WOMEN & ABORTION

AN EVIDENCE BASED REVIEW

SELENA EWING

wfa
Women's Forum Australia

ISBN 0-9758410-0-9

Ewing, Selena
Women and Abortion: An Evidence Based Review

www.womensforumaustralia.org

This document is written in International English. Where other works are quoted, the original spelling used has been retained.

wfa
Women's Forum Australia

Contents

1. About this paper

This paper is an evaluation of recent published research on aspects of abortion related to women's health and wellbeing, both in Australia and overseas in developed countries in which abortion is legal or extensively practised. Generally, references are limited to the past fifteen years, although in a few cases where evidence is scant, earlier references are used.

This research has been compiled for the purpose of generating informed debate about the way in which abortion is practised and some of the issues faced by pregnant women in Australia. It is hoped that recommendations may be developed which enable recognition of the potential abortion-related health risks to women and, more broadly, address structural conditions which impact on a woman's ability to make a free and fully informed decision. To conclude, a future research agenda is proposed.

2. Summary

Differences in demographic and social patterns are observable between women who have abortions and women who don't. Research has established some of the motivations underlying abortion decisions.

- Many abortion decisions are motivated by a lack of emotional, social and material support.
- Research does not support the idea that abortion is always for 'unintended' or 'unwanted' pregnancies.
- A significant number of women are ambivalent about their pregnancy and the abortion decision, and this ambivalence can continue for many years afterwards.
- A substantial number of women undergo abortion while also being morally opposed to the practice.
- Financial concerns are a major motivator for abortion.
- Many women believe that continuing with a pregnancy will jeopardise their plans for work and study. This suggests that schools, universities and workplaces are generally unsupportive of pregnant women and mothers.
- Women have concerns about becoming single mothers, suggesting a lack of support from men in many cases, and a lack of community support for single motherhood.
- Abortion is strongly associated with domestic violence and abuse of women.
- Poor-quality intimate relationships motivate many women to seek abortion.
- Depression and depressed mood is common during pregnancy and may be related to abortion decisions.
- Relatively few abortions occur for reasons of foetal disability. However, numbers can be expected to rise with increased availability and variety of prenatal tests. Such abortion decisions are related to how society tolerates disability and difference, and society's expectations for women to undergo prenatal testing and, implicitly, abortion.
- Very little is known about the choice and effect of abortion after sexual assault.

There are risks of physical harm associated with abortion.

- There appear to be more deaths from all causes, including suicide and homicide, after abortion, compared with childbirth.
- Research has established that abortion is associated with a variety of significant physical risks, including premature delivery, infection (which may lead to infertility, particularly in the presence of genital infection), uterine perforation, placenta previa, and possibly miscarriage and low birth weight in future pregnancies.

- A first pregnancy carried to full term provides a degree of protection against breast cancer. Many studies have identified an increased risk of breast cancer associated with the early abortion of a first pregnancy. Other studies have shown no risk.

There is also substantial evidence of psychological harm associated with abortion.

- Abortion results in short-term relief for most women, usually accompanied by negative emotions. Such relief tends to be transient.
- Ten to twenty percent of women suffer from severe negative psychological complications after abortion, despite the frequent presence of relief soon after the abortion.
- Many more women experience emotional distress immediately after the abortion and in months following. Women experience a range of negative emotions after abortion including sadness, loneliness, shame, guilt, grief, doubt and regret.
- Depression and anxiety are experienced by substantial numbers of women after abortion.
- For a small proportion of women, abortion triggers Post-Traumatic Stress Disorder.
- After abortion women have an increased risk of psychiatric problems including bipolar disorder, neurotic depression, depressive psychosis and schizophrenia.
- Women who have experienced abortion also have an increased risk of substance abuse and self-harm. This is particularly true during a subsequent pregnancy.
- Abortion for foetal disability is particularly traumatic and can be psychologically damaging for women.
- It is possible to identify a list of risk factors which put women at increased risk of psychological harm from abortion: for example, a lack of emotional and social support, ambivalence and difficulty making the decision to abort, relationship violence, and a history of psychiatric illness.
- Clinical case studies and stories written and told by many women confirm these empirical findings regarding the psychological harms of abortion.

Most research has investigated the negative effects of abortion and so tangible benefits have not yet been established.

Chemical abortion may have additional impacts on women's psychological well-being.

There are a variety of ways to interpret and apply the evidence that abortion can have a net harmful impact on large numbers of women.

3. Motives underlying abortion decisions

> *"Reasons women give for why they seek abortion are often far more complex than simply not intending to become pregnant."* [1]

Abortion decisions are not random occurrences. There are differences in demographic and social patterns among women who have abortions and women who do not.[2, 3, 4] These patterns provide clues as to how to address and relieve some of the pressures that can bias a decision in favour of abortion.

Evidence demonstrates that 'unintended' pregnancy is not the simple cause of abortion. Women's decisions are not independent of their circumstances and the influences of people around them. Research suggests that abortion is considered by women because of a lack of freedom to pursue motherhood, lack of emotional and financial support and other barriers to giving birth (see the following sections on finances, study and work, and relationships).

Specified medical conditions, foetal abnormality and rape are 'hard cases' that motivate relatively few

abortions.[5] Notwithstanding the difficulties and challenges involved in all of these situations, the vast majority of abortions are performed on healthy mothers and babies.

An Australian research project suggests that women primarily have abortions because they perceive that having a baby would jeopardise their future, they believe they could not cope with a baby, they don't want others to know they are pregnant, or they can't afford to have a baby.[6] For women of all ages, relationship problems are an important factor in abortion decision-making.

The following table summarises some of the findings from a 1995 Australian research project, involving women presenting at an abortion clinic:[6]

Endorsement of 'pro-terminate' items of balance sheet (n=20).

Statement	True for situation (%)	Considered (%)	Considered very much (%)
Continuing jeopardize future	100	100	80
Believe my right to choose	100	90	60
Know termination of pregnancy safe, simple	95	75	60
Could not cope	90	90	70
Not want others to know pregnant	85	60	35
Can't afford financially	75	70	60
Know women who aborted, did well	75	70	40
Pregnancy has no real form yet	75	70	45
Important others would suffer	65	55	35
Partner could not cope	65	55	25
Would be a single mother	55	40	35
Too young	45	45	24
Relationship unstable or new	45	45	30
Do not have support to continue	45	40	20
Worried not be a good mother	40	40	35
Relationship at risk if continue	35	25	10
Others say should terminate	35	20	15
Really scared of childbirth	35	25	20
Coped well with previous TOP	30	25	10
Health would suffer	20	15	10
Do not ever want (more) children	20	15	10
Too old	15	15	10
Not want involvement with partner in conception	5	0	0
Result of forced sex	5	5	5
Worried about health of pregnancy	5	5	5
Not want others to know had sex	5	5	5

A lack of support features prominently in this list: "could not cope", "can't afford financially", "do not have support to continue", and "relationship at risk if continue". Other reasons are related to lack of self-confidence: "could not cope" and "would not be a good mother". From a cognitive behavioural perspective, it is interesting to note that some of these statements may not be true facts, though this does not, of course, invalidate the woman's perception of them as true (e.g. "know termination of pregnancy safe, simple", and "pregnancy has no real form yet").

Other statements may also represent beliefs or fears (e.g. 'too old', 'too young') relating to the individual's circumstances and feelings rather than being objectively true across the population (e.g. others of the same age may not seek abortion). Coercion, explicit and implicit, is also evident: e.g. "others say should terminate," "result of forced sex", "relationship at risk if continue", "do not want others to know pregnant" and "partner could not cope."

It is noteworthy that all 20 women seeking abortion believed that giving birth would jeopardise their futures. This belief, however, is not an inevitable outcome but, rather, a subjective assessment

of how pregnancy and motherhood, to the best of her knowledge, might fit with a woman's hopes, dreams and aspirations. On the other hand, few women were aware of the potential harm. This demonstrates the critical importance of fully informing a woman, before she proceeds with abortion, about all the possible effects of abortion on her health and well-being, and on all the options and alternatives available to her.

3.1. 'Unwanted', 'unplanned' and 'unintended' pregnancies

Pregnancy "intendedness" is a notion that cannot be used accurately in discussions of abortion.[7] Much research literature uses the terms "planned", "unplanned", "intended", "unintended", "wanted", "unwanted", and the concept of "planning" as self-evident and unproblematic.[8] But for a growing number of researchers, the concept of *pregnancy intendedness* is in transition: it is no longer thought correct or useful to assume that becoming pregnant is a rational activity based on planning and forethought.[9] For this reason, a simplistic focus on contraception and sex education to reduce the unintended pregnancy rate, and therefore to reduce the abortion rate, is unlikely to be successful on its own.

For example, in one empirical study, the intendedness of a woman's pregnancy and her adjustment to, and happiness with, her pregnancy did not appear to be closely linked.[10]

In a 2002 study of UK women who had either given birth or had an abortion, most did not use the terms 'planned', 'unplanned', 'intended', 'unintended', 'wanted' or 'unwanted' to classify their pregnancies. Only 13 of the 47 women interviewed used these terms at all. Three women used the term 'intended'; all were married, over 30, and held university degrees. Eight women used the terms 'unplanned' or 'unintended'. These women varied in age from 17 to 37, varied in education, and had pregnancies that were either carried to term or terminated. The researchers conclude that these terms are not spontaneously used by women. Many women found it difficult to define a "wanted" pregnancy, and the term "unwanted" provoked a strong emotional reaction and disagreement among women.[8]

Only eight of the 47 women applied the term 'unwanted' to their pregnancies, and some with reservation. All were terminating. Eleven of the 19 women having abortions chose *not* to apply the term 'unwanted'. One woman expressed it thus: "it's not that I don't want the baby, it's that I can't have it… well not 'can't', that's another word I should put in, but it's not within my means to have it, and I think it's for the baby's best. But I think 'unwanted'… it's not that I don't want it at all. I love it just as much because, you know, if I could have it, and I would love to be able to have it, so I think 'unwanted' is a bit of a kind of harsh word in my head." Barrett and Wellings noted that "women's reluctance to apply the term 'unwanted' is interesting in light of the way in which the term 'unwanted' is often used as a euphemism for pregnancies ending in abortion in the medical literature".[8]

Barrett and Wellings concluded also that the women in their study expected four criteria to be met for a pregnancy to be 'planned':

1) they all stated they had a clear intention to become pregnant;
2) they had not used contraception in order to become pregnant;
3) they had discussed and agreed with their partners that they would try to conceive;
4) they had all made wide lifestyle preparations or reached the right time in their life.

They also found that some women did not want to plan pregnancy – they wanted it to be a surprise. There was evidence of resistance to family planning among some women.

A US study from 2001 is useful because of its unique approach – it considered women's retrospective

attitudes towards their children's births. [11] Over time the women's attitudes changed, more often toward more favourable reports (15 percent more positive versus 10 percent more negative). The author found that there was a "disturbingly high frequency (from the point of view of consistency) – 19% for last pregnancies and 27% for next-to-last pregnancies – of women whose pregnancy was reported as 'unwanted' who said they reacted to the event by being happy, thrilled or glad, or by thinking how nice it was". The results suggest that women were likely to reclassify their unintended or unwanted pregnancies later as 'wanted' or 'intended'. Women rarely reclassified their originally 'intended' pregnancies. The authors conclude that "it suggests considerable inconsistency between prospective and retrospective measures of the same event, either in the form of rationalization of the result, or in widespread changes of intention."

Some studies have also found that many women do not use any method of birth control despite their lack of conscious or stated intention for pregnancy.[12]

3.2. Ambivalence in decision making during pregnancy

Many researchers have found that the decision to abort is marked by a high degree of ambivalence (being unsure, or 'in two minds').[6, 13, 14, 15] This is normal in almost all major life decisions, of which abortion is one.[16] However, ambivalence within the abortion decision-making process should still be of concern to policymakers and service providers. This is because of the solid evidence of potentially severe effects of abortion for women who were unsure about their decision. It also highlights the need for women to be fully informed about abortion and all alternatives before making a decision.

Ambivalence is common in early pregnancy, even for many women whose pregnancies are specifically planned or wanted. Women's attitudes towards the pregnancy and the baby appear to change over time, even during pregnancy.[17] Some researchers report: "Of particular concern is the finding that women who reported their pregnancies as mistimed or unwanted were so much more likely to change their reports over time (to report the pregnancy as wanted) than were women who initially said that their pregnancies had been well timed."[11]

A Swedish study found that nearly a third of women seeking abortion reported contradictory feelings, both positive and negative, towards their pregnancy. Nearly half (46%) of all the women seeking abortion expressed a conflict of conscience in seeking abortion.[18] Among 1,446 women applying for abortion in Sweden, almost one in ten changed their minds.[19] Another Swedish study, involving 854 women one year after abortion, found that 19.8% were still undecided as to whether they had made the right decision. [20]

One large study found a decreasing level of decision satisfaction over a two-year period after abortion. However, these results must be viewed with caution, as the study achieved only a 50% retention rate over 2 years (other research suggests that women who withdraw from post-abortion studies are most likely to experience most distress, therefore studies with low retention rates may underestimate the negative effects of abortion[21]). At one month post-abortion, 10.8% of women were dissatisfied and felt they had made the wrong decision, and 10.5% were neutral about their decision. At 2 years, 16.3% of women were dissatisfied and felt they had made the wrong decision. Nineteen percent of women said they would definitely not or probably not have the abortion again if they had to make the decision over, and 12% were undecided.[22]

In a Swedish study, women who were ambivalent about their decision more often stated that their decision might have been different under alternative personal circumstances, for example, if the partner had wanted the baby or if finances had been better. Among these women, ambivalence about the abortion decision was associated with pressure from other people, particularly the male partner, and a negative attitude towards abortion. [23]

Another study showed that personal finances, housing conditions and pressure from a partner were significant reasons for abortion among ambivalent women.[13] However, another Swedish study found that women who changed their minds about abortion (i.e. applied for abortion but didn't go through with it) were most often initially motivated to have an abortion because their partner did not want the baby.[19]

Among 196 women who had a termination for foetal abnormality in The Netherlands, 8% reported feelings of regret and 10% reported feelings of doubt about their decision.[24] Among 83 women having abortion for foetal malformation in Germany, eight expressed retrospective doubts about the decision, and one felt she had made the wrong decision.[25]

Ambivalence among pregnant women, including those seeking abortion, is common and should inform considerations about abortion service delivery. The prevalence of ambivalence is a concrete indicator of the complexity of decisions made during pregnancy and underscores the need for information, accessible counselling and professional support to aid a woman's decision making by presenting alternative strategies to address external coercive factors such as finances, housing options, or lack of support.

Moreover, a substantial evidence base shows that ambivalence and difficulty arriving at the decision to abort are risk factors for long-term psychological distress following abortion.[20, 26, 13, 27, 24] For example, among US college students (including women who had had an abortion and men whose partners had had an abortion), the only predictor of increased anxiety after abortion for women was a lack of feeling comfortable with the decision.[28] A Dutch study showed that women who reported feelings of doubt about their decision were over-represented in the group with post-traumatic stress symptoms. The authors of this study emphasise the importance of adequate psychological support and guidance from the caregiver during the decision-making process "in order to avoid impulsive and not fully internalised decisions".[24]

3.3. Moral position on abortion

Interestingly, there is evidence that a substantial number of women have abortions despite being personally opposed to abortion.[29, 6, 30, 31] In an Australian study, five of the 20 women interviewed (all of them attending a clinic for an abortion) stated that "abortion is against my beliefs".[6] In a Norwegian study, 13% of women undergoing abortion were opposed to the law allowing abortion on demand.[29]

It is, therefore, reasonable to assume that there were other powerful influences in these women's lives that motivated them to seek abortion, rather than abortion being a free, uncoerced choice or a straightforward and preferred option. Attention should be given to the pressures causing women to seek abortion, particularly for those women for whom abortion conflicts with their moral beliefs.

3.4. Finances

Research suggests that one of the most common motivations for abortion is financial concerns, that is, the reality or perception by the mother that she can't afford to raise a baby.[3, 32, 6] This might be related to the costs of raising a child, or to lost earnings, or both.

In New South Wales, in a study of 2,249 women having abortions in 1995, 60% gave the reason "can't afford a baby now".[3] This was by far the most common motivation.

In Australia and overseas, older women are more likely to cite completed family, work (pressures of work, or necessity to earn an income), and problems in their relationships with the partner as reasons for abortion.[3, 33] This may indicate that women feel they cannot have as many children as they

want, frequently on affordability grounds. Anecdotal evidence from abortion providers suggests that increasing numbers of partnered women over 30 in Australia are choosing to limit their family size by terminating pregnancies for economic reasons.[34]

Australia could be similar to other developed countries where the high cost of housing can affect women's options for caring for children. One Swedish study showed that women living in crowded housing situations chose abortion more than twice as often as women living in spacious conditions.[29] The high cost of housing may force women to work when they would rather have children or care for their families at home. It may also force women to live in smaller homes than they would like or need.

In Scotland, a retrospective study sought to identify women who were at risk of repeat abortion. The authors found that, apart from age and parity which tend to be confounded, deprivation was the most important predictor of repeat abortion.[35]

3.5. Study and work

The desire to study and work is often a reason given for abortion,[32] suggesting that many women feel that pregnancy and motherhood are not compatible with study and work. This could be because structural barriers prevent them from achieving both, or that women want to devote most or all of their time to their family when they have one.

All 20 of the women interviewed in an Australian study (who were attending for abortion) agreed with the statement "continuing the pregnancy would jeopardize my career, study or future plans".[6]

Younger women are more likely to cite youth, career, single parenthood and changes to lifestyle as a reason for abortion.[3, 33] This might simply reflect their preference for abortion over childbearing. However, there are alternative interpretations. For example, schools, universities, workplaces and careers may not be welcoming of mothers. Relationship instability, including the threat of abandonment by men, is certainly a real problem for young women. And perhaps young women fear an unknown future, dramatic changes to lifestyle and the perceived 'loss of self' when becoming a mother.

3.6. Wanting the best for their children

International research shows that some termination decisions are motivated by the desire to provide children with a safe and positive environment. If a woman is poor, or in a dysfunctional or violent domestic situation, she may seek abortion because she does not feel able to provide her child with an ideal upbringing.[36, 37, 14] There is evidence that women don't want to raise children as a single mother, whether because of potential practical, financial or emotional difficulties, or stigmatisation.[18, 38] There is also evidence that women believe their children have a right to be wanted and loved by both parents and raised in a caring environment.[18]

Again, these findings may relate to a lack of emotional, financial and community support for women to have children. They suggest frequent abandonment of women by men, and that communities are economically and professionally structured such that single motherhood seems too difficult to pursue, and that women are inadequate if they provide anything less than the perceived ideal.

3.7. Domestic violence and abuse

Abortion, particularly repeat abortion, has a strong established relationship with domestic violence in many countries, including Australia.[36, 39, 40, 41, 42, 43]

A woman who is a victim of domestic violence may have an abortion for various reasons related to the abuse:[26]

1. because the current or past pregnancies precipitated increased violence
2. due to fear that the foetus will be harmed by violence
3. due to coercion from an abuser
4. because the pregnancy was the result of rape
5. based on her lack of desire to have a child with an abuser, and/or her fears regarding this prospect.

Research has found that it may be that pregnant abused women do not want their children to suffer in the same abusive domestic situation and therefore seek abortion, or that these women are more likely to experience coerced sex, or that they are coerced into abortion, or all of these at once.[42] Also, an English study found that almost 2% of requests for termination may have been due to forced sex.[42]

In an Australian study, 1,014 women were interviewed during pregnancy and followed up after delivery. Women reporting past abuse or abuse during pregnancy were compared with non-abused women. The study found that abused women had a higher incidence of two or more pregnancy terminations.[44]

Another recent study of 14,784 Australian women aged 18 to 23 years found that pregnancy loss, whether miscarriage or termination, was associated with the experience of violence. The authors recommend that when young women present with pregnancy, health providers should inquire about violence and be prepared to offer support.[40]

A sample of 486 women seeking abortion in the US found that the prevalence of self-reported abuse was 39.5%. Women with an abuse history were more likely than non-abused women to cite relationship issues as a reason for seeking termination. This study also found that women were much more likely to identify themselves as 'abused' when given a paper survey compared with being asked directly, a relevant finding for screening and intervention programs. The authors suggest that past or present abusive relationships influence women's decisions to seek abortion.[39]

Several researchers recommend systematic identification of a history of abuse among women seeking abortion, with the concurrent provision of information about interventions, safety and referral for counselling.[39, 41, 42, 45]

A Canadian study investigated the possibility of universal screening for domestic violence in an abortion clinic, and found it to be feasible but challenging.[46] The authors note that simply asking questions about abuse is an intervention, because this communicates that domestic abuse is an important issue. This study found some difficulties in universal screening at the abortion clinic. Staff compliance with the policy was low, with staff asking the questions of only 254 of the 499 women attending for abortion. About half the reasons given for not asking were "patient centred" reasons, such as poor English skills, the partner being present, or the woman being too emotionally distraught. About half the reasons were counsellor related, such as the counselor feeling rushed during the session, or feeling that rapport was not established. In some cases the counsellors "ran out of energy" to ask the questions. Nevertheless, the counselors found that overall, women were receptive to the screening.[46]

Others recommend routine prenatal visits as opportunities for trust-building between women and healthcare professionals, and therefore counseling and intervention for those who disclose abuse.[47, 48] However, the presence of a male partner or other perpetrator at pre-abortion interviews may well present an insurmountable problem for women in disclosing abuse or coercion, as may the lack of a trusted relationship with the abortion provider.[48]

A recent major Australian report on the social, economic and safety needs of women during pregnancy provides a detailed picture of the extent, level and nature of violence against women during pregnancy. The author cautions against careless implementation of screening programs in the context of pregnancy healthcare services. Her research and experience suggests that women will only discuss violence in the context of a trusted relationship (unless the violence is severe and the woman has already sought help). Hence, routine screening may or may not create the appropriate safe environment for women to speak freely about abuse.[49]

Dr Angela Taft wrote a major paper on violence against Australian women in pregnancy and after childbirth in 2002. She states that 4-9% of pregnant women experience domestic violence, and that a higher proportion of abused women than non-abused women seek abortion. She argues, however, that "we do not have the evidence to recommend partner abuse screening as policy at present" (referring to health services in general, not specifically to abortion services). This recommendation is based partly on evidence suggesting that most women do not disclose abuse, and if the response from a health professional is unsupportive or judgmental it may discourage the woman from seeking help for a long time.[50]

3.8. Relationships and abortion

Problems with the quality of intimate relationships, including lack of commitment from a male partner, or physical, psychological and sexual violence, appear to be a major contributor to abortion in Australia and overseas.[14, 32, 19, 36]

A major factor in a woman's decision about her pregnancy is the influence of the people closest to her, especially her partner. Research shows that in making the decision, women assess the likely level of emotional and financial support from their partner. If the partner doesn't want the pregnancy, or will give no financial support, the woman is more likely to view her pregnancy as 'unwanted'.[51] Research suggests that the male partner has a direct influence on a woman's desire for pregnancy and childbearing and on a woman's attitude towards an unplanned pregnancy.[52]

An Australian study of teenagers' pregnancy resolution decisions found that most young women, whether choosing abortion or childbirth, reported that they arrived at the decision entirely on their own. However, the authors stated that it was clear that these decisions were occurring within the context of a family and partner relationship, and in reality these external factors influenced the teenagers' decisions. Most significant was direct influence from the partner.[53]

A Swedish study found that women who changed their minds about abortion (i.e. applied for abortion but didn't go through with it) were most often initially motivated to have an abortion because their partner did not want the baby.[19] This suggests that these women were at first prepared to have an abortion because of lack of support, or perhaps even a request or demand, from their partners. However, given some time, the women decided not to accede to this pressure.

Another Swedish study found that, among 103 women undergoing termination, "partner relationship" was the most common reason given. This included a relationship with no future or viewed as too recent, the ambivalence of the partner towards a pregnancy, his non-commitment to paternity, or a pre-existing situation of crisis such as separation or divorce.[54]

Relationships can also influence a woman's perspective on whether her pregnancy was planned or unplanned. For example, a US study of pregnancy intendedness found that "those who had been unmarried at both interviews were more likely to shift their reports from intended to unintended than were women who were married at both interviews. This may be the result of disappointed expectations regarding the stability of the relationships out of which the babies were born."[11]

The strength and quality of women's relationships are important factors in the abortion decision. An Australian study found that 30% of women having an abortion had considered, as an argument against having an abortion, that the partner relationship was stable and caring. Feeling that her partner could cope with a baby was also an important argument against abortion for these women. This Australian study is extremely useful in identifying the correlates between women's feelings about motherhood and the realities of their lives. In relation to their own present decision to have an abortion, the statement "I could not cope" was strongly related to "I do not have emotional and practical support". Eighteen of the 20 women said that they could not cope with a baby, and this was an important reason for having an abortion. [6]

3.9. Depressed mood during pregnancy

Depressed mood during pregnancy is common, although often temporary, and is related to hormonal changes during pregnancy as well as the stresses of pregnancy, impending birth, and other coincident life events. Bonari *et al* cite estimates of prevalences ranging from 10% to 25% of pregnant women (who did not seek abortion).[55] Marcus *et al* found that 1 in 5 pregnant women (not seeking abortion) experience depressed mood yet few are diagnosed with clinical depression or seek treatment.[56] Evans *et al* studied a population of 14,541 pregnant women in England, and found depressive symptoms in 11.8% at 18 weeks and 13.5% at 32 weeks gestation. The rate of depressive symptoms after childbirth was lower than during pregnancy.[57]

In a study of women undergoing second-trimester abortion for foetal abnormality, there was a high rate of depression at enrolment in the study (61.9% of women electing surgical termination, and 53.8% of women electing medical termination). At 4 months the prevalence was 23.5% for surgical versus 14.3% for medical, and 27.3% for surgical versus 20% for medical at 12 months.[58]

Ross *et al* propose a biopsychosocial model of depression during pregnancy and the postpartum period, suggesting that "variance in depressive symptoms can be best accounted for by the indirect effects of biological risk factors on psychosocial variables and anxiety. These biological variables could alter sensitivity to environmental stressors, such as lack of social support, and in this way, determine the threshold for developing symptoms of depression or anxiety during pregnancy."[59]

Depression and other types of mental illness can be related to cognitive distortions which may affect decision-making capacity.[55] It is therefore highly relevant to consider the possibility of undetected and untreated depression amongst women seeking abortion. There are effective non-pharmacological interventions for depression, including counseling, physical activity and support services. Antidepressants may benefit pregnant women with severe depression.[57]

Academics and health professionals are considering and proposing routine screening for depression in prenatal clinics.[56] In Australia, this includes the *Beyond Blue* Postnatal Depression Program, which is trialing the use of a simple screening tool to identify pregnant women at risk of antenatal and postnatal depression.[60] Similar research might also be beneficial if directed towards women considering abortion.

3.10. Abortion for disability or disease in the foetus

Abortion for congenital abnormality or other health indications in the foetus comprise relatively few of state and national totals. Nonetheless, these occurrences are worthy of research attention and consideration of more supportive and beneficial policies and practices. Currently, research and women's experiences highlight the routinisation and expectations of participation in prenatal screening and abortion [61, 62], a lack of information for women undergoing screening or who have received positive results [63, 64, 65], subtle and not-so-subtle pressure on women to choose abortion if

their baby has suspected disability or disease,[64] and a commonly-noted lack of support for families and individuals living with disability in our community.

This growing body of evidence suggests that the reasons for women's choice of abortion in these situations are more complex than simply not wanting to have a child with that particular disability.

Some research has questioned whether women feel that abortion for suspected abnormality is even a free choice. A Netherlands study involved interviews with 30 women who underwent abortion at 24 weeks or later (compared with 30 women who underwent induced delivery resulting in perinatal death). Of the abortion group, 18 reported that this was the outcome of a decision process, while 12 (40%) reported that they "had no choice".[66]

There are significant pressures on women, apart from personal preference, to avoid being mothers of children with disease or disability. New prenatal testing technologies mean that women now have the responsibility to make the decision to give birth or not. It is therefore reasonable to predict that women will be increasingly seen as *responsible* for the births of children with disability or disease. Furthermore, if children are considered to have an illness which is perceived to be 'preventable', they may be considered less worthy of help both by health professionals and others.

A multi-national study has already provided evidence that this is happening. Marteau *et al* explored the idea of *attribution* in relation to the birth of disabled children. Attribution is the tendency for people to seek an explanation for an unexpected and negative event. Specifically, "attribution theory predicts that more help will be given when dependency is attributed to factors such as lack of ability on the victim's part (internal but uncontrollable cause), than when it is attributed to a lack of effort on the victim's part (internal and controllable cause)."[67]

Marteau's study involved the completion of hypothetical case studies by three groups: pregnant women, men and women from the general community, and geneticists, from Germany, Portugal and the UK (also included were obstetricians from the UK). In all three countries, and for all study groups, the mother's history of prenatal screening was the single most important factor influencing attributions of control and blame following the birth of a child with Down Syndrome. These results suggest that both health professionals and lay people make judgments about women's roles in the birth of children with disabilities. The authors conclude that "the results of the current study would suggest that less help will be given to parents who decline testing because the outcome, giving birth to a child with a condition for which prenatal screening and selective termination are available, is seen as preventable."[67]

Lippman has similarly argued that "the provision of prenatal testing for fetal abnormality and selective termination of affected fetuses will result in mothers being blamed for giving birth to children with disabilities."[68]

As genetic research and prenatal screening technology develops, the range of available prenatal tests will expand, including probably the range of tests which become routine in Australian antenatal care. Women will therefore be faced with more decisions about what, if any, testing should be undertaken on their children and whether or not to proceed with an abortion in the case of detected or suspected abnormality.

3.11. Rape, incest, and coerced sex

While abortion for rape or incest is relatively uncommon, sexual coercion is alarmingly common in Australia. In a recent representative sample of Australian women, 21.1% of women had experienced sexual coercion (i.e. forced or frightened into unwanted sexual activity) and 10.3% had been coerced

when aged 16 or younger.[69] A Swedish study found that 12% of women seeking abortion had become pregnant in a situation where they had felt pressured or threatened by the man.[18]

However it is premature to assume that a woman pregnant through rape and incest will benefit from abortion. There is currently no evidence that it heals the woman's pain or provides any other benefits.

Overall, there is very little research on this topic, perhaps due to an assumption that abortion is always the best option for a woman pregnant through rape.

There is also very little documentation of the experiences of women who have become pregnant as a result of rape and have chosen either abortion or birth. However, one book documents the experiences of almost 200 women who were raped and became pregnant, including women who continued the pregnancy, as well as some who underwent abortion. Nearly all the women interviewed said they regretted aborting their babies conceived through rape or incest. On the other hand, among the women who carried their pregnancies to term, not one expressed regret about that choice. Reardon writes that "many women report that their abortions felt like a degrading form of 'medical rape'… Abortion involves a painful intrusion into a woman's sexual organs by a masked stranger … For many women this experiential association between abortion and sexual assault is very strong … Women with a history of sexual assault are likely to experience greater distress during and after an abortion than are other women."[70]

There is some evidence from India that abortion as an option facilitates and perpetuates the continuation of rape and violence in intimate relationships.[71] While this sample is socially and demographically different from Australian women, it highlights the potential for such situations here.

4. Effects of abortion (physical and psychological)

The published research on the outcomes of abortion for women is enormously varied in quality and scope. It is important to be alert to researcher bias, poor methodologies and use of non-standardised measures.

The NHMRC's *General Guidelines for Medical Practitioners on Providing Information to Patients* identifies several types of information which doctors should discuss with the patients which are relevant to women considering abortion:

- the expected benefits
- common side effects and material risks of any intervention
- other options for investigation, diagnosis and treatment
- the degree of uncertainty about the therapeutic outcome
- any significant long term physical, emotional, mental, social, sexual, or other outcome which may be associated with a proposed intervention.[72]

The Guidelines state that "doctors should give information about the risks of any intervention, especially those that are likely to influence the patient's decisions. Known risks should be disclosed when an adverse outcome is common even though the detriment is slight, or when an adverse outcome is severe even though its occurrence is rare."

An Australian study suggests that while all women have been told, and apparently believe, that abortion is a very safe and simple procedure, many (8 of 20) intuitively worry that it might damage them emotionally or physically and many others (10 of 20) are 'really scared' of the abortion

procedure.[6] Women need objective and unbiased information in order to make fully informed decisions about pregnancy and birth.

4.1. Physical harm

The risks of abortion vary according to the method used and the gestation at which the procedure occurs. Early abortions are generally considered to be very safe. However, any complications must be considered in the light of the fact that abortion is a procedure almost always performed on a healthy woman, with no proven therapeutic benefit for her.

4.1.1. Death

There is a risk of death with all methods of termination. Additionally, there are more deaths from all causes, including suicide, after abortion, compared with childbirth, although this research has not confirmed causality.[73, 74, 75] There is also some evidence that deaths from abortion are unlikely to be identified as resulting from the abortion.[76, 77]

A 1996 study in Finland linked suicides with the Finnish birth, abortion and hospital discharge registry, to examine the relationship between suicide and a woman's pregnancy status the year before death. The authors found that the suicide rate after an abortion was three times the general suicide rate and six times that associated with birth. Among those women who committed suicide after abortion, divorced women and women of low social class (based on the woman's occupation) were over-represented. Women who had given birth had half the suicide rate of women who had not been pregnant the year before death.[75]

US researchers carried out a similar study using data from the Californian state-funded health insurance system, Medi-Cal. A major difference in this study was that the authors sought to examine the effects of pregnancy over a longer period. Primary analysis showed that deaths from all causes in the eight years after the first known pregnancy outcome were significantly higher among women with a history of abortion. After stratifying by cause of death, it could be seen that women who had had abortions and no births had the highest death rates for both natural and violent causes. When comparing women who had births only with women who had abortions only, during the eight-year period after the first pregnancy, women who aborted were 62% more likely to die from all causes. The researchers conclude that childbirth without any pregnancy loss may have a protective effect against death; conversely, abortion without any childbirth may increase risk of death.[73]

The US authors pose several potential explanations. The first possibility is that women who have children may be less likely to take risks, and may take better care of their own health. Secondly, abortion may be associated with other stress factors that increase the risk of death. The third possibility is that a higher death rate after abortion may be caused by psychological stresses resulting from the abortion such as unresolved guilt, grief, or depression, and perhaps substance abuse.

A recent systematic review found that there is no standardised method used to identify pregnancy at the time of a woman's death or close to the time of a woman's death.[76] Death certificates may not mention that the woman was or has recently been pregnant. For example, the Finnish study mentioned above, found that in only 11% of their identified cases, an ended pregnancy was reported on the death certificate. In addition, cause of death may be misclassified or miscoded. Therefore, under-reporting of pregnancy-associated mortality is inevitable, including among homicide and suicide victims. Two case-control studies show a much higher rate of both homicide and suicide among women who have an abortion compared with women who carry to term.[73, 78]

These findings "deserve careful analysis and replication. In particular, confounding factors should be examined such as higher rates of abuse or diagnoses such as depression or post-traumatic stress."[79]

4.1.2. Premature delivery

Women with a history of abortion have an increased risk of premature delivery in future pregnancies [80, 81, 82] as well as very premature delivery.[83, 84]

Henriet *et al* studied 12,432 women who had a singleton live birth during one week in France, and found that previous induced abortion was associated with a 40% increased risk of premature birth. Risk of premature birth increased with the number of previous abortions. The association was unrelated to the stage of pregnancy at which the abortion occurred, or to the abortion technique used. The authors propose some possible causal mechanisms.[85]

A multi-centre, case-control study in France found that women with a history of induced abortion were at higher risk of very preterm delivery than women with no history of abortion, an association which persisted after controlling for maternal characteristics and history of preterm delivery. This risk increased with the number of past abortions. A history of abortion significantly increased the risk of very preterm delivery due to premature rupture of the membranes and placenta praevia, as well as idiopathic spontaneous preterm labour and foetal growth restriction.[83]

In 2004 Ancel *et al* aimed to estimate the risk of premature birth associated with a history of first-trimester abortion using data from a large multi-centre case-control survey in Europe, with a specific focus on the complication during pregnancy leading to premature birth. Analysis included 2,938 cases of premature birth and 4,781 controls, who gave birth at full term. After adjustment for potential confounding (maternal age, marital status, social class, smoking during pregnancy, and parity), the risk of premature birth was significantly higher in women with a history of abortion than those without, in countries with high and intermediate rates of abortion. In countries with a low rate of induced abortion, the increased risk was not statistically significant. A history of abortion was significantly associated with premature delivery following rupture of membranes, idiopathic premature labour, placenta praevia, and other forms of intra-partum haemmorhage. The associations may have been underestimated because the authors could not rule out underreporting of abortions.[81]

Researchers suggest that potential causal mechanisms could include infection following abortion (including intra-amniotic infection), cervical incompetence due to mechanical dilatation, and endometrial damage which increases risk of placenta praevia.

4.1.3. Infection (which can cause infertility)

Infection is a well-known and frequently disclosed risk for women undergoing abortion procedures. Infection can cause infertility.[86] This is a particularly relevant risk when abortion is performed on a woman who has an existing genital infection, since she is at high risk of ascending upper genital tract infection.[87, 88] The significant risks associated with untreated chlamydia are even greater for women who have had a termination.[88]

Infertility has also been caused, although only rarely, by foetal bones remaining after midtrimester abortion.[89]

A large study in Denmark, involving 12,972 women, found an excess risk of stillbirth among women who had an induced abortion complicated by infection.[90] The authors suggest that further studies are needed to confirm this result.

4.1.4. Uterine perforation

Uterine perforation is uncommon but serious and potentially life-threatening. Hysterectomy may be required. A long-term complication may be rupture of the uterus in future pregnancies. Previous abortion and other gynaecological surgery increases the risk of perforation during subsequent abortions.[91]

4.1.5. Placenta praevia

Women with a history of abortion are at increased risk of placenta praevia in subsequent pregnancies.[92] A recent review article found that previous abortion was a risk factor for placenta praevia.[93] An earlier US case-control study of 486 women found that women with a history of one or more induced abortions were 28% more likely to have placenta praevia in a subsequent pregnancy.[94] A retrospective case-control study of 2002 pregnancies with placenta praevia, compared with 1004 randomly-selected controls, found that risk of placenta praevia was significantly increased after one previous abortion.[95] Another study of 192 cases and 622 controls found that the risk of placenta praevia was increased by sharp curettage abortion in a dose-response manner. Placenta praevia was not associated with vacuum aspiration.[96]

Placenta praevia occurs when the placenta is low lying and may partially or completely obstruct the cervical opening. If the placenta covers enough of the cervical opening, the baby will need to be born by caesarean section. Bleeding is often a symptom of placenta praevia and it is possible for the placenta to become detached as stretching of the lower part of the uterus occurs during later pregnancy, possibly causing more severe bleeding. Such bleeding can be life-threatening.

4.1.6. Miscarriage and low birth weight in later pregnancies

Research has suggested that abortion is a risk factor for miscarriage in later pregnancies.[97, 98]

Some studies suggest low birth weight in later pregnancies.[99] Other researchers find that there may only be a weak association.[85]

Several causal mechanisms may explain these associations: cervical trauma from forced mechanical or rapid dilatation during the abortion procedure [85, 98]; cervical and uterine adhesions due to curettage (suggested also by the relationship between abortion and placenta praevia)[85]; infection (either existing before the abortion or due to the procedure) [85, 98]; and delayed implantation possibly resulting from minor trauma to the uterus during abortion[98].

4.1.7. Breast cancer

Recent research and commentary has raised a reasonable possibility that abortion may be a risk factor for breast cancer. The aetiology of breast cancer suggests that it is closely related to reproductive events, although current knowledge of risk factors can only explain a small percentage of cases.[100] Early age at first birth and increasing parity are both related to long-term lifetime reduction in breast-cancer risk.[101]

It is also well-established that a first pregnancy carried to full term has a protective effect in relation to breast cancer.[102] This information is non-controversial and is important for women considering abortion.

However, most women who have an abortion do not get breast cancer, and most women who have breast cancer have not had an abortion. The main reason for highlighting the possible relationship between abortion and breast cancer is because abortion may be one of the few avoidable risk factors for breast cancer.

The hypothesis under examination is a very specific one and relates to the level of oestrogen in a woman's body: when a woman has an abortion early in her first pregnancy at a time when her breast tissue is undergoing major change, the sudden halting of the process may leave her more susceptible to breast cancer.

Miscarriage, or spontaneous abortion, is not thought to be linked with breast cancer, because low oestrogen levels are usually implicated in miscarriage.

Thus, researchers assessing this risk need to study women aborting their first pregnancies in the first trimester, or the hypothesis will not be tested. For example, a study of 267,040 Chinese women found no relationship between abortion and breast cancer. However, Chinese women very rarely abort their first baby.[103] Therefore, this study did not test the hypothesis. Similarly, a large registry study in Massachusetts failed to distinguish between abortion and miscarriage, and therefore did not test the hypothesis.[104]

A meta-analysis including 28 published studies found that abortion was a significant independent risk factor, albeit a relatively low increase in risk, for breast cancer.[105]

A case-controlled study of 1,302 women found that, among women who had ever been pregnant, breast cancer risk in those with one or more abortions was 20% higher. Higher risks were observed when the abortion occurred before 18 years of age, or at 30 years of age or older. No increased risk of breast cancer was associated with miscarriage.[106]

A 1996 study found that, among women who had been pregnant at least once, the risk of breast cancer in those with a prior induced abortion was 20% higher than that in women with no history of abortion. This association was present mostly among women who had never given birth and whose abortions occurred prior to 9 weeks' gestation.[107]

A frequently-quoted paper is *The Lancet* meta-analysis of breast cancer and abortion which reported no increase in risk.[108] The reviewers excluded all research that relied on retrospective self-reporting of abortion, claiming that such research was biased. This idea was based on a 1994 paper that claimed to show underreporting of abortions by women who did not have breast cancer, compared with women who did.[109] This was based on their finding that 27% of women claimed they had had abortions which were not recorded in the national abortion registry. However, this claim was later retracted by the authors in a published letter, acknowledging that the abortions may not have been recorded in the registry they used.[110]

There is disagreement about the proposed phenomenon of bias attributed to under- and over-reporting of abortions: a statistician who regularly analyses abortion statistics in SA writes that "it has been a constant finding that women tend to underreport their induced abortions".[111] A US case-control study of 225 cases of women with breast cancer and 303 controls without, found that there was no significant difference in reporting of abortion history between women with and without cancer.[112]

Interestingly, the authors of a recent major study on abortion and premature delivery stated that they expected more under-reporting of abortion among cases than controls, resulting in an under-estimation of the association.[83] A record-linked survey in the US found that under-reporting of abortion was significantly associated with race, and also with positive attitudes towards childbearing and negative attitudes towards abortion.[113] Another record-linked survey found that under-reporting could be predicted by race and education; additionally, as time passed, women became less likely to report their abortions.[114]

The process by which studies were selected for *The Lancet* meta-analysis has also been heavily criticised. For example, it has been suggested that many studies suggesting a link between abortion and breast cancer were excluded for unscientific reasons, some invalid studies whose flaws had been documented in the scientific literature were inappropriately included, and some valid studies whose data had been published were simply not mentioned at all. Furthermore, the majority of studies reviewed were unpublished. The control group selected for comparison was arguably inappropriate: Beral *et al* selected studies comparing women who had induced abortions with women who had never been pregnant, while the better control group may have been women who carried pregnancies to full term.

At present, there are many studies showing an increased risk of cancer after abortion, and other studies that show no increased risk.

More research is warranted, and it is still best to assess each study individually. There is not enough evidence to reassure women that there is no increased risk of breast cancer associated with termination of a first pregnancy; however, women can be told with certainty that carrying a first pregnancy to full term provides a degree of protection against breast cancer. This is highly relevant information for a woman considering abortion.

4.2. Psychological harm

Recent research has provided new evidence, and also confirms previous research, that for some women abortion results in mild, moderate or severe psychological and emotional harm.

Abortion is usually experienced as a stressful event, and women tend to experience relief and a reduction in perceptions of stress immediately after the abortion. However, there is relative consensus among post-abortion psychology researchers that at least 10-20% of women who have had an abortion suffer from severe negative psychological complications.[26] With at least one in four Australian women undergoing abortion over a lifetime, this relates to a large subgroup of the Australian population. Even higher proportions of women experience emotional distress after abortion.

Causality is difficult to establish, since psychological morbidity can also be a risk factor for abortion. However, anecdotally many women identify their previous abortion as the cause of their suffering, strongly suggesting abortion as a causal factor in those cases.

For example, retrospective data from 331 Russian and 217 American women who had experienced one or more abortions revealed that many women attributed negative outcomes to their abortions, including "felt badly" (53.9% US and 47% Russian women), "thoughts of suicide" (36.4%, 2.8%), "feelings of sadness and loss" (55.8%, 38.6%), "guilt" (77.9%, 49.8%), "increase in alcohol or drugs" (26.7%, 4.4%), "felt part of me died" (59.5%, 33.6%), "relationship ended with partner" (19.8%, 7.8%), "unable to forgive self" (62.2%, 10.9%), and "need help to deal with this loss" (29%, 8.4%).[116]

In a number of cases, women may take some time to identify the abortion as the source of their symptoms.

Research in post-abortion psychology is increasing, which may produce new information for women's benefit. It also indicates that researchers and funding bodies see the area as an important one in which to invest time and money.

However, this area of research is still methodologically problematic for many reasons. Most importantly, it is ethically and practically unacceptable to conduct a randomised controlled trial of abortion versus motherhood and adoption.

There are also several methodological problems from which existing studies suffer. One is the problem of non-participation. Many studies are compromised by low participation rates, and high numbers of participants lost to follow-up. For example, one frequently-quoted study had a retention rate of only 50% at the end of the follow-up period, at two years.[22] One Swedish study found that non-participants in a retrospective interview study were associated with socio-demographic factors related to increased vulnerability and morbidity in other areas of health research. Non-participation was also associated with an increased level of childbearing over the following two years,[21] perhaps an indication of the phenomenon of the replacement pregnancy following abortion.

4.2.1. Emotional distress

Emotional distress is found to be common immediately after abortion and in the months following.

All women undergoing abortion in one particular Swedish town were invited to participate in a follow-up study, and 66.5% agreed to participate. Only 2.8% of these women had second-trimester abortions. Women were interviewed approximately one year after the abortion. 'Slight emotional distress' was defined as mild depression or remorse, guilt feelings, tendency to cry for no reason, discomfort on meeting children, and recurrent fantasising about the aborted baby's gender or appearance. 'Serious emotional problems' included women who needed help from a psychologist or psychiatrist, or who could not work because of depression.[20]

Of the 854 women who participated, 42% reported no psychological reaction at all, 55% experienced remorse or emotional distress of shorter or longer duration, 16.1% had slight emotional problems at the one-year point, and 3.9% had deeper depression, with 2.3% experiencing depression that persisted for a long time. Of the 854, only 13.3% reported no emotional distress, said they would consider abortion if they got pregnant again, and were sure they had made the right decision. The authors note that their study might have underestimated emotional distress after abortion, because a previous analysis of the non-participants in this study showed that women who refused to participate tended to have characteristics known to be associated with increased vulnerability to post-abortion problems.

4.2.2. Depression and anxiety

Both short-term and long-term studies, including record-linked studies that take into account a woman's pre-abortion psychiatric history, suggest that women are at higher risk of depression after abortion than after giving birth. At present these studies cannot establish direct causal relationships. However they do demonstrate strong associations between abortion and depression and anxiety, independent of the woman's psychiatric or psychological history, and independent of several other key factors for which some analyses control.

There are several studies that compare women who had abortions with women who carried pregnancies to term. Two important studies are particularly contentious at present, with the respective authors disputing methodological approaches and interpretation of data.

The first such was published in the *British Medical Journal* in 2002.[117] The authors, Reardon and Cougle, analysed data from the National Longitudinal Survey of Youth (an interview-based cohort started in 1979 in the US), found that among women with unintended pregnancies, married women were at higher risk of clinical depression after abortion compared with giving birth.

In 2005, Schmiege and Russo published a paper in the same journal.[169] Although they clamed to replicate the above analysis, Schmiege and Russ did not provide analysis stratified by marital status and coded the same data differently as they believed the 2002 coding methods were flawed.

They concluded that, among the groups of women they selected for analysis, abortion did not raise the risk of depression. Their results did not, in fact, contradict the original analysis, since they did not, in fact, replicate the original analysis. Interestingly, their results do, however, contradict earlier research by Russo *et al* showing that, among 2,525 women, those who had experienced abortion had significantly more depression, suicidal ideation, and lower life satisfaction than other women.[118]

Reardon has criticised the new methods of coding.[119] For example, Russo and Schmiege excluded women from the abortion group who said that their aborted pregnancies were at any point wanted. This exclusion must be questioned because research shows clearly that ambivalence is common

during pregnancy, including among women who ultimately choose abortion. It is also a known risk factor for emotional and psychological problems resulting from abortion.

Schmiege and Russo also excluded women who carried their first pregnancies to term but aborted subsequent pregnancies. This had the effect of including women in the control group who had, in fact, experienced abortion. Reardon also points out that Schmiege and Russo identified 38% fewer cases of women classified as having experienced depression than his original analysis, thereby reducing the statistical power of their study to detect significant differences.

Under-reporting of abortion is a constant problem for all post-abortion research. Reardon points out that compared with national (US) average abortion rates, only 40% of the expected number of abortions are reported to the interviewers in the surveys. Both studies would have suffered from this problem which would dilute the observed effect of abortion compared with women's real experiences. The data set simply does not provide this information. Schmiege and Russo sought to address this problem by comparing women who filled out and returned an abortion history card with women who did not. They assumed that only women who did not return the card were likely to be concealing past abortions, and draw the conclusion that under-reporting is unlikely to dilute the researchers' ability to observe the effect of abortion on depression. They also assume that women who conceal past abortions are less likely to experience depression. Reardon questions both these assumptions and notes that neither have an evidence base.

This recent dispute highlights many of the problems with research on abortion; the classification of pregnancy 'wantedness', the diagnosis and categorisation of mental illness, decisions about appropriate comparison groups and exposures, the concealment of abortion histories, and the potential effect of researcher's philosophical perspective on abortion.

Schmiege and Russo's paper erroneously claims that "well-designed studies have not found that abortion contributes to an increased risk of depression". In fact, many studies have established a strong association between the two.

For example, the same dataset from the National Longitudinal Survey of Youth was used in a separate analysis to assess women's risk of depression after either abortion or childbirth. All women who experienced their first pregnancy between 1980 and 1992 were included, a total of 1,884, and researchers used data for an average of 8 years following the pregnancy event. After controlling for age, race, education, income, marital status, history of divorce, locus of control (an indicator of pre-pregnancy psychological state), results indicated that a history of abortion was associated with a greater risk of depression: in the abortion group 27.3% had a high score on the depression scale, compared with 21.4% of women in the birth group. This finding was statistically significant.[120]

From a population-based sample of 4,161 women aged 36-45 was taken a subset of 332 women who met the criteria for past or current major depression, and a control group of 644 women with no past or current major depression. From interviews the researchers gained a detailed history of reproductive events and menstrual cycles from the beginning of menstruation. Depression was not associated with any number of miscarriages. However, compared to women with no abortion history, women with two or more abortions were 2-3 times more likely to have a lifetime history of major depression. This was independent of age, education or history of marital disruption. When the researchers considered only the cases of depression which came after abortion events, they found that women who had multiple abortions were at substantially increased risk of depression, but women with only one were not at greater risk. This study was unable to assess pre-existing psychosocial factors interacting with reproductive decisions. They also note the confounding interactions of abusive relationships, depression and abortion.[121]

A different US study found that the cohort of women had, overall, a higher rate of depression before

the abortion (26%) than after the abortion (20%), although both were much higher than the average rate of depression over the same time period among US women overall. These results must be viewed with caution, as the study only achieved a 50% retention rate over two years.[22]

Anxiety has also been implicated in research as being related to abortion. A prospective study of 103 women undergoing termination in Switzerland found that some women had persisting sexual dysfunction 6 months after their abortion, and the researchers attributed this to the appearance of symptoms of anxiety and depression following the procedure. After their abortions, women described feelings of fatigue (39%), guilt (35%), sadness (34%) and anxiety (29%).[122] While not clinically measured, women's reports of anxiety signal the need for more investigation of the relationship between abortion and anxiety disorders.

At least one longitudinal interview study, the US National Survey of Family Growth, was used to investigate women's risk of anxiety disorders after abortion or childbirth, and specifically those women who reported their first pregnancy as unintended. Women reporting their first period of anxiety before or at the same time as their first pregnancy were excluded, so the final sample included 1,813 women delivering their first pregnancy, and 1,033 women aborting their first pregnancy. Therefore, this study controlled for any prior history of anxiety. Among all women with unintended pregnancies, those who aborted had significantly higher rates of anxiety.[123]

Most recently, studies arising from the Christchurch Health and Development Study, a longitudinal cohort study dating back to 1979 in New Zealand, have found significantly elevated rates of suicidal behaviours, depression, substance abuse, anxiety, and other mental health concerns in young women following abortion, even after controlling for preexisting pre-pregnancy differences in mental health. The researchers concluded that abortion itself is a strong contributing factor in these outcomes.[124]

4.2.3. Post-traumatic stress disorder

Researchers have observed that, for a small proportion of women, abortion triggers or causes post-traumatic stress disorder (PTSD) or related symptoms.

The relationship between abortion and PTSD was investigated in 331 Russian and 217 American women using retrospective data from a study on pregnancy loss. Analysis showed that 65% of American women and 13.1% of Russian women experienced multiple symptoms of PTSD; increased arousal, re-experiencing, and avoidance. When women were asked about symptoms which they themselves attributed to their abortions, 14.3% of American and 0.9% of Russian women met the full diagnostic criteria for abortion-related PTSD. This suggests that cultural factors may play a role in how stress is experienced and reported, and in how abortion is perceived by the wider public.[116]

Major *et al* reported that, among women having a first-trimester termination, 1% developed PTSD within two years after the abortion.[22] Again, these results must be viewed with caution, as the study only achieved a 50% retention rate over two years. Other research suggests that studies with low retention rates may underestimate the negative effects of abortion on women's psychological health.[21]

Broen *et al* found that, of 80 women undergoing abortion, after two years 18.1% met diagnostic criteria for PTSD. Most of these women experienced avoidance of thoughts and feelings related to the abortion. This may be a high estimate, since another important PTSD symptom – intrusive thoughts relating to the abortion – was found to be low. It was also found that mental health before the termination did not influence women's psychological stress responses.[125]

Among 196 women in The Netherlands undergoing terminations for foetal abnormality, 17.3% had pathological post-traumatic stress scores. This was significantly explained by level of education

(highest scores in low-educated women), by the experience of pressure from family or significant others during the abortion decision, and by feelings of doubt and regret.[24]

4.2.4. Other psychiatric disorders

Large studies have found that aborting women suffer from more psychiatric problems including bipolar disorder, neurotic depression, depressive psychosis and schizophrenia. This association may be related to a lack of social support for women who have abortions compared with those who give birth, or women's responses to the abortion, or to common risk factors among mentally ill women and those who have abortions.

One large study in the US was designed to avoid the typical methodological problems of post-abortion research, i.e. small sample sizes, concealment of abortion history, biased sampling, low participation and retention rates, lack of appropriate comparison groups, and short time frame. [126]

This Californian study used record-linkage involving 14,297 women who had a first abortion, compared with a control group of 40,122 women with at least one live birth and no abortions. All women were eligible for Medi-Cal assistance (Medi-Cal is publicly funded healthcare, implying that these women had low incomes). Psychiatric history for one year prior to the abortion was examined. Records of psychiatric treatment for up to four years following the abortion or birth were analysed. Results were controlled for age, prior psychiatric history from 12-18 months before the pregnancy, number of pregnancies, and months of eligibility for Medi-Cal assistance.

The study found that women in the abortion group had a significantly higher rate of psychiatric outpatient treatment than women in the birth group at 90 days, 180 days, one year, and two years after pregnancy. Aborting women had significantly higher rates of treatment within the specific categories of adjustment reactions (21% higher), bipolar disorder (92% higher), neurotic depression (40% higher) and schizophrenic disorders (97% higher). In the categories of anxiety states (14% higher) and alcohol and drug abuse (16% higher), the abortion group had higher rates which approached statistical significance. There were no differences in single episodes of depressive psychosis, recurrent depressive psychosis, depression not otherwise classified, non-organic psychoses, psychalgia, and acute stress reaction.

These results suggest that, compared with a birth experience, abortion is associated with greater risk for psychological disturbance among low-income women. These psychological disturbances were sufficiently serious to require professional intervention.

The relationship between abortion and psychiatric admissions was investigated in a record-based study of 56,741 US women eligible for Medi-Cal who either had an abortion or gave birth during 1989, excluding women with any psychiatric admissions during the year before the pregnancy. It was found that women who had an abortion were at significantly higher risk of psychiatric admission compared with women who delivered. Results may have been diluted by the inclusion of some women in the childbirth group who may have had a history of abortion.[127]

A prospective study by Gilchrist *et al* of 13,261 women with an unplanned pregnancy in the UK found that the rate of total psychiatric disorders reported by GPs following abortion was similar to that in women who gave birth. The exception was deliberate self-harm (DSH) – women after abortion were significantly more likely to engage in DSH than women who gave birth (but only among women with no history of DSH).[128]

Interestingly, the authors note that differences in the timing of admission and the past psychiatric history for women giving birth compared to undergoing abortion suggests that the psychiatric illness experienced by the two groups had different underlying mechanisms. However, the major difficulty with this study

was that the rate of psychosis among women giving birth was almost certainly inflated because of systematic miscoding by GPs, according to the authors. These results must be viewed with caution: by the end of the study, only 34.4% of the abortion group and 42.4% of women who did not request abortion were still under observation. This study may suffer from reporting bias, since the general practitioner who provided the follow-up records of psychiatric health was the same GP who referred the woman for abortion or otherwise. The rate of psychiatric illness for women who gave birth was artificially inflated because doctors were using the term 'puerperal psychosis' in a wide range of cases.

In a prospective study of 150 women seeking first and repeat terminations in Scotland, 42% of those undergoing repeat abortions reported that they suffered significant psychological problems as a consequence of their past abortions.[129]

4.2.5. Deliberate self-harm, including substance abuse

As described above, a study of 13,261 women with an unplanned pregnancy in the UK found that, among women with no history of self-harm, the rate of deliberate self-harm was significantly higher after abortion than childbirth. Results must be viewed with caution: by the end of the study, only 34.4% of the abortion group and 42.4% of women who did not request abortion were still under observation.[128]

Other studies have identified an increased risk of substance abuse[130], particularly during subsequent pregnancies.

One study examined substance abuse during pregnancy with regard to reproductive history using survey data from a sample of 607 women from the National Pregnancy and Health Survey in the US. Women with a history of abortion were significantly more likely to use marijuana (odds ratio of 10.29), various illicit drugs (odds ratio 5.60) and alcohol (odds ratio 2.22) during their next pregnancy. No difference was detected in the use of cigarettes.[131]

Another recent study used data from women in the National Longitudinal Survey of Youth whose first pregnancy was unintended, and used data from women with no pregnancies as a control group. Use of alcohol, marijuana, cocaine, and behaviours suggestive of alcohol abuse were studied over an average of four years after the target pregnancy among women with prior histories of delivering an unintended pregnancy (535 women), abortion (213 women), or those with no history of pregnancy (1,144 women). Results were controlled for age, race, marital status, income, education, and pre-pregnancy self-esteem and locus of control. The data showed that the way in which women resolved unintended pregnancies was significantly associated with substance abuse during subsequent pregnancies. Compared to women who carried an unintended first pregnancy to term, those who aborted were significantly more likely to report use of marijuana, and more likely to report using cocaine (this result approached statistical significance). Women with a history of abortion also reported more frequent drinking than those with a history of delivering an unintended pregnancy. The authors suggest that a history of abortion may be a useful marker for identifying women who might benefit from counselling for substance use.[132]

The relationship between substance abuse during pregnancy and past perinatal loss, including miscarriage, stillbirth, and abortion, was examined in a study of 1,020 women who gave birth in Washington DC during 1992. Substances examined were marijuana, cigarettes, alcohol, cocaine and any other illicit drug. After controlling for various socio-demographic variables (age, race, marital status, income, years of formal education, and number of people living with the respondent), the data showed that a history of one induced abortion was significantly associated with an elevated risk for substance use during pregnancy of all types except for alcohol. Other forms of perinatal loss were not systematically related to substance abuse during pregnancy.[133]

Two speculative interpretations are offered by the researchers. One is that women who use substances are more likely to abort and continue their usage into subsequent pregnancies, perhaps even because women who use substances may fear that they have harmed the fetus prior to discovering the pregnancy. Another is that women with a history of abortion have unresolved negative emotions relating to their past losses, and are more likely to use substances to deal with their feelings.

4.2.6. Negative emotional responses

Research has shown that many women experience a range of emotions after abortion, including sadness, loneliness, shame, guilt, grief, doubt and regret.[27, 18, 124, 134, 24]

Major and Cozzarelli *et al* found that, during the two years after abortion, women's reports of negative emotions increased ("sad", "disappointed", "guilty", "blue", "low" and "feelings of loss") while relief and other positive emotions ("happy", "pleased", and "satisfied") decreased.[22] These results must be viewed with caution, as only a 50% retention rate was achieved over the two years.

Among US college students (including women who had had an abortion and men whose partners had had an abortion), almost one third of women and almost half of the men were not comfortable with their decision. The same proportions expressed a sense of regret, and many felt sad when thinking of the abortion. A third of both men and women said that they sometimes felt a sense a longing for the aborted foetus. More than half the women, and a quarter of the men, reported an increase in depression after the abortion, and under one sixth of both groups experienced increases in anxiety post-abortion. The only predictor of increased anxiety after abortion for women was a lack of comfort with the decision. Men who experienced a sense of connection to the aborted foetus were most likely to experience anxiety.[28]

Kero *et al* carried out a prospective study of 65 women (66% of those asked to participate) with interviews 4 and 12 months after abortion, with 58 women (58%) completing the study at 12 months. At one year, one woman regretted the abortion, and another spoke of it as a mistake. Fifty women regarded the abortion as a form of taking responsibility. Most women experienced the abortion as a relief, although half also expressed concurrent feelings such as grief, emptiness and guilt. Women's retrospective reports of their emotions immediately after the abortion indicated that 62% experienced no emotional distress, 17% had mild/moderate distress, and 21% had severe emotional distress. Nearly all women with mild/moderate distress also reported relief in concurrence with sadness, loneliness, shame, guilt, emptiness and regret. Twelve women (18.5%) suffered severe emotional distress; their decision had been full of conflict and difficult to make. Three clearly stated that they wanted to give birth, and five others were ambivalent about the decision. Ten saw their abortion as "a necessity or a sacrifice". At one year follow-up, two of these women had already given birth to another child.[27]

4.2.7. Replacement pregnancies

There is some evidence for the 'replacement pregnancy' phenomenon. For example, among 14,297 low-income US women aborting their first pregnancies, and a control group of 40,122 women giving birth, the abortion group experienced more subsequent pregnancies. Possible explanations have been that it may help the woman re-experience the earlier pregnancy even with the hope of resolving grief and stress about her abortion, or that the woman perceived her abortion as a personal failure and was driven to become pregnant again to succeed in carrying to term. The woman also may feel that her abortion was a mistake and that she actually desired to have a child.[126]

4.2.8. Harm resulting from abortion for disability or disease in the foetus

For women who abort because of disability or disease in the foetus, the procedure and the years afterward can be extremely traumatic, characterised by grief and guilt.[135]

A Scottish study of women's reactions to second-trimester abortion for foetal abnormality found that, despite its acceptance in the community, the procedure "remains an emotionally traumatic major life event for both the father and mother", involving turmoil, ambiguity and reticence. Particularly vulnerable groups were found to be (i) young and immature couples; (ii) women with secondary post-abortion infertility and those with a reproductive conflict, and (iii) vulnerable personalities and those who are unsupported. The authors recommended that all of these require early identification and support.[31]

This study also found that after abortion for foetal abnormality a majority of women and men had negative emotional feelings and somatic complaints related to the abortion. Thirty percent of women felt relief. But women also tended to experience sadness (95%), depression (79%), anger (78%), fear (77%), guilt (68%), failure (61%), shame (40%), vulnerability (35%), isolation (27%), numbness (23%), panic spells (20%), crying (82%), irritability (67%), lack of concentration (57%), listlessness (56%), sleeplessness (47%), tiredness (42%), loss of appetite (31%), and nightmares (24%). Women reported recurrent nightmares about the procedure. Couples experienced changes in their sexual relationships: 50% reported they engaged in sexual intercourse less frequently, and 24% rarely engaged in sexual intercourse at all after the abortion (as compared to before the abortion). All couples experienced emotional distress but 40% of the women reported coping problems lasting more than 12 months. Thirteen couples refused to participate, mostly because the subject was still too painful to discuss, so the true percentage of adverse sequelae may be 53%.

Davies *et al* studied thirty women undergoing first- and second-trimester abortion for ultrasound-detected foetal anomaly.[136] The women were assessed at 6 weeks, 6 months and 12 months after the abortion, using a qualitative interview as well as four standardised self-completed questionnaires which had been validated by many other researchers for use in community or hospital populations. Sixty-seven percent screened positive for post-traumatic stress at 6 weeks, 50% at 6 months and 41% at 12 months. Emotional distress was experienced by 53% at 6 weeks, 46% at 6 months, and 43% at 12 months, and grief by 47% at 6 weeks, 31% at 6 months and 27% at 12 months. Depression was diagnosed in 30% at 6 weeks, 39% at 6 months and 32% at 12 months. Compared with first-trimester abortion, women undergoing second-trimester abortion had significantly greater levels of post-traumatic stress symptoms at 6 weeks, but not at 6 or 12 months. Other measures of psychological morbidity were generally similar between the two groups. The small sample size of this study should be taken into consideration, as well as the loss to follow-up of women in the second-trimester group, such that women "with higher levels of psychological distress early on were more likely to be lost to follow-up."

Elder and Laurence tested the effects of a support program for women undergoing second trimester termination for foetal abnormality in the UK. Describing women's reactions to the procedure, they found that 78% in one group (detection at ultrasound or early blood test) and 90% in a second group (detection at amniocentesis) experienced an acute grief reaction. Five women from group II had prolonged periods of grief lasting up to 2 years. The authors conclude that abortion for foetal abnormality in the second trimester "should be regarded as no less serious than a stillbirth and that acute grief reactions by the parents must be expected", bearing in mind that this will be compounded by feelings of guilt for having chosen the procedure.[137]

Dutch researchers found that, among 196 women aborting for foetal abnormality, grief and post-traumatic symptoms did not decrease between 2 and 7 years after the event. In their cross-sectional

sample, with a relatively high response rate of 79%, pathological post-traumatic scores were found in 17.3% of participants. Advanced gestational age was associated with more psychological distress. Grief and regret were reported by 8% and 10% of participants respectively. The authors emphasise the importance of "adequate psychological support from the caregiver during the decision-making process in order to avoid impulsive and not fully internalised decisions."[24]

A metasynthesis of qualitative research involving women who had experienced abnormal prenatal tests found that couples chose to terminate their pregnancies for reasons including "the availability and acceptability of termination and the perceived certainty of fetal death". Factors contributing to the choice to terminate included ambivalence about the ability to parent an impaired child and altruistic concerns about the foetus, other children, and marriage and family life. The authors note that "no matter what they ultimately chose to do, couples felt pulled to make the opposite decision and justify it to themselves, to close and distant members of their social network, and to health care providers. Couples continuing their pregnancies felt pressure from providers to terminate their pregnancies, and all couples felt the need to explain or explain away their choices." They found that the intimate links between choice and loss involved in prenatal testing and abortion created a paradoxical situation which did not support a simplistic notion of "choice".[138]

Kersting *et al* conducted a detailed analysis of three women's experiences of termination for foetal abnormality. The authors conclude that such an event is to be seen as a severe trauma which may entail a pathological grieving process, and that health professionals should be aware of the varying responses and coping methods.[139]

The same researchers investigated 83 women terminating due to foetal malformation, comparing them with women terminating for non-medical reasons and women giving birth. They found that termination of pregnancy due to foetal malformation is an emotionally traumatic major life event which leads to severe post-traumatic stress response and intense grief reactions which are still evident 2-7 years after the procedure. Contrary to expectations, women's experiences of traumatic stress 4 years after the procedure were not significantly different from women's experiences 14 days afterwards.[25]

Sandelowski and Barroso note that "positive prenatal diagnosis was devastating for women as it – and its aftermath – were embodied experiences for women, that is, prenatal testing, quickening, the continuation or termination of a pregnancy with an impaired fetus, and postpartum leaking of breast milk happen in women's bodies."[138] They also state that "couples experienced selective termination as a technologically induced, historically unique, and paradoxical form of suffering entailing the intentional loss of a desired pregnancy and killing to care. … Couples, health care providers, family and friends underestimated the intensity and duration of feelings of loss following selective termination." They concluded that "couples experienced selective termination as traumatic, regardless of the prenatal test revealing the fetal impairment or stage in pregnancy in which the termination occurred."

In a 1993 study, Zeanah *et al* concluded that "women who terminate pregnancies for fetal anomalies experience grief as intense as those who experience spontaneous perinatal loss, and they may require similar clinical management. Diagnosis of a fetal anomaly and subsequent termination may be associated with psychological morbidity."[140]

Similarly, a 1997 study on the long-term effects of abortion for foetal disability concluded that "the long-term psychological stress response in women to pregnancy termination following ultrasonographic detection of fetal anomalies does not differ from the stress responses seen in women experiencing perinatal loss."[141]

Prenatal diagnosis and abortion of foetuses with disease or disability has been assumed beneficial

for women, but the psychological consequences of these procedures has been a neglected area of research.[142] In particular, recent research (Davies *et al*) questions the assumption that early detection and termination of foetal anomaly has better outcomes for women in psychological terms.[136]

5. Case studies and women's stories

Clinical case studies and many stories written and told by women themselves confirm the research that shows abortion is associated with negative emotional and psychological outcomes for some.[143, 144, 145, 146]

In-depth surveys with seventeen women who had experienced abortion demonstrated the complexity, depth and long-term nature of emotions relating to abortion. These women spoke of their immediate reactions to abortion as relief, sadness and remorse. But in the long-term (from 6 to 31 years post-abortion) the women talked about flashbacks, anniversary-related depression, denial, emotional repression, fantasising about the aborted foetus, and triggering of painful emotions by significant events many years later. Several women rode an "emotional roller coaster" for decades, and thought constantly about their aborted children.[134]

The author notes that the research interview was, in itself, a therapeutic intervention for many of the women. She makes several recommendations for postabortion clinical practice, including the following:

- Take an extensive reproductive history of the pregnant woman, and, in doing so, create an atmosphere where she feels free to tell you about previous abortion(s) without feeling condemned or ashamed.
- Observe women during subsequent labor and immediate postpartum situations for postpartum depression, detachment from newborn, and unnatural grief.
- Help women work through grief, if present, for both miscarriage and previous abortion(s), acknowledging the losses.
- Assist perimenopausal and menopausal women who wish to make a life appraisal to be open about their abortion history and work through any unresolved feelings.
- Make appropriate referrals for spiritual, emotional, and/or psychiatric care.

6. Risk factors for psychological harm and emotional distress

Some research has identified particular risk factors among women seeking abortion which are predictive of negative psychological and emotional outcomes of abortion.

Swedish researchers found that women are more likely to suffer psychologically and emotionally from abortion if they are living alone, have poor emotional support from family and friends, experience adverse postabortion change in relationship with partner, have underlying ambivalence or adverse attitudes to abortion, or are actively religious.[20]

In a Swedish study, an absence of emotional distress immediately after the abortion was reported by women who had made the decision without a conflict of conscience, and without pressure.[27] Other researchers have found that ambivalence about the abortion and difficulty with the decision are predictors of post-abortion psychological harm.[13, 26] Clinicians should note that delaying the decision is a marker for ambivalence.[26]

Abortion for foetal abnormality is known to be associated with psychological morbidity (see section on this topic). Relationship violence also predicts particularly negative responses to abortion.[20, 118]

In a study of abortion and post-traumatic stress disorder in Russian and American women, more

negative responses to abortion in American women were related to being younger, having a history of divorce, not having been employed full-time, having more years of education, having bonded to the foetus, not believing in a woman's right to have an abortion, not being counseled before the abortion, having felt pressured into the decision, and having experienced more abortions. Among Russian women, negative responses were associated with having bonded to the foetus, not believing in a woman's right to abortion, having a partner who desired the pregnancy, experiencing health complications, feeling pressured into the decision, having experienced ambiguity surrounding the decision, not having received counseling before the procedure, and being further along in the pregnancy.[116]

Pre-pregnancy history of depression consistently predicted poorer post-abortion mental health, and more negative abortion-related emotions and evaluations. Furthermore younger women evaluated their abortion more negatively, as did women who had more children at the time of abortion.[22]

A study of 13,261 women with an unplanned pregnancy in the UK found that women with a history of psychiatric illness were found to have higher rates of such illness after both abortion and childbirth (although in this study, psychiatric disorders after childbirth were found to be artificially inflated by poor coding). The rate of deliberate self-harm, however, was found to be significantly higher after abortion than childbirth, among women with no history of self-harm.[128]

A recent comprehensive review of the psychology of abortion summarises research on "mediators in psychological processes". This means "how characteristics of the individual or experiences are able to partially or fully explain relations between specific predictor variables and outcomes."[26] The reviewers found evidence of several mediators in current post-abortion psychology literature:

> *Self-efficacy* – the woman's judgment, taking into account her knowledge and her confidence, that she has the ability to execute the actions necessary to successfully complete various life tasks.
>
> *Attribution of blame* – the degree to which the woman feels the situation may have been modifiable.
>
> *Subsequent reproductive events* – including another abortion or other forms of perinatal loss such as miscarriage or stillbirth, difficulty conceiving, problems with a desired pregnancy, and giving birth.

Counselors, doctors and abortion practitioners need to be particularly alert to women who are seeking abortion yet express some enjoyment in being pregnant, or a desire to have the child.

7. Chemical abortion

Chemical abortion is increasingly being promoted in many countries as an alternative to surgical abortion.

Many women choose chemical abortion because they want to avoid a surgical procedure.[147] Chemical abortion involves the use of drugs to soften cervix and cause uterus to contract, expelling the foetus and placenta. It has been promoted as simple and convenient, and less invasive than surgical abortion. However the procedures require more intervention and visits to the clinic than a surgical abortion. It may take 12-48 hours, and even up to several days.[148] About 60% of women abort within 24 hours, but for 20-30% it may take 3 or more weeks.[149] Currently there is little evidence that the method is in any way preferable to surgical abortion. A Cochrane Review (of medical versus surgical methods for first trimester termination of pregnancy) found that the trials

available for review were relatively small, and that there was inadequate evidence to compare the acceptability and side effects between the two methods.[150]

Chemical abortion requires active patient participation and takes longer to complete than surgical abortion. Women are more aware of the physical aspects of the process such as bleeding and cramping. On the other hand, chemical abortion offers a completed abortion without surgery or anesthesia, apparently similar to a "natural miscarriage", and a more private patient experience.[147] During second trimester abortion, women undergoing chemical abortion are more likely to require surgical intervention for missed abortion (29% of women undergoing chemical abortion compared with 4% undergoing surgical abortion).[151]

Misoprostol and methotrexate are used off-label in Australia for chemical abortion. That is, these drugs are not licensed by the manufacturer for use during pregnancy. It is uncertain whether women are told this when undergoing medically induced abortion. While drug licensing is not proof of effectiveness, it is a means of protecting consumers and ought to be taken seriously.

Mifepristone is an oral antiprogestin. It blocks progesterone receptors and causes breakdown of the implantation site. It also causes local prostaglandin release to increase, causes the uterus to become more sensitive to prostaglandins, and softens the cervix. Methotrexate is an anti-metabolite and interferes with DRNA synthesis, preventing the continuation of implantation. Misoprostol is a prostaglandin analog that causes the uterus to contract when administered orally or vaginally. The simple explanation is that the first drug prevents the embryo or foetus from continuing to implant, while the second medication causes cramping and therefore expulsion of the embryo or foetus.[147] In 2-10% of cases, surgical abortion is required to complete the abortion.[147]

A 1998 study in England compared women having surgical abortions with women having chemical abortions. The researchers found that women having chemical abortions rated the procedure as more stressful and painful, and they experienced more post-termination physical problems and disruption to their lives. Women may not expect, or are not told, that they may see the foetus, and this was associated with more intrusive events – nightmares, flashbacks, and unwanted thoughts related to the procedure. 53% of the chemical abortion group said they would choose the same procedure again, compared with 77% of the surgical group.[152] Another study by the same authors found similar results – chemical abortion was more stressful. This was related to the physical and emotional aspects of the process, seeing or feeling the foetus, waiting times during the procedure, and the process itself.[153]

These researchers also note that seeing the foetus is a particularly distressing experience for women – it can "bring home the reality of the event and may influence later emotional adaptation".[153] Another researcher explains that the patient may expel the foetus at home and that some patients are curious about what this will look like. In this case women may benefit from seeing a photograph of an embryo/foetus of the appropriate age.[147]

However, a recent study contradicts these, finding that during second trimester, chemical abortion was not significantly different from surgical abortion in relation to depression and grief (although this study had a very high attrition rate, with only 14 of 49 subjects completing the study). The authors hypothesise that women who have contact with their dead foetus may have something tangible to grieve.[58]

It is possible that chemical abortion may result in the delivery of a live foetus, the allegation in a recent prosecution of a doctor in Sydney.[154] The psychological damage of such an experience is unknown but should not be underestimated, and women need to know about this possibility.

Women need to know that some drugs used in chemical abortion can cause serious birth defects

in babies if the pregnancy continues. First-trimester exposure to misoprostol has been associated with skull and limb defects. So clinicians must stress the need to confirm the abortion and strongly advise a surgical procedure should the chemical abortion fail.[147]

Currently identified contraindications for chemical abortion include:[147]

- indecision about having an abortion
- pregnancy beyond the gestational age limits
- unwillingness to have a surgical abortion if the medical method fails
- lack of telephone or beeper access
- inability to return for follow-up visits
- difficult in completing all the steps of the protocol
- inability to give consent.

8. Benefits of abortion

The vast majority of studies have looked at potential negative effects of abortion. So far there have been few, if any, established benefits of abortion.

Studies consistently show that many women report relief immediately after abortion and in the months following. Relief is often experienced in concurrence with negative emotions such as grief, guilt and shame.

A retrospective study of US and Russian women who had experienced abortion found that 13.8% of US women and 6.9% of Russian women felt relief after the abortion and attributed it to the abortion. The statement "felt more in control of my life" was given by 3.7% and 1.6% of US and Russian women respectively. In contrast, much higher percentages of women attributed negative outcomes to their abortion such as thoughts of suicide, guilt, substance abuse, relationship problems, sadness and loss, and expressions such as "felt part of me died", and "unable to forgive self".[116]

A prospective study of 40 women after miscarriage and 80 women after abortion in Norway found that aborting women were significantly more likely to have feelings of relief, as well as guilt and shame. Some women after miscarriage also reported relief.[124]

In research to date, 'relief' is generally undefined. Some researchers suggest a variety of interpretations: "Women who state they felt relief following an abortion may variously mean that they were relieved that they would not have the responsibility of a child to care for, relief that they had made it beyond the stressful day of the abortion, relief that they were no longer being pressured by others, relief that there was no longer a risk of their parents discovering the pregnancy, relief that the physical symptoms of pregnancy were over, relief that they did not experience any complications from the surgery, or numerous other forms of relief."[26]

Relief appears to be a short-term effect of abortion. Indeed, there are no studies indicating that relief continues to be experienced by women many years after their abortions. Major and Cozzarelli *et al* found that relief was the most frequent emotion reported by women immediately after their abortion. However, among the women remaining in the study at 2 years (50% retention rate), reports of relief and other positive emotions had declined, and negative emotions had increased.[22]

A US study of 97 women used interviews at three stages: thirty minutes after the abortion, one week later and finally, one month later. Quality of life functions were measured by a Quality of Life questionnaire (originally designed for cancer patients) which contained items for physical, emotional, cognitive and social functioning. The questionnaire also asked about fatigue, nausea, vomiting and other gastrointestinal disturbances relevant to both cancer patients and pregnant women. Not

surprisingly (since the baseline interview was held at a particularly emotionally distressing time, that is immediately after the abortion) the women reported significant improvements in quality of life over one month. Symptoms of pregnancy were gone, although pain and physical functioning were worse at one week.[155] This study is widely cited as evidence that abortion generally improves women's well-being, despite its relatively small sample size and very short timeframe.

Abortion is sometimes conceptualised as a maturing or growth experience for women, giving an increased sense of control over one's life.[27] Some argue that this may be related to a process of intense introspection often associated with consideration of abortion, bringing women to a state of greater self-understanding.[26] However, there is no evidence that maturation or growth is greater for those who abort relative to those who do not.

Some studies report on women's self-assessed sense of well-being after abortion without providing a reference point of well-being before the abortion.[156, 157] Major *et al* asked 438 women with abortion experience to rate their agreement or disagreement with the statement "I think the abortion has had a positive effect on me" on a scale of 1 (strongly disagree) to 5 (strongly agree), with an average response of 3.1.[22]

Russo and Zierk found higher self-esteem among women who had abortions than women who had given birth, and slightly higher than all women in the study. However, after controlling for contextual factors, which they called "childbearing and resource variables" – employment, income and education – this effect disappeared. They concluded that, when examined in the context of childbearing and coping resources, the experience of abortion does not appear to have an independent relationship to women's well-being. They suggest that "abortion's positive relationship to well-being may come through its contribution to reducing women's total number of children rather than through a psychological effect of feeling empowered by having an abortion experience."[158] However, this hypothesis was not tested in their research.

Kero *et al* question whether painful feelings after abortion are always to be considered problematic or threatening. They carried out a prospective study of 65 women (66% of those asked to participate) with interviews 4 and 12 months after abortion, with 58 women (58%) completing the study at 12 months. At one year, one woman regretted the abortion, and another spoke of it as a mistake. Fifty women regarded the abortion as a form of taking responsibility. Most women experienced the abortion as a relief, although half also expressed concurrent feelings such as grief, emptiness and guilt. More than half the women reported only positive experiences such as maturity, deeper self-knowledge, strengthened self-esteem and "identity of the abortion process". Other positive effects included maternal feelings, knowing they were fertile, and specific female experiences. Bad or mixed experiences were related to emotional and mental suffering, bad treatment at hospital, or disturbed sex life.[27]

More research is needed to identify whether tangible long-term benefits of abortion exist for women.

8.1. Teenage girls

Abortion is often promoted as a good option for pregnant teenagers. But again, evidence of the benefits is lacking. On the contrary, there is strong evidence to suggest that, once pregnant, choosing to give birth can have better outcomes for young women, or at least that giving birth is not a harmful choice.

The National Longitudinal Study of Adolescent Health (US) collected data on approximately 19,000 US adolescents.[159] Adolescent females who had abortions were the *most* likely to report that they had wanted to become pregnant (79.3% of girls who had abortions reported their pregnancies as 'wanted', 9.5% reported 'undecided', 11.2% reported 'unwanted'). The authors note that it seems

likely that parental input played an important role in these decisions. So there is no way of knowing the extent to which adolescents' preferences are reflected in their pregnancy outcomes.

Ever-pregnant girls (who had been pregnant at least once) had higher rates of delinquency than never-pregnant girls (who had never been pregnant). The highest rates of juvenile delinquency were among (1) those who gave babies up for adoptions (caution: small sample size), (2) those who had abortions, and (3) those who had miscarriages. But girls who kept their babies had delinquency rates the same as never-pregnant girls.

Multivariate analysis of the data reveals that "the prevalence of delinquent behaviour is strongly dependent on the form of pregnancy resolution. Specifically, girls who have abortions or give their babies up for adoption have substantially higher rates of juvenile delinquency than those who keep their babies."

Other research has found that young mothers often demonstrate greater maturity than their childless peers, and are especially unlikely to consume alcohol or spend time with friends who drink, and young fathers have especially high rates of participation in socially productive work.[159]

Before pregnancy, girls in the 'keep baby' group had significantly higher rates of smoking and marijuana use than girls in the 'never-pregnant' group. After pregnancy, they had substance use rates about 45% lower than their never-pregnant peers.

Adolescent pregnancy is linked to a complex range of problem behaviours - but the nature of those links depends on the outcome of the pregnancy.

In addition, a 2005 study found that perceived quality of life in teenage mothers does *not* appear to be lower than the quality of life in teenagers without children, or than that of adult women.[160]

8.2. Women with mental illness

It is sometimes claimed that only psychologically vulnerable women have emotional or psychological problems after abortion. This claim is not supported by the available evidence. It is true, however, that pre-existing psychological problems are a risk factor for post-abortion psychological problems.[26, 22] This evidence calls into question the assumption that abortion will benefit women who have concerns about their mental health.

Some recent studies have included controls for prior psychological difficulties, and results suggest that abortion is associated with an increased risk for in-patient and out-patient treatment for various psychological problems, depression and suicide.[126, 120, 73, 127]

A Norwegian prospective study of 80 women having induced abortion found that mental health before the termination did not influence women's psychological stress responses.[124]

An important corollary is whether the experience of motherhood is harmful to women with serious mental illness. In a study of women with bipolar disorder, the authors wrote that "similar proportions of women perceived that pregnancy had a positive influence on their illness course and overall well-being (47%, 16 of 34) as those who reported negative effects (53%, 18 or 34). One-half reported that becoming a mother had bolstered their self-esteem."[161]

In the US a large number of women with major psychiatric disorders abort their pregnancies compared to the general population. Among a sample of 93 such women, abortion was associated with being a victim of sexual abuse and the experience of physical assault. Repeat abortions were prevalent. Women with reproductive losses were at greater risk for rehospitalisation than the women who had no children.[162]

There is an institutionalised bias against motherhood for women with mental illness. According to this research, "approximately one-half of the 70 respondents had been advised against pregnancy by a psychiatrist, primary care physician, obstetrician, or family members, suggesting widespread bias against pregnancy for such women."

Among women with major psychiatric disorders, "one or more extreme negative emotional responses regarding abortion occurred in one-third of the present study's participants. These extreme feelings involve predominantly anger and shame and should not be minimized nor ignored when they occur and, for some, may be unexpectedly intense. Obviously, there is no painless way to cope with an abortion."[163]

It is possible that women with mental illness feel abortion is their only choice because psychiatric patients who give birth are at high risk of losing custody of their children.[163]

Regrettably, there is very little research on mental illness and pregnancy to inform women and clinicians in decision-making.

9. Conceptualisation of abortion

9.1. Interpretation of the harm of abortion

The harm experienced by women who undergo abortion is a highly controversial and sensitive topic. The body of research on women's psychological and emotional responses to abortion is constantly expanding, yet it is easy to rely on a select few studies or reviews that may, in isolation, suggest that abortion is a benign experience for women.

In fact the breadth of women's experiences cannot be described by a single study. Women live with their reproductive decisions for a lifetime, and the long-term effects are perhaps more important than the short-term. Even if a minority (10-20%) of women experience severe responses to abortion, these half million or so Australian women are worthy of consideration in research and public policy.

Australian pro-choice researchers note that "fear of sabotaging the case for women's right to choose abortion has meant that the distress and ambivalence experienced by women facing a problem pregnancy and abortion has been understated or disregarded by some writers in the area despite clinicians' and researchers' ready observation of its prevalence."[6]

A feminist perspective which supports abortion might interpret the potential harm as something which women must accept if they are to have the right to choose. Others might assert, contrary to the evidence, that women suffering psychological anguish and harm after abortion are simply continuing to suffer from previously existing conditions. Others believe that "being forced to choose between giving birth to a child or having an abortion seems impossible, but it can also be seen as part of the difficulty inherent in life. … The fact that we have to choose creates the anguish."[14]

Much research is carried out in the context of abortion service delivery. In such cases, many of the researchers support abortion and may feel compelled to evaluate their findings in a way that maintains their support of abortion.

This can be done in a number of ways. Firstly, the experience of a crisis or a difficult decision, or grief and loss, and even the experience of being pregnant temporarily, is conceptualised as beneficial because it results in maturity, growth, and improved understanding of others.[30, 27]

Secondly, the interpretation of 'relief' varies according to the ideological perspective of the researcher (see discussion in the section on benefits of abortion).

Thirdly, the grief and mourning which the woman goes through is perceived as necessary and normal, and therefore unproblematic. One interpretation is that such reactions "can be best understood within the framework of a normal stress response".[155] However some researchers find that "although it has been suggested that emotional distress following abortion should be considered a normal stress reaction, our results do not support this view", because of the indications of regret and ambivalence among many women one year after the procedure.[20]

The reason for post-abortion grief – the loss of something of value to the woman – often remains unexamined. It is not considered by some researchers that the woman could have avoided such grief and pain by avoiding the abortion. It is also not considered whether the woman expected or was warned that she might experience such feelings.

Kero and Lalos note that "the fact that women and men choose to have an abortion despite simultaneously feeling that they are relinquishing something that has a positive value is seldom emphasized in research. Feelings of ambivalence are an indication that abortion has a price, which implies that it is a more or less painful solution to the unwanted pregnancy."[30]

Regardless of how the harm of abortion is interpreted, women must be told about these potential harms if they are to have real choice. Also, since abortion is offered to women by the medical profession, the benefits ought to outweigh the harms. At the very least, benefits should be established by evidence. This is not the case with abortion. Hence, more research and debate is necessary.

9.2. Abortion as a perinatal loss

Abortion is a perinatal loss, even when it is chosen. There appears to be a widely-held assumption that women do not grieve after abortion because they don't want the baby. It is assumed that miscarriage creates a problem for a woman who wants the baby, while abortion solves a problem for the woman who doesn't.

Evidence suggests that in reality it is not so straightforward. One study showed that depression after miscarriage was associated with ambivalence towards the foetus.[164] Other studies found that psychological reactions to miscarriage were not related to whether or not the pregnancy was desired.[165, 166]

Miscarriage is an emotionally traumatic experience for many women. After miscarriage, women's losses "consist not of an embryo or a fetus, but their child. … A feeling of utter emptiness occurs after the little living creature who was there no longer exists."[167] Previous studies suggest that 48-51% of women who experience miscarriage will suffer psychiatric morbidity, and that 22-44% of women will show clinically significant levels of depression and anxiety.[168]

A Norwegian study showed that women's responses after abortion compared with miscarriage were in fact quite similar, except that women after abortion had more feelings of guilt, shame and relief, and were more likely to experience avoidance of thoughts about the event, a common symptom of post-traumatic stress disorder. Towards the end of the follow-up period, 2 years after the procedures, feelings of loss and grief were similar between women who had had abortions compared with women who had miscarried.[124]

Yet abortion is not widely discussed, and women do not publicly grieve their loss. Research suggests that a lack of grief reaction after abortion may increase the risk of later depression.[124]

It is widely believed that most women undergoing abortion do not want the baby. But in an Australian study a significant minority of women who were attending an abortion clinic had expressed fantasies about the baby, maternal attachment to their foetus (for example patting her

tummy affectionately, or talking to the baby), what kind of mother she might be, or imagining what the baby might be like.[15]

10. A proposed research agenda

Based on the current body of knowledge on abortion summarised above, the following list includes topics which need more research attention:

- Investigation of the complexities of the decision-making process when women are considering abortion.
- Ways in which doctors and abortion practitioners can identify and assist women seeking abortion who are opposed to abortion, who are unsure about their decision, or who are likely to regret it.
- Exploration of structural ways to support women during pregnancy and motherhood.
- Methods of improving support for single mothers.
- The relationship between domestic violence and abortion.
- Research into the possibility of screening for domestic violence in abortion settings, or other ways to assist women experiencing violence. Continuing support and intervention programs are urgently required for these women.
- The development of broad strategies that will help to improve the quality of relationships.
- Investigation of the impact of depression on women's abortion decisions.
- Research into the choice and effect of abortion or birth after sexual assault.
- High-quality prospective longitudinal studies to examine the effects of abortion on women's physical and psychological well-being in Australia.
- Investigation of the phenomenon of increased death rates after abortion.
- High-quality research regarding the relationship of an early abortion of a woman's first pregnancy with the risk of breast cancer.
- Studies to identify women at increased risk of psychological harm from abortion who could be identified and given more attention in counselling and support.
- Research into the effects of abortion on women with mental illness.
- Research which conceptualises and examines abortion as a loss even when chosen by the woman.
- Research which informs the practice of pregnancy options counselling.

11. Conclusion

This paper is an evaluation of recent international research on the impact of abortion on women. What has emerged is the myriad factors which influence a woman's decision-making in pregnancy and the potential physical and psychological effects, in both the short- and long-term, of abortion on women.

Further research is required to better understand the pressures influencing women to decide to undergo termination of pregnancy, and how those pressures can be addressed and ameliorated.

For those concerned about women's well-being and freedom, the negative impacts of abortion on significant numbers of women underscores the need for public policy, structural and cultural changes to enable women to make informed decisions without undue external pressures.

Notwithstanding the methodological difficulties inherent in abortion research and the controversies involved, comprehensive consideration of the available evidence also provides an important

opportunity to develop creative public policy and community initiatives which address the real needs of women.

References

1 Bankole A, Singh S and Taylor H, Reasons why women have induced abortions: evidence from 27 countries. *International Family Planning Perspectives* 1998;24(3)

2 Söderberg H, Andersson C, Janzon L and Sjöberg NO, Socio-demographic characteristics of women requesting induced abortion. A cross-sectional study from the Municipality of Malmö, Sweden. *Acta Obstet Gynecol Scand* 1993;72:365-368.

3 Adelson P, Frommer M and Weisberg E. A survey of women seeking termination of pregnancy in New South Wales. *Medical Journal of Australia* 1995;163:419-422.

4 Smith AMA *et al*. Sex in Australia: Reproductive experiences and reproductive health among a representative sample of women. *Australian and New Zealand Journal of Public Health* 2003;27(2):204-9.

5 Parliament of South Australia. 33rd Annual Report of the Committee Appointed to Examine and Report on Abortions Notified in South Australia for the Year 2002. Published 2004.

6 Allanson S and Astbury J. The abortion decision: reasons and ambivalence. *J Psychosom Obstet Gynecol* 1995;16:123-136.

7 Pulley L, Klerman LV, Tang H and Baker BA. The extent of pregnancy mistiming and its association with maternal characteristics and behaviours and pregnancy outcomes. *Perspectives on Sexual and Reproductive Health* 2002;34(4):206-211.

8 Barrett G and Wellings K. What is a 'planned' pregnancy? empirical data from a British study. *Social Science and Medicine* 2002;55:545-557.

9 Klerman LV. The intendedness of pregnancy: a concept in transition. *Maternal and Child Health Journal* 2000;4(3):155-162.

10 Sable MR and Libbus MK. Pregnancy intention and pregnancy happiness: are they different? *Maternal and Child Health Journal* 4(3):2000.

11 Williams L, Piccinino L, Abma J and Arguillas F. Pregnancy wantedness: attitude stability over time. *Social Biology* 2001;48(3):212-233.

12 Petersen R *et al*. How contraceptive use patterns differ by pregnancy intention: implications for counselling. *Women's Health Issues* Sept/Oct 2001;11(5):427-435

13 Törnbom M *et al*. Decision-making about unwanted pregnancy. *Acta Obstetrica et Gynecologica Scandinavica* 1999;78:636-41.

14 Alex L and Hammarström A. Women's experiences in connection with induced abortion – a feminist perspective. *Scand J Caring Sci* 2004;18:160-8.

15 Allanson S and Astbury J. The abortion decision: fantasy processes. *J Psychosom Obstet Gynecol* 1996;17:158-167.

16 Singer J. Options counselling: techniques for caring for women with unintended pregnancies. *Journal of Midwifery and Women's Health* 2004;49:235-242

17 Poole VL *et al*. Changes in intendedness during pregnancy in a high-risk multiparous population. *Maternal and Child Health Journal* 2000;4(3):179-182.

18 Kero A, Hogberg U, Jacobsson L and Lalos A (2001). Legal abortion: a painful necessity. *Social Science and Medicine* 53:1481-1490.

19 Söderberg H *et al* (1997). Continued pregnancy among abortion applicants: A study of women having a change of mind. *Acta Obstet Gynecol Scand* 1997;76:942-947.

20 Söderberg H, Janzon L and Sjöberg NO (1998). Emotional distress following induced abortion. A study of its

incidence and determinants among abortees in Malmö, Sweden. *European Journal of Obstetrics and Gynecology and Reproductive Biology* 79:173-8.

21 Söderberg H *et al*. Selection bias in a study on how women experienced induced abortion. *European Journal of Obstetrics and Gynecology* 1998;77:67-70.

22 Major B *et al*. Psychological responses of women after first-trimester abortion. *Archives of General Psychiatry* 2000;57:777-784.

23 Husfeldt C *et al*. Ambivalence among women applying for abortion. *Acta Obstet Gynecol Scand* 1995;74:813-817.

24 Korenromp MJ *et al*. Long-term psychological consequences of pregnancy termination for fetal abnormality: a cross-sectional study. *Prenatal Diagnosis* 2005;25:253-260.

25 Kersting A *et al*. Trauma and grief 2-7 years after termination of pregnancy because of fetal anomalies – a pilot study. *Journal of Psychosomatic Obstetrics and Gynecology* March 2005;26(1):9-15.

26 Coleman PK, Reardon DC, Strahan T and Cougle JR. The psychology of abortion: a review and suggestions for future research. *Psychology and Health* 2005;20(2):237-271.

27 Kero A, Högberg U and Lalos A. Wellbeing and mental growth – long-term effects of legal abortion. *Social Science and Medicine* 2004;58:2559-2569.

28 Coleman PK and Nelson ES. The quality of abortion decisions and college students' reports of post-abortion emotional sequelae and abortion attitudes. *J Social and Clinical Psychology* 1998;17(4):425-442.

29 Skjeldestad FE. When pregnant – why induced abortion? *Scand J Soc Med* 1994;22(1):68-73.

30 Kero A and Lalos A. Ambivalence – a logical response to legal abortion: a prospective study among women and men. *Journal of Psychosomatic Obstetrics and Gynecology* 2000;21(2):81-91.

31 White-Van Mourik MCA, Connor JM and Ferguson-Smith MA. The psychosocial sequelae of a second-trimester termination of pregnancy for fetal abnormality. *Prenatal diagnosis* 1992;12:189-204.

32 Larsson M, Aneblom G, Odlind V and Tyden T. Reasons for pregnancy termination, contraceptive habits and contraceptive failure among Swedish women requesting an early pregnancy termination. *Acta Obstet Gynecol Scand* 2002;81:64-71.

33 Sihvo A, Bajos N *et al*. Women's life cycle and abortion decision in unintended pregnancies. *Journal of Epidemiological and Community Health* 2003;57:601-605.

34 Patricia Karvelas and Cath Hart. "Age emerges as abortion factor," *The Australian*, 10 Nov 04.

35 St John H, Critchley H and Glasier A. Can we identify women at risk of more than one termination of pregnancy? *Contraception* 2005;71:31-34.

36 Fisher WA *et al*. Characteristics of women undergoing repeat induced abortion. *Canadian Medical Journal* 2005;172(5):637-41, March 1.

37 Phillips S. Violence and abortions: what's a doctor to do? *Canadian Medical Journal* 2005;172(5):653-4, March 1.

38 Skjeldestad FE, Borgan JK, Daltveit AK and Nymoen EH. Induced abortion: effects of marital status, age and parity on choice of pregnancy termination. *Acta Obstet Gynecol Scand* 1994;73:255-260.

39 Glander S, Moore M, Michielutte R and Parsons L. The prevalence of domestic violence among women seeking abortion. *Obstetrics and Gynecology* 1998;91:1002-6.

40 Taft AJ, Watson LF and Lee C. Violence against young Australian women and association with reproductive events: a cross-sectional analysis of a national population sample. *Aust N Z Jnl Public Health* 2004;28(4):324-9.

41 Hedin LW and Janson PO. Domestic violence during pregnancy: the prevalence of physical injuries, substance use, abortions and miscarriages. *Acta Obstet Gynecol Scand* 2000;79:625-630.

42 Keeling J, Birth L, Green P. Pregnancy counselling clinic: a questionnaire survey of intimate partner abuse. *Journal of Family Planning and Reproductive Health Care 20*04;30(3):165-8.

43 Leung TW *et al*. A comparison of the prevalence of domestic violence between patients seeking termination of pregnancy and other general gynecology patients. *International Journal of Gynecology and Obstetrics* 2002;77:47-54.

44 Webster J, Chandler J and Battistutta D. Pregnancy outcomes and health care use: effects of abuse. *Am J Obstet Gynecol* Feb 1996;174(2):760-7.

45 Woo J, Fine P and Goetzl L. Abortion disclosure and the association with domestic violence. *Obstetrics and Gynecology* 2005;105:1329-34.

46 Wiebe ER and Janssen P. Universal screening for domestic violence in abortion. *Women's Health Issues* Sept/Oct 2001;11(5):436-441.

47 Saltzmann LE *et al*. Physical abuse around the time of pregnancy: an examination of the prevalence and risk factors in 16 states. *Maternal and Child Health Journal* March 2003;7(1):31-43

48 Webster J, Sweett S and Stolz TA. Domestic violence in pregnancy: a prevalence study. *Medical Journal of Australia* 1994;161:466-470.

49 Walsh D and Weeks W. *What a Smile Can Hide.* A report prepared for *The Support and Safety Survey: The social, economic and safety needs of women during pregnancy*, Women's Social Support Services, Royal Women's Hospital, Brisbane, August 2004.

50 Taft A. Violence against women in pregnancy and after childbirth: Current knowledge and issues in health care responses. *Australian Domestic and Family Violence Clearinghouse Issues Paper 6*, 2002.

51 Kroelinger CD and Oths KS. Partner support and pregnancy wantedness. *Birth* 2000;27(2):112-119.

52 Stanford JB *et al*. Defining dimensions of pregnancy intendedness. *Maternal and Child Health Journal* 2000;4(3):183-189.

53 Evans A. The influence of significant others on Australian teenagers' decisions about pregnancy resolution. *Family Planning Perspectives* 2001;33(5):224-230.

54 Bianchi-Demicheli F *et al*. Contraceptive practice before and after termination of pregnancy: a prospective study. *Contraception* 2003;76:107-113.

55 Bonari L *et al*. Perinatal risks of untreated depression during pregnancy. *Can J Psychiatry* 2004;49(11):726-735.

56 Marcus SM, Flynn HA, Blow FC and Barry KL. Depressive symptoms among pregnant women screened in obstetric settings. *Journal of Women's Health* 2003;12(4):373-380.

57 Evans J *et al*. Cohort study of depressed mood during pregnancy and after childbirth. *BMJ* 323;257-260 (4 August 2001)

58 Burgoine GA *et al*. Comparison of perinatal grief after dilation and evacuation or labor induction in second trimester terminations for fetal anomalies. *American Journal of Obstetrics and Gynecology* 2005;192(6):1928-1932.

59 Ross LE, Sellers EM, Gilbert Evans SE, Romach MK. Mood changes during pregnancy and the postpartum period: development of a biopsychosocial model. *Acta Psychiatr Scand* 2004;109:457-466.

60 http://www.beyondblue.org.au/index.aspx?link_id=4.65

61 Press, N. & Browner, C. H.. Why women say yes to prenatal diagnosis. *Social Science and Medicine,* 1997;45(7), 979–989.

62 Markens, S., Browner, C. & Press, N. 'Because of the risks': How us pregnant women account for refusing prenatal screening. *Social Science and Medicine*, *1999;49*, 359–369.

63 Abramsky, L., Hall, S., Levitan, J., & Marteau, T. M. What parents are told after prenatal diagnosis of a sex chromosome abnormality: Interview and questionnaire study. *British Medical Journal*, 2001;322:24 February, pp. 463–466.

64 Dunne, C. & Warren, C. Lethal autonomy: The malfunction of the informed consent mechanism within the context of prenatal diagnosis of genetic variants. *Issues in Law & Medicine*, 1998;*14*(2), 165–202.

65 Brookes, A. Women's experience of routine prenatal ultrasound. *Healthsharing Women*, 1994;*5*(3&4). 1–5.

66 Hunfeld JA, Wladimiroff JW, Passchier J. Pregnancy termination, perceived control, and perinatal grief. *Psychol Rep* Feb 1994;74(1):217-8.

67 Marteau T and Drake H. Attributions for disability: the influence of genetic screening. *Soc Sci Med* 1995;40(8):1127-1132.

68 Lippman, cited in Marteau T and Drake H. Attributions for disability: the influence of genetic screening. *Soc Sci Med* 1995;40(8):1127-1132.

69 De Visser RO and Smith AMA *et al*. Sex in Australia: Experiences of sexual coercion among a representative sample of adults. *Australian and New Zealand Journal of Public Health* 2003;27(2):204-9.

70 Reardon D, Makimaa J and Sobie A (eds). V*ictims and Victors: Speaking Out About their Pregnancies, Abortions and Children Resulting from Sexual Assault*. Acorn Books, 2000.

71 Sundari Ravindran TK and Balasubramanian P. "Yes" to abortion but "No" to sexual rights: the paradoxical reality of married women in rural Tamil Nadu, India. *Reproductive Health Matters* 2004;12(32):88-99.

72 National Health and Medical Research Council. *General Guidelines for Medical Practitioners on Providing Information to Patients*. Australian Government, Canberra, 2004, p11

73 Reardon DC *et al*. Deaths associated with pregnancy outcome: a record linkage study of low income women. *Southern Medical Journal* August 2002;95(8):834-841

74 Gissler M *et al*. Pregnancy-associated mortality after birth, spontaneous abortion, or induced abortion in Finland, 1987-2000. *American Journal of Obstetrics and Gynecology* 2004;190(2):422-7.

75 Gissler M, Hemminki E, Lönnqvist J. Suicides after pregnancy in Finland, 1987-94: register linkage study. *British Medical Journal* 1996;313:1431-4.

76 Strahan T. Incomplete or inaccurate reporting of information on 47 death certificates of U.S. women who died from confirmed or suspected legal abortion: 1972-1992. *Research Bulletin of the Association for Interdisciplinary Research in Values and Social Change.* 2003;17(4)

77 Horon IL. Underreporting of maternal deaths on death certificates and the magnitude of the problem of maternal mortality. *American Journal of Public Health* 2005;95(3):478-82.

78 Gissler M, Kaupplia R, Merilainen J *et al*. Pregnancy-associated deaths in Finland 1987-1994 – definition problems and benefits of record linkage. Acta Obstet Gynecol Scand 1997;76:91-97

79 Shadigian EM, Bauer ST. Pregnancy-associated death: a qualitative systematic review of homicide and suicide. *Obstetrical and Gynecological Survey* March 2005;60(3):183-190.

80 Zhou W *et al*. Induced abortion and subsequent pregnancy duration. *Obstetrics and Gynecology* 1999;94(6):948-53.

81 Ancel PY *et al*. History of induced abortion as a risk factor for preterm birth in European countries: results of the EUROPOP study. *Human Reproduction* 2004;19(3):734-40.

82 Ekwo EE, Gosselink CA, Moawad A. Previous pregnancy outcomes and subsequent risk of preterm rupture of amniotic sac membranes. *Br J Obstet Gynaecol* 1993;100(6):536-41.

83 Moreau C *et al*. Previous induced abortions and the risk of very preterm delivery: results of the EPIPAGE study. *BJOG* 2005;112(4):430-7.

84 Martius JA, Steck T, Oehler MK, Wulf KH. Risk factors associated with preterm (<37+0 weeks) and early preterm birth (<32+0 weeks): univariate and multivariate analysis of 106 345 singleton births from the 1994 statewide perinatal survey of Bavaria. *Eur J Obstet Gynecol Reprod Biol* 1998;80(2):183-9.

85 Henriet L and Kaminski M. Impact of induced abortions on subsequent pregnancy outcome: the 1995 French national perinatal survey. *BJOG* 2001;108(10):1036-42.

86 Wallach EE. Fertility after contraception or abortion. *Fertility and Sterility* 1990;54(4):559-573.

87 Smith CD *et al*. Genital infection and termination of pregnancy: are patients still at risk? *J Family Planning and Reproductive Health Care* 2001;27(2):81-84.

88 La Montagne DS *et al*. Management of genital chlamydial infections at termination of pregnancy services in England and Wales: where are we now? *BJOG* December 2004, 111:1408-1412.

89 Moon HS *et al*. Iatrogenic secondary infertility caused by residual intrauterine fetal bone after midtrimester abortion. *American Journal of Obstetrics and Gynecology* February 1997;176(2):369-370.

90 Zhou W and Olsen J. Are complications after an induced abortion associated with reproductive failures in a subsequent pregnancy? *Acta Obstet Gynecol Scand* 2003;82:177-181.

91 Pridmore BR and Chambers DG. Uterine perforation during surgical abortion: a review of diagnosis, management and prevention. *Aust N Z J Obstet Gynaecol* 1999;39(3):349-53.

92 Ananth CV, Smulian JC and Vintzileos AM. The association of placenta previa with history of cesarean delivery and abortion: a metaanalysis. *Am J Obstet Gynecol* 1997;77(5):1071-8.

93 Faiz AS and Ananth CV. Etiology and risk factors for placenta previa: an overview and meta-analysis of observational studies. *J Matern Fetal Neonatal Med* 2003;March;13(3):175-90.

94 Taylor VM, Kramer MD, Vaughan TL and Peacock S. Placental previa in relation to induced and spontaneous abortion: a population-based study. *Obstet Gynecol* July 1993;82(1):88-91.

95 Tuzović L *et al*. Obstetric risk factors associated with placenta previa development: case-control study. *Clinical Sciences* 2003;44(6):728-733.

96 Johnson LG, Mueller BA and Daling JR. The relationship of placenta previa and history of induced abortion. *International Journal of Gynecology and Obstetrics* 2003;81:191-198.

97 Infante-Rivard C and Gauthier R (1996). Induced abortion as a risk factor for subsequent fetal loss. Epidemiology 7:540-542.

98 Sun Y *et al*. Induced abortion and risk of subsequent miscarriage. *Int J Epidemiology* 2003;32(3):449-54.

99 Zhou W, Sørensen HT and Olsen J. Induced abortion and low birthweight in the following pregnancy. *International Journal of Epidemiology* 2000;29:100-106.

100 Dumitrescu RG and Cotarla I. Understanding breast cancer risk – where do we stand in 2005? *J Cell Mol Med* 2005 Jan-Mar;9(1):208-21.

101 Veronesi U *et al*. Breast cancer. *Lancet* 2005 May;365(9472):1727-41.

102 Verlinden I *et al*. Parity-induced changes in global gene expression in the human mammary gland. *Eur J Cancer Prev*. 2005 Apr;14(2):129-37.

103 Ye Z *et al*. Breast cancer in relation to induced abortions in a cohort of Chinese women. *British Journal of Cancer* 2002;87:977-981.

104 Lash TL and Fink AK. Null association between pregnancy termination and breast cancer in a registry-based study of parous women. *Int J Cancer* 2004;110:443-448.

105 Brind J, Chinchilli VM, Severs WB and Sunny-Long J. Induced abortion as an independent risk factor for breast cancer: a comprehensive review and meta-analysis. *Jnl of Epidemiology and Community Health* 1996;50:481-96.

106 Daling JR, Malone KE, Voigt LF, White E and Weiss NS. Risk of breast cancer among young women: relationship to induced abortion. *Jnl Nat Cancer Institute* 1994;86(21):1584-92.

107 Daling JR *et al*. Risk of breast cancer among white women following induced abortion. *Am J Epidemiol* 1996 Aug 15;144(4):373-80

108 Collaborative Group of Hormonal Factors in Breast Cancer. Breast cancer and abortion: collaborative reanalysis of data from 53 epidemiological studies, including 83,000 women with breast cancer from 16 countries. *Lancet* 2004;363:1007-16.

109 Lindefors-Harris B-M, Eklund G, Adami H-O, Meirik O. Response bias in a case-control study: analysis utilizing comparative data concerning legal abortions from two independent Swedish studies. *Am J Epidemiol* 1991;134:1003-8

110 Meirik O, Adami H-O, Eklund G. Letter re: Relation between induced abortion and breast cancer. *J Epidemiol Community Health* 1998;52:209-12

111 Chan A and Keane RJ. Prevalence of induced abortion in a reproductive lifetime. *American Journal of Epidemiology* March 1, 2004;159(5):475-80.

112 Tang MC, Weiss NS, Daling JR and Malone KE. Case-control differences in the reliability of reporting a history of induced abortion. *American Journal of Epidemiology* June 2000;15;151(12):1139-43

113 Jagannathan R. Relying on surveys to understand abortion behaviour: some cautionary evidence. *Am J Public Health* 2001;91(11):1825-1831.

114 Udry JR *et al*. A medical record linkage analysis of abortion underreporting. *Family Planning Perspectives* 1996;28(5):228-231.

115 Pregnancy Outcome Unit. *Pregnancy Outcome in South Australia 2002*. Dept Human Services, November 2003, p45

116 Rue VM, Coleman PK, Rue JJ and Reardon DC. Induced abortion and traumatic stress: a preliminary comparison of American and Russian women. *Medical Science Monitor* 2004;10(10):SR5-16.

117 Reardon DC and Cougle JR. Depression and unintended pregnancy in the National Longitudinal Survey of Youth: a cohort study. *British Medical Journal* 2002;324:151-2.

118 Russo N, Denious JE. Violence in the lives of women having abortions: Implications for policy and practice. *Professional Psychology Research and Practice*, 2001; 32:142-150.

119 Reardon D, Study fails to address our previous findings and subject to misleading interpretations, *British Medical Journal Rapid Responses*, 1 November 2005.

120 Cougle J, Reardon DC and Coleman PK. Depression associated with childbirth: a long-term analysis of the NLSY cohort. *Medical Science Monitor* 2003;9:CR105-112.

121 Harlow BL *et al*. Early life menstrual characteristics and pregnancy experiences among women with and without major depression: the Harvard study of moods and cycles. *Journal of Affective Disorders* 2004;79:167-76

122 Bianchi-Demicheli F *et al*. Termination of pregnancy and women's sexuality. *Gynecol Obstet Invest* 2002;53(1):48-53.

123 Cougle JR, Reardon DC and Coleman PK. Generalized anxiety following unintended pregnancies resolved through childbirth and abortion: a cohort study of the 1995 National Survey of Family Growth. *J Anxiety Disorders* 2005;19(1):137-42.

124 Fergusson D. M., Horwood L. J, and Ridder E. M. (2006), Abortion in young women and subsequent mental health, Journal of Child Psychology and Psychiatry, 47(1):16-24.

125 Broen AN *et al*. Psychological impact on women of miscarriage versus induced abortion: a 2-year follow-up study. *Psychosomatic Medicine* 2004;66:265-271.

126 Coleman PK, Reardon DC, Rue V and Cougle J. State-funded abortions vs deliveries: a comparison of outpatient mental health claims over four years. *American Journal of Orthopsychiatry* 2002;72:141-152

127 Reardon DC *et al*. Psychiatric admissions of low-income women following abortion and childbirth. *Canadian Medical Association Journal* 2003;168(10):1253—6.

128 Gilchrist AC *et al*. Termination of pregnancy and psychiatric morbidity. *British Journal of Psychiatry* 1995;167:243-8.

129 Tewari SK *et al*. Understanding factors influencing request for a repeat termination of pregnancy. *Health Bull (Edinb)* May 2001;59(3):193-7.

130 Coleman PK. Induced abortion and increased risk of substance abuse: a review of the evidence. *Current Women's Health Review* 2005;1(1):21-34.

131 Coleman PK, Reardon DC, Rue VM and Cougle JR. A history of induced abortion in relation to substance use during subsequent pregnancies carried to term. *American Journal of Obstetrics and Gynecology* 2002;187:1673-8.

132 Reardon DC, Coleman PK and Cougle JR. Substance use associated with unintended pregnancy outcomes in the National Longitudinal Survey of Youth. *American Journal of Drug and Alcohol Abuse* 2004 May;30(2):369-83.

133 Coleman PK, Reardon DC and Cougle JR. Substance use among pregnant women in the context of previous reproductive loss and desire for current pregnancy. *British Journal of Health Psychology* 2005;10:255-268.

134 Hess RF. Dimensions of women's long-term postabortion experience. *MCN* 2004;29(3):193-198.

135 Kolker A and Burke BM. Grieving the wanted child: ramifications of abortion after prenatal diagnosis of abnormality. *Health Care Women Int* 1993;14(6):513-26.

136 Davies V *et al*. Psychological outcome in women undergoing termination of pregnancy for ultrasound-detected fetal anomaly in the first and second trimesters: a pilot study. *Ultrasound Obstet Gynecol* 2005;25:389-392.

137 Elder SH and Laurence KM. The impact of supportive intervention after second trimester termination of pregnancy for fetal abnormality. *Prenatal Diagnosis* 1991;11:47-54.

138 Sandelowski M and Barroso J. The travesty of choosing after positive prenatal diagnosis. *JOGNN* 34:307-318, May/June 2005.

139 Kersting A *et al*. Grief after termination of pregnancy due to fetal malformation. *Journal of Pyschosomatic Obstetrics and Gynecology* June 2004;25(2):163-169.

140 Zeanah C *et al*. Do women grieve after terminating pregnancies because of fetal anomalies? a controlled investigation. *Obstetrics and Gynecology* 1993;82:270-5.

141 Salvesen KA *et al*. Comparison of long-term psychological responses of women after pregnancy termination due to fetal anomalies and after perinatal loss. *Ultrasound Obstet Gynecol* Feb 1997;9(2):80-5.

142 Leithner K *et al*. Affective state of women following a prenatal diagnosis: predictors of a negative psychological outcome. *Ultrasound in Obstetrics and Gynecology* March 2004;23(3):240-246

143 Bianchi-Demicheli F, Lüdicke D and Chardonnens D. Imaginary pregnancy 10 years after abortion and sterilization in a menopausal woman: a case report. *Maturitas: The European Menopause Journal* 2004; 48:479-481.

144 Tankard Reist, M. *Giving Sorrow Words: Women's stories of grief after abortion*. Duffy & Snellgrove, Sydney, 2000.

145 Butler C. Late psychological sequelae of abortion: questions from a primary care perspective. *Journal of Family Practice October* 1996;43(4):396-402.

146 Brockington I. Post-abortion psychosis. *Archives of Women's Mental Health* May 2005;8(1):53-4.

147 Breitbart V. Counselling for medical abortion. *American Journal of Obstetrics and Gynecology* 2000;183(2) Supplement:S26-S33

148 Hedley A *et al*. Accounting for time: insights from a life-table analysis of the efficacy of medical abortion. *Am J Obstet Gynecol* Dec 2004;191(6):1928-33.

149 Goldberg AB, Carusi DA and Meckstroth KR. Misoprostol in gynecology, *Current Women's Health Reports* 2003;3:475-483.

150 Say L, Kulier R, Gulmezoglu M and Campana A. Medical versus surgical methods for first trimester termination of pregnancy. *Cochrane Database System Review* Jan 25 2005;(1):CD003037.

151 Autry AM, Hayes EC, Jacobson GF and Kirby RS. A comparison of medical induction and dilation and evacuation for second-trimester abortion. *Am J Obstet Gynecol* 2001;187:393-7.

152 Slade P, Heke S, Fletcher J and Stewart P. A comparison of medical and surgical termination of pregnancy: choice, emotional impact and satisfaction with care. *British Journal of Obstetrics and Gynaecology* 1998;105:1288-1295.

153 Slade P, Heke S, Fletcher J and Stewart P. Termination of pregnancy: patients' perceptions of care. *The Journal of Family Planning and Reproductive Health Care* 2001;27(2):72-77.

154 'Doctor charged with manslaughter', *Courier-Mail*, 10th August 2005.

155 Westhoff C, Picardo L and Morrow E. Quality of life following early medical or surgical abortion. *Contraception* 2003;67:41-47.

156 Major B, Zubek JM, Cooper ML, Cozzarelli C and Richards C. Mixed messages: implications of social conflict and social support within close relationships for adjustment to a stressful life event. *Journal of Personality and Social Psychology* 1997;72:1349-1363

157 Cozzarelli C, Sumer N and Major B. Mental models of attachment and coping with abortion. *Journal of Personality and Social Psychology*, 1998;74:453-467.

158 Russo N and Zierk K. Abortion, childbearing, and women's well-being. *Professional Psychology Research and Practice*, August 1992;23(4):269-280.

159 Hope LT, Wilder EI and Watt TT. The relationships among adolescent pregnancy, pregnancy resolution, and juvenile delinquency. *Sociological Quarterly* Fall 2003;44(4):555-576.

160 Wrennick AW, Schneider KM and Monga M. The effect of parenthood on perceived quality of life in teens. *American Journal of Obstetrics and Gynecology* 2005;192:1465-8.

161 Viguera AC *et al*. Reproductive decisions by women with bipolar disorder after prepregnancy psychiatric consultation. *American Journal of Pyschiatry* 2002;159:2102-2104.

162 Thomas T, Tori CD and Scheidt SD. Psychosocial characteristics of psychiatric inpatients with reproductive losses. *Journal of Health Care for the Poor and Underserved* 1996;7(1):15-23

163 Thomas T and Tori CD. Sequelae of abortion and relinquishment of child custody among women with major psychiatric disorders. *Psychological Reports* 1999;84:773-790.

164 Beutel M, Deckhardt R, von Rad M and Werner H. Grief and depression after miscarriage: their separation, antecedents, and course. *Psychosomatic Medicine* 1995;67:517-26.

165 Neugebauer R, Kline J, Shrout P *et al*. Major depressive disorder in the first six months after miscarriage. *JAMA* 1997;277:383-8.

166 Neugebauer R, Kline J, O'Connor P *et al*. Determinants of depressive symptoms in the early weeks after miscarriage. *Am J Public Health* 1992;82:1332-9.

167 Adolfsson A, Larsson PG, Wijma B and Berterö C. Guilt and emptiness: women's experiences of miscarriage. *Health Care for Women International* 2004;25(6):543-60.

168 Athey J and Spielvogel AM. Risk factors and interventions for psychological sequelae in women after miscarriage. *Prim Care Update Ob/Gyns* 2000;7:64-69.

169 Schmeige S and Russo NF, Depression and unwanted pregnancy: longitudinal cohort study, *British Medical Journal*, doi:10.1136/bmj.38623.532384.55 (published 28 October 2005)

A detailed and timely review of the research for anyone concerned about the impact of abortion on women.

Why do women undergo abortion?

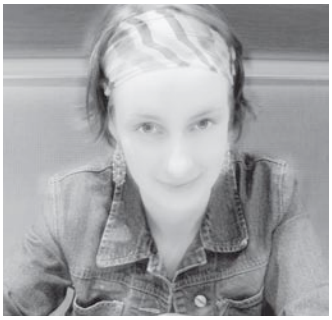
What are the factors that influence women to have abortions?

What are the physical and psychological health risks of abortion for women?

This paper is a comprehensive evaluation of the international literature on abortion and its consequences for women's health and wellbeing.

"An excellent, highly informative and also disturbing – but very necessary – paper"

– Dr Renate Klein, Associate Professor,
Women's Studies, Deakin University.



Selena Ewing is a Research Officer at Southern Cross Bioethics Institute, Adelaide and a Founding Director of Women's Forum Australia.