

Special article

To meta-analyse or not to meta-analyse:
abortion, birth and mental health

Tim Kendall, Victoria Bird, Roch Cantwell and Clare Taylor

Summary

Two recent meta-analyses claim that abortion leads to a deterioration in mental health. Previous reviews concluded that the mental health outcomes following an unwanted pregnancy are much the same whether the woman gives birth or terminates the pregnancy, although there is an increased mental health risk with an unwanted pregnancy. Meta-analysis is particularly susceptible to bias in this area. The physical health outcomes for women with an unwanted pregnancy have improved greatly by making abortion legal. To further improve the mental health outcomes associated with an unwanted pregnancy we should focus practice and

research on the individual needs of women with an unwanted pregnancy, rather than how the pregnancy is resolved.

Declaration of interest

T.M., V.B., R.C. and C.T. have been funded by the Academy of Medical Royal Colleges (AoMRC) to undertake a review of mental health and abortion. R.C. is Chair of the expert reference group for the AoMRC, and is Chair of the Section of Perinatal Psychiatry of the Royal College of Psychiatrists.

In most liberal societies, a woman carrying an unwanted pregnancy can choose to have an abortion, subject to the relevant legal framework (e.g. rules on timing and risk to either the woman or child). Alternatively, she may decide to continue with the pregnancy to birth (or she may miscarry). It is important for a woman to understand the possible physical and mental health risks associated with each action, particularly in the UK and Commonwealth countries where the legal grounds for abortion are to mitigate the likelihood of physical or mental harm to the woman should she continue with the pregnancy. It is also important for women in the US, where there have been recent attempts to introduce more restrictive abortion laws with claims that abortion is damaging to women's mental health.

It is reasonably well accepted that there is a broad range of physical and mental health risks associated with birth. It is less certain whether the mental health risks associated with birth are altered if the pregnancy is unwanted. Similarly, it is established that there are some physical risks directly related to the timing of an abortion and the techniques used, especially for illegal abortion,¹ but we are less certain about the mental health outcomes following the termination of an unwanted pregnancy.

This topic has been the subject of much debate and research. In this *Journal*, a recent meta-analysis (the first of its kind) comparing mental health outcomes following abortion with other pregnancy outcomes² generated considerable disquiet, accusations of bias and suggestions of undeclared conflicts of interest.^{3–6} In a letter of response, Fergusson and colleagues also reported the findings of a meta-analysis of mental health outcomes following abortion.⁷ Coleman and Fergusson appear to agree that abortion is associated with an increased risk to a woman's mental health. However, two previous systematic narrative reviews^{8,9} examining very similar studies to Coleman and Fergusson, came to the conclusion that abortion (when compared with birth) did not lead to an increased risk of mental health problems. No doubt these differences stem from the very variable types of studies reviewed and their interpretation.

Narrative and systematic reviews of abortion and mental health

The American Psychological Association's narrative review set out to ascertain whether there is an increased risk of mental health

problems following an abortion compared with birth, and the factors that may be related to such an increased risk⁸ (updated by Major *et al*¹⁰). Reviewing 56 studies comparing abortion and other pregnancy outcomes, and 23 with no comparator, they concluded that the relative risk of developing mental health problems following a single, first-trimester abortion of an unplanned pregnancy was no greater than the risk following giving birth.

Charles and colleagues⁹ systematic review of more than 700 studies, including only 21 for analysis, compared the longer-term mental health outcomes of abortion with those of birth. The authors developed five quality criteria to rank the studies, such as appropriateness of the comparison group and whether they controlled for pre-abortion mental health status. Using these criteria, four studies were judged to be 'very good', eight 'fair', eight 'poor' and one 'very poor'. They concluded that restricting the analysis to studies of very good quality resulted in little or no difference in mental health outcome following abortion compared with birth, and that, as the quality declined, there was an increased possibility that studies would conclude that abortion was more likely than birth to end in poor mental health outcomes.

Meta-analyses of abortion and mental health

The Coleman² meta-analysis cannot be regarded as a formal systematic review because search strategies and exclusion criteria were not published. Nevertheless, the 22 pooled studies had to: assess the impact of abortion against a no-abortion group; have a sample size of at least 100; use odds ratios; and have been published in English-language peer-reviewed journals between 1995 and 2009. Although studies were required to control for third variables, they were not required to control for mental health problems before the abortion. In addition, the no-abortion groups included 'no abortion', 'pregnancy delivered' or 'unintended pregnancy delivered'. Coleman concluded that there was 'a moderate to highly increased risk of mental health problems after abortion over the risks of birth'. The volume of highly critical letters that followed publication is a testament, not just to the review's methodological flaws, but also to the personal, ethical, religious and political importance of abortion to different groups.

Fergusson and colleagues⁷ meta-analysed eight studies identified in the three reviews discussed above, comparing abortion versus unwanted/unintended pregnancy, and suggest that, following an unwanted/unintended pregnancy, abortion is more likely than birth to be associated with anxiety, self-harm and substance misuse (but not depression). Although the main analysis did not control for mental health before abortion, a secondary analysis of four studies, which did control for mental health, found that an increased risk of general psychiatric problems remained.

Last year, we completed a systematic review, narrative synthesis and limited meta-analysis of the mental health outcomes following abortion and birth of an unwanted pregnancy.¹¹ We concluded that the majority of studies in the review were subject to multiple limitations, such as heterogeneity of mental health outcomes and their methods of assessment, inadequate control of confounding variables, and comparator populations that rarely included unwanted pregnancies continuing to birth. For these reasons, our meta-analysis only included four studies, all of which controlled for prior mental health problems and used unwanted/unintended pregnancies for analysis. We found that there were small effects associated with abortion, increasing the risks of self-harm and decreasing risks for psychosis. However, these four studies were conducted in different countries: two^{12,13} in the USA, where abortion is available on-demand, one¹⁴ in the UK and one¹⁵ in New Zealand. In the UK and New Zealand the legal grounds for abortion are to mitigate any physical or mental harm should the pregnancy be delivered. Finding that women in these studies had a higher rate of mental health problems after abortion risks the criticism that it would be like finding out that people who took hangover remedies had an increased risk of headache.¹⁶

From abortion to unwanted pregnancy: making sense of the data

A recent prospective, population-based cohort study¹⁷ used three Danish national registers to identify, and follow, females who had no prior history of mental health problems, and who went on either to have a first abortion or to give birth. The authors estimated the rates of psychiatric contact in the 9 months preceding abortion or birth, and in the subsequent 12 months. They showed that females who had an abortion had significantly higher rates of mental health problems in the 9 months before abortion than those in the 9 months before birth; and that for those who had an abortion, their rates of psychiatric contact after the abortion were no greater than before the abortion. In contrast, females who gave birth had significantly higher rates of mental health problems after birth than before. It is a distinct possibility that mental health problems precede unwanted pregnancy and/or unwanted pregnancy may lead to mental health problems.

In our view, all three meta-analyses^{2,10,11} added little to a well-done narrative review, and risked giving the impression that the results were more scientific and reliable. GRADE evaluation of our meta-analysis suggested that the outcomes were of very low quality and therefore at significant risk of not being correct; a critique likely to be true of Fergusson and colleagues' meta-analysis. We concluded that the American Psychological Association's⁷ and Charles *et al*'s⁸ reviews were probably accurate: for a woman carrying an unwanted pregnancy, current evidence suggests that her mental health is probably largely unaffected whether she chooses to have an abortion or to continue to birth. In Denmark, where a woman has the right to choose, and in the UK where the right to choose is curtailed by the requirement for professional approval, two high-quality studies, some 16 years

apart, appear to support the general conclusion of these and our review: that there is no or little increased risk of mental health problems following abortion.^{14,17}

Unwanted pregnancy is both a potential personal catastrophe and a major public health problem, leading to over 46 million abortions each year worldwide, of which over 19 million are illegal abortions.¹⁸ In the UK before the Abortion Act 1967 there were an estimated 100 000 illegal abortions each year.¹⁹ The vast majority of unsafe/illegal abortions now occur in low- and middle-income countries, with a mortality rate between 100- and 1000-fold greater than legal abortions; however, the mortality rate for illegal abortions in the USA is still 50 times greater than that for legal abortions.¹ Making abortion legal has helped to substantially reduce the physical health risks for women with an unwanted pregnancy; perhaps moving our attention from what all too often appears to be morally and politically influenced concerns about abortion, we could focus on the mental health needs associated with unwanted pregnancy both in clinical practice and research.

Tim Kendall, FRCPsych, National Collaborating Centre for Mental Health, Royal College of Psychiatrists, London, and Sheffield Health and Social Care NHS Foundation Trust; **Victoria Bird**, BSc, Institute of Psychiatry, King's College London; **Roch Cantwell**, FRCPsych, Southern General Hospital, Glasgow; **Clare Taylor**, DPhil, National Collaborating Centre for Mental Health, Royal College of Psychiatrists, London, UK

Correspondence: Tim Kendall, Sheffield Health and Social Care (NHS) Foundation Trust, Fulwood House, Old Fulwood Road, Sheffield S10 3TH, UK. Email: tim.kendall@shsc.nhs.uk

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psychiatry in pictures

Thomas Chetcuti – an image in Maltese psychiatry

Anne-Marie Scerri



The 19th-century Maltese psychiatrist Thomas Chetcuti was born 3 years before the beginning of British rule in Malta, in 1797, in Mosta, a village in the centre of the island. He studied grammar, languages and classical poetry, as well as engaging in the study of philosophy and developing a great love for Christian literature. Having read law, he turned to pursuing medicine in Naples, to bring others to health and wholeness. He had a great interest in the works of Sydenham.

After completing his medical studies, he returned to Malta and was sought after by many for his great knowledge and diligence in the practice of medicine, obstetrics and ophthalmology. He soon became superintendent of Franconi House, a lunatic asylum in Floriana, a town on the outskirts of Malta's capital city, Valletta. Chetcuti remains greatly respected as the father of Maltese psychiatry and is fondly remembered as the one who removed restraints from psychiatric in-patients, limited the use of seclusion and introduced a more humane approach in psychiatric treatment, prohibiting maltreatment and the use of physical force on patients, and restoring their dignity.

As a researcher, Chetcuti kept records of the people he encountered in his psychiatric practice, including statistical records. He was a local implementer and advocate of what were at the time established

treatments in psychiatry, including baths, emetics, purgatives, bloodletting, avoidance of constipation, exercise, psychotherapy and engaging patients in mentally stimulating activities. His enthusiasm and gentleness were key to his success in the treatment of his patients.

Chetcuti brought about reform in the asylum, but he was keen on moving it to the rural environment of what he called 'the splendid house of Incita Valley'. The new psychiatric hospital was built on the outskirts of the village of Attard, in the centre of the island. It survived to this day a large building with a grand main garden, surrounded by trees and open-air spaces, a comfortable and peaceful place with a splendid view of the hill on which Mdina, Malta's silent city with its ancient and majestic fortifications, was built, surrounding countryside and arable farmland – an ideal therapeutic setting for the treatment of mental illness.

As an appointed expert to the court of law, Chetcuti was sought for medical advice even within the remits of forensic psychiatry. He was also a well-respected medical educator, his prime works on medical education being a text he wrote together with his colleague, Nicholas Zammit, as well as several addresses to medical students at the beginning of the academic year and addresses to the Medical Society of Encouragement. He was affiliated to several medical societies of the time. As an enthusiastic learner, Chetcuti also visited several asylums in England, France and Italy. His main psychiatric works include *On the Manias*, *On Instinctive Homicidal Monomania*, and *Description of the Public Asylum of Malta*.

Thomas Chetcuti died on 17 March 1863, following a period of illness during which patients still sought him for medical advice in his own home. It was when he noted the enlargement of his parotid and cervical glands that he realised he was approaching the end of his life, and asked for last rites. He was buried in Mosta parish church, where to this day a detailed inscription can be seen in the corridor joining the two sacristies.

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