MARGARET JACKSON PRIZE ESSAY 2005

Teenage pregnancies: is the high rate of teenage pregnancy and parenthood in the UK a public health problem?

Phillippa Bailey

Introduction

In 2002, the number of all teenagers under 18 years who became pregnant in England and Wales was 46 745.[1] Around 20% of these conceptions were second pregnancies. Just over 50% resulted in live births, causing the UK to have a teenage birth rate that is twice as high as Germany, three times as high as France and six times as high as The Netherlands. In England, the problem is greatest in the poorest areas and among the most vulnerable, including those in care and those who have been excluded from school; however, even the most affluent areas have teenage birth rates that are high by European standards.[2]

This essay presents an overview of teenage pregnancy in England, and what may cause the high rates. Discussion focuses on the consequences of teenage pregnancy and birth: for the mother, child and society. Research enquires as to whether efforts should be made to reduce teenage pregnancy and childbearing.

Methodology

Statistics for teenage pregnancy rates in England produced by the Office for National Statistics were reviewed.[1] A scientific literature review of reviews and meta-analyses of research aimed at identifying causes and consequences of teenage pregnancy were conducted. Additionally, current key policy documents, including the Government White Paper 'Choosing Health', and further research carried out by the Social Exclusion Unit and the Teenage Pregnancy Unit, were reviewed, together with social research from the USA. Residents and workers in shared accommodation for teenage mothers and children (where the author had previously worked) were also consulted.

The author consulted the following literature sources in preparing this essay:

1. Databases (keywords used: adolescent sexual health; teenage health; teenage pregnancy; sex education):
- PubMed
- The Cochrane Database.

2. Internet pages:
- Teenage Pregnancy Unit, Department for Education and Skills, UK Government (http://www.dfes.gov.uk/teenagepregnancy)
- Office for National Statistics (http://www.statistics.gov.uk)
- Social Exclusion Unit (http://www.socialexclusion.gov.uk).

What is the current situation? – Conception data

Teenage pregnancy is defined here as 'a pregnancy conceived between the ages of 15 and 17 years, inclusive'.

J Fam Plann Reprod Health Care 2005; **31**(4): 315–319

Oxford University, Oxford, UK
Phillippa Bailey, BA, *Final Year Medical Student*

Correspondence to: Miss Pippa Bailey.
E-mail: pippabailey@hotmail.com

Table 1 *Teenage conception statistics for England 1998–2003*[1a]

Year	Under-18 conceptions (*n*)	Under-18 conception rate[b]	Percentage leading to legal abortion (%)
1998	41 089	46.6	42.4
1999	39 247	44.8	43.5
2000	38 699	43.6	44.8
2001	38 461	42.5	46.1
2002	39 350	42.6	45.8
2003	39 560	42.1	46.0

[a]The 2003 England under-18 conception rate of 42.1 per 1000 girls aged 15–17 years represents an overall decline of 9.8% since 1998 – the baseline year for the Teenage Pregnancy Strategy – and compares with a decline of 8.6% between 1998 and 2002.
[b]Rate per 1000 females aged 15–17 years. NB. Rates for 1998–2001 use Office for National Statistics October 2004 population estimates.

The most recent data for teenage conceptions from 1998 to 2003 are given in Table 1.

Figure 1 shows that, in 1999, the UK had the highest rate of teenage births in Western Europe.[2] Throughout most of Western Europe, teenage birth rates fell during the 1970s, 1980s and 1990s; UK rates have stabilised at the early 1980s level or above.[2]

What is the UK government's approach? – Goals

Implemented in 1999, the UK Government's Teenage Pregnancy Strategy has two key goals:[2,3]

1. To reduce the rate of teenage conceptions, specifically to halve the 1998 England under-18 conception rate by 2010.

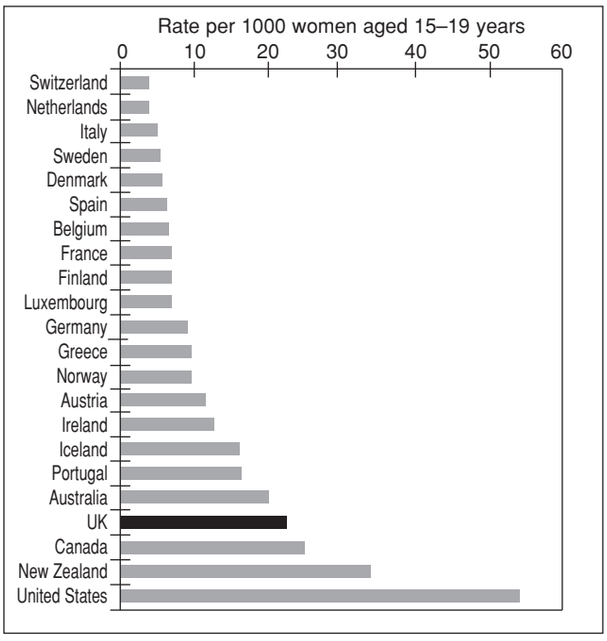

Figure 1 *Live birth rates for women aged 15–19 years (1999 data). Source: Eurostat and Centre for Sexual Health Research, Southampton, UK, 1999*

2. To increase to 60% the proportion of teenage parents aged 16–19 years in education, employment or training by 2010.

What is a public health problem?

To answer the question of whether the high rates of teenage pregnancy can be considered a public health problem, 'public health problem' must be defined.

Public health has been defined as: "The science and art of preventing disease, prolonging life and promoting health through organised efforts of society".[4] In the past, public health has been conceptualised as preventive, social and community medicine. 'Health', for the purpose of this essay, encompasses biological, psychological and social well-being.

The Public Health Approach:[4]

- Emphasises the collective responsibility for improvement in health and prevention of disease.
- Recognises the key role of the state, linked to a concern for the underlying socioeconomic and wider determinants of health and disease.
- Involves multidisciplines and incorporates quantitative and qualitative methods.
- Emphasises partnerships with all those who contribute to the health of the population.

This essay addresses whether the high rates of teenage pregnancy have negative consequences for the health of individuals and society, whether teenage pregnancy is a reflection of underlying socioeconomic determinants of health, and whether change at national level is necessary to address the problems identified.

Who becomes a teenage mother? Who are the 'at-risk' population?

To identify the 'at-risk' population it is necessary to determine factors contributing to a teenage pregnancy outcome. Do teenage pregnancies reflect or result from poor health?

There is evidence that certain groups of young people are particularly vulnerable to becoming teenage parents as detailed below.

- Young people living in poverty: research has shown that the risk of becoming a teenage mother is almost ten times higher for a girl whose family is in social class V (unskilled manual), than for one whose family is in social class I (professional).[5]
- Young people in or leaving care: the 1958 UK Birth Cohort showed that women who had been in care or fostered were nearly two and a half times more likely to become teenage mothers than those reared by both natural parents.[6,7]
- Homeless young people.[2]
- School excludes, truants and young people underperforming at school.[8,9]
- Children of teenage mothers.[5]
- Ethnic minorities (e.g. Caribbean, Pakistani and Bangladeshi women).[5,10]
- Young people involved in crime: the 1958 UK Birth Cohort identified that teenagers who had been in trouble with the police had twice the risk of becoming a teenage parent than those who had not.[7]
- Young people who have experienced sexual abuse: in the USA estimates suggest that the incidence of childhood physical or sexual abuse is about twice as high among pregnant teenagers as in the general population.[11]
- Young people with mental health problems.[2]

The above factors identify teenagers at risk of becoming both pregnant and parents (i.e. these groups have higher conception rates and higher birth rates). Studies have identified social deprivation as the key factor in the variation in abortion rates; in the UK, less affluent areas have a lower proportion of abortions compared to more affluent areas.[2] This essay focuses on those teenagers who become teenage parents.

Teenage conception rates are higher in the north of England than the south, with significant regional variation.[5] Multiple risk factors are responsible for the geographical variation but the poorest areas in England have teenage conception and birth rates up to six times higher than the most affluent areas.[2] Poverty has been shown to be strongly associated with high teenage pregnancy rates.

Cause or consequence?

There is debate over whether research into 'at-risk' groups identifies factors that increase a teenager's risk of becoming pregnant, or the consequences of teenage pregnancy and birth. For example, teenage mothers are much less likely to be a homeowner later in life, and their living standard (as measured by equivalent household income) is about 20% lower;[12] however, it is debatable whether this is because women with lower incomes are more likely to have a teen birth, or whether it is a direct effect of the teen birth. Further research suggests that it is a combination of these two factors: that teenagers from the most deprived areas of the UK are most likely to conceive and give birth, and that this in turn affects their education and chances of earning. Within the white community, disadvantaged outcomes of teenage motherhood appear to be associated with young women's departure from the dominant social norm, and there is further disadvantage of having a teen birth (not mirrored in ethnic minority communities where there is no further disadvantage beyond that already experienced).[13]

In summary, high teenage pregnancy rates are strongly associated with high levels of poverty and deprivation. More research is needed but it seems that social deprivation both contributes to the likelihood of a teen pregnancy and birth, and results from one.

Are teenage pregnancies a public health problem? – Consequences for health

So, do teenage pregnancies have adverse health and social consequences?

Biological and psychological consequences

Research has suggested that a teen birth is associated with the following health deficits:

1. Maternal effects:
   - Poorer health: negative short-, medium- and long-term health outcomes for young mothers.[5]
   - Poorer mental health: teenage mothers tend to have a significantly higher level of depression in the medium-term postpartum than older mothers.[14,15]
2. Infant effects:
   - Low birth weight: babies born to teenage mothers may have lower than average birth weight.[5]
   - Increased mortality: mortality rates for both infants and children in the 1–3-year age group are highest for mothers in the under-20 age group.[10,16]
   - Breastfeeding: teenage mothers are only half as likely to breastfeed as older mothers.[5]
   - Accidents: children of teenage mothers are more likely to suffer accidents, especially poisoning or burns, and twice as likely to be admitted to hospital as the result of an accident or gastroenteritis.[17]

However, a crucial question relates to whether the adverse outcomes experienced by (some) mothers and children of teenage pregnancies are causally related to the age of the mother, or whether other factors lead to the adverse outcomes experienced by teenage mothers and their children.

The Social Exclusion Unit's (SEU) 1999 report for the UK Government[2] concluded: "there is no reason why a teenage pregnancy should not have a good outcome if it is well managed".

The report also states that poor outcomes of teen birth are partly the result of poorly managed pregnancies. Research reveals that teenagers usually present to health care services later in pregnancy, as three-quarters were not planning to become pregnant.[18] For the same reason, teenagers often miss out on important early preconception health measures, such as folic acid supplements.[19] Teenage mothers are also the most likely of all age groups to smoke during pregnancy: nearly two-thirds of under 20-year-olds smoke before pregnancy and almost one-half smoke during it.[19]

When other confounding factors are controlled for, studies have suggested that first teenage births are not independently associated with an increased risk of adverse pregnancy outcomes as measured by stillbirth, preterm delivery, emergency Caesarean section, and size relative to gestational age.[2,13]

In summary, it is not clear that a teen birth is independently associated with poor outcomes in biological and psychological health.

Social consequences

The first report of the Teenage Pregnancy Research Programme in 2003 explored "the longer-term consequences of having a child as a teenager". The report's main conclusions were:[12–14,20]

1. Maternal effects:
- Education and employment: the SEU report states that young mothers are less likely to complete their education, have no qualifications by the age of 33 years, be in receipt of benefits and, if employed, be on lower incomes than their peers. However, data from the 1970 British Cohort Study suggests little adverse impact of a teen birth on a woman's qualifications, employment or pay at age 30 years, but that a partner is more likely to be unemployed.[20]
- Housing: 80% of under 18-year-old mothers live in someone else's household (e.g. parents) and teenagers are more likely to move house during pregnancy.
- Family: teenage mothers are more likely to be lone parents[21] and to find themselves with family conflict.

2. Infant effects:
- Deprivation: children of teenage mothers are more likely to have been in care and in a lone-parent family, and are generally at increased risk of poverty, poor housing and poor nutrition.[20]
- Education: at age 10 years, children of teenagers were more likely to be rated by their teachers as below-average general knowledge, less popular with peers, less co-operative, and less able to concentrate. In adulthood, children of younger mothers are less likely to gain A-levels or equivalent educational qualifications.
- Young parenthood: in adulthood, both men and women born to younger mothers were more likely to have had a child themselves before the age of 20 years.

It has been argued that the above factors are social determinants of health and increase a teenager's risk of becoming a mother; thus the debate returns to the question of causality or consequence.

Whatever the age of the mother, poverty has an impact on a child's prospects; but though infant mortality is higher for the poorest at all ages, research has shown that a teenage birth increases the risk for all social classes.[21] In the 1958 UK Birth Cohort Study, childhood poverty was also associated with poor outcomes in adult life, although generally not as strongly as the association between early motherhood and adverse outcomes.[21]

Teenage motherhood appears therefore to be independently associated with adverse social outcomes.

"Teenage pregnancy is not a public health problem"

It has been argued that "teenage pregnancy is not a public health problem; the cumulative effect of social and economic exclusion on the health of mothers and their babies, whatever their age, is".[22] If this is true, the UK Government's goal of reducing the risk of long-term social exclusion of teenage parents and their children is an appropriate public health aim, and should receive most funding.

The same authors have argued that teenage pregnancy should not be conceptualised as a public health problem, and suggest that this label is a reflection of what is currently considered to be socially, culturally and economically acceptable.

As previously mentioned, there is evidence within the white community that the disadvantaged outcomes of teenage motherhood appear to be associated with the young women's departure from the dominant social norm, and this is not mirrored in ethnic minority groups.[13] Good teenage pregnancy outcomes have been found in other communities (e.g. orthodox Jewish communities living in Jerusalem) in which marriage and pregnancy at a young age are encouraged and women are strongly supported.[22] Good outcomes in certain groups have led to the argument that teenage pregnancy is not a problem. It has been suggested that it is a moral judgement to label teenage pregnancy a problem, and it is society's attitude that needs to change rather than the teenage pregnancy rate. However, data are group specific, and our society and communities within it should ask: 'Are teenage pregnancies chosen, well-managed, and with positive outcomes for mother and child?'

It is also important to question what teenage pregnancies reflect in our society. Research providing support for the public health aim of preventing first teen pregnancies and births, and the social and educational exclusion of young mothers is summarised as follows:

- Teenage pregnancies are the unintended and unplanned consequence of early sexual activity.[23]
- Earlier first intercourse is less likely to be an autonomous and a consensual event.
- Earlier first intercourse is more likely to be regretted.
- Earlier first intercourse is more likely to be unprotected against pregnancy and infection.
- Teenage pregnancies are viewed negatively. In the 700 young people and 600 parents from the first wave of the British Market Research Bureau International tracking survey, 68% of young people and 67% of parents felt that having a baby under the age of 18 was 'just about one of the worst things that could happen to a young person'.[24]
- Teenage pregnancy is associated with lower self-esteem. The risk of teenage motherhood is raised by up to 50% among teenage girls with lower self-esteem than their peers. It is thought to be linked to an increased likelihood of unprotected intercourse.[25]

From these data, and earlier research about which teenagers become mothers at a young age, it is clear that

first teen pregnancies are a public health problem, associated with increased risk of negative biological and social outcomes for both mother and child, and occurring in those already in a disadvantaged position in society and in those who perceive their educational and career opportunities as limited. In our society, it is the most vulnerable teenagers who are most likely to become pregnant and give birth.

What is the UK Government's approach? – Action plan

The Teenage Pregnancy Strategy for achieving goals falls into four categories:[2,3]

1. A National Campaign aimed at helping young people resist pressure to have early sex, raising awareness of sexually transmitted infections, and encouraging the use of contraception and condoms.
2. Joined-up action with new mechanisms to co-ordinate action at both national and local levels and ensure that the strategy is on track.
3. Better prevention of the causes of teenage pregnancy, through improved sex and relationship education in schools and community settings; support for parents in talking to their children about relationships and sex; increasing access for sexually active teenagers to 'young people friendly' contraceptive and sexual health advice services; and targeting of at-risk groups, with a new focus on reaching young men, who are half of the solution, yet who have often been overlooked in past attempts to tackle this issue.
4 Better support for pregnant teenagers and teenage parents, including prevention of second unplanned pregnancies, with a new focus on returning to education with child care to help, working to a position where no under-18 lone parent is put in a lone tenancy, and pilots around the country providing intensive support for parents and child.

One criticism of this plan is that it focuses on sex and sex education, and fails to address the wider determinants of teenage pregnancy such as poverty and education. In particular, the goal of 'better prevention', which targets the causes of teenage pregnancy, refers only to improved sex and relationship education, and improved access to sexual health services, with no mention of addressing income inequalities, education or provision of care for homeless youths, youths involved in crime and those in and leaving care. Sex and relationship education is only part of the solution to this complex problem.

Discussion

It is not clear whether there are any biological problems independently associated with pregnancy and having a child before the age of 20 years. However, there is evidence that teenagers are more likely to have poorly managed pregnancies, with increased risk of adverse health outcomes. Research suggests that there are adverse social outcomes to teenage birth in our society.

It is difficult to distinguish effects related to maternal age from those considered to be confounding, such as poverty. For example, poor parenting skills may reflect the ignorance of young age but may also occur at any age among women who have restricted access to information and education.

Although it is helpful to identify 'confounding' factors, it is not helpful to view each in isolation. Some authors have argued that labelling teenage pregnancy as a public health problem is wrong since, in isolation, age has not been shown to be detrimental.[22,26,27] We are encouraged to consider what public health impact would be achieved "... if we could successfully intervene and change a woman's age at first birth and nothing else about her up to that point".[27] Thus, it is important that if we choose to label teenage pregnancy a public health problem, the label encompasses all that determines teenage pregnancy and its consequences. Furthermore, we should recognise that teenage pregnancies are likely to be unplanned, a result of regretted first intercourse, and poorly managed. It is important to consider whether labelling teenage pregnancy as a public health problem affords any benefit to mothers or children. The author would argue that in order to effectively tackle social deprivation and prevent poor outcomes of pregnancy at whatever age, it is important to identify 'at-risk' groups, such as teenagers, at whom medical, educational and vocational services could be aimed.

Further questions

The demographic characteristics of teenage mothers and the economic environment have changed so quickly and dramatically that samples available to researchers may simply not be relevant today. Examining longer-term effects of teenage childbearing requires using data on women who were teenage mothers years ago. This must be considered when analysing data of cohorts from decades ago. The need for ongoing research is obvious. Most research focuses on teenage mothers, and more on teenage fatherhood would be interesting.

Most research focuses on the effects of having a child as a teenager. A further question requiring investigation is whether teenage pregnancy is associated with poor outcomes, or whether poor outcomes are the result of teenage birth and motherhood? Research into the effects on teenagers of terminated or spontaneously aborted pregnancy is needed. It has been postulated that a country with a teenage pregnancy rate similar to or higher than that of Britain might do 'better' because pregnant teenagers have greater access to or make more use of termination services.[26]

Conclusions

It is too early to conclude that current efforts to reduce teenage pregnancy and childbearing are misguided. Reduction of early parenthood will not eliminate the powerful effects of growing up in poverty and at disadvantage. However, it represents a potentially productive strategy for widening pathways leading away from poverty or, at least, not compounding the handicaps imposed by social disadvantage.[27] If, in order to achieve this, one needs to conceptualise the issue as a public health problem, then I would argue that teenage pregnancy should be.

The Government's Teenage Pregnancy Strategy[2,3] focuses on sex education and family planning rather than the wider determinants of teenage pregnancy. This alone is not enough. As the recent UNICEF Innocenti Research Centre report[28] noted: "… the incentive to avoid early parenthood stems from a stake in the future, a sense of hope, and an expectation of inclusion in the benefits of living in an economically advanced society. Building that sense of inclusion where it is now absent is a task that requires action on a much broader front".

Acknowledgement

The author wishes to thank Dr Emma Plugge from the Department of Public Health, University of Oxford, Oxford, UK for her advice and support.

Statements on funding and competing interests

Funding. None identified.
Competing interests. None identified.

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Journal Review

Unintended pregnancies with etonogestrel implant (Implanon): a case series from postmarketing experience in Australia. Harrison-Woolrych M, Hill R. *Contraception* 2005; **71**: 306–308

This is an observational study of the failures that have occurred with Implanon® in Australia since the launch of the product. The pregnancies were reported to the Australian reporting agency, the Adverse Drug Reactions Advisory Committee. Data were collected between 2001 and 2004. During this 3-year period an estimated 204 486 Implanon devices were inserted, based on figures from the Australian Pharmaceutical Benefits Scheme, which subsidises the cost of Implanon. A total of 218 pregnancies were reported of which five were ectopic. The failures were categorised in seven groups: non-insertion (85), already pregnant (46), insufficient information collected (45), incorrect timing of fitting (19), drug interaction (8) and Implanon expelled (3). The authors acknowledge that there may have been underreporting of pregnancies and not all the Implanon devices issued may have been fitted.

Although the trials performed to support the licensing of Implanon showed a pregnancy rate of zero, these findings from early postmarketing experience suggest that there will be a small method failure rate with the product. This is the first publication that illustrates that there is a drug interaction. In this study all the reported instances were women taking anti-epileptic drugs. The data also show that we really have to make sure that Implanon devices are fitted correctly and that the woman has no risk of pregnancy before fitting.

So if errors at the time of insertion are taken out of the equation then the pregnancy risk with this method is still likely to be very small. The authors calculate it as somewhere in the region of 1 per 1000. It is up to us as practitioners fitting the method to make sure that no unnecessary errors occur.

Reviewed by **Judy Murty,** DRCOG, MFFP
SCMO Contraceptive and Sexual Services, Leeds, UK

The association of hysterectomy and menopause: a prospective cohort study. Farquhar CM, Sadler L, Harvey SA, Stewart AW. *Br J Obstet Gynaecol* 2005; **112**: 956–962

Does hysterectomy with ovarian conservation lead to earlier loss of ovarian function (an early menopause) than might have been expected without surgery? This has been a controversial question for many years. The methodology of earlier studies, such as reliance on symptoms alone for the diagnosis of ovarian failure, was open to question and previous reports have been contradictory. This paper from New Zealand reports on a large, prospective, cohort study. Premenopausal women aged under 46 years undergoing hysterectomy for benign pathology and a matched cohort of volunteers who did not undergo hysterectomy were followed for up to 5 years with annual serum follicle-stimulating hormone (FSH) levels. The menopause was defined as having occurred once an FSH level of ≥40 IU/l was reached. This cut-off level was sufficiently high to make it unlikely that there would be a return to premenopausal values.

The results of the study suggest that women who had a hysterectomy were likely to reach the menopause almost 4 years earlier than women in the control group who had retained their uteri and who had no other interventions that might interfere with local blood supply or with ovulation. Unilateral oophorectomy at the time of hysterectomy increased the likelihood of an early menopause yet further. It is likely that disruption to the blood flow to the ovaries at the time of surgery affects ovarian function and ovarian reserve, leading to earlier ovarian failure.

Although this study has some limitations, the results do suggest a definite link between hysterectomy and early menopause with its associated health risks. This will now have to be discussed with premenopausal women who are considering a hysterectomy so that they can make choices most appropriate for themselves. The importance of offering alternatives to hysterectomy to women with benign gynaecological disorders is strengthened by this study.

Reviewed by **Vibha Ruparelia,** MRCOG
Specialist Registrar in Obstetrics and Gynaecology, Luton & Dunstable Hospital NHS Trust, Luton, UK