

Psychological Effects of Abortion on Women: A Review of the Literature

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About the author

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Dr Fine-Davis is a member of the Board of the Coombe Women and Infants University Hospital and the International Editorial Board of the *European Journal of Women's Studies*.

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Margret Fine-Davis
December 2007

Foreword

I am pleased to present this review of research on the psychological effects of abortion. Our aim in commissioning this study was to give a sense of the nature and type of research that has been carried out in this area and, if possible, to draw conclusions to inform the work of the Crisis Pregnancy Agency and the services it funds.

The Agency is mandated to provide support to women after crisis pregnancy, including the 15% of women experiencing crisis pregnancy who have an abortion. The Agency is achieving this through the development and improvement of crisis pregnancy counselling services. Our work in this area has been informed by Agency-commissioned research examining supports required by women and their families when they choose to parent following a crisis pregnancy and when they choose to place a baby for adoption. The current review of abortion literature will complement this body of research, which informs the development of supports for women in a crisis pregnancy situation.

Knowledge about how a woman may respond to making a decision to have an abortion is an important part of a counsellor's work, and yet it can be difficult for service providers and women themselves to make sense of the sometimes seemingly contradictory findings on the effects of abortion. In order to standardise and assure the quality of care given to a woman in a crisis pregnancy situation, it is vital that clarity be brought to bear on this issue. In commissioning this review the Agency aimed to provide a clear overview of research conducted in this area, and to synthesise findings where possible.

The review provides a comprehensive analysis of the research that exists on this subject, the main findings and the methodological limitations that have been a feature of much of the research in this area. I commend the author, Dr Margret Fine-Davis, for engaging so comprehensively with a large body of work and producing a report that succinctly summarises the main issues and findings.

The methodological limitations in much of the literature mean that it is difficult to draw firm conclusions about the psychological effects of abortion - especially in the Irish context, where there is very little research. Even the most robust studies reviewed in this report have limitations in their study design; as a consequence external factors and influences could have affected the reliability of the findings. In spite of the limitations, broad consensus does exist within the literature on some issues. The first finding common to most studies and reviews is that for most women abortion has no serious lasting negative psychological effects. Some studies put the figure for the proportion of women likely to experience negative psychological effects at around 20%. Many studies were also able to identify common factors that seemed to pre-dispose women to negative psychological effects, although the studies differed in how they defined negative psychological effects, with some studies speaking of mild symptoms, such as anxiety, and others describing more serious mental health problems, such as depression.

The report suggests that women who have more negative responses following abortion tend to be those:

- who have limited or no partner or family support
- who have psychological problems before the pregnancy
- who feel coerced to have the abortion
- who have an abortion in the second trimester of pregnancy
- whose own religious beliefs or those of their social environment are disapproving of abortion
- live in a cultural context or have a religion that prohibits abortion
- terminate a wanted pregnancy due to foetal abnormalities or genetic reasons.

Since its establishment the Agency has worked to improve women's access to high-quality counselling and support services. As we progress this work, our focus is on quality, and standardising the care given to a woman during and after crisis pregnancy. The planned development of a self-assessment Quality Assurance Framework of provision of crisis pregnancy counselling and the accredited training programme to up-skill crisis pregnancy counsellors, which began in November 2007, are important elements of our strategy to enhance the quality of crisis pregnancy counselling services. The Agency is also in the process of developing a toolkit for the establishment and delivery of crisis pregnancy counselling services. The findings from this review will inform this work, by enabling us to ensure that all women are given the best information available on the psychological effects of abortion, by supporting counsellors to be mindful of the possible risk factors for negative outcomes and by enhancing referral processes, especially for women who may need specialised care.

Caroline Spillane,
Director,
Crisis Pregnancy Agency

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1.0 Introduction and scope of the review

1.1 Introduction

The psychological effects of abortion have been the subject of scientific investigation, as well as public debate internationally, for several decades and have generated a great deal of discussion, as well as some controversy. Given the importance of this matter for women and the significant public health implications resulting from it, it is an important issue upon which to focus attention from a health policy point of view.

1.2 Scope of review

While there is much literature on this topic going back quite a long way (e.g. Shusterman, 1976; Lemkau, 1988), we are focusing in this review on more recent literature. In general, we are limiting ourselves to peer-reviewed studies that have been published in the last 10 years - that is from 1996. The only exception to this is in relation to review articles, in which case we have included some that go back to the early 1990s. We are making this exception since review articles are particularly useful, as they have systematically reviewed many other studies and hence are particularly strong and reliable sources. Among the individual studies, we are paying particular attention to the latest studies, e.g. those carried out in the last five years, since it may be assumed that these have benefited from previous research and are taking the topic further.

The types of literature to be covered in this review include the following:

1. Reviews of literature concerning the psychological effects of abortion on women;
2. Individual studies concerning the psychological effects of abortion on women;
3. Reports and articles from professional associations and other bodies.

In the course of this review, we will also touch upon the contextual issues which bear upon the main issue. These relate to demographic factors and issues of support, including support of family, partner, etc.

1.3 Methodological approach

Our methodological approach in carrying out this review was to search the psychological and related literature, including psychiatric and nursing literature, to locate references concerning the psychological effects of abortion on women. We used the following Trinity College Library databases to locate peer-reviewed literature dating from the time periods noted above:

PsychLit
PsychArticles
PsychInfo
Psychology and Behavioural Sciences Collection
PubMed
Embase
Science Citation Index
Cinahl
Springer Link
UMI ProQuest Digital Dissertations

Relevant articles were located through PsychArticles, Psychology and Behavioural Sciences Collection and PsychInfo simultaneously. Search words used included: Psychology and Abortion, Psychological Effects of Abortion, Human Females and Abortion, Women and Abortion, Partners and Abortion. The databases yielded a large number of articles dating back to the 1960s and before. However, with rare exceptions, we have restricted ourselves to those dating from 1996, as noted above.

Search words used in the PubMed database were also Psychology and Abortion, Psychological Effects of Abortion, Human Females and Abortion, Women and Abortion, Partners and Abortion. Approximately 500 articles were located, but most of these predated the cut-off point of 1996 to the present. Using 'Psychology' as a principal search word also produced articles relating to a partner's experience of abortion.

The same search words were applied to a search of Embase. This yielded only 17 articles, none of which were relevant to our purposes. A search of Springerlink yielded 25 articles, of which 11 were relevant.

The same search words were applied to a search of the Science Citation Index, which yielded 51 results, approximately ten of which were useful.

UMI ProQuest Digital Dissertations was also very useful; many of the articles found here contained a full PDF version as well as brief summaries of dissertations.

1.4 Methodological issues

Before presenting an overview of the findings, it is important to point out that research in this area is prone to several methodological limitations. Numerous authors have prefaced their results by referring to these limitations.

Stotland (1997) points out that "psychiatric aspects of abortion have been limited by methodological problems such as the impossibility of randomly assigning women to study and control groups, resistance to follow-up, and confounding variables". He observes that a wide range of factors may impact on an unintended pregnancy and the decision to abort. These include: "Ongoing or past psychiatric illness, poverty, social chaos, youth and immaturity, abandonment issues, ongoing domestic responsibilities, rape and incest, domestic violence, religion, and contraceptive failure." He cites the risk factors for post-abortion psychosocial difficulties as being previous or concurrent psychiatric illness, coercion to abort, genetic or medical indications, lack of social supports, ambivalence and increasing length of gestation.

Thorp, Hartmann and Shadigian (2002) also refer to the methodological problems inherent in research on abortion and its effects. They echo Stotland's (1997) concern that such research cannot be carried out using experimental designs and random assignment to groups: "Abortion is an exposure that cannot be assigned to women by chance as part of an experimental design. Thus, investigators are deprived of the powerful tool of randomization to minimize bias in their findings." They point out that progress in research must therefore depend on well designed and executed observational studies.

Thorp et al. (2002) also point out that women who choose to have abortions often differ in many ways from those who do not. The former are likely to be younger, poorer, and less able to reliably use contraceptives. These authors further emphasise that “dissimilarities in socio-economic status, stress and access to health care and lifestyle may persist across time, and themselves be associated with adverse health events” (p. 68). This introduces risk of uncontrolled confounding of the results concerning the relationship between abortion and long-term outcomes.

Adler, David, Major, Roth, Russo and Wyatt (1992) point out that interpretations of results may be influenced by bias. For example, they point to a study by Fingerer (1973), who demonstrated that postdoctoral students undergoing psychoanalytic training were asked to predict responses of women following abortion. The responses predicted by the postdoctoral psychologists were significantly more negative than those actually reported by 324 women following their abortions. Thus the bias toward expecting negative responses is “inherent in a number of studies” (Adler et al., 1992, p.1197).

1.5 Overview of results

As noted above, this review of the literature covers three main types of literature:

- Reviews of the literature concerning psychological effects of abortion on women.
- Individual studies concerning psychological effects of abortion on women.
- Reports and articles from professional associations and other bodies.

We will present literature systematically under each of these three headings and then present a Discussion and Conclusions section, which will summarise and synthesise the key findings and main trends that have emerged in the recent literature.

1.6 Terminology

1.6.1 Abortion terminology

Throughout the report the term ‘abortion’ is used to describe a legally obtained, elective abortion (i.e. one that is sought by the woman concerned as the chosen response to her pregnancy). The terms ‘induced abortion’, ‘legal abortion’ and ‘elective abortion’ are used when quoting directly from the research. Definitions of these can be found in the ‘Glossary of key terms’ in Appendix 2.

1.6.2 Terminology related to the psychological effects of abortion

A variety of terms are used in the literature to denote that women did display some negative feelings following an abortion; for example: ‘negative psychological effects’, ‘psychiatric sequelae’, ‘emotional problems’, ‘negative psychological outcomes’, ‘mental health problems’, ‘adverse mental health effects’. The level of distress conveyed by these terms is not always made explicit in the literature; in some studies a negative health consequence could be anxiety, regret, guilt or avoiding thinking about the abortion; other studies define negative outcomes as serious mental health problems, such as self-harm, suicidal thoughts or depression. Some of the studies reviewed herein used standardised measures to define mental health outcomes and others relied on the respondents’ descriptions of how they felt and/or the interviewer’s interpretation of respondents’ comments. For these reasons care should be taken when assessing the findings of the studies under review.

1.7 Availability and prevalence of abortion

Before presenting research results, it may be useful to present some background data on the availability and prevalence of abortion in the countries in which the research was carried out.

Most of the research we have reviewed was carried out in the United States and the United Kingdom. Several studies were also reported from Scandinavia, i.e. Sweden, Norway and Denmark, as well as studies and reviews from Australia and New Zealand. A few studies were reported from Ireland, the Czech Republic and Russia.

Abortion has been legal in the United Kingdom (excluding Northern Ireland) since 1967. It has been estimated that one in five pregnancies in England and Wales are terminated (Zolse and Blacker, 1992, as cited in Psychological Society of Ireland, 1992). Most of these are by single women.

Abortion has been legal in the United States since 1973. About 1.5 million abortions are performed annually. Most women having abortions are single (Adler et al., 1970, as cited in Psychological Society of Ireland, 1992).

The Swedish abortion law of 1975 grants the woman the right to have an abortion on demand until the end of the eighteenth week of pregnancy. After the eighteenth week, abortion may only take place on "exceptional grounds" (Soderberg, Janzon and Sjoberg, 1998). The Norwegian law allows abortion within the first 12 weeks of pregnancy; this became an unconditional legal right in 1978 (Broen, Moum, Bodtker and Ekeberg, 2005).

The abortion rate in Sweden has remained relatively stable since 1975 at 17-21 per 1,000 women between the ages of 15-44. Most are in the age group 20-24, followed by those aged 25-29, 30-34, and then teenagers (Soderberg et al., 1998). In Norway, with a population of 4.6 million people, there are approximately 15,000 abortions per year and the rate is 15.6 per 1,000 women of childbearing age (see Figure 1).

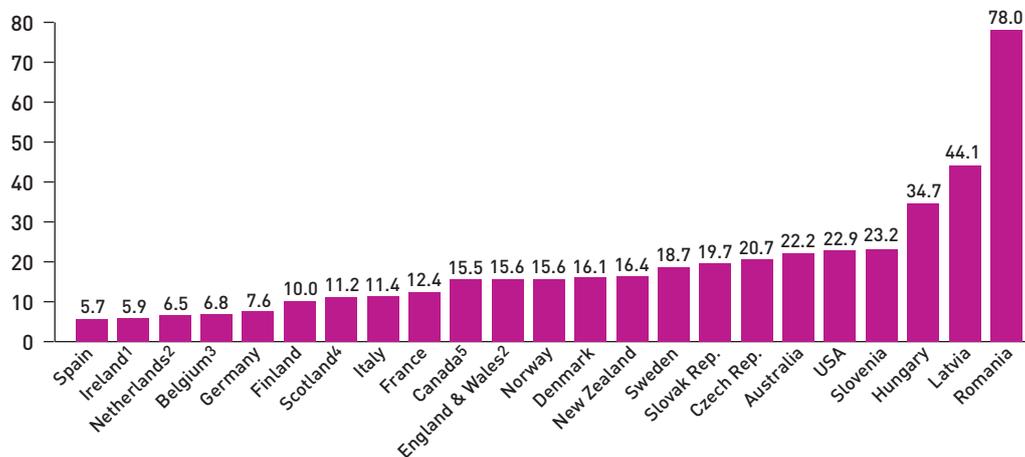
Abortion is not legally available in Ireland, except in highly circumscribed circumstances. There were approximately 4,900 abortions carried out on Irish women in England in 1996 (Henshaw, Singh and Haas, 1999; McGrath, O'Keeffe and Smith, 2005). More recent figures indicate that approximately 6,381 Irish women received abortions in the UK in 2000 (Layte, McGee, Quail, Rundle, Cousins, Donnelly, Mulcahy and Conroy, 2006). Layte et al. (2006) report that between 1980 and 2000 the number of Irish women who travelled to the UK increased from 3,320 to 6,381. According to the Irish Survey of Sexual Health and Relationships, 4% of Irish women reported having had an abortion (Ibid.). This is considered low by international standards.

More recent figures for Ireland indicate that the abortion rate may have gone down. Data for 2006 from the UK indicate that 5,042 abortions were conducted in the UK on Irish women. This is a decrease of 1,631 from a high of 6,673 in 2001 (UK Department of Health, 2006), reflecting an overall decrease of 24% in the number of abortions carried out in the UK on women giving Irish addresses. However, preliminary findings from new research being conducted by the Crisis Pregnancy Agency suggest that since 2006 some women from Ireland are travelling elsewhere within the EU for a termination. This may explain some of the difference between the 2001 and 2006 figures from the

UK. However, it is also likely that some of the reduction since 2001 may be due to the information campaigns and other work of the Crisis Pregnancy Agency to reduce crisis pregnancies in this country.

Figure 1 shows the abortion rates from 1995/6 for 23 countries, including those for which we have reviewed literature, as well as for other selected countries within the European Union, including selected Central and Eastern European countries which have since joined the EU. These data have been extracted from a larger set of results compiled by the Alan Guttmacher Foundation (Henshaw et al., 1999). More up-to-date data from 2003-2006 (Dutch Department of Health, 2006) are available for 18 countries and these are presented in Figure 2.

Figure 1: Abortion Rates per 1,000 Women by Country: 1995-1996*



* Rates calculated for women aged 15-44. Countries that are incomplete or of unknown completeness include France, Ireland, Italy, Spain and Romania.

¹ Based on Irish residents who obtained abortions in England.

² Residents only.

³ Including abortions obtained in the Netherlands.

⁴ Including abortions obtained in England and Wales.

⁵ Including abortions obtained in the United States.

Sources: Adapted from Henshaw, S., Sing, S., & Haas, T. (1999). *The incidence of abortion worldwide. International Family Planning Perspectives. (25) Supplement. S30-S38; The Guttmacher Institute* <http://www.guttmacher.org/pubs/journal/25s3099.html>

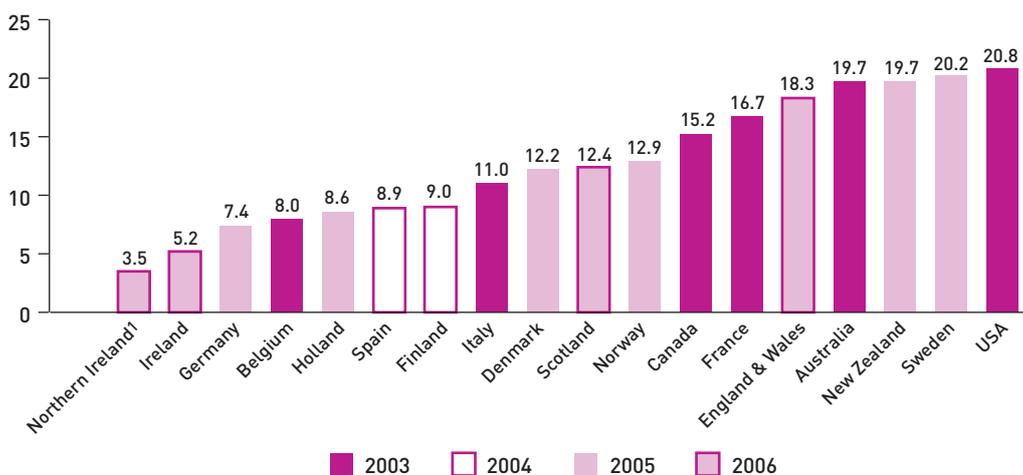
It may be seen in Figure 1 that the abortion rates in 1995/6 ranged from 5.7 per 1,000 women aged 15-44 in Spain and 5.9 Ireland to 78 per 1,000 women in Romania. The Irish rate is based on 4,900 abortions carried out in England on women giving Irish addresses. Other European countries with low rates included the Netherlands (6.5) and Belgium (6.8). The rate for England and Wales was 15.6 per 1,000. Rates for Scandinavian countries were very similar, ranging from 15.6 in Norway to 16.1 in Denmark and 18.7 in Sweden. The rate in Australia was slightly higher at 22.2, but lower in New Zealand at 16.4. The data for Central and Eastern European countries were much higher than those for the other countries. The highest rate was in Romania (78.0), but high rates were also evident for Latvia (44.1) and Hungary (34.7), while figures for the Slovak Republic (19.7) and the Czech Republic (20.7) were lower.

Taking into account a larger number of countries, the rate overall in Eastern Europe (including countries both within and outside the European Union) is 90 per 1,000 women and in Western Europe 11 per 1,000 women 15-44, according to Henshaw et al. (1999). These authors say that “Abortion rates are no lower overall in areas where abortion is generally restricted by law (and where many abortions are performed under unsafe conditions) than in areas where abortion is legally permitted.” They conclude, “Both developed and developing countries can have low abortion rates. Most countries, however, have moderate to high abortion rates, reflecting lower prevalence and effectiveness of contraceptive use.”

Figure 2, presenting more recent data for European countries as well as Australia, New Zealand, the U.S. and Canada, shows that the lowest rate is reported for women from Northern Ireland, at 3.5 per 1,000, with these abortions taking place in England or Wales. The next lowest figure is for Ireland at 5.2, showing a decrease from the figure of 5.9 evident in 1995/96. Other countries with lower rates include Germany (7.4), Belgium (8.0), Holland (8.6), Spain (8.9) and Finland (9.0). Among this group of countries, the highest rates are manifested in the U.S. (20.8), Sweden (20.2), Australia and New Zealand (19.7), England and Wales (18.3). Countries in the middle range include Italy (11.0), Denmark (12.2), Scotland (12.4), and Norway (12.9).

The availability of these two data sets enables us to compare 15 countries over the period 1995/96 to 2003/6. These comparative data are presented in Appendix Table 1. It may be seen that abortion rates decreased over time in half of the countries: Ireland, Germany, Italy, Canada, Norway, Denmark, Australia and the U.S. However, in the remaining countries the rates increased. This was true for Spain, the Netherlands, Belgium, France, England and Wales, Sweden and New Zealand.

Figure 2: Abortion Rates per 1,000 Women by Country 2003-2006*



* Note: Most rates calculated for women aged 15-44; some states may vary on age range
1 Figures are for women from NI having abortions in England & Wales only

Sources: Jaarrapportage 2005 van de Wet afbreking zwangerschap, Inspectie voor de Gexondheidszorg, Oktober 2006 (Dutch Department of Health); Alan Guttmacher Institute, USA; Department of Health, UK and NHS Scotland

2.0 Reviews of the literature

2.1 Introduction

Several reviews of the literature on the psychological effects of abortion on women have been carried out over the years (e.g. Shusterman, 1976; Lemkau, 1988). We shall restrict ourselves to those carried out from 1991 onwards. Even though 1996 is our cut-off year, we have decided to include three important reviews of the literature published in 1991, 1992 and 1994. In the few cases where we refer to studies published before 1991-92, it is to document particular studies that were cited in reviews.

2.2 Dagg (1991)

The first major review of the literature that we shall consider, and one which is widely cited in the literature itself, is that carried out by Dagg (1991), who is based in the Department of Psychiatry, Mount Sinai Hospital, Ontario, Canada. Dagg set out to review the literature on the psychological sequelae of therapeutic abortion, addressing both the effects on the woman if abortion was performed and the effects on the woman and child when abortion was denied. This method involved a Medline search, which resulted in 225 papers being reviewed. These were further selected by limiting papers reviewed to those reporting original research. Studies were also assessed in terms of whether or not they used control groups or objective, validated symptom measures.

Dagg found that adverse psychological sequelae occurred in only a minority of women and when such symptoms did occur they were usually the continuation of symptoms that had been experienced before the abortion itself. With regard to women who were denied access to abortion, studies have shown that up to 40% sought an abortion elsewhere. Relatively few mothers chose to have their child adopted, and in most cases the mothers raised the children themselves. However, long-term studies have shown that in up to 30% of cases, women denied an abortion continued to express negative or ambivalent feelings toward their child (Ibid, p. 584). Furthermore, children born following denied abortion were found to have "numerous, broadly based difficulties in social, interpersonal and occupational functions that last at least into early adulthood (Ibid., p. 578)." Dagg states that, "The final and most difficult question concerns the effects on the children themselves of being born after an abortion request is denied" (Ibid., p. 583). Among the studies he discusses is a classic study by Forssman and Thuwe (1966), who compared 120 children (up to age 21) who were born of unwanted pregnancies, with control subjects matched by age. These authors found that the study group had a more insecure childhood, more psychiatric care, and more childhood delinquency. While some of these differences may relate to the social circumstances of the two groups, many of the differences remained even when socio-economic status was controlled. However, it was found in a follow-up study that these negative effects diminished somewhat in adulthood, i.e., when the study children were between the ages of 21 and 35 (Forssman and Thuwe, 1988).

2.3 Adler, David, Major, Roth, Russo and Wyatt (1992) for the American Psychological Association

In 1989 the American Psychological Association appointed an expert panel whose role was to consider the best available scientific evidence on psychological responses to

abortion. The review article by Adler, David, Major, Roth, Russo and Wyatt (1992) reports the panel's conclusions. They reviewed "findings from only the best scientific studies that reflect current legal abortion practices in the United States and provide quantitative measures of psychological responses following abortion" (p. 1198). To be included in this review studies needed to meet three criteria: 1) they had to be empirical, that is involving collection of data subjected to statistical analysis, and using a definable sample; 2) they had to be of women who had had a legal abortion; and 3) the sample had to be of women in the United States. Adler et al. (Ibid.) point out that meta analyses could not be done successfully because there was not a large enough literature at that stage. The number of appropriate studies that would have been used for any given analysis would have been too small.

The authors concluded that "the best available studies on psychological responses following legal, non-restrictive abortion in the United States suggest that severe negative reactions are infrequent" (p. 1202). Studies that have included comparison groups of women who carry to term (Athanasίου, Oppel, Michaelson, Unger and Yager, 1973; Zabin, Hirsch and Emerson, 1989) suggest that the choice made by women themselves is the one that is most likely to be best for them (Adler et al., 1992). The panel provided evidence that abortion is not likely to be followed by severe psychological responses and that psychological aspects can best be understood within a framework of normal stress and coping, rather than a model of psychopathology. Nevertheless, the authors note that some women are more likely to suffer negative psychological consequences than others. They point out that these results are correlational and therefore cannot prove causality. The research has shown that younger and unmarried women without children are more likely than those who are older and who have already given birth to experience negative outcomes. So too are women whose cultural context or religion prohibits abortion. This is corroborated by an Irish review (Clare and Tyrrell, 1994), which also confirmed that the religious context was a determinant of psychological outcomes.

Other determinants of outcome include the timing of the termination. Earlier terminations (in the first trimester) are less likely to have negative outcomes than those carried out in the second trimester.

Interestingly, it was found that the stronger the relationship with the partner, as measured six weeks post-abortion, the greater the regret following an abortion. At a one-year follow-up a strong relationship with the male partner was also associated with regret among women who aborted (Robbins, 1984). This regret is likely to reflect the sadness not to have had the child with the loved partner. Such regret should not be confused with negative psychological outcomes due to lack of partner support.

While both the Dagg (1991) and the Adler et al. (1992) reviews had some different emphases their main conclusions concerning the psychological effects of abortion on women were quite similar. Dagg found that negative psychological effects occurred in only a minority of women and when such symptoms did occur they were usually the continuation of symptoms that had been experienced before the abortion itself. Adler et al. (1992) also found that abortion is not likely to be followed by severe psychological responses and that psychological aspects can best be understood within a framework of normal stress and coping, rather than a model of psychopathology. Nevertheless,

the authors noted that some women are more likely to suffer negative psychological consequences than others.

2.4 Clare and Tyrrell (1994)

Anthony Clare, Clinical Professor of Psychiatry at Trinity College, Dublin, and formerly Medical Director, St. Patrick's Hospital, Dublin, together with Janette Tyrrell, Psychiatric Registrar, St. Patrick's Hospital, carried out a literature review on the psychiatric aspects of abortion (Clare and Tyrrell, 1994) to "examine the evidence concerning the psychological consequences of abortion, the risk of suicide in pregnancy and the psychological consequences for the mother and the child in cases of refused abortion" (p. 92). Their article came at a time when Ireland was deeply concerned with and attempting to grapple with these issues at a national political, social and legal level. While the authors emphasised that they were not raising ethical issues, they pointed out that discussions concerning abortion frequently focus solely on physical survival and that "psychological health and the quality of human life are sometimes accorded lesser significance". On the basis of the large body of literature on the psychological aspects of abortion, they argued that factors such as the quality of a woman's life and that of her child need to be included in the equation (p. 93).

Following their review, Clare and Tyrrell concluded that the majority of research in this area indicates that the "psychological consequences of abortion are in the main mild and transient" (p. 97).

However, these authors also pointed to the fact that there is evidence that "women who have strong religious or cultural attitudes negative to abortion do experience high levels of psychological stress following abortion" (p. 92). They note that this is of particular relevance to the Irish situation, stating: "This consistent finding lends support to those - both pro- and anti-abortion - who argue that weakening religious taboos on abortion reduces guilt, distress and depression in those women who undergo abortion" (p. 97). The authors state that, "Given the circumstances that surround the abortions undergone by Irish women - the fact that they have to be surreptitious, have to be performed in a foreign land and are regularly categorised as murder by religious and political critics - it is highly probable that many Irish women do experience profound, persistent and disabling psychiatric symptomatology following the terminations of their pregnancies in the UK" (p. 97). However, the authors emphasise that this is likely to be due to the cultural context in which this takes place, involving negative attitudes to abortion in Ireland, rather than to guilt or remorse about the abortion *per se*. The stress of having to travel abroad in these circumstances is considered to compound the trauma experienced by Irish women in this situation.

Clare and Tyrrell (1994) further concluded from their review of the literature that "the risk of suicide is low in pregnancy and suicide is a rare outcome of refused abortion".

They are two of the few authors who have examined the effects of refused abortion on the woman and child, noting that, "There is evidence of psychological and social difficulties experienced by mothers of unwanted pregnancies forced to proceed to term and by many offspring of such unwanted pregnancies" (p. 92). This latter finding is one which has been reported in earlier literature by Forssman and Thuwe (1966, 1988),

Resnick (1970) and Dagg (1991). In particular, Clare and Tyrrell referred to findings by Hook (1963) who studied 294 Swedish women who had been refused abortion ten years previously. Hook found a high level of poor adjustment and psychological sequelae in those women. These findings have been further supported more recently by David, Dytrych and Matejcek (2003).

2.5 Bonevski and Adams (2001)

Subsequent to these three reviews, a review was carried out in 2001 by Bonevski and Adams (2001), based at the Newcastle Institute of Public Health in New South Wales, Australia. This review was based on a computer-based search of the Australian and international literature published between 1970 and 2000, using the databases Medline, Psychlit and CINAL. The authors indicate that the year 1970 was chosen as the starting point since abortion was legal in most countries by that year, resulting in a considerable body of research on this topic. The aim of their review was to identify studies which examined "the psychological consequences of termination of pregnancy". The keywords included: "abortion; abortion, induced; abortion, legal; abortion, eugenic; abortion, therapeutic; pregnancy reduction, multifetal; stress, psychological; psychological, coping; adaptation, psychological; and psychological outcome". The search was limited to the English language and to human research.

The review included 72 articles. In addition, the authors identified 27 reviews of the literature. These 99 publications are presented by the authors in summary form with key information concerning the study parameters and the key findings.

The authors observe that the quality of the studies varied considerably in relation to sample size, sample selection and validity of measures, among other things. However, they believe that the large number of articles identified and the consistency of the conclusions in those articles suggests that the review outcomes are valid. On the basis of their review these authors observed a number of consistent trends:

- There was "overwhelming indication that legal and voluntary termination of pregnancy rarely causes immediate or lasting negative psychological consequences in healthy women".
- The factors that do seem to predict negative psychological outcomes include: "certain personality traits including impulsivity, attachment, low self-esteem and dependency, late gestation abortion, prior psychiatric illness, and conflict with religious or cultural beliefs."
- The research overall suggests that "greater partner or parental support improves the psychological outcomes for the woman and that having an abortion results in few negative outcomes in the relationship".
- Reviews of literature specifically concerning the effects on adolescents conclude that "the effects on younger women are mild and transitory and that other confounding factors may influence negative outcome".

In addition, they had several specific observations to make concerning various aspects. These are summarised below under sub-headings.

Negative psychological outcomes

The overwhelming tendency from the literature reviewed by Bonevski and Adams was that abortion rarely causes immediate or lasting negative psychological consequences. When negative psychological consequences do occur, the effects are usually mild and transient. Having said that, the authors point out that there are some groups of women who are at greater risk of some trauma from abortion. The predictors of negative outcomes most often cited included personality traits. The majority of studies reported that negative psychological outcomes diminished following the abortion.

Only one of 26 reviews reported significant psychological outcomes of abortion. This was carried out by Ney and Wickett (1989) and included 108 studies. It was unclear to the authors (Bonevski and Adams, 2001) why that one review contradicted the conclusions of all the others.

Personal relationships

Some studies examined the effect of relationships on abortion outcomes. Cozzarrelli, Karrasch, Sumer and Major (1994) found that if a partner accompanied the women to the procedure that this resulted in better coping. Bracken, Hachamovitch and Grossman (1974) found that partner and parent support predicted a more positive outcome. Robbins and DeLamater (1985) also found that partner support was helpful, especially in reducing feelings of loneliness. There was also some evidence that less supportive partners and weaker relationships were more likely to result in abortions (Cozzarrelli et al., op cit.).

Foetal abnormality

Women who had an abortion due to foetal abnormalities or genetic reasons were more likely to have negative outcomes. Nine studies pertaining to this group of women were included in the review by Bonevski and Adams (2001). One study (Hunfeld, Wladimiroff and Passchier, 1994), found that women reported a "loss of control over their bodies" as a result of an abortion under such circumstances. Several studies indicated that women had raised levels of grief if they had undergone genetic screening which resulted in an abortion. An Italian study (Di Gusto, Lazzari, Giorgetti, Paesano and Pachi, 1991) reported "depression and a sense of failure" amongst a sample of 54 women.

Positive outcomes

While Bonevski and Adams (2001) note that most research in this area has attempted to identify negative consequences of abortion, a small number of studies have reported positive outcomes. They refer to an early study of teenage pregnancies (Pare and Raven, 1970), which compared those who continued with the pregnancy with those who had chosen to terminate. Of those who chose termination the majority did not have negative psychological outcomes, while a minority did. However, among those who chose to have the baby, the majority reported "feeling the burden of the child, regretted not terminating and frequently admitted to feelings of resentment towards the baby". In a more recent study of 440 women, Major, Cozzarrelli, Cooper, Zubek, Richards, Wilhite and Gramzow (2000) found that the majority of the women reported "more benefit than harm" from having had a termination.

2.6 Thorp, Hartmann and Shadigian (2002)

Another relatively recent review of the literature was carried out by Thorp, Hartmann and Shadigian (2002). They examined both the physical and psychological health consequences of abortion. They used the MEDLINE database and used the key words "abortion" and "abortion complications". It will be noted that these key words are much more restrictive than those used in other reviews reported here and they did not include keywords referring specifically to psychological effects, which very likely explains the relative few studies which emerged in the psychological domain. These authors restricted their analysis to 1) studies published in English during the period 1966 – 2002, 2) which had a minimum of 100 respondents, 3) with a follow-up of two months or longer after the elective abortion. We shall focus solely on their findings concerning psychological consequences.

The authors located ten studies during this period that met these criteria and were concerned with psychological consequences. In summarising the results of these studies they point out that "of particular note is the association between induced abortion and either suicide or suicide attempt". They point out that "this is an objective rather than a subjective outcome, and the fact that the effects are seen after abortion rather than before indicates either common risk factors for both choosing abortion and attempting suicide, such as depression, or harmful effects of induced abortion on mental health" (Thorp et al., 2002, p. 74). It is notable that this effect is not seen after spontaneous abortion.

Other studies cited by these authors demonstrated increased risk of depression or emotional problems after abortion in certain sub-groups. This, they felt, may explain the psychopathology that culminates in self-harm.

The authors conclude that "the long-term health effects of elective abortion are difficult to study and thus poorly understood." First and foremost, they refer to the methodological problems of inability to assign respondents to an experimental group and thus all research in this realm is "prone to an array of different sources of bias".

In relation to comparison groups, the authors note that it is not clear what group constitutes an appropriate comparison group. The decision to terminate a pregnancy is emotionally difficult for many women. Hence, regret, remorse or shame may cause them not to disclose that they had an abortion, thus affecting accuracy of data. Further issues that cloud reliability of findings are the fact that the health consequences of abortion have been highly politicised, thus potentially affecting accuracy of results. Finally, effects found have generally been small.

In view of these methodological limitations, the authors believe that future studies in this area should be large in order to have adequate power to detect small effects; such studies will therefore be expensive. However, they recommend that such studies should be carried out to make available reliable data on any health risks – both physical and psychological - ensuing from abortion. They draw the analogy with research into cigarette smoking, where the availability of accurate data has made it possible to inform the public about the risks inherent in smoking. Until further research and meta analyses are forthcoming, Thorp et al. believe that it will not be possible to give women full and accurate information about the potential health risks of abortion. However, on the basis

of the evidence to date, they believe there is concern of a possible link to serious mental health problems.

2.7 Stotland (1997 and 2001)

In a recent commentary on research in this area, Stotland (2001) re-iterates methodological concerns which he expressed some time earlier in a review of research on abortion and its effects (Stotland, 1997). (See Section 1.4: Methodological issues.) Nevertheless, he concludes that the existing data point firmly to the conclusion that “abortion has fewer psychiatric sequelae than childbirth”. Though some women experience “sadness and guilt”, Stotland states that these reactions tend to be “transient” and do not rise to the level of psychiatric disorder.

2.8 Bradshaw and Slade (2003)

Bradshaw and Slade (2003) from the University of Sheffield have conducted the most recent review of the literature that we were able to locate. These authors reviewed literature from 1990-2000 concerning “psychological experiences and sexual relationships prior to and following abortion”. They aimed to assess whether conclusions drawn from earlier reviews were still supported, and also evaluated the extent to which previous methodological problems had been addressed.

Overall their conclusions were “concordant with previous reviews” (p. 929). However, they observed that anxiety symptoms were now the most common adverse response. Further, they observed that there has been increasing understanding of abortion as potential trauma, but found that guilt was a phenomenon that was less frequently explored. While they found the quality of studies had improved, there were still methodological weaknesses.

As Bradshaw and Slade’s (2003) review did not cover the breadth of studies which had been covered by other reviews, and given its primary focus on studies in the 1990s, we shall not report any further data from this review, but rather will focus on individual studies, particularly those carried out more recently. Before doing so, we shall report one more review of the literature which specifically dealt with adolescents.

2.9 Adler, Ozer and Tschann (2003)

Adler, Ozer and Tschann (2003) reviewed research concerning abortion among adolescents specifically. This review was carried out in the context of the issue of parental consent, which is required in some states of the United States, where this review was conducted. The authors note that “legislation mandating parental consent has been justified by several assumptions, including high risk of psychological harm from abortion, adolescents’ inability to make an adequately informed decision, and benefits of parental involvement” (p. 211). Following a review of the literature, the authors conclude that the “empirical data raise questions about the first 2 assumptions” (Ibid.). They note that the studies reviewed suggest a relatively low risk associated with abortion and that adolescents seeking abortion appear to make an informed choice. They refer in particular to the findings of Zabin et al. (1989), which they characterise as the best study of adolescent abortion. This study followed 360 adolescents over two years, following an interview when seeking a pregnancy test. Some had a negative test, some were pregnant and carried to term and some were pregnant and had an abortion.

The adolescents who had an abortion showed significant decreases in anxiety and significant increases in self-esteem and internal locus of control from a baseline to two years later. They had better psychological measures than the other two groups on some indices. They were also more likely to be in school or to have graduated from secondary school.

Adler et al. (2003) also refer to results of a study by Quinton, Major and Richards (2001), which compared 38 patients under 18 with 402 adult patients, both groups of which had experienced an abortion. This research found that on a standardised measure of depression there were no differences either one month or two years post-abortion.

3.0 Individual studies

3.1 Introduction

In this section we review individual studies that emerged from our literature search, as well as selected commentaries on these studies, since these reflect ongoing debate in the literature. We will refer to studies published during the period 1996-2006; however, because of the large amount of research found, and because studies prior to 2000 have been covered in the reviews referred to above, we shall focus primarily on 1) the most important studies, that is, those that are larger and more methodologically robust, and 2) those carried out since 2000. Where we refer to studies before these dates, it is when they have been cited in one of the studies we are reviewing.

In reviewing this research it is evident that there are a few core groups of researchers working in this area, whose work we shall refer to in this section. In addition, there are other individual researchers and teams throughout the world who have contributed to the very prolific output of research in this area. We shall present the results of the individual studies grouped according to groups of researchers, research teams and also by geographical area, where relevant.

3.2 Adler, David, Major, Russo and colleagues in the U.S.

Some of the key researchers in this field are Adler, David, Major, Roth, Russo and Wyatt, who carried out a seminal review for the American Psychological Association (Adler et al. 1992). Of this group, several of the authors - in particular Adler, Major, David and Russo - have continued to publish in this area, either individually or with others. A recent study by Major et al. (2000) has already been referred to above. Adler (2000) comments that Major et al.'s (2000) research is "... consistent with other well-designed studies of psychological responses of women who have undergone first-trimester abortion. They found that while some women report regret and/or experience psychological problems following an abortion the majority are satisfied and feel they benefited from the abortion. More importantly, rates of psychological dysfunction, including depression and post-traumatic stress disorder (PTSD), are no higher than those in the general population of same aged women" (p. 785).

Adler (2000) adds that the research by Major et al. (2000) is an advance over past studies in that the researchers did follow-ups on women for two years after the abortion and used standardised measures of depression and PTSD, as well as having a large sample. Adler concludes that Major et al.'s (2000) study "adds further backing for the earlier conclusion of an expert panel convened by the American Psychological Association (Adler, David, Major, Roth, Russo and Wyatt, 1992) that abortion is generally 'psychologically benign'" (Adler, 2000, p. 785).

3.3 Reardon, Cogle, Coleman and colleagues in the U.S.

In contrast to the findings by Adler, Major and others, a number of other investigators have concluded that abortion has longer term adverse mental health effects, as a result of feelings of guilt, unresolved loss and lowered self-esteem. These conclusions have been drawn primarily by Reardon and colleagues (Reardon and Cogle, 2002; Reardon, Cogle, Rue, Shuping, Coleman and Ney 2003; Cogle, Reardon and Coleman, 2003) who found that abortion may increase risks of a wide range of mental disorders including: substance abuse, anxiety, hostility, low self-esteem, depression and bipolar disorder.

More recently, Cogle, Reardon and Coleman (2005) carried out research to “determine if symptoms of anxiety reported by some women who have induced abortions (Coleman and Nelson, 1998 and Kumar and Robson, 1984) are significant enough to be observed in a nationally representative sample. Furthermore, non-aborting women with unintended pregnancies ending in childbirth were used as the control group to more definitively determine whether anxiety is associated with an abortion experience in particular as opposed to unintended pregnancy more generally”. These authors found that women who had abortions had more anxiety.

However, the methodology of this study has several weaknesses. Firstly, these authors eliminated women who had anxiety prior to abortion for other reasons. This is difficult to understand since anxiety is a common human emotion and can occur for many reasons besides abortion. To eliminate this group would therefore seem to seriously bias the sample and hence the findings. Secondly, the authors did not refer to the social and educational characteristics of their sample. It will be noted that more white women in their sample had an abortion relative to black women and white women were found to have more anxiety. The white women also had higher educational levels and higher incomes. The black women in the sample were more likely to deliver babies, to have lower anxiety, lower education and lower income. It may have been that for the higher educated, higher SES women, a crisis pregnancy was a more anxiety provoking situation, possibly because it could interfere with educational and professional plans and also may be more likely to go against the social norms of this group. None of these issues -particularly the confounding of race and social class- were noted or discussed in the article. Thirdly, as discussed above, anxiety would seem to be a normal response for many women to an unplanned pregnancy.

This group of researchers (Rue, Coleman, Rue and Reardon, 2004) also carried out comparative research in the U.S. and Russia into the effects of abortion on Post Traumatic Stress Disorder (PTSD). They found that American women were more likely to suffer negative consequences than their Russian counterparts. This was attributed to the different social contexts in the two countries. However, this study, too, suffered from methodological limitations. For example, the data-collection procedures differed in the two countries. An examination of Table 2 of their article shows significant differences between the American and Russian women in terms of experience of prior sexual abuse. For example, there were significant correlations among the Russian women of prior sexual abuse (including being raped) and negative effects later, including Post Traumatic Stress Disorder. While there were some among the U.S. women, these were far fewer. The data presented in this table suggests that these other experiences may be mediating outcome measures. The fact that analyses were not reported to tease out these earlier experiences raises questions about the conclusions drawn about the effects of abortion *per se*.

3.4 Fergusson and colleagues, New Zealand

Fergusson et al. (2006), in a recent study in this area, point out that “the evidence on the linkages between abortion and mental health proves to be relatively weak with some studies finding evidence of this linkage ... and others failing to find such linkages”.

They further note that “the studies in this area have been marked by a number of design limitations including the use of selected samples, limited length of follow-up, retrospective reports of mental health prior to abortion and failure to control confounding”, as has been pointed out by Adler (2000) and Major et al. (2000). For example, they refer to Cogle et al.’s 2003 analysis of the National Longitudinal Study of Youth (NLSY), which found that women who reported having had an abortion were 65% more likely to score in the high-risk range for clinical depression than women who gave birth. Fergusson et al. (2006) note that there were potential limitations to this study, primary of which was that the study did not provide comprehensive control of pre-pregnancy factors. There was also evidence of significant under-reporting of abortion in the study, with an estimated 60% of those undergoing abortion failing to report this.

In order to understand more fully the relationship between abortion and mental health outcomes in young women, Fergusson et al. (2006) carried out a major and very carefully designed and executed study in the context of the Christchurch Health and Development Study (CHDS), a 25-year longitudinal study of a birth cohort of 1265 New Zealand children born in the Christchurch urban region who have been studied from birth to age 25.

The specific purpose of their study was to examine the linkages between having an abortion and mental health outcomes over the interval from age 15-25 years. The analysis reported by Fergusson et al. (Ibid.) is based on the cohort of female participants for whom information on pregnancy history and mental health outcomes was available. The sample sizes in the analysis range between 506 and 520. These samples represent between 80-83% of the original cohort of 630 females.

The instruments used were measures of DSM-IV mental disorders and suicidal behaviour over the intervals 15-18, 18-21 and 21-25.

The study found that 41% of the women had become pregnant on at least one occasion prior to age 25, with 14.6% having an abortion. Those having an abortion had elevated rates of subsequent mental health problems including depression, anxiety, suicidal behaviours and substance use disorders. This association persisted after adjustment for confounding factors.

The authors concluded that the findings suggest that abortion in young women may be associated with increased risks of mental health problems. However, they did not stop there. They were aware that further confounding variables could be the explanation for this association, as had been pointed out earlier by Major (2003).

The fact that abortion has been found to be related to poorer mental health in some studies is consistent with two possible interpretations: 1) that abortion is causally related; or that 2) some third common variables are responsible for the relationship; these are referred to as confounding variables. Such confounding variables can include socio-economic status, childhood and family factors; mental health and personality factors. Ferguson et al. (2006) point out that control of such factors in this area of research has been limited. They further point out that generally two groups have been studied – those who are pregnant and have an abortion and those who are pregnant and carry the child to term. They suggest that an important group has been overlooked in such research design: namely women who are not

pregnant, as these would provide an important reference group in terms of mental health. They aimed to overcome this design deficiency in their study by including all three groups. In addition, they controlled for a wide variety of factors and carried out a series of sophisticated statistical analyses which enabled them to tease out various effects, including the women's early history. They were aided in this by having a large number of variables on the young women from when they were children, including parental and teacher ratings. These analyses of confounding factors demonstrated that there was a significant tendency for those who became pregnant by age 25 "to exhibit a profile characterised by greater social and economic disadvantage, family dysfunction and individual adjustment problems. In addition, those who became pregnant were more likely to have left the family home at a young age and to have entered a cohabiting relationship." When they took into account these "confounders" they still found that four out of five measures of mental health (depression, suicidal ideation, illicit drug dependence and total mental health problems) were associated with pregnancy/abortion history at the $p < .05$ level (which is significant, but at the lowest level of significance). Their analyses also showed that those who had not become pregnant and those who had become pregnant but did not have an abortion were similar in mental health.

They still felt that the direction of causality was not clear, since the assessment of pregnancy status and mental health were taken at the same time. Hence the interpretation could be in either of two ways: 1) mental health problems could lead to increased risk of abortion or 2) abortion could lead to increased mental health problems. They then carried out a prospective analysis in which pregnancy/abortion history prior to age 21 was used to predict mental health outcomes from 21-25. They still found that those who had had an abortion had poorer mental health than those who had not been pregnant or who had been pregnant but not had an abortion. Again the difference was at the $p < .05$ level of significance.

The authors estimate that those who were not pregnant or who were pregnant but did not have an abortion had "overall rates of mental disorders that were between 58 – 67% of those becoming pregnant and having an abortion". What this tells us is that the women in this study who had an abortion had a higher risk of mental health problems, leading the authors to conclude that their findings would indicate "a possible causal linkage between exposure to abortion and mental health problems." Other studies have indicated that only a proportion of women having an abortion have mental health symptoms and these generally dissipate once the abortion is over.

This study builds on previous research and is perhaps the most methodologically robust of all the studies currently under review. In spite of their careful methodology, these authors acknowledge that there are still remaining limitations that should not be overlooked and which prevent them from drawing strong conclusions about the link between abortion and negative mental health suggested by their research. Limitations include "omitted covariates", that is confounding factors that were not tapped in this study. Secondly, there is evidence that women tend to under-report abortion and thus this under-reporting can have a distorting effect on the results. There are many contextual factors that have not been measured. For example, the extent to which the pregnancy was wanted, the extent of family and/or partner support for seeking an abortion, the woman's actual experience in seeking and obtaining an abortion. The

authors say that “it is possible, therefore, that the apparent associations between abortion and mental health found in this study may not reflect the traumatic effects of abortion *per se* but rather other factors which are associated with the process of seeking and obtaining an abortion.”

They conclude that “the present research raises the possibility that for some young women, exposure to abortion is a traumatic life event which increases longer-term susceptibility to common mental disorders”. They believe that this is inconsistent with the “current consensus on the psychological effects of abortion”. In particular they refer to the 2005 statement of the American Psychological Association which concluded that “well-designed studies of psychological responses following abortion have consistently shown that risk of psychological harm is low ... the percentage of women who experience clinically relevant distress is small and appears to be no greater than in general samples of women of reproductive age” (American Psychological Association, 2005).

On the basis of their study, Fergusson et al. (2006) believe that the issue of whether or not abortion has harmful effects on mental health remains to be resolved. They believe there is a “clear need for further well controlled studies to examine this issue before strong conclusions can be drawn about the extent to which exposure to abortion has harmful effects on the mental health of young women”.

3.5 Selected Scandinavian studies

There have been several recent studies carried out in Scandinavia on the psychological effects of abortion on women. We shall discuss them together, since the Scandinavian countries are geographically near one another and all have a relatively egalitarian ethos regarding women’s rights. We have described above the legal position concerning the availability of abortion in Scandinavian countries, as well as the abortion rates (Soderberg et al., 1998; Broen et al., 2005).

Scandinavian studies on the psychological effects of abortion on women have been primarily carried out in Sweden, but also in Norway and Denmark. We shall report on some of the key studies here.

3.5.1 Soderberg, Janzon and Sjoberg (1998) - Sweden

Soderberg et al. (1998) examined “emotional distress following induced abortion” at the Lund University Hospital in Malmo. Subjects were 854 women who had a 12-month post-abortion follow-up interview. This group represented 66.5% of the 1,285 women who had an abortion at the Lund University Hospital in 1989. Thus, this was a retrospective study.

Fifty to sixty per cent of women who had an abortion experienced some measure of emotional distress, with 30% experiencing “severe” emotional distress.

Several risk factors for emotional distress were identified and these included: 1) living alone; 2) poor emotional support from family and friends; 3) adverse post-abortion change in relationship with partner; 4) underlying ambivalent or negative attitudes to abortion; and 5) being actively religious (p. 173). On the basis of the risk factors identified, the authors concluded that it may be possible to ameliorate or even prevent such distress.

The authors note that in terms of revised Swedish legislation, “a woman is expected to take full responsibility for her abortion decision,” although publicly provided counselling and support are mandatory before an abortion (p. 173).

They refer to an earlier Swedish study which found that post-abortion reactions were estimated to occur in about 10% of cases (Troost, 1982) and that many of these women had pre-existing psychological problems. However, a more recent Danish study (Schleiss et al., 1997) found that at least 21% develop emotional problems lasting at least four months.

The 66.5% of women who participated in the study by Soderberg et al. (1998) were those who agreed to participate in a follow-up interview. They were asked at the time of their abortion if they would be willing to participate in this interview; thus, 66.5% constitutes the response rate.

All of the interviews were conducted by a single female gynaecologist, one of the authors. The interview consisted of largely open-ended qualitative questions. No standardised instruments were used. The data and their interpretation were therefore based on the subjective ratings of the gynaecologist author.

Respondents were asked to describe how they felt after the abortion and if they had felt “depressed or dispirited” (p. 174). ‘Slight emotional distress’ was defined as “the occurrence of mild depression or remorse guilt feelings, a tendency to cry without cause, discomfort upon meeting children, or recurrent fantasising about the child that may have been [its gender, looks, etc.]”. More ‘serious emotional problems’ were defined as those requiring help from a psychiatrist or a psychologist, or which prevented the woman from working. Women who experienced such problems were considered to have serious emotional problems, and were offered consultation with a medical social worker. (p. 174).

Hence, in each case, the estimation of the severity and duration of the emotional reaction was based on the woman’s own assessment. Respondents were also asked about their religious beliefs, participation in church activities, etc.

It will be noted that women were not asked if they felt relief after the abortion. The data gleaned from the interview process would have been more comprehensive had this question been included, as many studies have noted that a common reaction to abortion is a feeling of relief. It is also worth noting that the interviews were psychological in nature and yet were not carried out by a psychologist, but rather by a gynaecologist – someone who is not formally trained in psychological matters, such as depression. While qualitative data is very useful, in qualitative research of this kind there is always the risk of interviewer bias. No standardised measures were used in this research. All of these factors need to be borne in mind in assessing the research.

The results of this study showed that:

- 42% of women experienced no psychological reaction at all;
- 55% experienced remorse or emotional distress of shorter or longer duration;
- 16.1% still had slight emotional problems at the time of the interview
- 3.9% had a deeper depression (for 2.3% this persisted for a longer time).

The authors themselves say that: "In some cases it is not impossible that such reported concerns and reactions may, at least to some extent, represent an attempt to "please the interviewer." Although in Sweden women are entitled to abortion, "public opinion is, if not actually anti-abortionist at least divided" (p. 177).

One of the most interesting findings of this study was that 76.1% of the women in the study said that they would never consider an abortion if they became pregnant again and 19.8% were still undecided as to whether their decision on abortion had been the right one.

3.5.2 Kero, Hogberg and Lalos (2004) - Sweden

A more recent Swedish study on the long-term effects of legal abortion was carried out by Kero, Hogberg and Lalos (2004). These authors note that there is "a strong consensus, regarding results from international studies on abortion outcomes, that relief is the dominant feeling in the immediate and short-term aftermath and the incidence of severe negative responses is low" (p. 2259). They note that Swedish studies have supported this (e.g. Trost, 1982; Holmgren, 1988). Where post-abortion distress has been found, this has been related to a variety of factors, which point to the "complexity" of the abortion issues. These authors note that women most at risk seem to be "those who experienced the pregnancy as meaningful, who lacked support and/or experienced ambivalence or coercion during the decision-making process." (p. 2560).

However, they point out that few studies have investigated the long-term emotional responses to abortion, an exception being a Danish study (Schleiss, Mygind, Borre and Petersson, 1997) in which 16% of the women had psychological problems at a four-month follow-up, which they related to the circumstances of the abortion, though none regretted the abortion itself (note, Soderberg et al. cite this figure as 21%; it was not possible to check this inconsistency since the article is in Swedish).

They also refer to one of their recent studies (Kero and Lalos, 2000) in which ambivalent feelings after one year did not necessarily imply that the abortion was regretted or that emotional distress was experienced.

Kero et al.'s (2004) study was carried out at the University Hospital of Umea in the north of Sweden. The study involved a prospective interview, a four-month follow-up and a 12-month follow-up. A total of 58 women took part in all three segments of the research. The follow-up interviews were carried out by two experienced medical social workers, of whom one was the first author.

A combination of qualitative and quantitative methods was used. "Feelings were elicited by asking the women to select from a list of words the ones describing their feelings. Emotions other than those listed could also be added" (p. 2560). In addition, open-ended questions were posed, such as "How do you feel about the abortion today, one year later?" and "What has the abortion meant to you?" (p. 2561), etc. This more neutral technique is in contrast to the Soderberg et al. (1998) study, in which there were leading questions, such as, "Did you feel depressed or dispirited?"

These authors found that at the four-month interview women were asked retrospectively about their immediate post-abortion reactions. They found that there were three kinds

of responses: 1) women without emotional distress (62%); 2) women with mild/moderate emotional distress (17%); and 3) women with severe emotional distress (21%). (p. 2562). They found that overall the reactions at the one-year follow-up did not differ from those at the four-month follow-up. The study found that almost all of the women considered that they coped well with the abortion, although a fifth experienced "crisis reactions." The authors concluded that "the pregnancy was found to cause painful feelings in almost all the women, while the abortion at both four months and 12 months was experienced by almost all of the respondents as a relief. They note that feelings of well-being and mental growth were also manifested. The complexity of emotions is evident from the quotes excerpted from the three time periods for the same women (pp. 2564-2566).

3.5.3 Broen, Moum, Bodtker and Ekeberg (2005) - Norway

A very recent Norwegian study was carried out on the effects of abortion (and miscarriage) on mental health after a five-year period (Broen, Moum, Bodtker and Ekeberg, 2005). The authors of this study were from the University of Oslo and the Department of Obstetrics and Gynaecology, Buskerud Hospital, Drammen. This study is unusual in that it was longitudinal over a five-year period, with data collected at four points in time: 1) after 10 days; 2) after six months; 3) after two years; and 4) after five years.

The study utilised several standardised instruments: 1) the Impact of Event Scale; 2) The Quality of Life questionnaire; and 3) the Hospital Anxiety and Depression Scale. Careful attention was paid to the reliability of each of the measures and it is clear that the measures used had high reliability. The sample included 120 women between the ages of 18 and 45, of whom 80 had had an abortion and 40 had experienced a miscarriage. These 120 were those who agreed to participate from a larger group of those approached. The response rate was 47% overall – 50% of those who had had a miscarriage and 46% of those who had had an abortion. This relatively low response rate is potentially problematic, since we don't know if those who agreed to participate were the same in key respects as those who did not agree to participate. However, it was noted in the study that the response rate varied depending on which staff member recruited respondents; thus the response rate more likely reflects staff differences and differences in approaching potential participants than to participant differences.

The results showed that women who suffered a miscarriage had more "mental distress" ten days following the event and at six months following; however, they showed quicker improvement than women who had experienced an abortion. The latter group manifested significantly greater IES Scores (Impact of Event) after two and five years in certain areas (avoidance, feelings of guilt, shame, and relief). The "avoidance" measure included such items as "I know that I have many pent-up feelings about the pregnancy termination, but I have pushed them away," and "I have not allowed myself to have thoughts about the pregnancy termination."

The authors point out that the women who had miscarriages showed expected responses to a traumatic and sad event. However, the women who had experienced abortion had what they described as "more atypical responses". The authors point out that "the elevated scores for guilt, shame and IES avoidance for women who had an induced abortion may require more attention." They found in an earlier study that

“feelings of guilt and shame ten days after a pregnancy termination predicted high IES avoidance scores two years later” (Broen et al., 2004). They believe these findings suggest that the feelings of guilt and shame associated with abortion may contribute to slower improvement in mental health.

The authors recommended that women in both groups should be given information concerning possible psychological reactions that women often experience in their situation and they also recommended that follow-up talks should be offered to women most affected.

4.0 Views of professional associations and other bodies

4.1 Introduction

Several professional associations and other bodies have issued documents expressing their views on the subject of the psychological or psychiatric effects of abortion on women. In our literature search we have located a number of these; however, it is likely that others also exist internationally. We summarise below the key conclusions arrived at by these bodies.

4.2 Psychological Society of Ireland

In 1992 the Psychological Society of Ireland (PSI), the professional body of psychologists in this country, issued a “statement to inform the public debate on abortion with research evidence on the psychological effects of abortion and related issues” (Psychological Society of Ireland, 1992). This statement summarised the evidence of research up to that point and, as such, is, in effect, a review of the literature up to that point in time with special reference to the Irish context. It thus represents an important document in this review.

The PSI statement begins by noting that “research on abortion has been conducted in countries where abortion is legally available. The meaning and impact of abortion in cultures such as Ireland, where it is illegal, may differ.”

The statement then summarises the key points that have emanated from the literature up to 1992. The key points in this summary that are relevant to this review are quoted below:

Evidence from the most rigorous scientific studies available shows that legal termination of unwanted pregnancy does not have severe or lasting negative consequences for most women undergoing the procedure.

Studies of women’s psychological distress before and after abortion show that distress levels drop immediately after an abortion and are lower several weeks later than they were before the abortion. The most frequently reported emotions following abortion are relief and happiness. While women often feel mixed emotions – positive and negative – after an abortion, typically the positive feelings (relief and happiness) far exceed the negative feelings (regret, shame, guilt, anxiety, depression).

Most women do not experience severe negative responses to terminating an unwanted pregnancy. However, a small percentage do report such responses. Women who have more negative responses tend to be those who:

- terminate a pregnancy that was originally wanted;
- have difficulty deciding to have the abortion;
- have limited or no social support from their sexual partner or others;
- have an abortion in the second trimester of pregnancy;
- blame themselves for the unwanted pregnancy;
- have a history of emotional disturbance before the pregnancy; or
- feel coerced to have the abortion.

The PSI also points out that national professional associations of psychologists and psychiatrists in Ireland, the UK and the United States “either support access to abortion services or have no policy on the matter”.

The paper from the PSI then goes on to summarise the key findings of 45 of the most important studies which had been carried out to date. Many of them have already been referred to here, e.g. Forssman and Thuwe (1966, 1988), Athanasiou et al. (1973), Zabin et al. (1989), Dagg (1991) and Zolese and Blacker (1992). They also cite Adler, David, Major, Roth, Russo, and Wyatt (1990), an article which precedes the time period for the current study. However, we have referred to a subsequent and often cited work by these authors (Adler et al., 1992), which was published by the American Psychological Association, as well as more recent research by these authors.

In its overview of the literature, the PSI statement refers to the small handful of earlier studies from Ireland which bear on this issue (e.g. Dean, Walsh, O’Hare and McLoughlin, 1985; Jackson, 1987) as well as two studies from outside Ireland which are concerned with abortion in Ireland (Rose, 1978; Francome, 1992). However, it notes that “in the absence of a body of scientific research on abortion in Ireland, research from other countries is considered”.

They note that historically, because abortion had been illegal in Ireland and the British Isles, “A number of post-natal forms of management of unwanted pregnancy have been documented in these Islands: infanticide, concealment of child birth and abandonment of children.” They note that “Ireland has a very low rate of illegal abortion relative to the other countries. However, when infanticide, concealment of childbirth and abandonment of children under age 2 ... are considered, higher rates of each of these is evident in Ireland ... than in any of the other countries” (Psychological Society of Ireland, 1992; see also Rose, 1978).

It will be noted that since the PSI published its report, research on concealed pregnancy in Ireland has been carried out by Conlon (2006). Conlon found that hospital reports were “inconsistent in the terminology used and in the reporting of concealment of pregnancy”. Her research revealed that concealment did occur in a proportion of all pregnancies and that this tended to be more a rural than an urban phenomenon, which appeared to be related to a desire to conceal sexual activity. It is not surprising that this was more often a rural phenomenon, since traditional gender-role attitudes have been found to be stronger in rural areas of Ireland than in urban ones (Fine-Davis, 1988a).

The PSI pointed out that “there appears to be a change in attitude towards increasing acceptance of some form of abortion in the past decade in Ireland”. They point to survey evidence to this effect (Francome, 1992). More recent research has documented that attitudes towards abortion have indeed been changing in Ireland. Fine-Davis (1988b) found in 1986 that 58% of an Irish national sample felt that abortion was permissible under some circumstances. More recently in 2003 Rundle et al. (2004) found that 39% of a nationwide representative Irish sample believed abortion was permissible under some circumstances and a further 51% of the sample believed it was permissible in all circumstances, for a total of 90% indicating support in at least some circumstances. This

is a radical change from the 1986 position, which in itself reflected that public opinion was less restrictive than the legislative position.

The PSI (1992) concluded by saying:

We do not have a significant body of research information on Irish attitudes to unwanted pregnancy and its various outcomes: abortion, adoption or childrearing by the mother. Neither do we know the impact of Irish attitudes in this area on the experience of unwanted pregnancy for women in Ireland. Adequate research funding is needed here to provide information to inform policy and decision making in this area (Psychological Society of Ireland, 1992).

4.3 Royal College of Obstetricians and Gynaecologists (UK)

The Royal College of Obstetricians and Gynaecologists in the UK (2004) has also issued a document concerning abortion. This takes the form of Guidelines for the Care of Women Requesting Induced Abortion. While this report is primarily concerned with the physiological medical issues surrounding abortion, it also deals with the psychological sequelae of abortion.

In their recommendations in terms of information that should be provided to women is the fact that there can be psychological sequelae to abortion. This is based on the fact that some studies suggest that rates of psychiatric illness or self-harm are higher among women who have had an abortion compared with women who give birth or with non-pregnant women of similar age. However, the report points out that "It must be borne in mind that these findings do not imply a causal association and may reflect continuation of existing conditions" (p. 9).

In light of this possibility, however, they recommend that aftercare following abortion should include referral to counselling for the "small minority of women who experience long-term post-abortion distress". They point out that risk factors for such distress include: "ambivalence before the abortion, lack of a supportive partner, a psychiatric history or membership of a cultural group that considers abortion to be wrong" (p. 13).

In support of this view they relied primarily on the review of the literature by Dagg (1991) and his conclusion that "adverse sequelae occur in a minority of women, and when such symptoms occur, they usually seem to be the continuation of symptoms that appeared before the abortion and are on the wane immediately after the abortion", as well as Dagg's finding that "many women denied abortion show ongoing resentment that may last for years" (Royal College of Obstetricians and Gynaecologists, 2004, p. 35).

They also referred to the more recent review of the literature by Thorp et al. (2002), which we have also referred to in Section 2.6. In addition, they independently reviewed papers cited in Thorp et al., as well as more recently published literature.

4.4 The American Psychological Association (U.S.)

The American Psychological Association (APA) is a scientific and professional organisation that represents the psychology profession in the United States. With 148,000 members, APA is the largest association of psychologists worldwide.

The APA issued a Briefing Paper in 2004 summarising what the psychological research had to say about the impact of abortion on women (American Psychological Association, 2004). A full review of the literature on this topic was commissioned by the APA more than 10 years earlier; this was published by Adler et al. (1992) and has been widely cited.

In its 2004 Briefing Paper, the APA begins by asserting that the research shows that the ability of women to make decisions about their own childbearing is a necessary condition for their health and mental health, as well as for their families.

The key points made in the Briefing Paper are:

- there is a low risk of psychological harm following abortion;
- research has shown that there is positive functioning and educational attainment two years following abortion;
- positive emotions are more often experienced following abortion than negative emotions;
- there is a higher risk of psychopathology if there were pre-existing emotional problems;
- individual circumstances must be taken into account;
- poor social outcomes often arise for unwanted children.

Their recommendations include advocating for access to abortion, pointing out that this is necessary to safeguard the health of the woman.

They also recommend that mental health consultations need to be made available to the small number of women who experience distress following abortion.

Finally they stress the importance of education and career development programmes for young women. They emphasise that the school system must encourage careers for young women and discourage early pregnancies.

4.5 The Surgeon General of the United States (U.S.)

While the Surgeon General of the U.S. is not a professional association, his Office – the United States Public Health Service – is responsible for health policy in the United States and hence his report on this topic is relevant and of interest in this context.

In 1987 the then President of the United States, Ronald Reagan, asked the Surgeon General of the U.S. to “prepare a comprehensive report on the health effects of abortion on women” (Koop, 1989, p. 31). It was clear that the report was to cover mental health effects, as well as physical effects. In carrying out this assignment, over 250 scientific studies were reviewed by the Surgeon General’s staff, and he met with 27 different groups with an interest in abortion on all sides of the spectrum of opinion, including such bodies as the U.S. Conference of Catholic Bishops, the American College

of Obstetricians and Gynecologists, the Right to Life National Committee, Planned Parenthood, etc.

In 1989, Koop summarised his findings to the President in a letter, which has been published (Koop, 1989a). In the course of the letter, Koop referred to the U.S. statistics concerning abortion: Each year approximately six million American women became pregnant. Of these 54% - or 3.3 million pregnancies - were unplanned. Over 1.5 million women, or 25% of those pregnant, had abortions each year. He stated that "even among groups committed to confirming a woman's right to legal abortion there was consensus that any abortion represented a failure in some part of society's support system - individual, family, church, public health, economic or social" (Ibid).

On the basis of the evidence he examined, Koop felt that it was not possible to reach any conclusions about the health effects of abortion. He noted that: "In general, the studies on the psychological sequelae of abortion indicate a low incidence of adverse mental health effects. On the other hand, the evidence tends to consist of case studies and the few non-anecdotal reports that exist contain serious methodological flaws" (Koop, 1989b).

He concluded that a prospective study over a five-year period would be necessary in order to resolve the question. This would involve studying a cohort of women of childbearing age with regard to the various outcomes of mating, e.g., failure to conceive, miscarriage, abortion and delivery. He estimated that such a study would cost up to \$100 million (Koop, 1989a, 1989b).

5.0 Discussion and conclusions

5.1 Results of research

The majority of the reviews of the literature conducted into abortion and psychological effects have come to the same conclusion: that legal and voluntary termination of pregnancy rarely causes immediate or lasting negative psychological consequences in healthy women (Dagg, 1991; Adler et al., 1992; Clare and Tyrrell, 1994; Bonevski and Adams, 2001), including among adolescents (Adler et al., 2003). When psychological effects do occur they are in the main mild and transient (Clare and Tyrrell, 1994). More pronounced psychological effects occur only in a minority of women (Dagg, 1991; Adler et al., 1992) and are usually the continuation of symptoms which had been experienced before the abortion itself (Dagg, 1991). Stotland (1997) concluded from the literature that "serious psychiatric illness is at least eight times more common among postpartum than among post-abortion women," indicating that childbirth itself is eight times more likely to lead to negative psychological outcomes than is abortion.

Adler et al. (1992) emphasised that psychological reactions which do occur can best be understood within a framework of normal stress and coping, rather than a model of psychopathology. This view is echoed by Bonevski and Adams (2001), who pointed out that while most research in this area has attempted to identify negative consequences of abortion, a small number of studies had actually reported positive outcomes, e.g. Pare and Raven's (1970) early study of teenage pregnancies and Major et al.'s (2000) more recent study of 440 women, in which the majority of the women reported "more benefit than harm" from having had a termination.

An even more recent Swedish study on the long-term effects of legal abortion (Kero, Hogberg and Lalos, 2004) noted that there is "a strong consensus, regarding results from international studies on abortion outcomes, that relief is the dominant feeling in the immediate and short-term aftermath and the incidence of severe negative responses is low" (p. 2259). These authors point out that Swedish studies have supported this (e.g. Trost, 1982; Holmgren, 1988). In their own research (Kero et al., 2004) they found that four months post abortion - when women were asked retrospectively about their immediate post-abortion responses - the majority (62%) had no emotional distress, 17% had mild/moderate emotional distress and 21% had severe emotional distress. Overall reactions at the one-year follow-up did not differ from those at the four-month follow-up. The study found that almost all of the women considered that they coped well with the abortion, although a fifth experienced "crisis reactions". The authors concluded, "The pregnancy was found to cause painful feelings in almost all the women, while the abortion at both four months and 12 months was experienced by almost all of the respondents as a relief." They note that feelings of well-being and mental growth were also manifested.

A number of other investigators have concluded that abortion may have longer term adverse mental health effects, as a result of feelings of guilt, unresolved loss and lowered self-esteem (e.g., Reardon and Cogle, 2002; Reardon et al., 2002; Cogle, Reardon and Coleman, 2003). However, many of these studies have methodological shortcomings (Boonstra, Gold, Richards and Finer, 2006, p. 24), some of which have been noted above.

In their review, Thorp et al. (2002) concluded that “the literature on psychological sequelae of induced abortion is confusing, and results are confounded by not only the research problems . . . but the cultural, religious, and legal milieu of reproductive decision-making with the society studied” (p. 74). Studies cited by these authors demonstrated increased risk of depression or emotional problems after abortion in certain sub-groups. This, they felt, may explain the psychopathology that culminates in self-harm in some respondents. However, because of methodological problems in the research “the long-term health effects of elective abortion are difficult to study and thus poorly understood” (Ibid.). In particular, they referred to the fact that “dissimilarities in socioeconomic status, stress, access to health care, and lifestyle may persist across time and may actually be associated with adverse health events. This introduces risk of uncontrolled confounding of the estimates of association between abortion and long-term outcomes – in other words, observed associations may stem from other confounding differences between women who choose abortion and those who do not” (Ibid., p. 68). Their review focused, however, primarily on medical outcomes and the number of studies they reviewed in relation to mental health outcomes was limited.

On the basis of a very sophisticated study, carried out in several phases, which attempted to tease out a variety of confounding variables, Fergusson et al. (2006) still concluded that the issue of whether or not abortion has harmful effects on mental health remains to be resolved. In spite of their careful methodology, these authors acknowledge that there are still remaining limitations that should not be overlooked. These include “omitted covariates”, that is confounding factors that were not tapped in this study. Secondly, there is evidence that women tend to under-report abortion and thus this under-reporting can have a distorting effect on the results. There are many contextual factors that have not been measured. For example, the extent to which the pregnancy was wanted, the extent of family and/or partner support for seeking an abortion, the woman’s actual experience in seeking and obtaining an abortion. The authors say that “it is possible, therefore, that the apparent associations between abortion and mental health found in this study may not reflect the traumatic effects of abortion *per se* but rather other factors which are associated with the process of seeking and obtaining an abortion.”

The recent Norwegian study carried out on the effects of abortion (and miscarriage) on mental health after a five-year period (Broen, Moum, Bodtker and Ekeberg, 2005) concluded that “the elevated scores for guilt, shame and IES avoidance for women who had an induced abortion may require more attention.” The authors believe these findings suggest that the feelings of guilt and shame associated with abortion may contribute to slower improvement in mental health. Findings to the effect that avoidance is a psychological consequence (Broen et al., 2004, 2005) echo earlier findings by Zolse and Blacker (1992), discussed by Clare and Tyrrell (1994), to the effect that denial is a coping mechanism often used by women undergoing an abortion.

5.2 Views of professional associations and other bodies

Most of the professional associations and other bodies concurred with the more benign assessments of the earlier research. This included the American Psychological Association, the Psychological Society of Ireland (1992), the Royal College of Obstetricians and Gynaecologists (2004), and the U.S. Surgeon General’s Office (1989b).

However, they also acknowledged that contextual factors are important, including the fact that there is a higher risk of psychopathology if there are pre-existing emotional problems or when a wanted pregnancy is terminated, such as after diagnostic genetic testing. However, some of the professional bodies emphasised the need for better research (Koop, 1989a, 1989b), a topic we will address more fully in Section 6.3.

5.3 The influence of contextual factors

Most studies have agreed that certain women are more at risk than others of experiencing negative psychological effects after an abortion.

5.3.1 Demographic factors

Some research has indicated that demographic factors may be significantly related to psychological outcomes of abortion. For example, younger and unmarried women without children were more likely to experience negative outcomes than those who were older and who had already given birth (Adler et al., 1992).

The reasons for this have been identified by Fergusson et al. (2006), who found a significant tendency for those who became pregnant by age 25 “to exhibit a profile characterised by greater social and economic disadvantage, family dysfunction and individual adjustment problems. In addition, those who became pregnant were more likely to have left the family home at a young age and to have entered a cohabiting relationship”. Thus, it is the confounding socio-economic factors that seem to be associated with the significant effects for age.

Comprehensive reviews of the adolescent-specific literature have concluded that “the effects on younger women are mild and transitory and that other confounding factors may influence negative outcome” (Bonevski and Adams, 2001). More recently Adler et al. (2003) found that among adolescents, having an abortion was associated with better psychological outcomes, including reduced anxiety, higher self esteem and more internal locus of control.

The seeming inconsistency between the negative effects on women under 25 and the mild and transitory effects on adolescents *per se* may relate to the greater relief on the part of adolescents, since a pregnancy at that age is generally quite a disruptive event. The socio-economic covariates cited by Fergusson et al. (2006) may explain the greater negative effects overall for young women up to 25. However, it should be borne in mind that most abortions are carried out on women in their early twenties and thus the age differences between women under 25 with older women may be misleading, since they are not particularly relevant. What is important is the overall effects on most women and the research generally has shown that these are generally mild and transient.

5.3.2 The effects of support from family and/or partner

Bonevski and Adams (2001) noted that the effect of social support could significantly affect outcome. For example, Cozzarrelli et al. (1994) found that if a partner accompanied the woman to the procedure this resulted in better coping. Bracken et al. (1974) found that partner and parent support predicted a more positive outcome.

Robbins and DeLamater (1985) also found that partner support was helpful, especially in reducing feelings of loneliness. There was also some evidence that less supportive

partners and weaker relationships were more likely to result in abortions (Cozzarelli et al., op cit.).

5.3.3 Cultural or religious context

Women whose cultural context or religion prohibits abortion are also more at risk for negative psychological outcomes. For example, Clare and Tyrrell (1994) pointed to the evidence that “women who have strong religious or cultural attitudes negative to abortion do experience high levels of psychological stress following abortion” (p. 92). They note that this is of particular relevance to the Irish situation: “This consistent finding lends support to those - both pro- and anti-abortion - who argue that weakening religious taboos on abortion reduces guilt, distress and depression in those women who undergo abortion” (p. 97). With regard to the Irish context the authors state:

Given the circumstances that surround the abortions undergone by Irish women – the fact that they have to be surreptitious, have to be performed in a foreign land and are regularly categorised as murder by religious and political critics – it is highly probable that many Irish women do experience profound, persistent and disabling psychiatric symptomatology following the terminations of their pregnancies in the UK (p. 97).

However, Clare and Tyrrell clearly underscore that this is due to the cultural context in which the women find themselves rather than due to the abortion *per se*. They also suggest that having to travel to obtain an abortion undoubtedly adds to the stress and trauma experienced by women having to undergo abortion abroad in the Irish context.

5.3.4 Foetal abnormalities or genetic reasons

Women who had an abortion due to foetal abnormalities or genetic reasons were more likely to have negative outcomes (Bonevski and Adams, 2001). This concurs with the conclusion of Fergusson et al. (2006) that women most at risk of negative outcomes seem to be those who wanted the child.

It should, however, be emphasised that we did not carry out a systematic review of the literature on the effects of abortion in the context of foetal abnormalities. This contextual characteristic was one of many that emerged in our literature review. One would have to carry out a thorough review of the literature on this situational characteristic alone to have fuller information on the psychological outcomes of abortion in this context.

5.4 Conclusion

A large body of research on the psychological effects of abortion has been carried out since the 1970s, when abortion became legal in many countries. The methodological quality of this research has improved over time. As the research has progressed, there has been an increasing tendency for greater controls to be introduced into the research and also for measures to be taken at several intervals. In some cases prospective studies have been carried out. However, in spite of the methodological improvements over time, there are still some unanswered questions, which will only be able to be answered with even better designed, larger, prospective longitudinal studies.

On the basis of the vast body of research that has been carried out to date, there is a general consensus that abortion generally does not lead to negative psychological outcomes for women. However, in a minority of cases (some studies suggest about 20%), it does. The women most at risk of negative outcomes are:

- those who do not have psychological support of partner and/or family;
- those with pre-existing psychological problems;
- those whose own religious beliefs or those of their social environment are disapproving of abortion;
- those who have abortions in the second trimester, as opposed to the first;
- those who wanted the child and decided to terminate the pregnancy due to such factors as foetal abnormalities.

Research has shown that some of the above risk factors are confounding factors. For example, as Fergusson et al. (2006) have pointed out, there was a significant tendency for those who became pregnant by age 25 “to exhibit a profile characterised by greater social and economic disadvantage, family dysfunction and individual adjustment problems. In addition, those who became pregnant were more likely to have left the family home at a young age and to have entered a cohabiting relationship”.

These authors also refer to the fact that even carefully designed research has “omitted covariates”, that is confounding factors that are not tapped by the research. These can include many other contextual factors that have not been measured - for example, the extent to which the pregnancy was wanted, the extent of family and/or partner support for seeking an abortion, the woman’s actual experience in seeking and obtaining an abortion. Thus, these authors conclude: “The apparent associations between abortion and mental health found in [their] study may not reflect the traumatic effects *per se* but rather other factors which are associated with the process of seeking and obtaining an abortion.”

6.0 Policy implications and recommendations for practice and further research

6.1 Policy implications

Several of the authors of the studies reviewed recommended that women undergoing abortion should be made aware of the fact that they could experience negative psychological outcomes. Further, authors and professional bodies pointed to the need for counselling and emphasised that this should be made available to those women who do experience distress following abortion (e.g., Clare and Tyrrell, 1994; American Psychological Association, 2004; Royal College of Obstetricians and Gynaecologists, 2004).

Clare and Tyrrell (1994), writing about the Irish context, state:

Whether Irish legislation is altered to permit abortion in certain restricted circumstances or abortion remains illegal, there is a clear and pressing need for more psychiatric and psychological involvement in the counselling and support of women who seek and obtain abortion in other jurisdictions and of women who while ambivalent or hostile to their pregnancies continue to term (p. 98).

Henshaw et al. (1999) of the Alan Guttmacher Institute point out that stringent legal restrictions do not guarantee a low abortion rate and, indeed, the lack of legal abortion can often lead to illegal abortions being carried out in unsafe conditions. This underscores the importance of promoting better availability and use of contraception as a policy to reduce abortion.

The American Psychological Association (2004) has stressed the importance of education and career development programmes for young women. They emphasise the role that the school system can play in encouraging young women to remain in school and to equip themselves for careers and to discourage early pregnancies.

As we have already noted above, Clare and Tyrrell (1994) linked the consistent finding in the literature that “women who have strong religious or cultural attitudes negative to abortion do experience high levels of psychological stress following abortion” to the Irish situation. In view of this, it is incumbent upon Government to develop health policies to deal with the psychological stress and potential adverse psychological outcomes which are likely to be experienced by a proportion of Irish women who undergo abortion.

6.2 Recommendations for practice

The implications for practice include the following:

1. GPs, gynaecologists, nurses and counsellors who come into contact with women who are contemplating an abortion or who have recently had one should be trained to be aware of the possible psychological outcomes of abortion and the risk factors for negative outcomes. Medical practitioners should be trained to look out for symptoms of psychological stress and be ready to refer the patient to appropriate counselling or therapy if needed.

2. Such training of professionals should include familiarisation with the literature on the psychological effects of abortion, including the risk factors for negative outcomes and the possible effects over time.

The need to familiarise doctors and counsellors with the results of the literature is particularly important because of its nuanced nature and hence the need to be attuned to the various risk factors (age, social class variables and early social dysfunction; extent of family and partner support, etc).

3. Women who are the patients/clients of the above professionals should be informed of the likely effects and possible psychological effects of abortion, so that this can be part of making an informed judgment about whether or not to have an abortion.

6.3 Recommendations for further research

To date there has been no study of the psychological effects of abortion on Irish women. Clare and Tyrrell's (1994) conclusions suggest that it would be important to carry out such a study.

If, as the authors suggest, many Irish women, particularly those with strong religious beliefs, do suffer from psychological and/or psychiatric symptoms following abortion, it would be important for service providers (and policy makers) to have data concerning the nature and extent of this problem. While service providers, at least, undoubtedly do have a sense of this already, it would nevertheless be useful and important to have information on how Irish women fare in comparison to women from other countries for whom there is data.

The Psychological Society of Ireland pointed out 15 years ago (Psychological Society of Ireland, 1992) that there is an "absence of a body of scientific research on abortion in Ireland". As they also point out, given that abortion is illegal in this country, the effects of research carried out in countries where it is legal do not necessarily translate equally to this country, especially since the influence of the Catholic Church has been so great here, and research conducted elsewhere has shown that women with strong religious beliefs are likely to suffer psychologically more than women who do not hold these beliefs:

We do not have a significant body of research information on Irish attitudes to unwanted pregnancy and its various outcomes: abortion, adoption or childrearing by the mother. Neither do we know the impact of Irish attitudes in this area on the experience of unwanted pregnancy for women in Ireland. Adequate research funding is needed here to provide information to inform policy and decision making in this area (Psychological Society of Ireland, 1992).

Not only do we not have research on the psychological effects of abortion on Irish women, the international research - while it has been prolific - has still not been definitive.

Several authors have pointed to the methodological limitations of research in this area. Thorp et al. (2002) believe that future studies in this area should be large scale, in order to have adequate power to detect small effects. Such studies will be expensive.

However, these authors recommend that they should be carried out, since they believe women deserve to be given full and accurate information about the potential health risks, both physical and psychological, which may ensue from abortion. Until further research and meta-analyses are forthcoming, they believe we are faced with uncertainties. However, on the basis of the evidence to date, they believe there is concern of a possible link to serious mental health problems. The U.S. Surgeon General (Koop, 1989a, 1989b) concurs with this assessment, as do Fergusson et al. (2006), who state that there is a "clear need for further well controlled studies to examine this issue before strong conclusions can be drawn about the extent to which exposure to abortion has harmful effects on the mental health of young women."

Because of the high cost of such research, which would need to be prospective and longitudinal on a large sample of women of childbearing age, it is likely that such research will need to be carried out in countries which can afford such expensive research. However, in the meantime, it would still be important for research on Irish women to be carried out, so that we will be better informed about the psychological impact of abortion on Irish women since the Irish context is unique in relation to this experience and, as has been pointed out by several authors (Psychological Society of Ireland, 1992; Clare and Tyrrell, 1994; Rue et al., 2004), the cultural context is a critically important determinant of the experience of this event in a woman's life.

7.0 References

- Adler, N. (1989) University of California at San Francisco, Statement on Behalf of the American Psychological Association Before the Human Resources and Intergovernmental Relations Subcommittee of the Committee on Governmental Operations, U. S. House of Representatives, pp. 130-140.
- Adler, N. (2000) Abortion and the Null Hypothesis-Commentary. *Archives of General Psychiatry*, 57, 785-86.
- Adler, N.E., David, H.P., Major, B.N., Roth, S.H., Russo, N.F. and Wyatt, G.E. (1990) Psychological responses after abortion. *Science*, 248, 41-44.
- Adler, N.E., David, H.P., Major, B.N., Roth, S.H., Russo, N.F. and Wyatt, G.E. (1992) Psychological Factors in Abortion: A Review. *American Psychologist*, 47 (10), 1194-1204.
- Adler, N.E., Ozer, E.J., and Tschann, J. (2003) Abortion among adolescents. *American Psychologist*, 58 (3), 211-217.
- American Psychological Association (2004) The impact of abortion on women: What does the psychological research say? APA Briefing Paper on the Impact of Abortion on Women. (<http://www.apa.org/ppo/issues/womenabortfacts.html>).
- Athanasίου, R., Opiel, W., Michaelson, L., Unger, T. and Yager, M. (1973) Psychiatric sequelae to term birth and induced early and late abortion: A longitudinal study. *Family Planning Perspectives*, 5, 227-231.
- Barber, J.S., Axinn, W.G. and Thornton, A., (1999) Unwanted Childbearing, Health, and Mother-Child Relationships, *Journal of Health and Social Behavior*, 40 (3), 231-257.
- Bonevski, B. and Adams, J. (2001) Psychological Effects of Termination of Pregnancy: A Summary of the Literature, 1970-2000. *Psychological Consequences Review* (Newcastle Institute of Public Health), pp. 1-40.
- Boonstra, H.D., Gold, R.B., Richards, C. L. and Finer, L.B. (2006) *Abortion in Women's Lives*. New York: Alan Guttmacher Institute.
- Bracken, M.B., Hachamovitch, M. and Grossman, G. (1974) The decision to abort and psychological sequelae. *Journal of Nervous and Mental Disease*, 158 (2), 154-162.
- Bradshaw, Z. and Slade, P. (2003) The effects of induced abortion on emotional experiences and relationships: A critical review of the literature. *Clinical Psychology Review*, 23, 929-958.
- Brewer, C. (1977) Incidence of post-abortion psychosis: A prospective study. *British Medical Journal*, 1, 476-477.
- Broen, A.N., Moum, T., Bodtker, A.S. and Ekeberg, O. (2004) Psychological impact on women of miscarriage versus induced abortion: A 2-year follow-up study. *Psychosomatic Medicine*, 66, 265-271.

Broen, A.N., Moum, T., Bodtger, A.S. and Ekeberg, O. (2005) The course of mental health after miscarriage and induced abortion: a longitudinal, five-year follow-up study. *BMC Medicine*, 3(18), 14pp.

Clare, A.W. and Tyrrell, J. (1994) Psychiatric aspects of abortion. *Irish Journal of Psychological Medicine*, 11 (2), 92-98.

Coleman, P.K. and Nelson, E.S. (1998) The quality of abortion decisions and college students' reports of post-abortion emotional sequelae and abortion attitudes. *Journal of Social and Clinical Psychology*, 17 (4), 425, 442.

Conlon, C. (2006) *Concealed Pregnancy: A case-study approach from an Irish setting*. Dublin: Crisis Pregnancy Agency.

Cogle, J.R., Reardon, D.C. & Coleman, P.K. (2003) Depression associated with abortion and childbirth: a long-term analysis of the NLSY cohort. *Medical Science Monitor*. 9, CR105-112.

Cogle, J.R., Reardon, D.C. & Coleman, P.K. (2005) Generalized anxiety following unintended pregnancies resolved through childbirth and abortion: a cohort study of the 1995 National Survey of Family Growth. *Journal of Anxiety Disorders*, 19(1), 137-142.

Cozzarrelli, C., Karrasch, A., Sumer, N., and Major, B. (1994) The meaning and impact of partner's accompaniment on women's adjustment to abortion. *Journal of Applied Social Psychology*, 24 (22), 2028-2056.

Dagg, P.K.B. (1991) The Psychological Sequelae of Therapeutic Abortion – Denied and Completed.. *American Journal of Psychiatry*, 148 (5), 578-585.

David, H.P. et al. (1985) Postpartum and postabortion psychiatric reactions. In: P. Sachder (Ed), *Perspectives on Abortion*. Metuchen, N.J.: Scarecrow Press, pp. 107-116.

David, H.P., Dytrych, Z. and Matejcek, Z. (2003) Born Unwanted: Observations from the Prague Study. *American Psychologist*, 58(3), 224-229.

Dean, G., Walsh, D., O'Hare, A. and McLoughlin, H. (1985) *Termination of pregnancy England 1984: Women from the Republic of Ireland*. Dublin: Medico-Social Research Board.

Department of Health (2006) *Abortion Statistics England and Wales*. London: UK Department of Health.

Di Gusto, M., Lazzari, R., Giorgetti, T. Paesano, R. and Pachi., A. (1991) Psychological aspects of therapeutic abortion after early prenatal diagnosis. *Clinical and Experimental Obstetrics and Gynecology*, 18 (3), 169-173.

Dutch Department of Health (2006) *Jaarrapportage 2005 van de Wet afbreking zwangerschap*, Inspectie voor de Gezondheidszorg.

Fergusson, D.M., Horwood, J. L. and Ridder, E.M. (2006) Abortion in Young Women and Subsequent Mental Health, *Journal of Child Psychology and Psychiatry*, 47 (1), 16-24.

Fine-Davis, M. (1988a) Changing Gender Role Attitudes in Ireland: 1975-1986 Vol. I: "Attitudes toward the Role and Status of Women, 1975-1986". In: First Report of the Second Joint Oireachtas Committee on Women's Rights (Pl. 5609) Dublin: The Stationery Office.

Fine-Davis, M. (1988b) Changing Gender Role Attitudes in Ireland: 1975-1986 Vol. III: "Attitudes Towards Moral Issues in Relation to Voting Behaviour in Recent Referenda". In: Third Report of the Second Joint Oireachtas Committee on Women's Rights. (Pl. 5796). Dublin: The Stationery Office.

Fingerer, M. (1973) Psychological sequelae of abortion: Anxiety and depression. *Journal of Community Psychology*, 1, 221-225.

Forssman, H. and Thuwe, I. (1966) One hundred and twenty children born after application for therapeutic abortion refused. *Acta Psychiatr Scand*, 42, 71-78.

Forssman, H. and Thuwe, I. (1988) The Goteborg cohort 1939-1977. In: David, H.P. et al. (Eds), *Born unwanted*. New York: Springer.

Francome, C. (1992) Abortion in Ireland: Confused on both sides of the border. *British Medical Journal*. 305, 436.

Henshaw, S., Sing, S., and Haas, T. (1999) The incidence of abortion worldwide. *International Family Planning Perspectives*. 25 (Supplement). S30-S38.

Holmgren, K. (1988) Time of decision to undergo a legal abortion. *Gynecologic and Obstetric Investigation*, 26 (4), 289-295.

Hook, K. (1963) Refused abortion. *Acta Psychiatr Scand* (Supplement 39), 168, 1-156.

Hunfeld, J.A., Wladimiroff, J.W., and Passchier, J. (1994) Pregnancy termination, perceived control, and perinatal grief. *Psychological Reports*. 74 (1), 217-218.

Jackson, P. (1987) Outside the jurisdiction – Irish women seeking abortion. In: C. Curtin, P. Jackson and B. O'Connor (Eds.) *Gender in Irish Society*. Galway: Galway University Press, pp. 203-223.

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

Kero, A., Hogberg, U. and Lalos, A. (2004) Wellbeing and mental growth – long-term effects of legal abortion. *Social Science & Medicine*, 58, 2559-2569.

Koop, C.E. (1989a) Letter to President Reagan. In: *A measured response: Koop on Abortion*, *Family Planning Perspectives*, 21(1), 31-32.

- Koop, C.E. (1989b) Post abortion syndrome: myth or reality? *Health Matrix*, 7(2), 42-44.
- Kumar, R. and Robson, K. (1984) A prospective study of emotional disorders in childbearing women. *British Journal of Psychiatry*, 144, 34 – 47.
- Layte, R., McGee, H., Quail, A., Rundle, K., Cousins, G., Donnelly, C., Mulcahy, F., and Conroy, R. (2006) *The Irish Study of Sexual Health and Relationships*. Dublin: Crisis Pregnancy Agency.
- Lemkau, J.P. (1988) Emotional Sequelae of Abortion: Implications for Clinical Practice. *Psychology of Women Quarterly*, 12, 461-472.
- Major, B. (2003) Psychological Implications of abortion – highly charged and rife with misleading research (comment). *Canadian Medical Association Journal*, 168, 1257-1258.
- Major, B., Cozzarrelli, C., Cooper, M.L, Zubek, J., Richards, C., Wilhite, M. and Gramzow, R.H. (2000) Psychological responses of women after first-trimester abortion. *Archives of General Psychiatry*, 57(8), 777-784.
- McGrath, D., O’Keeffe, S. and Smith, M. (2005) *Crisis Pregnancy Agency Statistical Report 2005: Fertility and Crisis Pregnancy Indices*. Dublin: Crisis Pregnancy Agency.
- Ney, P.G. and Wickett, A.R. (1989) Mental health and abortion: review and analysis. *Psychiatric Journal of the University of Ottawa*, 14 (4), 506-516.
- Pare, C.M. and Raven, H. (1970) Follow-up of patients referred for termination of pregnancy. *Lancet*, (7648), 635-638.
- Planned Parenthood (2001) *The Emotional Effects of Induced Abortion. Fact Sheet*. New York: The Katherine Dexter McCormick Library, Planned Parenthood Federation of America, 11 pp.
- Psychological Society of Ireland (1992) *Abortion: Social context and psychological consequences*. Dublin: Psychological Society of Ireland, 5 pp.
- Quinton, W.J., Major, B. and Richards, C. (2001) Adolescents and adjustment to abortion: Are minors at greater risk? *Psychology, Public Policy, and Law*, 7, 491-514.
- Reardon, D.C. and Cogle, J.R. (2002) Depression and unintended pregnancy in the National Longitudinal Survey of Youth: A cohort study. *BMJ*, 324, 151-152.
- Reardon, D.C., Cogle, J.R., Rue, V.M., Shuping, M.W., Coleman, P.K. and Ney, P. G. (2003) Psychiatric admissions of low-income women following abortion and childbirth. *Canadian Medical Association Journal* 168, 1253-1256.
- Resnick, P. J. (1970) Murder of the newborn: a psychiatric review of neonaticide. *Am J Psychiatry*, 126, 1414-1420.

Robbins, J.M. (1984) Out of wedlock abortion and delivery: The importance of the male partner. *Social Problems*, 31, 334-350.

Robbins, J.M. and DeLamater, J.D. (1985). Support from significant others and loneliness following induced abortion. *Social Psychiatry*, 20(2), 92-99.

Robinson, G.E. and Stewart, D.E. (1993) Postpartum Disorders. In: N.L. Stotland (Ed). *Psychological Aspects of Women's Health Care*. Washington: American Psychiatric Press, pp. 115-138.

Rose, R. S. (1978) Induced abortion in the Republic of Ireland, *British Journal of Criminology*, 18, 245-254.

Royal College of Obstetricians and Gynaecologists (2004) *The Care of Women Requesting Induced Abortion – Evidence-based Clinical Guideline Number 7*. London: Royal College of Obstetricians and Gynaecologists.

Rue, V.M., Coleman, P.K., Rue, J.J. and Reardon, D.C. (2004) Induced abortion and traumatic stress: A preliminary comparison of American and Russian women. *Medical Science Monitor*, 10(10), SR5-16.

Rundle, K., Leigh, C., McGee, H. and Layte, R. (2004) *Irish Contraception and Crisis Pregnancy [ICCP] Study: A Survey of the General Population*. Dublin: Crisis Pregnancy Agency.

Russo, N.F. and Denious, J.E. (2001) Violence in the lives of women having abortions: Implications for practice and public policy. *Professional Psychology: Research and Practice*, 32 (2), 142-150.

Schleiss, L., Mygind, K. A., Borre, R. V. and Petersson, B. H. (1997) Psychological consequences of induced abortion. *Ugeskrift Laeger*, 159 (23), 3603-3606.

Shusterman, L.R. (1976) The Psychosocial Factors of the Abortion Experience: A Critical Review. *Psychology of Women Quarterly*, 1(1), 79-106.

Soderberg, H., Janzon, L. and Sjoberg, N-O. (1998) Emotional distress following induced abortion – A study of its incidence and determinants among abortees in Malmo, Sweden. *European Journal of Obstetrics & Gynecology and Reproductive Biology*, 79, 173-178.

Stotland, N. (1997) Psychosocial Aspects of Induced Abortion. *Clin Obstet Gynaecol*, 4(3), 673-86.

Stotland, N. (2001), Psychiatric aspects of induced abortion. *Archives of Women's Mental Health*. 4 (1) 27-31.

Thorp, J.M., Hartmann, K.E. and Shadigian, E. (2002) Long-Term Physical and Psychological Health Consequences of Induced Abortion: Review of the Evidence. *Obstetrical and Gynecological Survey*. 58 (1),67-79.

APPENDIX 1

**Table 1: Abortion rates per 1,000 women by country:
comparison of 1995-1996 and 2003-2006**

Country	1995-1996*	2003-2006**
Spain	5.7	8.9
Ireland	5.9	<i>5.2</i>
Netherlands/Holland	6.5	8.6
Belgium	6.8	8.0
Germany	7.6	<i>7.4</i>
Italy	11.4	<i>11.0</i>
France	12.4	16.7
Canada	15.5	<i>15.2</i>
England & Wales	15.6	18.3
Norway	15.6	<i>12.9</i>
Denmark	16.1	<i>12.2</i>
New Zealand	16.4	19.7
Sweden	18.7	20.2
Australia	22.2	<i>19.7</i>
United States	22.9	<i>20.8</i>

Bold Numbers Increased from 1995/1996 – 2003/2006
 Italic Numbers Decreased from 1995/1996 – 2003/2006

Sources:

* Adapted from Henshaw, S., Sing, S., & Haas, T. (1999). The incidence of abortion worldwide. *International Family Planning Perspectives*. (25) Supplement. S30-S38; The Guttmacher Institute <http://www.guttmacher.org/pubs/journal\25s3099.html>

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APPENDIX 2: Glossary of Terms

Confounding variable (also a confounding factor or confounder) - an extraneous variable in a statistical model that correlates with both the dependent variable and the independent variable and so makes it difficult to establish causal links.

DSM-IV mental disorders - The Diagnostic and Statistical Manual of Mental Disorders is a manual used for diagnosis of mental disorders. The current, fourth edition (DSM-IV) organises mental disorders into 16 major diagnostic classes. For each disorder within a diagnostic class, DSM-IV enumerates specific criteria for making the diagnosis.

Elective abortion - the deliberate termination of a pregnancy through personal choice.

Eugenic abortion - Abortion performed because of possible foetal defects.

Induced abortion - An abortion that is brought about intentionally. Also called an artificial or therapeutic abortion, as opposed to a spontaneous abortion (a miscarriage).

Late gestation abortion - Induced abortion procedure that occurs after the 20th week of pregnancy.

Multifetal pregnancy reduction - Procedure to reduce the number of fetuses where a woman has a multiple pregnancy.

Non-restrictive abortion - Policy whereby abortion procedures are freely available to women without restriction.

Psychopathology - Behaviours or experiences which are indicative of mental illness.

Sequela - A secondary consequence or result.

Spontaneous abortion - A miscarriage of a pregnancy that is not viable, i.e. in which the foetus cannot survive. Spontaneous abortion occurs in at least 15-20% of all recognised pregnancies and usually takes place before the 13th week of pregnancy.

Suicidal ideation - Having thoughts of suicide or of taking action to end one's own life.

Symptomatology - The combined symptoms of a disease.

Therapeutic abortion - See Induced abortion.

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