health effects of violence against them provide rich material for policymakers. The two surveys provide baseline data from which to monitor any changes in violence and reproductive health status for this population of very disadvantaged women. They also highlight current trends in women's health service use and help-seeking. Worryingly, the levels of some serious health damaging outcomes were maintained and in some cases increased, indicating that Australian health services are not yet sufficiently well equipped to respond effectively to

the challenges posed by this social problem. This challenge remains to be tackled, as there is precious little sound evidence for good practice in identification and management of violence against women in the health system. As Professor Jacquelyn Campbell noted in The Lancet (2002), the revolving door of women's help-seeking for their mental health problems is costly to the health system. Overall, the short and the long-term costs to women, their children and families and overwhelmingly also to the health, welfare and legal systems is extensive.

The strong evidence for the effect of social support indicates the potential role it could play in enhancement, although the most effective manner by which this could be achieved remains to be further explored and understood. We should investigate how women's need and aspirations for further education could be integrated with social support and with intervention services.

The linked analysis shed further light on the differences between women who have and those who have not been able to free themselves from violence and those who become victimised for the first time in the period of these two surveys. It illustrated the beneficial assistance of social support for women, the enigma of the relationship between early intercourse, pregnancy and violence and the value of education for women in disadvantaged circumstances and communities. It emphasised the value to the community of helping women to free themselves of violence and many of its serious sequelae.

The authors recommend that further research be conducted which:

- Follows up the future patterns of abuse and health status among groups of women participating in the Australian Longitudinal Study on Women's Health to see which patterns of risk and harm are sustained and which alter and improve in the longer term.

- A prospective cohort study be specifically designed to follow women over time to establish the complex inter-relationship and timing of violence, pregnancies and adverse pregnancy outcomes preceded by good qualitative research with abused women

- Includes the development and rigorous evaluation of an intervention combining social support and education to free abused women of early pregnancy and childbearing age, to test the outcomes for women's physical and mental health and for their parenting

- Examines the relationship between pregnancy and femicide in Australian data

- Examines the longitudinal effects of victimisation on women's work, aspirations and socio-demographic status.

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Appendix A. Creating a composite variable for violence.

In Survey 1, three key questions about violence were asked:

1. Physical violence *(Survey 1 Q29ff, survey 2 Q70ahh)* 'have you been pushed, grabbed, shoved, kicked or hit'
2. Sexual violence *(Survey 1 Q29gg, survey 2 Q70aii):* 'have you been forced to take part in unwanted sexual activity' and
3. Partner violence *(Survey 1 Q72g, survey 2Q86g)*: 'have you ever been in a violent relationship with a partner/spouse?'

The responses to these individual questions are provided in cross tabulations in Appendix 1. There were two problems associated with using the individual questions as either outcome or explanatory variables: first the overlap in responses from individuals, and second the missing data. Modelling such data would require many models to be fitted and evaluated for the many outcome variables of interest. We narrowed the model from having 27 possible categories to one with ten ***mutually exclusive categories***, outlined below in Table A.1. It is clear that physical violence is more common than sexual in all categories. We have two categories for missing as some are not missing at random, but have answered yes to at least one form of violence, but their other responses are missing.

Table A.1. Mutually exclusive categories of violence, Survey 1.

Category	Number	Percentage
No violence	11030	75.3%
Physical violence only <12 mths ago other than partner	1492	10.3%
Sexual violence only <12 mths ago other than partner	219	1.5%
Physical & sexual violence <12 mths ago other than partner	121	0 .08%
Ex-partner violence	1006	6.3%
Partner violence and physical violence only < 12 mths ago	562	3.6%
Partner violence and sexual violence <12 mths ago	63	0.04%
All forms of violence (partner, physical and sexual violence < 12mths ago	137	0.08%
Missing & yes to at least one violence question	38	0.02%
Missing in some and no to others	111	0.07%
	14,779	**100%**

As we began the univariate analyses, there were two distinct patterns. First, the factors were so complex and numerous, that the results were difficult to read and in some cases the numbers were so small, that the analyses were not robust. Second, women who were victimised in the previous twelve months had clearly different responses from those with partner violence. Among those with partner violence, those with added violence in the previous twelve months fared worst in almost all analyses. We therefore decided to simplify the model to five factors. We created a combination variable that would enable ***mutually exclusive*** categories that captured what we judged the most important combinations occurring in the population. Detailed description of the process is in Appendix 1. The ***summary composite variable*** contained the levels of:

1. No violence
2. Physical and or sexual violence in the last 12 months from someone **other** than a partner (but no partner violence)
3. Ever having experienced partner violence
4. Partner violence plus physical and or sexual violence in last twelve months.
5. A fifth level contained those reporting any violence and missing responses.
6. Missing responses

We analysed the models with all categories, including the 'missing and yes' category, retained, but these women are too diverse to provide any useful conclusions to be drawn. We only report on the four major categories. These will be referred to in the text as follows:

5. No violence
6. Non-partner violence
7. Ex-partner violence
8. Partner and recent violence

In explanatory terms:

- women in category 2 are likely to have experienced violence from people other than intimate partners
- those in category 3 have previously experienced partner violence and are now either (a) with another partner, (b) separated from their abusive partner or (c) with the same partner but not experiencing current physical or sexual violence
- women in category 4 are those who are likely to still be in abusive relationships

Composite health outcome variables were similarly constructed for a number of factors: eating disorders, reproductive outcomes and other questions with multi-factorial answers. The benefit of using combination outcome variables is that one statistical model can be fitted in assessing the impact of an explanatory variable. Thus, we assessed the impact of socio-demographic variables (as listed above) on violence using multinomial logistic regression (aim 1). Similarly, we also tested the effect of violence on health outcomes with many categorical levels (eg: once, twice, three times or more) by modelling our composite variable on the outcomes using multinomial logistic regression. Where the health outcome was continuous (SF36 scores) linear regression modelling was used.

In Survey 2, questions about violence varied slightly from those in survey 1.

Physical violence (have you ever experienced being pushed, grabbed, shoved, kicked or hit?) and sexual violence (being forced to take part in unwanted sexual activity within the last twelve months) were asked. These questions were also asked about a period more than twelve months ago.

Additional questions were asked about types of violence in survey 2, but were non-specific about who perpetrated this violence and whether it was in adult or childhood, so these are not reported, as they cannot reliably be compared with any other data. However, other questions were added to Survey 2, such as sub-optimal forms of reproductive outcomes, including pre-term birth and stillbirths. In addition, further forms of mental disorders, including panic attacks, anxiety, postnatal depression and depression were elicited and those about illicit as well as licit drugs were also asked.