CURRENT TOPIC

Preventing teenage pregnancy

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Preventing unwanted pregnancy in teenagers has become a high priority for health care purchasers and providers. The publication of the White Paper *'Health of the Nation'* raised the profile of teenage pregnancy by selecting pregnancy in under-16s as a target area.¹ Although the rate of pregnancy in teenagers had been falling recently in the United Kingdom, it has recently risen; we still have a higher teenage fertility rate than most other European Community countries.² The UK government has recently announced the possibility of an initiative to target high risk girls (school under achievers) for specialist attention (by mentoring) in relation to sex education. There is no evidence that such programmes have been effective. While the overall aim of programmes is to prevent all unwanted pregnancies, even for wanted pregnancies babies born of teenagers are more likely to be premature, small for gestational age, or have a low birth weight.³ The proportion of adolescents who have first intercourse under the age of 16 has increased at least over the last half of this century.⁴ Non-users of contraception are unlikely to be in a steady relationship and tend to have more sexual partners.⁵ Once established, this pattern of behaviour appears to last into adulthood.⁴ Teenage pregnancy is more common in deprived areas, and in cities as opposed to rural areas. The outcome of pregnancy for teenagers in cities is more likely to be a maternity than an abortion.⁶ The outcome of the pregnancy is also associated with socioeconomic deprivation (in terms of educational attainment, social class, housing tenure, and access to cars), with girls from the less socioeconomically disadvantaged groups being more likely to opt for an abortion,^{7,8} possibly because of social or parental pressures. The stability of the relationship with the putative father of the child also appears to determine the outcome of the pregnancy.⁹ Under-16s who become pregnant are more likely to be academic underachievers, come from large families, and have mothers who were themselves teenagers at the time of their daughter's birth.¹⁰ The outcome is also more likely to be an abortion. Teenage girls who are in care or looked after by the local authority are often believed to be at particular risk of pregnancy because of their complex emotional needs. In a recent study of children in care, most felt that there were more losses than gains in becoming pregnant; only three of

50 wanted to have a baby in order to have someone for whom they could care.¹¹

Around half of teenagers do not use contraceptives the first time they have sexual intercourse¹² but those having sexual intercourse under 16 are more likely than older individuals to take risks—for example, not using contraception and having sex in short term relationships and 'one night stands'.¹³ After first intercourse, young teenagers are then more likely to have intercourse in subsequent relationships and will do so earlier in these relationships than those who start at an older age.¹⁴

Preventing unwanted teenage pregnancies would appear to require either reduced exposure to risk (that is, sexual intercourse) or effective contraceptive use. These courses of action may appear obvious to those who have to fund and deal with the outcomes of teenage sexual behaviour. To teenagers such planned, highly rational action may be less easy to achieve.

Intervening in teenage sexual behaviour

The continuing problem implies that traditional currently used intervention methods are not working. Which of the many determinants of teenage pregnancy are amenable to intervention to prevent unwanted pregnancy? For some, when primary prevention of unprotected sexual intercourse fails or is inadequate, emergency contraception may become the most useful method of preventing an unwanted pregnancy. For others it may be up to those providing services to target assistance. For example a potential intervention is to target known 'near misses': a study from a USA family planning clinic indicated that a quarter of adolescent girls with a positive pregnancy test had previously had a negative test in a clinic.¹⁵ Sex education is seen as one of the most important processes in reducing teenage pregnancy. Despite a wealth of information to the contrary,^{16,17} many still appear convinced that informing teenagers of risks and providing good contraceptive services will be sufficient to reduce teenage pregnancies. However, even knowledgeable sexually active young teenagers with contraceptive clinics in their schools are poor contraceptive users.¹⁸ Explanations for the lack of effect include immaturity of young teenage psychological development,¹⁹ pressure from partners and friends to behave in a certain

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manner,¹⁹ and sociodemographic and associated factors.¹⁴ The implication is that external forces may be important—and sometimes overriding—determinants of sexual behaviour and that personal knowledge and the availability of contraception are not by themselves good predictors of behaviour. Sexually active teenagers, including poor contraceptive users, appear to be no better or worse informed than virgins or effective contraceptive users.^{9–20} Similarly it is not suggested that British teenagers are particularly less knowledgeable than teenagers in countries with lower pregnancy rates. But even those knowledgeable and aware of emergency contraception may fail to recognise potential risks and act accordingly.²¹ What may be more important are differences in attitudes and expectations and the expectations of society.

Since effective contraception does prevent conception, the absence of available contraception is associated with higher than average rates of teenage pregnancy; but expanding current services has neither decreased rates consistently nor improved effective contraceptive use by young teenagers.^{22–23} In terms of theoretical models of health behaviour this suggests barriers to the use of services. Models such as the health belief model,²⁴ which probably remain the basis for most health promotion, predict that barriers can be overcome with information and good services but have not been shown to influence behaviour. This model may be more applicable to those who have first intercourse as adults or at least in their later teenage years. Overall the majority of teenagers under 16 years do not have sexual intercourse, so that it would be unwise to suggest that sex education should not be informative or that contraception services should be decreased. Despite the lack of success with more traditional approaches, sex education for young teenagers can be effective in delaying the onset of sexual activity.²⁵ These programmes are expensive and require considerable professional resources. Without support and financial commitment they are difficult to sustain other than as experimental projects.

Contraceptive services

While it appears to be insufficient just to increase the availability of services, this should not imply that improved access should not be attempted, since appropriate use of contraception will at least partly be determined by accessibility. The choice for teenagers is to consult a general practitioner, visit a family planning clinic, or purchase contraceptives from a pharmacist. Much has been written about the importance of the style of contraceptive services in attracting teenagers.²⁶ Services in primary care have been perceived as lacking confidentiality,^{27–28} and younger teenagers tend to prefer family planning clinics as the source of their contraceptive advice.²⁹ However, teenagers who do consult their general practitioners become less concerned and more positive about the service.³⁰ Moreover there is a clear commitment from all the major providers of contraception to maintain confidentiality.³¹ Specialist services specifically designed to meet

the needs of teenagers (for example a friendly reception, guaranteed confidentiality, specially trained staff, well publicised) have generally been organised through NHS family planning clinics or agencies such as Brook, and although highly acceptable,³² few evaluations of their effectiveness in preventing teenage conception have been carried out.³³ Part of the problem arises because of difficulty in getting teenagers to use these services.³⁴ If we do wish young teenagers to use clinics effectively there needs to be a major societal shift towards an expectation and requirement for consultation to occur before first intercourse. There are many who would need convincing that promoting such consultations as a natural course of action is not in turn promoting promiscuity.

Behavioural interventions

If most of the traditional approaches are not effective in reducing medical problems associated with teenage sexual activity, what can be learned from the limited successes that have been shown in some interventions? Several theoretical models have been named in the development of effective sex education, particularly social learning theory.³⁵ Interpretation of these theories is not uniform, nor are they always well understood. An important principle appears to be collaboration between those delivering and those receiving the programme. When asked, the great majority of 13–14 year olds do not consider they should have sexual intercourse.³⁶ Indeed they are often intolerant and stigmatise those, particularly girls, who are thought or known not to be virgins. Similarly young teenagers most frequently cite pressure, from partners and friends, as the reason why people of their age have sexual intercourse. It is therefore reasonable that one collaborative goal should be to delay first intercourse. It would be naive to expect this to be universally achievable. Since most pregnancies in this age group end in termination, this suggests that pregnancy for the majority is not a desired state. Effective contraceptive use for those who do have sexual intercourse is an equally important and collaborative aim.

Collaboration is not easy to achieve and is not necessarily welcomed by either teaching or health professionals, who may regard it as weakening their positions of authority. Physical intimacy between teenagers is not generally a supervised activity. Teenagers, as well as everyone else, need to gain skills which allow them to maintain safety within boundaries that they set. Some of this process may be achieved through sex education which develops communication skills and, at least within the school, sustains the social norm that virginity is the majority state rather than 'everybody's doing it.' Some of this may best be achieved through peer education. Slightly older teenagers who are informed, effective, and trained appear to be able to share some of their abilities to deal with relationship situations.³⁷ Perhaps one of the most important skills is dealing with health professionals. No matter how friendly and welcoming services are, their structure and culture will always be alien to young teenagers. Most

adults would probably be wary about approaching teenagers for advice and help, particularly in groups where the teenagers had the upper hand. Yet teenagers are required to come to adults for advice about behaviour which is regarded as adult, in situations where there is a wide divide of power and authority.

Using health professionals in the classroom may be an effective method. This can include role plays which allow teenagers to learn skills (or even tricks) to gain access to and deal successfully with services and consultations. Some programmes have included other novel activities such as group visits to clinics or buying condoms as 'homework'.³⁸ Some of these techniques may start to exceed acceptability bounds for parents, governors, and school staff. Careful negotiation with schools needs to be a continuing process if programmes are not to be rejected in their entirety. Overstepping what are seen to be limits may have repercussions outside the schools, with individuals becoming targets for the media.³⁹

Determining effectiveness

It has been suggested that school sex education can be effective in reducing teenage pregnancies.⁴⁰ Although interventions may cause change, the evaluated effective programmes have been small and, like other adolescent health promotion, may fail in dissemination to a service mode.⁴¹⁻⁴² It has been suggested that results from small sociological experiments are less related to programme content than other factors such as the Hawthorne effect.⁴³ For this reason and because the methods are novel, involving new skills for teenagers and educators, further evaluation is necessary. Health funding of such interventions may be required since the benefits are health related. Continuation of such funding will in turn require demonstration of changes in, for example, numbers of teenage pregnancies.

Unless more research is urgently carried out into the relative effectiveness of these different methods of encouraging young people to control their reproductive risks, our teenage pregnancy rates will remain among the highest in Europe. Health should not be the only measured variable. Evaluation of dissemination from research programme to service mode suggests that some of the newer intervention techniques become diluted when delivered to a wider audience.⁴² Quality control needs therefore to be maintained. Effective programmes are designed to be collaborative and therefore approval should be measured, both by authoritative figures within the school and most importantly by the teenagers themselves. While it may be encouraging to outline potentials for success it seems unlikely that Britain will develop a consistent comprehensive approach to teenage sexual behaviour in the near future. There may be less polarity of debate, between sex and abstinence, but an attitude still prevails that although teenagers have sexual intercourse and although contraception is available to them, they shouldn't really be doing it or using contraceptive services. Perhaps just as important is the support that is needed by the dwin-

dling majority of young teenagers who, despite pressure from partners, friends, the media, and some adults, are not having sexual intercourse.

This paper relates to work carried out in the Department of Child Health, Exeter and the Department of Public Health, North and East Devon Health.

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Diabetes and drinking water

Since most of the monozygotic twins of patients with insulin dependent diabetes do not have the condition environmental factors are presumably important in producing it. The theory that early feeding with cows' milk may be concerned has still to be disproved and there are known, apparently protective, associations between the incidence of diabetes in children and factors which might lead to more early life infections, such as deprivation and increased population density. The possibility of environmental pancreatic beta cell toxins seems to have attracted less attention but a study in Yorkshire (R C Parslow and colleagues, *Diabetologia* 1997;40:550-6) has pointed the finger at nitrates in drinking water.

Over a period of 16 years a new diagnosis of diabetes was recorded for almost 1800 children under 16 in Yorkshire. Water is distributed in zones each supplying water of the same chemical composition to up to 50 000 people. Water analysis data were available for 148 such zones and it was possible to match up the water supply zones and the addresses of the children with diabetes. Demographic data were also collected.

The previously reported inverse relationships between the incidence of childhood diabetes and childhood population density, deprivation scores, and proportion of non-white residents were confirmed. After statistical adjustment for these factors there was a 15% increase in incidence of childhood diabetes in areas with water nitrate concentrations above 14.85 mg/l.

Nitrosamines may be toxic to beta cells and these authors suggest that the conversion of ingested nitrate to nitrosamines gives biological plausibility to their finding. Within the European Community the maximum acceptable drinking water concentration of nitrate is 50 mg/l and it is recommended that levels should be kept below 25 mg/l. In this study some 30% of over 9000 water samples contained more than 25 mg/l of nitrate. The estimated adult daily intake of nitrate in food in the UK is about 60–80 mg. More needs to be known about water and food nitrate intakes in children.

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