**Sexual and reproductive health in pregnant teenagers presenting for
antenatal care or for termination**

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Abstract

Sexual health is an important public health issue with attention being paid to the development of national policy strategies for teenage pregnancy and reproductive health. A substantial proportion of pregnant adolescents engage in unprotected intercourse and risky sexual behaviours that may increase their risk for acquiring sexually transmitted infections (STIs) during pregnancy and beyond. Pregnant teenagers are also at high risk of subsequent teenage conceptions, with approximately one fifth of teenage pregnancies being to a teenager who has conceived previously. This review not only examines the sexual and reproductive health of pregnant teenagers presenting for antenatal care or for termination of pregnancy, but also outlines the value of promoting safe sex behaviours whilst still pregnant, followed by promotion of dual protection after termination or postpartum.

Policy issues

Sexual health is an important public health issue with increasing attention being paid to the development of national policy strategies for teenage pregnancy and reproductive health. Current research suggests geographical variations in teenage conception and births with higher rates in areas of greater social and economic deprivation.[1]

Teenage motherhood has been identified as having a negative effect not only on health but also on education, labour market attachment and pay. Even after accounting for any educational differential, the economic effects may be substantial suggesting teenage mothers have difficulties combining labour market participation and child rearing.[2] This may in turn contribute to cycles of deprivation. Teenage pregnancy is a problem of social exclusion and therefore central to government policy on tackling health inequalities. It is a complex social issue associated with low academic attainment and poor career prospects, poor physical and mental health, low self-esteem, social isolation and poverty.

The UK Teenage Pregnancy Strategy aimed to reduce by 50% the 1998 under 18 conception rate (47.1/1000) and establish a downward trend in conception rates for under 16s by 2010.[3] However, data on the Teenage Pregnancy Unit website [4] suggest these targets are proving hard to meet with the under 18 rate falling only slightly to 42.3/1000 by 2003, and the under 16 conception rate reducing from 9/1000 to 8/1000. Pregnant teenagers are sexually active and are more accessible for health interventions than any other sexually active group as they are identified and known through their

contacts with family doctors, abortion service providers and/or to midwives and obstetricians. Those who deliver a live birth continue to be in regular contact with health visitors. Thus, this high-risk group is identifiable, and there are opportunities to provide a targeted intervention aimed at improving their sexual health. In addition, improving outcomes and reducing repeat pregnancies during the teenage years has been identified as a valid target in the Social Exclusion Unit's report on teenage pregnancy.[3]

Pregnancy has been described as a 'window of opportunity for sexual risk reduction'[5] yet scant research can be identified about sexual risk-taking among pregnant/mothering teenagers. A recent review of the literature states that 'there exists remarkably few interventions aimed at reducing sexual risk among pregnant/mothering teens and no intervention targeting both STD/HIV and repeat pregnancy has been published.'[5]

Teenage pregnancy and sexually transmitted infections (STIs)

Many of the adolescent population seen by paediatricians may be sexually active. In 2000, a research article showed that over a quarter (26%) of 16- to 19-year-old females reported being under 16 years of age at first sexual intercourse.[6] Young adults are those most likely to report STIs, for example in the Health Protection Agency's report 'Mapping the Issues, HIV and other STIs in the United Kingdom: 2005', 36% of all female chlamydia diagnoses in 2004 were in the 16–19-year old age group (n = 19 969) and 37% to those aged 20–24 years (n = 21 446).[7] Interestingly this document did not report on data for those under 16 years of age. However, for the year 2000, it is

possible to identify official government statistics identifying 1035 new cases of chlamydia⁸ and 228 new cases of gonorrhoea⁹ in the under 16s. With regard to the other marker of sexual health, teenage pregnancy, there were approximately 8000 conceptions to girls under the age of 16 years, 34 200 conceptions to 16- and 17-year olds and 56 400 to 18- and 19-year olds reported in England and Wales in 2003.[¹⁰] Of those under the age of 16 years, 57% resulted in an abortion, the remainder continuing with the pregnancy.

Whilst risk of STIs and risk of pregnancy are not the same, STIs and unintended pregnancy both require sexual contact, usually unprotected intercourse or failed use of contraception. From the data available, teenage pregnancy appears to be a greater likelihood than sexually transmitted disease for the younger teenagers. However, it should be highlighted that, contrary to some viewpoints, pregnancy is not a time of reduced sexual risks and rates of STI are high among pregnant teenagers. The UK pilot study of opportunistic screening for chlamydia found that ~10% of teenagers undergoing antenatal care and ~14% of those attending for termination of pregnancy tested positive.[¹¹] Generally, sexually active women have been found to have a very poor knowledge of chlamydia, despite it being the most common STI¹² and one study showed that teenagers attending an abortion clinic had significantly poorer knowledge of chlamydia than women attending family planning clinics.[¹³] Teenagers presenting at genitourinary medicine (GUM) clinics have been found to be at high risk of unplanned pregnancy. A study following those presenting at a GUM clinic (who stated that they were not pregnant and were not wanting to become pregnant) identified that 28%

(99/352) of these teenagers became pregnant within a year.[14]

The majority of pregnant teenagers appear to remain sexually active. Niccolai et al.[15] found that two-thirds of pregnant teenagers reported vaginal intercourse in the last 30 days, which was less than non-pregnant teenagers (66% compared with 77%). However, of the sexually active teenagers in this study, 88% of the pregnant teenagers were having unprotected intercourse compared with 62% of those who were not pregnant.[15] In this study pregnant and nonpregnant teenagers did not differ in terms of other sexual risk behaviours except the lack of condom use. Furthermore, 20% of the pregnant teenagers had chlamydia or gonorrhoea diagnosed during their pregnancy.[15] Niccolai et al.[15] also cited a further study that found that the proportion of pregnant teenagers who were sexually active did not differ from the proportion of non-pregnant adolescent mothers who were sexually active.[16] Again risk behaviours were higher, with only 12% of pregnant teenagers reporting use of a condom the last time they had sex compared with 43% of non-pregnant adolescent mothers.

The relationship between pregnancy and STI is demonstrated. Teenagers with STI are at risk for pregnancy as well as pregnant teenagers being at risk of STIs. After the pregnancy the risks seem to remain. Postpartum teenagers have been identified as a group vulnerable to STIs.[17] Pregnant teenagers recruited during their last trimester were followed-up 6 and 12 months and new chlamydia and gonorrhoea infections were 14.3% at the 12-month follow-up (9 months postpartum).[17] This prevalence was higher than the comparison group of non-pregnant sexually active teenagers, although not significantly higher (OR 1.94, CI 0.97–3.89).[17] The results of this study

strongly suggest that the postpartum teenagers are particularly vulnerable to new STI infections during that first year postpartum.

Teenage pregnancies and subsequent repeat pregnancies

Many pregnant teenagers continue to be sexually active whether they continue with the initial pregnancy or not and rates for repeat teenage pregnancies are high. One UK study found that teenage mothers may be eight times more likely to conceive a further pregnancy than other teenagers.[\[18\]](#)

Another UK study of teenage pregnancies in general practices found that 20% had been pregnant at least once before,[\[19\]](#) earlier UK research involving 101 teenagers aged 17 years or less showed that at least 13% had been pregnant before.[\[20\]](#) For those who continue with the pregnancies it has been found that it is not first teenage birth that lead to poorer outcomes, rather it is the consequences of a second teenage delivery that may be detrimental to health.[\[21\]](#) When comparing the birth outcomes of 110 223 non-smoking mothers aged 15–19 and aged 20–29, among first births the only significant difference in adverse outcomes by age group was for emergency Caesarean section, which was less likely among younger mothers. However, second births in women aged 15–19 were associated with an increased risk of moderate and extreme prematurity and also stillbirth.[\[21\]](#)

Many pregnancies subsequent to teenage pregnancy lead to termination.

Although not all teenage pregnancies are unwanted the high numbers terminating later pregnancies indicate that many are unplanned. In 2001, in

England and Wales, 12% of legal abortions to teenagers followed an earlier teenage birth (4410/36 718) and 12% followed a previous legal abortion as a teenager (4671/36 718).[22] These two groups are not mutually exclusive and cannot tell us how many of the teenagers presenting for termination have been pregnant before. However, one might suggest that only a minority have had both a previous birth and a previous abortion as teenagers, and one might postulate that about a fifth of all teenage abortions are to teenagers who have conceived previously. This is a worryingly high number of repeat pregnancies, probably unplanned, and resulting in termination. This has increased over the preceding 11 years, both in terms of absolute numbers and with regard to the proportion, as in 1991, 8% of legal abortions to teenagers followed an earlier birth (2929/37 089) and 8% followed a previous legal abortion (2983/37 089).[23]

Preventive interventions

The evidence clearly demonstrates that pregnant teenagers are at high risk of both STIs and unintended conceptions. Interventions over the last decades have not reduced the levels dramatically. Despite the high interest in the area we do not clearly understand the reasons for the continuing high teenage pregnancy rates and increasing numbers of STIs. Partly this may be because one of the highest risk groups, the already pregnant teenagers, are currently not targeted sufficiently in Government policy development, for example, when the Counterpoint report to the DH [24] explored young people's perceptions of contraception and seeking contraception advice and provided

considerable insight, no pregnant (or previously pregnant) teenagers seem to have been interviewed.

Abstinence can be advised for prevention of STIs and repeat pregnancy. However, abstinence-only programmes are primarily found in the United States and may not be transferable to the UK. Moreover, reviews of the evidence as to their efficacy report mixed findings[25],[26] with one concluding that abstinence programmes may have a positive effect on attitudes among adolescents, but are not proven to have a significant effect on sexual behaviour.[27] Further to this, the evidence regarding efficacy is commonly reported with regard to delay in sexual initiation, and the limited evidence of the effect of an abstinence programme on existing sexual activity suggests that positive outcomes were especially limited among the sexually active, a finding identified as emphasising the difficulties of reaching adolescents who are already at high risk for pregnancy.[28]

There is a need for individualised sexual health advice to be provided for sexually active teenagers who have already conceived, and healthcare professionals need to consider the costs and benefits of differing methods of contraception. Hormonal contraceptive methods are most effective at preventing pregnancy [29] but ineffective in preventing transmission of STIs.[30] Male condoms are most effective at preventing STIs but are only effective in preventing pregnancy in ideal conditions with consistent use.[30] However, in conditions typical of the sexual activity of many teenagers (i.e. inconsistent use) these methods are not effective at preventing pregnancy. Key to the sexual health of sexually active teenagers then appears to be the value of dual protection. That is, the use of hormonal methods to reduce the

risk of pregnancy, and the use of barrier methods to reduce the risk of STIs. Recognition of the dual roles that contraception can play (prevention of conception and prevention of infection with STIs) has prompted both the World Health Organization and the International Planned Parenthood Federation to advise that sexual and reproductive health programmes integrate information and education on protection against STI/HIV with that on protection against unwanted pregnancy.[30],[31]

However, this does not appear to be reflected in the current practise of those providing sexual healthcare for pregnant teenagers, whether the teenagers are presenting through antenatal services, or for termination of the pregnancy. Evidence suggests instead that current routine practice regarding the health promotion activities associated with to the prevention of future pregnancy and STIs appears to be unsatisfactory in relation to pregnant teenagers. The repeat pregnancies and high rates of STIs provide ample evidence of poor use of the contraceptive pill, low condom use, risky sexual behaviour and poor knowledge levels.

One report identified that midwives did not commonly report antenatal discussion of sexual health issues as 'sexual health' was equated with contraception,[32] with the result that pregnant teenage girls often may not be given the advice to avoid unprotected sex until they enter the postnatal period. The findings of Niccolai et al. suggest that this is clearly too late.[15] A further study revealed that teenage girls presenting for termination of pregnancy, though a clearly identified high-risk group for chlamydia, continue to lack sufficient sexual health advice, as only 25% were given a full discussion on contraception and information about STIs.[33] Furthermore, younger

teenagers may be reluctant to approach sexual health services, and appear to be selective in where they choose to obtain sexual healthcare. One study examined those under 16 years attending various clinic settings in Manchester and showed that whilst 6% (n = 6) of the community GUM clinic clients were 15 years old or younger and 1% (n = 18) of clients attending the hospital-based GUM clinic were of that age group, the majority attended a specialist young persons clinic, with 12% (n = 1834) of clients attending regular Brook clinics being less than 16 years.[34]

The NHS Evidence Briefing 'Teenage pregnancy and parenthood: a review of reviews' [35] identified evidence from the United States of the effectiveness of involvement, outreach and support for parents and families. However, this is not currently reflected in the UK literature and further work is needed here.

A study in the United States showed that a home-visitation programme by nurses, aimed at improving: the outcomes of pregnancy; the physical and emotional care of their children; clarification of goals and problem solving to promote work, education, and family planning, was associated with a reduction in subsequent pregnancies/births and with a delay in subsequent pregnancies.[36] The majority of participants in this study were aged 16–24 years. Studies in the United States that have shown the success of home visiting in reducing numbers of repeat teenage pregnancies,[36–38] but such intensive programmes may not be sustainable in mainstream service delivery.

Pregnant teenagers are sexually active and are more accessible for health interventions than many other sexually active groups, as they are identified and known through their contacts with family doctors, abortion service providers and/or to midwives and obstetricians. Those who deliver a live birth

continue to be in regular contact with health visitors. Thus this high-risk group is identifiable and there are opportunities to provide a targeted intervention aimed at improving their sexual health. In addition, improving outcomes and reducing repeat pregnancies during the teenage years has been identified as a valid target in the Social Exclusion Unit's report on teenage pregnancy.[3]

Implications

Given this evidence of unwanted second and subsequent pregnancies and the association between STIs and teenage pregnancy, it is imperative that the sexual health of already pregnant teenagers is not neglected further. Meade and Ickovics' recent systematic review of sexual risk among pregnant and mothering teens in the United States identified some clear conclusions, primarily: that behaviours that lead to teen pregnancy also place young women at risk for STIs and repeat pregnancy; compared with the broad literature on adolescent sexual risk behaviour our understanding of sexual risk in pregnant/mothering teens lags far behind; that teen pregnancy is a marker for future sexual risk behaviour and adverse outcomes; that pregnant/mothering teens need dual protection interventions; and that pregnancy may provide a critical 'window of opportunity' for sexual risk reduction.[5] As we have identified that pregnant teenagers are a potentially high-risk group, yet can be more accessible for health interventions than many other sexually active groups, this is a group of clients whose sexual health should be considered a priority by all healthcare professionals that they encounter.

In summary, research in this area indicates that a substantial proportion of pregnant adolescents engage in unprotected intercourse and risky sexual behaviours that may increase their risk for acquiring STIs during pregnancy and beyond. Although some research findings cannot be generalised as they focus on clinic-based convenience samples or minority adolescents residing in urban areas, there is sufficient evidence that repeat teenage pregnancies are on the increase, and that STIs are also common in this client group, teenagers that have already conceived. These adolescents therefore represent an important sector of the population in which to target interventions.

Practice points

- Pregnant teenagers often continue to be sexually active, and often do not use barrier methods (to prevent STIs)
- The provision of sexual health advice for pregnant teenagers is often poor
- Pregnant teenagers are continuing to be unsuccessful in following safe sex advice both during and after the pregnancy
- The risk of STI such as gonorrhoea and chlamydia is high
- Rates for repeat teenage pregnancy are high
- Many pregnancies subsequent to early motherhood lead to termination
- This group is more accessible to health intervention as they are already in contact with service providers

Research directions

- A scoping exercise to identify current provision of sexual health advice to pregnant teenagers
- Evidence from the UK of the effectiveness of involvement, outreach and support for parents and families
- Evaluations of individualised programmes of sexual health advice
- Work on the cost-effectiveness of interventions

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