



**REPROSTAT 2: A systematic review of factors
associated with teenage pregnancy
in the European Union**

Final report

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Summary

Objective

To identify factors associated with teenage pregnancy in 25 European Union (EU) countries.

Methods

The search strategy included electronic bibliographic databases (1995 to May 2005), bibliographies of selected articles and requests to all country representatives of the research team for relevant reports and publications. Primary outcome measure was conception. Intermediate outcome measures included early childbearing, early sexual initiation, contraceptive use, sexual knowledge and attitudes, and service accessibility. Inclusion criteria were quantitative studies of individual-level factors associated with teenage (13-19 years) pregnancy in EU countries. No language restrictions were applied.

Results

Of 4444 studies identified and screened, 57 met the inclusion criteria. Most of the included studies took place in UK and Nordic countries. Six broad groups of risk factors emerged: socio-demographic, family structure and stability, educational, psychosocial, sexual health knowledge, attitude and behaviour, and service accessibility and acceptability. The well-recognised factors of socioeconomic disadvantage, disrupted family structure and low educational level and aspiration appear consistently associated with teenage pregnancy. However, evidence that access to services in itself is a protective factor remains inconsistent. Although further associations with diverse risk-taking behaviours and lifestyle, sexual health knowledge, attitudes and behaviour are reported, the independent effect of these factors too remain unclear.

Conclusions

Included studies varied widely in terms of methods and definitions used. This heterogeneity within the studies leaves two outstanding issues. First, we cannot

synthesise or generalise key findings as to how all these factors interact with one another and which factors are the most significant. Second, it is not possible to examine any variations in factors associated with teenage pregnancy between EU countries, or potential variations between age sub-groups. Future research ensuring comparability and generalisability of results related to teenage sexual health outcomes will help gain insight into the international variation in observed pregnancy rates to better inform interventions.

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1. INTRODUCTION

1.1. Definitions

For the purpose of this review, **teenage** is defined as 13-19 years old ('older adolescents'). While the WHO's definition of adolescents is 10-19 years, few studies examine the factors associated with pregnancy at a very young age (<13 years). Notably, no studies were excluded from this review on the basis of our narrower age band.

Pregnancy refers to conception, regardless of whether this results in live birth or abortion.

Individual characteristics or social circumstances surrounding teenage pregnancy are described as **factors**, if they are strongly associated with individuals who become pregnant or impregnate others in their teens, even if the empirical data establishes no causal relationships.

1.2. Background

This literature review is undertaken as part of REPROSTAT 2 (Reproductive Health Indicators in the European Union), a project which is part of the Health Monitoring Program of the European Commission. The first phase (September 2001 to August 2003) aimed to identify key reproductive health indicators to be used for the monitoring and evaluation of reproductive health and associated health care in the European Union (Temmerman et al., in press). This second phase of REPROSTAT, entitled '*Assessing the usefulness of a comprehensive set of reproductive health indicators designed for the enlarged European Union, with particular emphasis on the reproductive health of adolescents and young adult*', started in July 2004. Among its objectives is to develop and pilot a youth reproductive health survey. This systematic review is designed to identify factors associated with teenage pregnancy to be used in the future survey.

While the majority of studies in this area are US-based, this review focuses on recent studies conducted within the European Union member states over the last 10 years. It aims to provide a ‘micro-level’ analysis at the level of the individual, because ‘macro-level’ population data reviews of teenage pregnancy in Europe have already been conducted (Kane and Wellings 1999; Dorroch et al. 2001). Some of the variables analysed in these ‘macro-level’ reviews are summarised in Table 1.

At the micro-level, we are guided by two recent studies: a systematic review by the UK NHS Centre for Reviews and Dissemination (CRD) published in 1997 and the Health Behaviour in School-aged Children (HBSC) study across Europe by Currie et al. 2001. The CRD review (1997) identified factors associated with teenage pregnancy within 6 broad themes and these are detailed in Table 2. The more recent HBSC survey (Currie et al. 2001: 96) goes beyond a ‘traditional’ model of individual knowledge acquisition and attitude change and includes inter-personal and socio-cultural variables, such as self-esteem, risk behaviour and attitudes towards parents, teachers and schools.

Table 1: Selected ‘macro-level’ variables associated with teenage fertility

Fertility	Nuptuality	Economic variables	Social expenditure	Income distribution	Housing
<ul style="list-style-type: none"> • Total fertility rate • Contraceptive prevalence. 	<ul style="list-style-type: none"> • Mean age of women at first marriage • First marriage rate to women aged 15-19 	<ul style="list-style-type: none"> • GDP per capita US dollars • UNDP Human Development Index 	<ul style="list-style-type: none"> • Social protection benefits on health (% of total expenditure) • Expenditure on family benefits (as % of GDP) • Social protection benefits (as % of GDP) 	<ul style="list-style-type: none"> • Share of bottom 20% of households • % of population with household expenditure less than half the national average 	<ul style="list-style-type: none"> • Homelessness rate: estimated homeless per 1000 inhabitants
Employment	Law	Education	Religion	Behavioural/attitudinal	
<ul style="list-style-type: none"> • % of women aged 15 or over who are economically active • Rates economically active aged 15-19 	<ul style="list-style-type: none"> • Minimum legal age of heterosexual consent • Minimum legal age at marriage 	<ul style="list-style-type: none"> • Mean years of schooling • Adult literacy rate in % of population 15+ 	<ul style="list-style-type: none"> • % of population who are members of a religious community • % of population who are actively involved in a church. 	<ul style="list-style-type: none"> • Per capita alcohol consumption (litres p.a.) • Proportion of women approving of women's right to choose to have an abortion 	

Source: Kane and Wellings (1999: 11, Table 1, and Appendix 3)

Table 2: Selected ‘micro-level’ factors associated with early sexual initiation, non-use of contraception and teenage pregnancy

Individual	Family	Educational	Community	Socioeconomic	Contraceptive
<ul style="list-style-type: none"> • Knowledge • Self-esteem • Skills base • Cognitive maturity • ‘Experimental’ behaviour • Age of first intercourse • Emotional maturity 	<ul style="list-style-type: none"> • Parent/child communication • Mother or sister teenage pregnancy history • Family structure (including single headed families) 	<ul style="list-style-type: none"> • Academic attainment/ educational goals • Truancy • Sex education 	<ul style="list-style-type: none"> • Social norms (sexual activity/ pregnancy) • Peer influences • Cultural and religious influences • Media influences • Child abuse 	<ul style="list-style-type: none"> • Poverty • Employment prospects • Housing and social conditions 	<ul style="list-style-type: none"> • Contraceptive services • Awareness • Availability • Accessibility

Source: NHS Centre for Reviews and Dissemination, University of York (1997: 3), Table 2

1.3. Scope of the review

The review examines micro-level factors attributable at individual level (including exposure to local, small area measures of deprivation) associated with pregnancy in adolescents (age 13-19) in the EU member states.

It is important to note here that self-reported sexual behaviours are included as factors, but sexual behaviour, such as early sexual initiation and non-use of condoms, and sexual health knowledge and attitudes may also be taken to be key precursors of pregnancy, and these factors have actually been used as a proxy for teenage pregnancy in a recent systematic review (CRD 1997).

In this review these factors are reported as ‘intermediate’ outcomes, *but only if these are discussed in the context of pregnancy*. This meant that studies that examine, for example, teenagers’ condom use only in the context of STIs are not included. This approach provides a sharper focus on the primary outcome of pregnancy and narrows the scope of the review.

The review is also guided by the overall project aim of REPROSTAT 2, which is to identify strategies to reduce teenage pregnancy (as well as STIs) and thus focuses on factors that are considered to hamper or contribute to safe sex practice. For this reason, the literature surrounding emergency contraception (morning after pill), young people’s decision making about continuing or terminating pregnancy, or clinical outcomes of teenage birth (e.g. low birth weight), is beyond the scope of this review.

In terms of study design, however, a fairly broad approach has been adopted and includes all empirical studies (including observational studies). There are a number of reasons for taking such a broad approach.

First, the standard guidelines for systematic reviews, which are designed to gauge the effectiveness of healthcare interventions, are not directly transferable to our review that focuses on factors. Traditionally, systematic reviews tend to focus on experimental studies such as randomised controlled trials and exclude observational

studies such as cross-sectional studies seeing them as being low quality. However, experimental design is neither feasible nor ethical in the study of factors associated with teenage pregnancy, and it is therefore important to include all well-conducted observational studies in our review. Indeed, our initial literature scoping identified no experimental studies in this area, although we found a few studies undertaking sub-analysis of data derived from a trial of sex education and these are included in the review.

The second reason for taking a very broad approach in terms of study design is that the review is designed to inform the development of a youth survey, rather than directly inform policy makers. Therefore it aims to identify the factors that are deemed important within the context of the EU (rather than determining the actual size of effect) and it also aims to identify any gaps in the literature.

1.4. Objectives

The primary objective is to identify factors associated with teenage pregnancy in the European Union. In particular, the review focuses on micro-level characteristics, such as socio-demographic, social, psychological, and behavioural variables. The review also aims to provide an update of contemporary European studies published around or after the publication of the CRD review (CRD 1997). Finally, the review would explore potential variations across different countries within the EU. However, as we will see later, this is not possible due to considerable heterogeneity within the sample of studies identified by our search strategy.

2. REVIEW METHODS

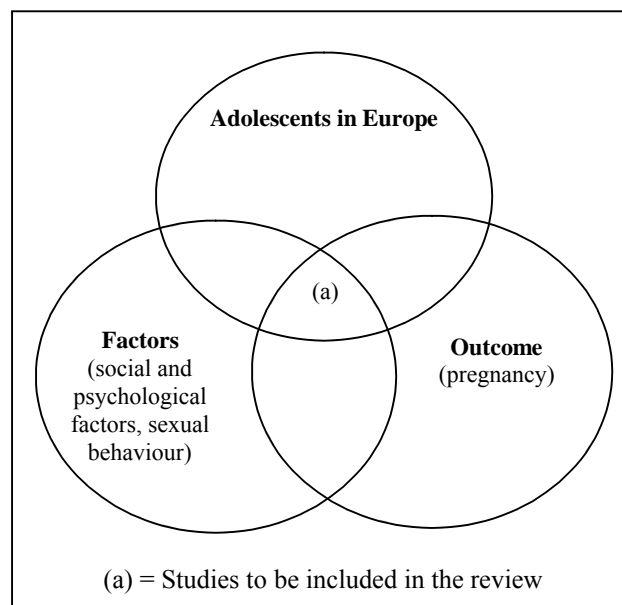
Alongside the standard guidelines for systematic reviews such as the Cochrane Reviewers' Handbook 4.2.2 (Alderson, Green and Higgins 2003) and the CRD Report No. 4 (2001), this review adopted, as a practical guide, the methodology used by Jepson et al. (2000) in their review on the determinants of screening uptake, and Rigsby, Macones and Driscoll's (1998) review of factors associated with rapid repeat pregnancy among adolescent mothers.

2.1. Search strategy

Electronic searches (1995 to May 2005) were undertaken using the following databases: MEDLINE, EMBASE, Applied Social Sciences Index and Abstracts (ASSIA) and Social Science Citation Index (SSCI).

Four search facets were used in the electronic searches: adolescents, EU countries, pregnancy and factors (see Appendix 1 and Figure 1). A fifth facet, study design, was dropped from the search facets but was subsequently reviewed after abstracts screening and quality assessment of eligible studies. For larger databases such as MEDLINE and EMBASE, all four search facets were used, while only the first three facets were used in ASSIA and SSCI.

Figure 1. Electronic search strategy



Additional references were located through searching the bibliographies of selected articles and also requesting all country representatives of the REPROSTAT research team¹ for relevant reports and publications. There were no language restrictions.

2.2. Inclusion criteria

(1) Types of factors

All micro-level factors potentially associated with the occurrence of teenage pregnancy, such as sociodemographic, social, economic and psychological variables, are included.

(2) Types of pregnancy

All incidents of conception, resulting either in live birth or abortion, are included.

(3) Types of participant

All adolescents aged 13-19 years in the 25 European Union member states (see Table 3 below) are included. Male partners of adolescents are also considered.

Table 3: List of the European Union Member States, New Member States and candidate countries

EU15 Member States	New Member States as of May 1 2004	Candidate countries
1. Sweden 2. Denmark 3. Finland 4. United Kingdom 5. Ireland 6. Belgium 7. Luxembourg 8. The Netherlands 9. France 10. Germany 11. Austria 12. Italy 13. Greece 14. Portugal 15. Spain	16. Cyprus 17. Czech Republic 18. Estonia 19. Hungary 20. Latvia 21. Lithuania 22. Malta 23. Poland 24. Slovakia 25. Slovenia	<ul style="list-style-type: none"> • Bulgaria • Croatia • Romania • Turkey <p>Application pending:</p> <ul style="list-style-type: none"> • Former Yugoslav Republic of Macedonia <p><i>Candidate countries are not included in the review.</i></p>

¹ Country representatives cover 21 of the EU countries; 4 countries not covered are Malta, Slovakia, Lithuania, and Cyprus.

(4) Measures of factors

- Factors of patients available through health service records (such as hospital or GP record)
- Factors of study participants as recorded by questionnaire or interview (i.e. self-report), including official statistics such as national census.

(5) Type of outcome measures

a. Primary measures of pregnancy

- Pregnancy recorded by health service records (such as hospital or GP records)
- Self-reported pregnancy history, and official statistics such as national census.

b. Intermediate measures of pregnancy (included in studies that were conducted in the context of pregnancy)

- Studies that only reported intermediate measures of pregnancy, such as childbearing, early sexual initiation, contraceptive use, sexual knowledge, attitudes and behaviour, are included, if these outcomes are discussed in the context of pregnancy.

(6) Study design

All quantitative studies are eligible for this review.

(7) Type of analysis

Only studies using some form of statistical analysis to test for significant difference between groups (e.g. multivariate analysis, cross-tabulations) are included.

(8) Exclusion criteria

- Studies where the outcome such as sexual initiation, contraceptive use, and sexual knowledge, attitudes and behaviour, is not discussed in the context of pregnancy.

- Studies that solely focus on clinical pregnancy outcomes such as low birth weight, or sequelae of patient populations of specific medical or genetic conditions such as cancer, diabetes and Down-Syndrome.
- Studies that only provide macro-level analysis (e.g. GDP per capita) or data on trends (e.g. fertility rates).
- Studies that solely focus on knowledge and use of emergency contraception.
- Studies that solely focus on factors associated with decision about continuing or terminating the pregnancy.
- Studies that solely focus on long-term consequences of teenage births for mothers such as career prospects.
- Studies where no form of statistical analysis is undertaken.

2.3. Data extraction and assessment for study inclusion

There were six stages to the review process.

Stage 1. Titles of papers were screened liberally by one reviewer.

Stage 2. Titles and abstracts of papers were screened independently by two of the four reviewers. Any disagreements were resolved through discussion.

Stage 3. Full paper copies of selected papers were examined by one reviewer and a random sample (60%) of papers were checked by one of two second-reviewers.

Stage 4. Data were extracted from relevant selected studies and summarised in a table by one reviewer and checked by one of the two second reviewers (see Appendix 2).

Stage 5. The methodological quality of each study was assessed. A quality assessment checklist was developed by collating and modifying available instruments (Jepson et al. 2000, Downs and Black 1998, Thomas 1999, Vale, Wyness, Macormack et al. 2002, Crombie 1996) and each study was assessed independently by two reviewers. The checklist is attached in the Appendix (Appendix 3). The checklist

was not used as a quality threshold (studies were not rated or excluded on the basis of an overall quality rating) but the results are summarised in a table (Appendix 4) and used to indicate, albeit in a crude way, the generalisability of study findings, given that many of the studies found have no external control or comparison groups.

The criteria used for assessing the quality of studies are as follows.

- Whether data on pregnancy or related outcomes were generated by self-report or medical records
- Whether data on factors were generated by self-report or medical records
- Whether the individuals selected to participate in the study were likely to be representative of the target population. Subjects were deemed representative, if the study identified the source population from which the subjects were derived (e.g. all pregnant teenagers registered with the local general practice, or all students in a specific community) and if the subjects comprised the entire source population or a random sample.
- Whether the sample was clearly described in terms of basic characteristics such as age, gender and ethnicity, the intention being to indicate whether any information is available regarding known confounding factors and how the study sample compares with a wider population. This criterion is more relevant to small studies using non-representative samples; in a probability sample it is often assumed that relevant confounders are adequately controlled.
- Response rate (percentage of selected individuals who agreed to participate) and sample size
- Type of statistical analysis used (multivariate or bivariate)

Stage 6. The results are presented in a narrative summary.

With regard to papers published in a language other than English, inclusion and exclusion criteria were assessed by one REPROSTAT member with a relevant language skill (using a separate checklist, see Appendix 3). Data extraction and methodological quality assessment was then undertaken by the same member, using the same method described above.

2.4. Analyses

Studies varied in their settings, population characteristics and method of data collection and some factors appear in only one or two reports. It has also been noted that potential variations between teenage sub-groups make ‘the task of interpreting and generalising data fairly complex’ (Swann et al. 2003: 11). It was felt that meta-analysis of such studies was not feasible and therefore the findings are reported in a narrative summary. Authors were not contacted for original or additional data.

3. RESULTS: INCLUDED STUDIES

The results from the study selection process are summarised in a flow chart below (Figure 2).

A total of 4444 titles and abstracts were generated by electronic and additional searches. This includes 1923 studies generated from MEDLINE, 1199 from EMBASE, 981 from SSCI, 310 from ASSIA and 31 from other sources.

Of these, 266 full paper copies were examined in further detail. 57/266 (21%) studies met all the inclusion criteria and were selected for inclusion. Methodological quality was assessed and data were extracted from these studies. Details of these studies are given in the data extraction table in Appendix 2 and the study quality table in Appendix 4.

In addition, a further 67/266 (25%) studies were identified as useful sources of information, though they did not meet all the inclusion criteria. These studies were included for discussion and background information only and were not subjected to the quality assessment or data extraction. Abstracts of these studies are given in Appendix 5.

The remaining 127/266 (48%) studies that did not meet one or more of the inclusion criteria and were excluded. A list of excluded studies is included in Appendix 6.

15/266 (6%) studies have no data available in time for the review and are also excluded.

Figure 2. Flow diagram of study selection process

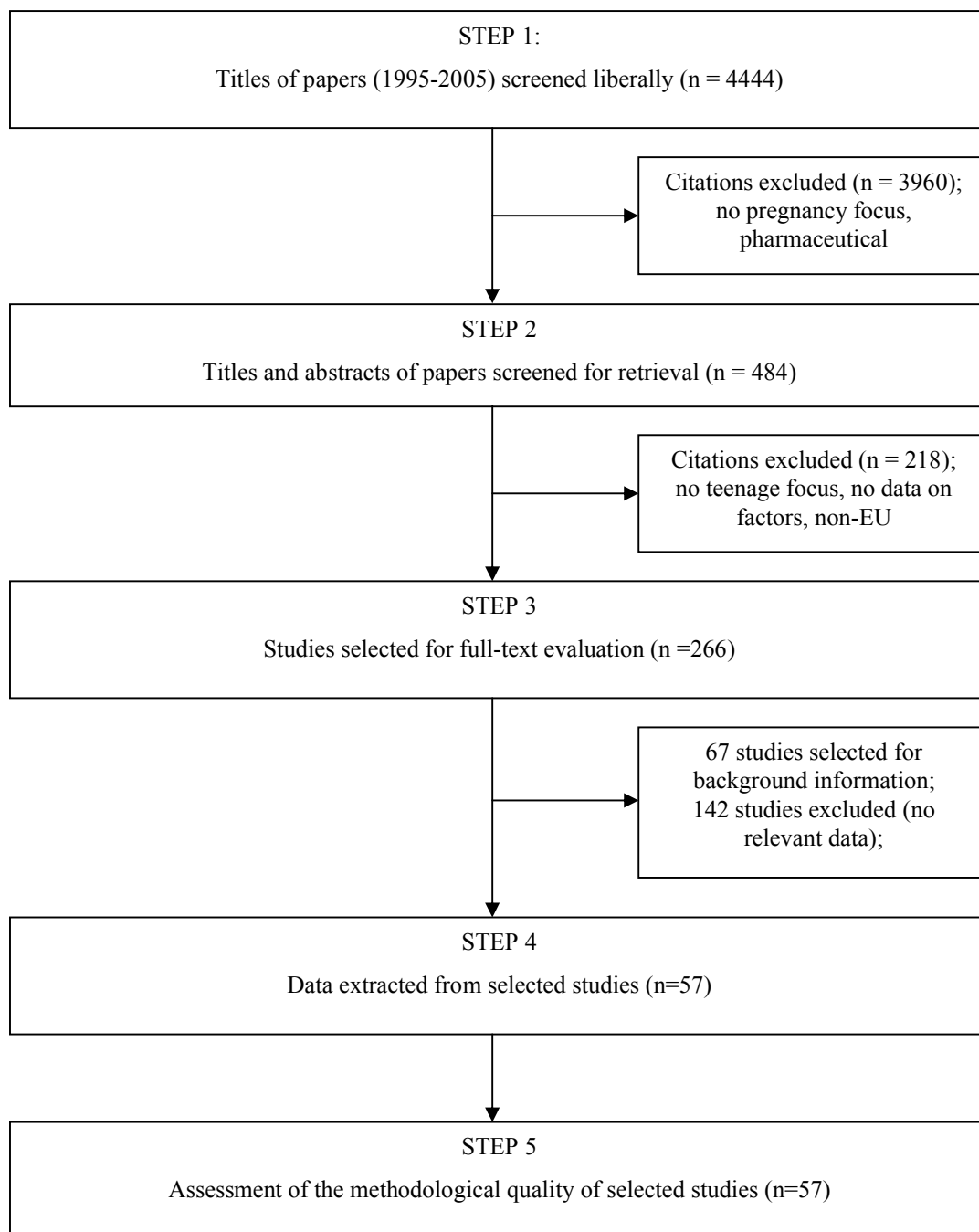


Table 4 describes the included studies and countries where these studies were undertaken. Studies are categorised by the type of study outcomes. Overall, most studies found were UK-based. A total of 36 studies were undertaken in the UK with further representation of studies conducted in the Nordic countries and few were conducted in other countries. In terms of outcome, 20 studies used pregnancy as their study outcome. The other studies used intermediate measures of pregnancy, i.e. childbearing, early sexual initiation, contraceptive use and sexual knowledge, attitude and service accessibility.

Table 4. Number of studies for each outcome, and countries where the studies were undertaken (n=57)

Outcome	UK	SW	DK	FI	HU	PL	IR	SP	IT	Total
1. Pregnancy	12	5	1	1	1	0	0	0	0	20
2. Childbearing	15	3	1	0	0	0	0	1	0	20
3. Early sexual initiation	2	5	0	0	0	1	1	0	0	9
4. Contraceptive use	0	1	0	4	0	0	0	0	0	5
5. Sexual health knowledge and attitudes	2	0	0	0	0	0	1	0	1	4
6. Service accessibility	4	0	0	0	0	0	0	0	0	4
Total	35	14	2	5	1	1	2	1	1	62*

*The number does not add up, since some studies examined more than one outcome.

Key: UK = United Kingdom, SW = Sweden, DK = Denmark, FI = Finland, HU = Hungary, PL = Poland, IR = Ireland, SP = Spain, IT = Italy.

The methodological quality of the studies was gauged in terms of data sources, sampling strategy and type of analysis. As Table 5 shows, the quality of the included studies varies considerably. For example, the majority of the studies utilise self-reports, rather than official statistics or medical records. Two-thirds of the studies were based on a sample representative of the study target population, while in others subjects were derived from a specific clinic, school or community or the target population was not well defined. Thirty-six studies utilised multivariate analysis, while 21 studies only provided descriptive statistics, without controlling for other variables. Studies also varied in their settings, population characteristics, target age groups and method of data collection. Some factors appear in only one or two reports.

For this reason it was not possible to synthesise results to examine potential variations across different countries in the EU or between teenage sub-groups.

Table 5. Summary of the quality of included studies (n = 57)

Quality criteria	No. of studies
1. Assessment of outcome (i.e. self-report or medical records or databases)	
Self-report	45/57 (79%)
Medical records or databases	12/57 (21%)
2. Assessment of factors (i.e. self-report or medical records or databases)	
Self-report	46/57 (81%)
Medical records or databases	10/57 (17%)
Both self-report and medical record	1/57 (2%)
3. Representative of the target population (national or regional)	
Likely	37/57 (65%)
Unlikely	20/57 (35%)
4. Reporting of the sample characteristics	
Adequate	17/57 (30%)
Not adequate (inc. studies using representative/comparative samples)	40/57 (70%)
5. Response rate	
≥70%	22/57 (39%)
<70%	4/57 (7%)
Not applicable	25/57 (44%)
Insufficient information provided	6/57 (10%)
6. Type of analysis	
Multivariate analysis	36/57 (63%)
Univariate or bivariate analysis	21/57 (37%)

In the following section, findings are presented by outcomes as well as factors that are grouped under the following six broad headings to assist interpretation:

- (a) sociodemographic factors
- (b) family structure factor
- (c) educational factors
- (d) psychosocial factors
- (e) sexual health knowledge, attitude and behaviour
- (f) contextual factors

Table 6 provides examples of how the factors were categorised. The included studies and some of the study features are listed in Table 7 below.

Table 6. Examples of factors and their classification into the six categories

<p>A. Sociodemographic factors</p> <ul style="list-style-type: none"> • Age • Gender • Socioeconomic deprivation • Geographic variables, e.g. urban/rural <p>B. Family</p> <ul style="list-style-type: none"> • Parental divorce • Parental interest in education • Mother (or sister) teenage pregnancy history <p>C. Educational</p> <ul style="list-style-type: none"> • Attitude to school • Absent from school • School achievement, involvement and aspirations 	<p>D. Psychosocial factors</p> <ul style="list-style-type: none"> • Health lifestyle and risk behaviour, e.g. smoking, drug use • Problem behaviour • Depression • Parent-child relations <p>E. Sexual knowledge, attitudes, behaviour</p> <ul style="list-style-type: none"> • Non-use of contraception • Self-efficacy in condom use • Number of sexual partners • Preference for early motherhood <p>F. Contextual</p> <ul style="list-style-type: none"> • Availability and accessibility of sexual health services • Service preference and acceptability • Sex education
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Table 7. Included studies of teenage pregnancy and other intermediate measures of pregnancy

<i>Ref ID</i>	<i>Study</i>	<i>Key factor(s) investigated</i>	<i>Number of subjects (Male/Female)</i>	<i>Design</i>	<i>Population source</i>	<i>Data source</i>	<i>Analysis</i>
	1. Pregnancy						
63	Bradshaw, Finch and Miles, 2005, UK	Deprivation	N/A	Population data analysis	Conception rates (15-17 y) in England	Routinely collected ONS (Office for National Statistics) data, 1994-96, 1997-99	Multivariate
88	Clements et al., 1998, UK	Deprivation, service accessibility	N/A	Population data analysis	Pregnancy rates (13-19 y) in the Wessex region, England	NHS (National Health Service) database and British Pregnancy Advisory Services (BPAS); 1991-94	Multivariate
113	Diamond et al., 1999, UK	Deprivation, service accessibility	N/A	Population data analysis	Pregnancy rates (13-19 y) in the Wessex Region, England	NHS (National Health Service) database and British Pregnancy Advisory Service (BPAS), 1991-94	Multivariate
262	McLeod, 2001, UK	Deprivation	N/A	Population data analysis	Pregnancy rates (13-19 y) in Scotland	Routinely collected ISD (Information and Statistics Division) data, 1981-85 & 1991-91	Multivariate
307	Paton, 2002, UK	Deprivation, service accessibility	N/A	Population data analysis	Pregnancy rates (13-19 y) in Scotland, England and Wales	Routinely collected data (ONS, ISD, NHS etc), 1984-97	Multivariate

<i>Ref ID</i>	<i>Study</i>	<i>Key factor(s) investigated</i>	<i>Number of subjects (Male/Female)</i>	<i>Design</i>	<i>Population source</i>	<i>Data source</i>	<i>Analysis</i>
396	Vikat et al., 2002, FI	Family structure	28914 F	Survey follow-up using registers	Female respondents (12, 14, 16 and 18 y) in the AHLS samples representative for Finland	Adolescent Health and Lifestyle Survey (AHLS), 1987-98, and registers on pregnancies (abortions, births, miscarriages) occurring to 14 - 19 y	Multivariate
354 & 355	Seamark and Gray, 1997, 1998, UK	Mother's pregnancy history, smoking	76 F	Case-control, retrospective	Females (13-19 y) registered with a group general practice in east Devon, England	General practice records, 1994-95	Bivariate
57	Bonell et al. 2005, UK	Attitude to school	4248 F at baseline	longitudinal	Female participants (13/14 y at baseline) in a sex education trial in central and southern England	Self-completed questionnaire based on trial (RIPPLE), 1997-99	Multivariate
180	Holmberg and Berg-Kelly, 2002, SW	Health and risky behaviour	1175 M	cross-sectional	Male students (18 y) from one community in a medium sized city	'Q90' survey in 1994 and 1998	Bivariate
47	Berg-Kelly, 1995, SW	Health and risky behaviour	4516 M/F	cross-sectional	Students (grades 7, 9 and 11, age 13-18 y) from 7 (not randomly) selected areas across Sweden	'Q90' survey, 1990-91	Bivariate
121 & 124	Edgardh 2000, 2002b, SW	Early sexual initiation	1943 M/F (students) and 210 M/F (school dropouts)	cross-sectional	National sample of teens (17 y) (statistical analysis restricted to the student sample)	'SAM 73-90' survey, 1990	Bivariate

<i>Ref ID</i>	<i>Study</i>	<i>Key factor(s) investigated</i>	<i>Number of subjects (Male/Female)</i>	<i>Design</i>	<i>Population source</i>	<i>Data source</i>	<i>Analysis</i>
119	Easton, Kiss and Mowery, 2004, HU	Health and risky behaviour, school type	2615 M/F	cross-sectional	Representative sample of students (15-18 y) in Budapest	Budapest Student Health Behaviour Survey (BSHBS), 1999	Bivariate
404	Wellings et al. 2001, UK	Early sexual initiation	11161 M/F	cross-sectional	National probability sample of men and women aged 16-44 y in Britain (analysis restricted to females aged 18-24 y who had first heterosexual intercourse before 18 y)	National Survey of Sexual Attitudes and Lifestyles (Natsal 2000), 1999-2001	Multivariate
13	Andersson-Ellström, Forssman and Milsom, 1996, SW	Early sexual initiation	88 F	cross-sectional	Female students (15-17 y) in the health care programme course in the city of Karlstad, Sweden	Questionnaire and interview at a clinic, 1989-90	Bivariate
416	Woodward 1995, UK	Sexual behaviour	61 F	cross-sectional	Pregnant teens (≤ 19 y) from an antenatal clinic and 'never-pregnant' teens from a family planning clinic, England	Self-completed questionnaire, 1992	Bivariate
405	Wielandt, Boldsen and Knudsen. 2002, DK	Contraceptive use/failure	359 F	cross-sectional	National random sample of adolescents (16-20 y)	Structured interview at home, 1989	Multivariate
85	Churchill et al., 2000, UK	Service access (GP consultation)	959 F	case-control, retrospective	Females (< 20 y) registered with 14 general practices in Trent region, England	General practice records (case notes), 1995-97	Multivariate
178	Hippisley-Cox et al., 2000, UK	Service acceptability (characteristics of general practice)	N/A	cross-sectional	Pregnancy rates for teens (13-19 y) registered with all 826 general practices in Trent region, England	Hospital admission records, 1994-97	Multivariate

<i>Ref ID</i>	<i>Study</i>	<i>Key factor(s) investigated</i>	<i>Number of subjects (Male/Female)</i>	<i>Design</i>	<i>Population source</i>	<i>Data source</i>	<i>Analysis</i>
	2. Early childbearing						
365	Sloggett and Joshi, 1998, UK	Area and personal deprivation	33647 F	Population data analysis	National random sample of individuals (10-64y) in England and Wales in the 1981 census; study sample restricted to females <20y	UK ONS Longitudinal Study	Multivariate
260	McCulloch, 2001, UK	Area and personal deprivation	22510 F	Population data analysis	Females selected from SAR (16-19y) who were unmarried and living at home with parent	Sample of Anonymised Records (SAR) from the 1991 census in Great Britain	Multivariate
284	Nebot, Borrell and Villalbí, 1997, SP	Socioeconomic status	N/A	Population data analysis	Fertility rates (15-19y) in Barcelona	Municipal Yearly Statistics and Population Census	Bivariate
129	Ermisch and Francesconi, 2001, UK	Single parent family	2 samples: 764 M/F and 411 M/F with sibling	longitudinal	Participants in BHPS ($\leq 16y$) who were living with parent (due to lack of data focus was on motherhood)	British Household Panel Survey (BHPS), 1991-95, based on a representative sample of British households	Multivariate
127	Ermisch, Francesconi and Pevalin, 2004, UK	Single parent family, jobless parents	1787 M/F	longitudinal	Participants in BHPS ($\leq 16y$) who were living with parent (due to lack of data focus was on motherhood)	British Household Panel Survey (BHPS), 1991-99	Multivariate
289	Ní Bhrolcháin et al. 2000, UK	Family structure	7866 M/F	longitudinal	Participants in NCDS who were in intact families (living with both natural parents) at age 7	1958 National Child Development Study (NCDS), based on a nationally representative sample of British children born in 1958	Multivariate
344	Russell, 2002, UK	Family life risk factors in early childhood	4928 F	longitudinal	Female participants in NCDS	1958 National Child Development Study (NCDS)	Multivariate
s11	Manlove, 1997, UK	Mother's pregnancy history	2183 F	longitudinal	Participants in NCDS who were firstborn daughters	1958 National Child Development Study (NCDS)	Multivariate

<i>Ref ID</i>	<i>Study</i>	<i>Key factor(s) investigated</i>	<i>Number of subjects (Male/Female)</i>	<i>Design</i>	<i>Population source</i>	<i>Data source</i>	<i>Analysis</i>
335	Roberts et al. 2004, UK	Child sexual assault	8292 F	longitudinal	Sub-sample of females in ALSPAC	Avon Longitudinal Study of Parents and Children (ALSPAC), including all women in Avon, England, who gave birth between 1991 and 1992	Multivariate
82	Christoffersen and Soothill, 2003, DK	Parental alcohol misuse	41362 F in original cohort	longitudinal	All females born in Denmark in 1966	Population-based registers in Denmark	Multivariate
300	Otterblad Olausson, Lichtenstein and Cnattingius, 2000, SW	Genetic and environmental factors	1885 female twin pairs	experimental (twin research)	All female twins in Sweden in 1953-58 who gave birth before age 30	Swedish Twin Register and Swedish Medical Birth Register	Multivariate
210	Kiernan, 1997, UK	Educational attainment	17414 M/F in original cohort	longitudinal	Participants in NCDS	1958 National Child Development Study (NCDS)	Multivariate
73	Feinstein and Bynner, 2004, UK	Cognitive performance at ages 5 and 11	9132 M/F	longitudinal	Participants in BCS70 (due to lack of data focus was on motherhood)	1970 British Cohort Study (BCS70), based on a nationally representative sample of British children born in 1970	Multivariate
345	Russell, 1998a, UK	Psychosocial factors, family characteristics	4868 F 4885M	longitudinal	Participants in NCDS	1958 National Child Development Study (NCDS)	Multivariate
254	Maughan and Lindelow, 1997, UK	Anti-social behaviour, social and educational disadvantage	1004 F (1946) 2539 F (1958)	longitudinal	Participants in NSHD or NCDS who reported at least one live (and legitimate) birth before age 33 or 36	1946 National Survey of Health and Development (NSHD); 1958 National Child Development Study (NCDS)	Multivariate
112	Dearden, Hale and Woolley, 1995, UK	Risky behaviour, family characteristics	5997 M	longitudinal	Male participants in NCDS	1958 National Child Development Study, (NCDS)	Multivariate

<i>Ref ID</i>	<i>Study</i>	<i>Key factor(s) investigated</i>	<i>Number of subjects (Male/Female)</i>	<i>Design</i>	<i>Population source</i>	<i>Data source</i>	<i>Analysis</i>
80 & 81	Ekéus and Christensson, 2003a, 2003b, SW	Risky behaviour, socioeconomic status	264 M	cross-sectional (comparative)	Fathers of babies born to primiparous teenagers and primiparous women aged 25-29y in Stockholm	Self-completed questionnaire in postnatal wards, 1997-98	Bivariate
404	Wellings et al. 2001, UK	Early sexual intercourse	As above	As above	As above	As above	As above
s23	Russell, 1998b, UK	Sex education lessons	5036 F	longitudinal	Female participants in NCDS	1958 National Child Development Study (NCDS)	Multivariate
	3. Early sexual intercourse						
404	Wellings et al. 2001, UK	Sociodemographic factor, family, education	As above	As above	As above (analysis restricted to females aged 16-24 y who had had heterosexual intercourse)	As above	As above
58	Bonell et al. 2003, UK	Attitude to school Socioeconomic status	8766 M/F	cross-sectional	Female participants (13/14 y) in a sex education trial in central and southern England	Self-completed questionnaire based on trial (RIPPLE), 1997	Multivariate
417	Wojnarowska et al. 2004, PL	Gender, place of living	6382 M/F	cross-sectional	National clustered random sample of adolescents (15y)	Health Behaviour in School-aged Children (HBSC), 1990-2002	Bivariate
247	Magnusson, 2001, SW	Psychosocial factors, sexual behaviour	522F 567F	cross-sectional (comparative)	Two cohorts of female students (15y) in a mid-Swedish community (Örebro)	Self-completed questionnaire ('Adjustment Screening Test'), 1970 and 1996	Bivariate
124	Edgardh 2000, SW	Risky behaviour	As above	As above	As above	As above	As above
123	Edgardh, 2002c, SW	Risky behaviour	258 M/F	cross-sectional	Students (17y) from 2 high schools in a suburban low-income community in greater Stockholm	Self-completed questionnaire (adapted from 'SAM73-90'), 1999	Bivariate

<i>Ref ID</i>	<i>Study</i>	<i>Key factor(s) investigated</i>	<i>Number of subjects (Male/Female)</i>	<i>Design</i>	<i>Population source</i>	<i>Data source</i>	<i>Analysis</i>
80 & 81	Ekéus and Christensson, 2003a, 2003b, SW	Risky behaviour, socioeconomic status	As above	As above	As above	As above	As above
140	Fitzpatrick, Fitzpatrick and Turner, 1997, IR	Sociodemographic characteristics	120 F	cross-sectional	Consecutive teenage mothers (14-19y) attending a public adolescent antenatal clinic	Structured computer-coded questionnaire	Bivariate
	4. Contraceptive use						
223	Kosunen, Rimpelä and Rimpelä, 1995, FI	Socioeconomic status	462-1594 F each year	cross-sectional (biannual surveys)	National samples of adolescents (16y)	Adolescent Health and Lifestyle Survey, 1981-93	Multivariate
220	Kosunen and Laippala, 1996, FI	Sexual behaviour	189F + 200F (combined)	cross-sectional	Sexually experienced female students (15-16y) in strategically selected areas in southern and western Finland	Self-administered questionnaires conducted in 1988 and 1992 as part of the KISS study	Multivariate
318	Pötsönen and Kontula, 1999, FI	Gender, sexual experience	928 (1990), 1183 (1994)	cross-sectional	Adolescents (15y) selected from a nationally representative sample	Health Behaviour in School-aged Children (HBSC), 1990-1994	Bivariate
164	Häggström-Nordin, Hanson and Tydén, 2002, SW	Gender, school type	249 F 159 M	cross-sectional	Clustered random sample of the first-year high school students (median 16y) in two medium-sized cities (Uppsala and Västerås)	Self-completed questionnaire, 1999	Bivariate
219	Kosunen et al. 2003, FI	Depression	22236 M/F	cross-sectional	Respondents (15-16y) in School Health Promotion Survey with experience of sexual intercourse	School Health Promotion Survey, 1999 and 2000	Multivariate

<i>Ref ID</i>	<i>Study</i>	<i>Key factor(s) investigated</i>	<i>Number of subjects (Male/Female)</i>	<i>Design</i>	<i>Population source</i>	<i>Data source</i>	<i>Analysis</i>
	5. Sexual knowledge and attitudes						
t02	Donati et al. 2000, IT	Sociodemographic characteristics, sexual experience	6532 M/F	cross-sectional	Probability sample of the first two classes (≤ 14 y) of all mixed-sex state secondary schools in 11 Italian regions	Self-completed questionnaire, 1998	Multivariate
71	Burack, 1999, UK	Gender	1500 M/F	cross-sectional	Clustered random sample of secondary school students (years 9-11, 13-16y), and respondents from 1 of the 2 local sixth form colleges (17-18y), in Barking and Havering Health Authority, England	Self-completed questionnaire, 1996	Bivariate
181	Hooke, Capewell and Whyte, 2000, UK	Gender	126 M/F	cross-sectional	Pupils (14-15y) from 2 secondary schools in Ayrshire, Scotland	Self-completed questionnaire and vignette	Bivariate
s07	Grey and Swain, 1996, IR	Religiosity, gender	322 M/F 333 M/F	cross-sectional	Two groups of students at University College Cork (age not specified)	Self-completed questionnaire	Multivariate
	6. Service accessibility						
305	Parkes, Wight and Henderson, 2004, UK	Sexual knowledge, attitude, behaviour	5747 M/F	cross-sectional	Participants (15-16y) in a sex education trial in Lothian and Tayside regions, Scotland	Self-completed questionnaire based on trial (SHARE), 1996-99	Multivariate
70	Burack, 2000, UK	Gender, sexual experience	1045 M/F	cross-sectional	Individuals (13-15y) selected from the survey respondents reported in Burack 1999	Self-completed questionnaire, 1996	Bivariate

<i>Ref ID</i>	<i>Study</i>	<i>Key factor(s) investigated</i>	<i>Number of subjects (Male/Female)</i>	<i>Design</i>	<i>Population source</i>	<i>Data source</i>	<i>Analysis</i>
118	Donovan et al. 1997, UK	Gender, sexual experience	4481 M/F	cross-sectional	Participants (15-16y) in a sex education programme outside of major conurbations in England	Self-completed questionnaire based on a peer-based sex education programme, 1994	Bivariate
168	Harden and Ogden, 1999, UK	Gender, sexual experience	967 M/F	cross-sectional	Sixth form and further education college students (16-19y) in the South Thames area, England	Self-completed questionnaire,	Bivariate

4. RESULTS: FACTORS ASSOCIATED WITH TEENAGE PREGNANCY

4.1. Factors associated with teenage pregnancy

(A) Sociodemographic factors

The most commonly cited factor associated with teenage pregnancy was poverty. Five UK studies have found a strong association between pregnancy and exposure to local area deprivation: the areas with higher levels of deprivation were found to have higher conception rates (Bradshaw, Finch and Miles 2005; Clements et al. 1998; Diamond et al. 1999; McLeod 2001, Paton 2002). For example, Bradshaw, Finch and Miles (2005) found that deprivation explains more than three quarters of the area variation in the teenage (age 15-17) conception rate in England. McLeod (2001) also found that the proportion of local variation in teenage pregnancy (age 13-19) explained by deprivation more than doubled from the 1980s to the 1990s in Scotland and that teenage pregnancy rates increased more rapidly in more deprived areas (i.e. 'differences in teenage pregnancy in more affluent and more deprived areas widened').

In a study in the Wessex Regional Health Authority in England, Diamond et al. (1999) found that established deprivation indices such as Carstairs, Townsend, Jarman, and the Department of the Environment (DOE) indices may not adequately reflect the variation in teenage pregnancy. Four predictors for urban areas improved on the generic deprivation indices. These were the high proportions of children under 5 years old in the ward, households without access to a car, 17-year-old children not in full-time education, and residents who had moved within the last year (population mobility). In rural areas, predictors included non-car ownership, children under 5 years old, overcrowding and a lack of basic amenities.

Three further studies investigated parental socioeconomic status. One of these studies found a significant association between father's or guardian's occupation and level of education and teenage pregnancy (14-19 years) (Vikat et al. 2002). Another study

found that females whose parents were not in full-time employment were more likely to experience pregnancy by age 16, but self-reported housing tenure was not a significant factor (Bonell et al. 2005). In contrast, Wellings et al. (2001) reported no significant effect of parental socio-economic status (based on father's occupation) on teenage pregnancy (defined as self-reported motherhood and abortion before age 18) in the second National Survey of Sexual Attitudes and Lifestyles (Natsal 2000), although the proportion of females experiencing pregnancy was slightly higher among those whose parents were 'manual' rather than 'non-manual' workers in bivariate analysis. All three studies used data derived from adolescents' self-report, and therefore usual caveats apply as with other self-reported measures.

Few studies investigated the relationship between ethnicity and teenage pregnancy. One population-based study in England by Bradshaw et al. (2005) found areas with more ethnic minorities had higher teenage pregnancy rates, although this association was no longer significant after adjusting for socioeconomic deprivation.

Two other studies investigated immigrant status by means of the mother tongue. Holmberg and Berg-Kelly (2002), describe a survey of 18-year-old male students in one Swedish city. They reported that, of those sexually active, those from bilingual families (who spoke a language other than Swedish at home) were more likely to have made their partners pregnant, compared with those who only spoke Swedish at home. In this study possible interaction with other sociodemographic characteristics were not considered. Findings by Vikat et al. (2002) from a Finnish study comparing Swedish-speaking teenage girls with the Finnish-speaking counterparts indicated that Swedish speakers had a lower pregnancy risk. This was partly explained by the fact that Swedish speakers in Finland tend to come from higher socioeconomic groups, although in this study the significant difference remained, even after controlling for father's socioeconomic status.

Three studies assessed whether early physical development was associated with early pregnancy (Holmberg and Berg-Kelly 1995; Edgardh 2002b; Welling et al. 2000). However, only in one study with bivariate analysis was this found to be a risk factor. Sexually active 18-year-old males in one Swedish city who had made their partners

pregnant were more likely to report early physical development, compared with the sexually active males who did not report (or were unaware of) making their partners pregnant (Holmberg and Berg-Kelly 1995). Another study based on a national sample of 17-year-old Swedish males found that early puberty was not significantly related to pregnancy of their partners (Edgardh 2002b). The third study using a representative sample of British females also found no significant association between early menarche (age <13 years) and teenage pregnancy (Welling et al. 2000).

Four studies looked at urban/rural characteristics. Multivariate analysis by Clements et al. (1998) found that teenage pregnancy rates in an urban ward were significantly higher than those in a rural ward (in Wessex, England). Urbanisation was also associated with higher risk of teenage pregnancy in the study by McLeod (2001) in Scotland, although this effect appeared to be explained by socioeconomic deprivation. The study also found that the positive effect of deprivation on pregnancy rates is more apparent in urban than in rural areas. Vikat et al. (2002) in Finland too found higher pregnancy rates in urban areas, although this effect was no longer significant after controlling for other sociodemographic factors such as parental occupation and family type (see below). Notably, this study did find a persistent regional variation in teenage pregnancy rates over the study period (1987-98) with teenage pregnancy more likely in (less developed) northern regions and the capital, and this regional variation remained after adjusting for socioeconomic status. It was argued that pregnancy rates in Finland are considerably lower than other European countries (at the time of study) and this may explain relatively small socioeconomic differentials observed in this study, compared with other studies in the UK with pregnancy rates more than three times higher.

(B) Family structure

Three studies examined whether family disruption influenced the likelihood of teenage pregnancy. Using bivariate analysis, Holmberg and Berg-Kelly (1995) showed that male teenagers (age 18) who did not live at home with both parents were more likely to make their partner pregnant. Vikat et al. (2002) found that, controlling for age, female teenagers who did not live with both parents were more likely to

experience pregnancy (14-19 years). The risk of pregnancy was even higher for those living in a stepfamily than for those living in a one-parent family. These results hold after controlling for socioeconomic status, mother tongue and regional variation (Vikat et al. 2002). Wellings et al. (2001), found that living with both biological parents to age 16 years appeared protective against early pregnancy resulting in teenage motherhood only but not associated with lower abortion. However, this association with motherhood was no longer significant in a multivariate model including sociodemographic factors as well as early age (<16) at first intercourse which was in itself significantly associated with teenage pregnancy (resulting in either motherhood or abortion).

Surprisingly, only one small study examined the reproductive history of the mother of a teenager. Comparing female teenagers (age 13-19) with and without a recorded pregnancy, matched only by age and general practitioner, the study reported that the daughter of a mother who had a teenage conception was more likely to become pregnant as a teenager herself, although this was not adjusted for other factors (Seamark and Gray 1997).

(C) Educational factors

Wellings et al. (2001) found that sexually active females who left school early (at the minimum school leaving age of 16) were more likely to experience early pregnancy (motherhood and abortion before age 18). In multivariate analysis (including early age at first intercourse), however, leaving school at age 16 was independently associated with pregnancy resulting in motherhood only and not with abortion.

One study examined whether attitude to school was an influential factor. Bonell et al. (2005) analysed longitudinal data arising from a trial of sex education (age 13/14 at baseline) in central and southern London (the RIPPLE study). The key objective of this secondary analysis was to examine whether attitude to school is associated with teenage pregnancy. The second objective was to test two hypothesised pathways whereby dislike of schools might increase risk of teenage pregnancy. In particular, the analysis tested whether young females who dislike school lack future expectations

about education and view parenting as an acceptable ‘alternative’, or whether young people who are disengaged from school are in ‘deficit’ when it comes to the knowledge and confidence necessary to avoid pregnancy. To this end, the effect of attitude to school was adjusted in turn by other factors ascertaining expectations (of parenting and education at age 20), confidence (in rejecting unwanted sex and communicating about sex) and knowledge (about emergency contraception timing and contraception service).

The results showed that females who disliked school were significantly more likely to report pregnancy by age 16 compared with those who liked school. This association remained largely unaffected after adjusting for expectations, confidence or knowledge, indicating that the ‘alternative expectations’ or ‘deficits’ in sexual health knowledge and confidence were unlikely to explain the underlying mechanism linking dislike of school to increased risk of pregnancy. Notably, though, the association between dislike of school and pregnancy was removed after adjusting for parental employment status, which was in itself significantly associated with pregnancy.

In the same study lack of expectation of being in higher education at age 20 was also found to be significantly associated with the likelihood of early pregnancy.

(D) Psychosocial factors

Five studies investigated the relationship between risk-taking behaviour and lifestyles and teenage pregnancy (all bivariate analysis). The first study by Seamark and Gray (1998) found a significant association between smoking and pregnancy amongst female teenagers (age 13-19) in a small comparative study with non-smokers (Seamark and Gray 1998).

The second study by Holmberg and Berg-Kelly (2002) found that 18-year-old males in a Swedish city who had made their partners pregnant were more likely to show health-compromising and risky lifestyles. Compared with those who were sexually active but never made their partners pregnant, those who had made their partners pregnant were more likely to exhibit unhealthy lifestyles in terms of smoking, violence

(fighting), anabolic steroid use and lack of breakfast and seatbelt use, and also more likely to have considered committing suicide. These males tended to report early pubertal development and were less likely to live at home with parents and come from monolingual Swedish-speaking families, though the above results were not adjusted for these factors.

The third survey by Berg-Kelly (1995) including male and female students (age 14-18) from selected Swedish schools found no significant difference by age and gender regarding whether respondents had been pregnant or made someone pregnant. Nevertheless, the study found a consistent age-related pattern for other sexual and risk-taking behaviours, in clear contrast with health habits such as regular breakfast, exercise and seatbelt use which changed little during teenage years. For example, unsurprisingly, the proportion of respondents who reported sexual intercourse increased with age, while contraceptive use at last intercourse decreased and the proportion of respondents having had more than 5 partners increased between grades 9 and 11. The proportion of respondents reporting drinking and drug use also increased with age. Furthermore, sexual and risky behaviour was associated with less healthy lifestyle, with respondents reporting sexual intercourse, drinking and drug use more likely to smoke and skip breakfast. However, whether early sexual intercourse and other sexual and risk-taking behaviours are related with teenage pregnancy remained untested in this study.

The fourth study based on a national cross-sectional survey in Sweden found that, among sexually active males (age 17) in the sample, those reporting binge drinking were significantly more likely to have made their partners pregnant, although the association with other risky behaviour such as truancy, smoking, drinking, drug use, and high perceived social age was not statistically significant (Edgardh 2002b).

Finally, based on the Budapest Student Health Behaviour Survey (BSHBS) among secondary school students of both genders (age 15-18), Easton, Kiss and Mowery (2004) found that vocational/technical school students were more likely to be sexually active than traditional school students. Furthermore, more vocational/technical school students than traditional school students and more males than females reported heavy

drinking, drink driving and having had more than four sexual partners. However, the study found no significant association between gender, school type (vocational/technical vs. traditional) and reported pregnancy.

(E) Sexual health knowledge, attitude and behaviour

The aforementioned study by Bonell et al. (2005) found that, after adjusting for other factors, lack of confidence in rejecting unwanted sex increased risk of teenage pregnancy (marginal significance). The same study also found that expectations of parenting by age 20 were significantly associated with the likelihood of teenage pregnancy, although there was no significant relationship between pregnancy and knowledge of timing of emergency contraception and knowledge of access to contraception and sexual health services.

Four studies examined whether early sexual activity was associated with teenage pregnancy. Wellings et al. (2001) found that among sexually active females (age 18-24) early sexual initiation (before age 16) was significantly and independently associated with early pregnancy (resulting in either birth or abortion before the age of 18). The study also found that the odds of having first intercourse before age 16 was greater among females (age 16-24) who did not live with both parents, who left school early (at age 16), who had menarche under 13 years of age, and females whose parents were manual workers and whose main source of information about sex was not school, although these factors in themselves do not seem to increase the likelihood of early pregnancy. The association with 'sexual competence' at first sex (a composite measure constructed by variables on regret, willingness, autonomy, and contraception), and communication with parents about sex was not significant in relation to pregnancy.

Using bivariate analysis, Edgardh (2000, 2002b) found that, amongst sexually active females (age 17), those who began having intercourse before age 15 were more likely to report pregnancy compared with those who experienced their first intercourse at a later age. Amongst males, the effect of early sexual initiation in itself was not significantly associated with their partners' pregnancy. However, having first date

intercourse more than twice was significantly related to having made their partners pregnant. The effect of non-use of contraceptives was not statistically significant. Care needs to be taken here given the small number of male respondents reporting having impregnating their partners ($n = 18$).

The other two studies, based on a small sample of 88 females (age <18) and 61 females (age <19) respectively, examined the relationship between early sexual initiation and pregnancy but the results were not very informative (Andersson-Elström, Forssman and Milsom 1996, Woodward 1995).

One descriptive study also looked at other sexual behaviour using a sample of males (age 18). Holmberg and Berg-Kelly (2002) found that, compared with those who were sexually active but never made their partners pregnant, those who had made their partners pregnant were more likely to have had more than two sexual partners, had an STI, been victim to sexual offences, and less likely to use contraceptives.

Wielandt, Boldsen and Knudsen (2002) suggested a possible effect of contraceptive failure on teenage pregnancy, using data obtained from structured interviews with a representative sample of 16-20 year olds in Denmark (in 1989). The study was driven by the observation that 95% of the sexually active females in the sample reported use of contraceptives at last intercourse, with the caveat that this may reflect over-reporting. The study thus tested the validity of the self-reports by constructing a model whereby an estimated number of conceptions was calculated on the basis of reported frequency of coital intercourse and contraceptive methods used, accounting for the estimations of failure rates for the different contraceptive methods. The model was then tested by comparing the estimated number of conceptions and the number of births and legal abortions in the following year (1990) obtained from registers. The results show that from 25% to 50% of estimated conceptions occurred despite use of contraceptives, and that the estimated number of conceptions was highly correlated with (and even slightly higher than) the registered number of pregnancies. The study concluded that a high proportion of 16-20 year old Danes do use contraceptives and 'contraceptive failure is a much greater problem than non-use of contraception for teenagers in Denmark'. Caution is required in interpreting these results, since the

analysis is restricted to sexually active females in the sample and gender differences in self-reporting of contraceptive use and also possible over- or under-reporting of coital frequency were not fully explored.

(F) Contextual factors - Service accessibility and acceptability

Four studies examined the relationship between service accessibility and teenage pregnancy. Diamond, Stone and Ingham (1999) conducted a study in the Wessex region (England) and reported that increased distance to youth family planning clinic may be associated with higher conception rates. However, the association was only significant in urban areas less than 10 km away from their nearest clinic. The authors interpret this by noting that this may reflect the fact that specialised clinics are more likely to be located in cities and town centres, while suburbs (further away from cities) may represent a more affluent area with low pregnancy rates, although these results remained even after controlling for deprivation. In the same study, distance to general practice (GP) was not associated with higher conception rates in urban areas, and no association was found with distance to either nearest GP or youth-oriented clinic in rural areas.

McLeod (2001) for Scotland argues that, while local variation in teenage pregnancy rates may reflect differential access to family planning services, socioeconomic deprivation explains much of local variation in rates of teenage pregnancy. The study demonstrated this in two hypothetical situations: statistically removing the effect of deprivation while maintaining the effect of local variation would halve the number of pregnancies in teenagers under 18, whereas by removing the effect of local variation and maintaining the effect of deprivation this reduction would be less than 10%.

Paton (2002) attempted to assess the same question of whether improved access to family planning services would reduce underage pregnancies by constructing a simple rational choice model and testing the model using two approaches. The first test used the 1984 Gillick ruling, which reduced family planning attendance by teenagers under-16 years in England, until it was overturned in 1985. The second test used attendance by under-16s at family planning clinics as a proxy for overall family planning

provision for under 16s in England, Scotland and Wales. No evidence was found that greater access to services reduced regional teenage (<16 years) pregnancy rates, whereas socio-economic variables such as the proportion of children in care, unemployment rates and lower participation rates in post-compulsory education were significantly associated with teenage pregnancy. This report argues that improving access to family planning for individuals can have an ambiguous impact on underage conception rates; while family planning may reduce the probability of pregnancy amongst those who use it, it may raise the likelihood of engaging in sexual activity by appearing to make sexual activity less risky.

A case-control study in Trent region in England (Churchill et al. 2000) indicates that improved access to services in itself may not reduce teenage pregnancy. The study examined female patients (age 13-19) across 14 General Practices and compared those who had conceived before the age of 20 (cases) and those who had no recorded teenage pregnancy (controls). The results found that 93% of cases actually consulted their general practice at least once in the year preceding the conception, and 53% consulted more than 4 times. Cases were also more likely to have consulted for contraceptive reasons than controls in the year preceding the conception, after controlling for other factors such as deprivation and distance to surgery.

Another study, conducted also in Trent region by Hippisley-Cox et al. (2000), examined over 800 General Practices in the area and found that lower pregnancy rates were associated with a practice with a female doctor, a young doctor (under 36 years) and more practice nurse time, after controlling for deprivation and rural location.

4.2. Factors associated with early childbearing

Clearly, factors associated with early childbearing (parenthood) are not directly comparable with factors associated with early pregnancy, as they exclude adolescents who had abortion. This is important, since at least in the context of the UK teenage conception and abortion show different social correlates; for example, teenage conception rates are higher but abortion rates are lower in more deprived areas (Lee et

al. 2004). Nevertheless, a large number of studies ($n = 20$) investigated factors associated with early childbearing. This may be partly explained by the fact that childbirth is a required registrable event. Studies on childbearing were also facilitated by the availability of longitudinal datasets, and, particularly, the National Child Development Study (NCDS), on which eight of the studies were based. The NCDS is based on a representative sample of a British cohort born in the first week of March in 1958, with follow-ups at ages 7, 11, 16 and during adulthood at ages 23 and 33 years. Data were collected from the parents, teachers, the school doctor and health visitors as well as the children themselves. Originally designed as the Perinatal Mortality Survey, however, the initial survey collected little information regarding family background and parental characteristics at the time of birth. Later surveys cover a wide range of measures including health, academic ability (reading and maths), teacher rating of educational ability and behavioural problems, parental interest in education, attitude to school and early parenthood, as well as social and economic circumstances of the family. Crucially, however, the NCDS dataset does not contain data on young people's sexual activity. Children from disadvantaged backgrounds were slightly underrepresented in the samples at ages 16 and 23 due to attrition at each follow-up.

(A) Sociodemographic factors

Fifteen studies looked at whether socioeconomic status was associated with early childbearing (Dearden, Hale and Woolley 1995; Ekéus and Christensson 2003b; Ermisch and Francesconi 2001; Ermisch, Francesconi and Pevalin 2004; Kiernan 1997; Manlove 1997; Maughan and Lindelow 1997; McCulloch 2001; Nebot, Borrell and Villalbí 1997; Ní Bhrolcháin et al. 2000; Otterblad Olausson, Lichtenstein and Cnattingius 2000; Russell 1998a, 1998b, 2002; Sloggett and Joshi 1998). All studies found this to be a significant factor, reporting that young people from a socioeconomically disadvantaged background were more likely to become a parent in their young ages. In particular, the risk of becoming a young parent was found to be significantly greater among those with persistent financial difficulties throughout childhood (Kiernan 1997) and those whose parental economic status deteriorated during childhood (Russell 2002).

One of these studies (Kiernan 1997) also reported gender differentials whereby the effect of parental social class was significant for early fatherhood (having a child before age 22) only. Nevertheless, in this study early motherhood (having a child before age 20) was significantly associated with another socioeconomic measure of financial adversity within the family based on the self-report of the youngster's mother and a health visitor.

Two of these studies also examined the importance of neighbourhood effects whereby residence in more deprived neighbourhood increases the risk of teenage childbearing, over and above the personal (and family) socioeconomic disadvantage. For example, research by Sloggett and Joshi (1998) drawing on the UK ONS longitudinal study shows that, without adjusting for personal disadvantage, there is a strong association between area deprivation measures and teenage fertility rates. However, the effect of area deprivation is reduced considerably particularly in most deprived areas, once personal factors such as family homeownership and car access are included in the model, although area deprivation measures do remain significant. This result is consistent with the study of teenage non-marital births using the sample of anonymised records (SAR) from the 1991 British census (McCulloch 2001).

Nebot, Borell and Villalbi (1997) suggest that the relationship between teenage motherhood and area deprivation may be contingent upon the size of spatial unit used in the analysis, at least in the context of the city of Barcelona, with the association being stronger when smaller units at the district or neighbourhood level are used rather than larger units at the regional level.

Bivariate analysis findings of one small comparative study based in Sweden (Ekéus and Christensson 2003b) appeared to suggest there was an association between immigrant status and the likelihood of fathering a child by a teenage mother. Using bivariate analysis, the study reported that fathers of a baby of a teenage mother were less likely to be born in Sweden and be monolingual in Swedish, compared with fathers of a baby of an older mother (age 25-29). However, the study sample was restricted to fathers who were present in the postnatal wards in the greater Stockholm

area (possibly a more advantaged group, compared with non-attending fathers) and who were able to read and write Swedish (to answer the questionnaire).

Two studies assessed whether early puberty increased the likelihood of early childbearing (Manlove 1997; Russell 1998a). The first study by Manlove (1997) using NCDS data found that an early age of menarche was associated with a greater likelihood of early motherhood (in their teens and early 20s). In the second study by Russell (1998a), early physical development (age of menarche or when voice was broken) did not initially show significant relationships with early parenthood but their effects became significant once social class was entered in the model.

(B) Family structure and stability

Eight studies investigated whether there was an association between family structure (or disruption) and early motherhood. Two of these studies were based on the British Household Panel Survey (BHPS)² (Ermisch and Francesconi 2001; Ermisch, Francesconi and Pevalin 2004) and found that having lived in a single-parent family during childhood was significantly associated with early motherhood (having a child before their 21st birthday). The effect of family structure was even stronger than the influence of socioeconomic disadvantage (as measured by parental worklessness). There were also some indications that a family disruption experienced in early childhood (when the girl was aged 0-5) rather than adolescence (when the girl was aged 11-15) had a stronger impact on teenage motherhood, although the difference was not statistically significant. Factors associated with early fatherhood were not examined due to small number of identified respondents who fit into this category in the BHPS dataset.

Another study was based on Natsal 2000 (Wellings et al. 2001) and reported that prevalence of early motherhood (before age 18) was higher among (sexually active)

² The BHPS is an on-going national longitudinal survey of a representative sample of British households, launched in 1991 (<http://www.iser.essex.ac.uk/ulsc/bhps/overview/quescontent.php>). Initially it consisted of about 5,500 households and around 10,300 individuals drawn from 250 different areas in Great Britain. The main focus of the questions was on household compositions, health and

women who did not live with both natural parents to age 16 (11%) compared with those who did (6.8%); however, family structure was not found to be a significant factor, after adjusting for family background, education and age at first intercourse.

The other five studies based their analyses on NCDS (Manlove 1997; Ní Bhrolcháin et al. 2000; Russell 1998a, 1998b, 2002). Manlove (1997) found that females living with both biological parents were less likely to have a birth in their teens and early 20s. Ní Bhrolcháin et al. (2000) found that the odds of becoming a teenage mother was significantly higher for women living in a step family or a lone father family, relative to women living with both biological parents. It appears then that women who become teenage mothers were less likely to come from a lone mother family. The authors postulate, however, that the apparent adverse effect of lone-fatherhood may be explained by other factors that may be closely associated with lone-fatherhood, for example, the mother's mental health or alcoholism. In this study, no significant association with any of the disrupted family type was found for early fatherhood. There were mixed reports within these studies based on NCDS as to the potential cause of the family disruption. For example, Ní Bhrolcháin et al. (2000) and Russell (1998b) found that the odds of becoming a teenage mother was significantly higher for women whose parents divorced. Interestingly, however, the analysis by Russell (2002) did not find any significant effect of parental divorce on teenage childbearing among the women in the NCDS sample; maternal death, on the other hand, was a factor strongly associated with daughters' having a child as a teenager. In another report by the same author (Russell 1998a) maternal death had strong and robust associations with teenage parenthood, although the effect of parental divorce did reach statistical significance.

Intergenerational links with respect to the adolescent's family have also been investigated. There is evidence from the NCDS that the probability of a female having an early birth, in their teens through to early 20s, is substantially higher among (firstborn) daughters of a teenage mother compared with (firstborn) daughters of older mothers (Manlove 1997). The effect of having a teenage mother continued into their

usage of health services and socioeconomic values. The intention was to show how these were related to family relationships. Children in the households are also interviewed when they reach the age of 16.

early 20s. This intergenerational effect was partially explained by other factors such as family characteristics (e.g. lower social class, not living with both parents) and home environment (including maternal interest in education), early menarche, academic performance and teacher rating of educational ability, and a preference for early parenthood. Nevertheless, the effect of having a teenage mother remained significant, with the daughter of a teenage mother 61% more likely to become a teenage mother compared with the daughter of an older mother. Kiernan (1997) also found that having a mother who had a teenage birth was significantly associated with early motherhood (before age 20), although the association with early fatherhood (before age 22) was statistically significant in bivariate analysis only. In contrast, another report also based on the NCDS found that being born to a younger mother was not independently associated with teenage motherhood in a multivariate model (Russell 2002).

Five studies, all based on NCDS, found that having a large number of siblings was significantly associated with early parenthood (Russell 1998a, 1998b, 2002; Manlove 1997; Dearden, Hale and Woolley 1995).

Four studies, again all based on NCDS, looked at the influence of parental interest in education. Having a mother with little interest in her child's education was found to increase the risk of early parenthood (Manlove 1997; Dearden, Hale and Woolley 1995; Russell 1998a). Russell (2002) also found that a decline in maternal interest in education from childhood through to adolescence increased the chance of becoming a teenage mother.

With regard to the level of education of the adolescent's parent, Manlove (1997) found that the mother's education level was associated with early motherhood but this effect dissipated with the inclusion of the adolescent's own educational attainment in the model. In contrast, Russell (1998a) reported that parental education showed independent and robust associations with teenage parenthood, allowing for the effect of the adolescent's academic performance. Russell (1998b) also found that father's school leaving age was significantly associated with teenage motherhood in a

multivariate model, adjusting for family characteristics but not the adolescent's school performance.

Two studies looked at parental behaviour, although they did not directly study precursors of teenage parenthood. Based on the Avon Longitudinal Study of Parents and Children (ALSPAC), Roberts et al. (2004) found that females (mothers) who experienced child sexual abuse prior to their teens were significantly more likely to become pregnant in their teens, although no adjustment was made for socio-demographic factors. In another study based on the 1966 Danish cohort, Christoffersen and Soothill (2003) examined the proportion of women having a child as a teenager according to whether or not they had a parent who had alcohol problems resulting in hospital admissions (possibly 'extreme cases' of parental alcohol misuse). The proportion is significantly higher for women whose parents suffered from alcohol misuse, and mother's alcohol misuse in particular had a strong effect on teenage motherhood, although adjusting for parents' social and economic circumstances and health status reduced the effect of parental alcohol misuse.

A Swedish twin study by Otterblad Olausson, Lichtenstein and Cnattingius (2000) suggested a link between genetic influences and teenage motherhood, based on the analysis of female pairs born in Sweden between 1953 and 1958. The estimation of genetic and environmental effects was obtained by comparing monozygotic and dizygotic pairs in the sample. The results found a measurable familial effect on the risk of early childbearing, which could be explained by genetic factors, although the possible effect of shared environmental factors was not fully rejected. In a separate analysis, adjustments were made for smoking and socioeconomic position, which were reported to be affected by genetic factors and were found to be significantly associated with early childbearing in the data, but the familial effect remained significant. However, no information was available on early menarche which was also reported to be affected by genetic factors.

(C) Educational factors

Five studies investigated whether poor academic ability was a risk factor associated with early parenthood (Manlove 1997; Kiernan 1997; Feinstein and Bynner 2004; Russell 1998a; Maughan and Lindelow 1997). All studies found this to be significant. Three of these studies derived from a single dataset (NCDS, i.e. the 1958 British cohort) (Manlove 1997; Kiernan 1997; Russell 1998a), and this trend was confirmed in an earlier British cohort born in 1946 (Maughan and Lindelow 1997) as well as in a later cohort born in 1970 (Feinstein and Bynner 2004). Various measures were used, including maths and reading tests, teacher rating of the adolescent's academic ability, and higher levels of exams passed (school leaving qualifications).

While three of these studies restricted their analyses to the sample of females, Kiernan (1997) and Russell (1998a) found that level of academic ability was significantly associated with early parenthood for both genders. In particular, Kiernan (1997) found that, net of all the other factors included in the model, level of academic ability had the strongest influence (early parenthood before age 20 for females and 22 for males), though there is a clear gender difference with the greater odds of becoming a young parent far higher for women with lower attainment level (OR 6.7) than for the male counterpart (OR 3.7). Further analysis on females suggested that those with lower education attainment, compounded by all the significant risk factors identified (financial difficulties, a preference for early childhood, having a teenage mother, and behavioural problems), had an estimated probability of becoming a teenage mother of 56%, whereas this estimate for women with higher education scores was less than 6%.

Kiernan (1997) also found that educational attainment during adolescence (age 16) had a stronger effect on the likelihood of young parenthood for both genders rather than early childhood attainment (age 7). For example, men and women whose scores improved between ages 7 and 16 differed little from those who maintained high scores at both ages. Those whose educational attainment scores declined between ages 7 and 16 were at greater risk (OR, women 6.8, men 1.7) and the odds of becoming a young parent are even greater than those with persistent low educational scores at both ages (OR, women 4.3, men 1.8), particularly among women.

This contrasts with some of the evidence reported by Feinstein and Bynner (2004) using a later British cohort born in 1970 (British Cohort Study or BCS70). Focusing on females, the study analysed a range of cognitive performance measures in the BCS, including reading, maths, and language development at age 10 and vocabulary and copying designs at age 5. The results indicate that the risk of having a child as a teenager is more than twice as large for girls with lower cognitive scores at both ages as for those with average scores, even after adjusting for family's socioeconomic status. What is interesting is that the risk of having a child as a teenager among those with poor performance at age 5 was not significantly reduced by improved scores by age 10. This suggests that early development matters more than later cognitive ability, although those whose cognitive performance deteriorated over time do not seem to maintain any positive effect from a good performance at age 5.

Four studies also investigated whether there was an association between the level of education and teenage parenthood (Manlove 1997; Wellings et al. 2001; Otterblad Olausson, Lichtenstein and Cnattingius 2000; Dearden, Hale and Woolley 1995; Ekéus and Christensson 2003b). Using NCDS, Manlove (1997) found that leaving full-time schooling at the minimum age of 16 was associated with a higher risk of having an early birth (before age 21). Similarly, Wellings et al. (2001) based on the Natsal study found that, amongst sexually active females (age 18-24), early school leaving age was significantly associated with early motherhood (before the age of 18), and the result holds, even after controlling for family background and the age of first sexual intercourse. Otterblad Olausson, Lichtenstein and Cnattingius (2000) found that teenage mothers in the sample of female twins born in the 1950s were less likely to have attended schools beyond elementary (bivariate analysis). Focusing on the sample of males, a retrospective case-control study based on NCDS found that those who fathered a child before age 20 were more likely to have left school early (at age 16) compared with those who had no child by age 23 (multivariate analysis) (Dearden, Hale and Woolley 1995). Another (non-NCDS) case-control study by Ekéus and Christensson (2003b) found that partners of teenage mothers (age 15-47) were more likely to have low level of education compared with partners of non-teen mothers (bivariate analysis).

Three studies, all based on NCDS, examined whether attitude to school was associated with early parenthood (Russell 1998a; Dearden, Hale and Woolley 1995; Manlove 1997). It was found that negative attitude to school (e.g. 'I feel school is largely a waste of time', 'I think homework is a bore', 'I don't like school') initially showed a significant relationship with early parenthood. However, none of these studies found this relationship to be significant in a multivariate model which included many sociodemographic factors as well as educational attainment factors (Manlove 1997), psychosocial factors (Russell 1998a) or early school leaving age (Dearden, Hale and Woolley 1995).

Two of these studies also examined educational aspiration (measured at age 16). Russell (1998a) found low educational aspiration (lack of plan to continue education) was significantly associated with teenage parenthood, even after adjusting for academic performance. With respect to teenage fatherhood (Dearden, Hale and Woolley 1995), low educational aspiration (lack of education plan) initially showed significant relationship, but this effect was not significant in a multivariate model.

(D) Psychosocial factors

Kiernan (1997), analysing NCDS data, found that young mothers or fathers were more likely to have behavioural problems (composite measure including teachers' and parents' rating at ages 7 and 16, and parents report of argument with their children at age 16). In particular, multivariate analysis showed that females who had behavioural problems at age 16 were more likely to become a mother at a young age, and the chances were even greater among those who had behavioural problems at both ages 7 and 16. For males, the effect of behavioural problems was removed with the introduction of other factors in the model.

Similarly, another study based on NCDS by Russell (1998a), including both males and females in the sample, reported that behavioural problems, truancy and emotional problems (consulted psychologists) at age 16 were significantly related to becoming a parent at a young age, even after taking account of sociodemographic characteristics,

physical maturity, school environment and future plan (educational aspirations and preference for early parenthood). The study also found that adolescents whose parents did not approve of their female (but not male) friends was more likely to become parents at younger ages. On the other hand, smoking and parent-child relationship (parent's report of argument at age 16) initially exhibited significant relationships with teen parenthood, but their effects were removed after controlling for other factors.

Maughan and Lindelow (1997) found that the association between teacher-rated anti-social behaviour (aggression, disruptiveness and truancy) and teenage motherhood is significantly greater in the 1958 cohort (NCDS) than in an earlier cohort born in 1946 (National Survey of Health and Development, or NSHD). However, teacher rating of emotional problems (sadness, anxiety and social isolation from peers) were not statistically related to teenage motherhood in either cohort.

Using bivariate analysis, Otterblad Olausson, Lichtenstein and Cnattingius (2000) found that teenage mothers (born between 1953 and 1958) were more likely to be current smokers at the time of the survey (1973) and to have started smoking regularly at age 13 or younger. However, excessive alcohol drinking and personality traits (neuroticism and introversion-extroversion scores) showed no significant relationships with teenage motherhood.

We found few studies focusing on teenage fatherhood. One exception is a retrospective case-control study based on the NCDS, comparing teen fathers (fathered a child before 20), non-teen fathers (became fathers between 20 and 23 years of age) and non-fathers (no child at age 23) matched by parental social class (Dearden, Hale and Woolley 1995). Multivariate logistic models show that teen fathers were more likely to have left school early (at age 16), experience financial hardship at age 11, have at least 2 older siblings and have parents with a limited interest in their children's education, compared with non-fathers, even after parental social class was taken into account. Teen fathers were also more likely than non-fathers to show aggressive behaviour (fighting and bullying), and also more likely to be involved in truancy and law-breaking behaviour (theft, disruptive behaviour and trouble with the

police). Characteristics of teenage fathers and non-teenage fathers were similar, indicating that the risk of early parenthood continues into their early 20s.

Ekéus and Christensson (2003a, 2003b) reported a descriptive study using two samples, including 132 fathers of babies born to teenage mothers and the same number of fathers of babies born to mothers in their late 20s, recruited from the postnatal wards in the Stockholm area in 1997-98 (an estimated 65% of teenage births in Stockholm are attended by their partners). The study found that only one-fifth of the partners of teenage mothers were teenagers themselves, with their age ranging between 15 and 47 years, while the age range for the partners of non-teen mothers was much narrower at 22-40 years. The findings from bivariate analysis show that partners of teenage mothers were significantly more likely than partners of non-teen mothers to report risky behaviour, such as smoking, drug use and being prosecuted in court. Partners of teenage mothers were also significantly more likely to have their first intercourse before age 15 compared with the partners of non-teen mothers. However, reported contraceptive use at first intercourse was low in both groups (30-38%), and the study also found no significant difference in terms of other sexual behaviour, such as lifetime number of partners, whether or not they had a sexual debut with a casual partner, the number of first date intercourse, and use of alcohol at intercourse. Overall, partners of teenage mothers in the sample were significantly more likely to have disadvantaged backgrounds (coming from a single-parent family, having a lower educational level and being out of work) relative to partners of non-teen mothers, but the above results are not adjusted for these factors.

(E) Sexual knowledge, attitudes and behaviour

As mentioned earlier, Wellings et al. (2001) found that early sexual initiation (<16 years of age) was significantly and independently associated with teenage motherhood.

In the NCDS, respondents were asked at the age 16 about their attitude to early marriage and early childbearing. Excluding those who had married or had a child before the age 17, Kiernan (1997) found that adolescents who became parents at

younger ages were more likely to show a preference for early parenthood compared with those who became parents at a later age and this results hold in a multivariate model. Attitudes to early marriage also showed a significant association, though this variable was not included in the multivariate analysis. This finding is consistent with two other studies also based on NCDS (Russell 1998a; Manlove 1997).

Kiernan (1997) also looked at the partnership context (e.g. marriage or cohabiting union) but there was little or no discernible effects on early childbearing.

(F) Contextual factors — Sex education

The NCDS dataset includes a small set of variables regarding the extent of sexual education topics covered in school, reported by students at age 16 and their school head teachers. Using this information, Russell (1998b) analysed the potential effect of sexual education on reducing the risk of having a child as a teenager, controlling for other variables on pupils' family backgrounds. The study found that sex education had both positive and negative effects on the likelihood of teenage birth. For example, female students reporting lessons on conception were significantly less likely to have a child as a teenager (OR 0.66), whereas those reporting lessons on baby care (OR 1.36) and family life (OR 1.31) were significantly more likely to have a child in their teens. No significant effect was found for head teachers' reports of sex education (there was a tendency for them to over-report). The study also suggests a potential selection bias into sex education, i.e. sex education was more common in schools where the majority of female students opted out of full-time education at the minimum age of 16, even after controlling for family socioeconomic circumstances. The author argues that sex education may be targeted to more disadvantaged children in areas with higher risk of teenage motherhood in the first place (though the above analysis was adjusted for the proportion of female students staying on in education after age 16).

4.3. Factors associated with early sexual initiation

Key studies found in this area include Natsal 2000 by Wellings et al. (2001) discussed earlier. Bonell et al. 2003 also reports that dislike of school was significantly associated with sexual activity among the 13-14 year old pupils of both genders. Socioeconomic disadvantage (housing tenure) was also related to early intercourse, though more weakly than with dislike of school. Compared to those who liked schools, those who disliked schools were similar in terms of level of knowledge about contraception and had greater confidence about condom use, but they were more likely to express a preference for early sex (by age 16) and early parenthood (by age 20). They were also nearly 4 times more likely to report having been drunk at least once a month.

Other studies regarding early sexual initiation tend to be small-scale or descriptive. A descriptive report from the health Behaviour in School-aged Children (HBSC) study conducted in Poland examined early sexual initiation with a representative sample of 15-year-old adolescents by gender and place of residence (Woynarowska et al. 2004). There was a significant gender difference, with a greater proportion of males reporting sexual experience (21%) than females (9%). Adolescents living in towns were likely to become sexually active at younger age than those living in other areas. Contraceptive use was reported by 27% of the sexually active respondents, especially among those living in towns.

Magnusson (2001) examined data from self-administered questionnaire surveys conducted in 1970 and 1996 with 15-year old females in a mid-sized Swedish community. The study found that the proportion of females who reported having had intercourse decreased over time (from 22% to 15%). Nevertheless, attitudes and feelings associated with early sexual intercourse were similar in both rounds (bivariate analysis). For example, early intercourse was correlated with poor relationships with parents and teachers, low school motivation, risky or problem behaviour (e.g. smoking, drinking, shop lifting, loitering in town, first date intercourse), and psychosomatic problems (e.g. headache, sleepless nights). Those who were sexually active were also more likely to have early menarche at age 11 or younger, have a

steady boyfriend, and less likely to have fear about sex, relative to those who were not sexually active. The study also found that parental divorce was associated with reported intercourse, although no information was available on respondents' other family circumstances.

Edgardh (2000) found that a higher proportion of females reporting early intercourse (<15 years) attended vocational rather than theoretical schools (reported as indicating relatively less affluent backgrounds). They were also more likely to report high social age, early menarche (age 11 or earlier), and risky behaviour such as smoking, large number of lifetime partners, intercourse on the first date or with a partner met on a trip abroad.

school survey among second-year high school students (age 17) in a low-income suburban community in Stockholm found that those who reported previous intercourse were more likely to report smoking, drinking, drug use and truancy and less likely to be living with both biological parents compared with those with no reported intercourse (Edgardh 2002c).

Ekéus and Christensson (2003a, 2003b) found that, among the partners of teenage mothers, those who reported early sexual debut (<15 years) were significantly more likely to report smoking and drug use, having had more than 10 lifetime partners and having had first date intercourse more than three times, compared with partners who began their sexual activity later.

A small descriptive study conducted in Ireland with teenage mothers suggests that those with lower socioeconomic class were more likely to have begun their sexual activity before age 16 and less likely to have used contraception (Fitzpatrick, Fitzpatrick and Turner 1997).

4.4. Factors associated with contraceptive use

Kosunen, Rimpelä and Rimpelä (1995) examined use of oral contraception in Finland, based on a sub-sample of 16 year old females derived from the Adolescent Health and

Lifestyle Survey, a national postal survey carried out biannually from 1981. The study was guided by the observation that, although the use of oral contraceptives increased and adolescent fertility and abortion rates decreased in Finland, there are persistent regional variations in teenage pregnancy and this may be explained by differential use of oral contraception. Rather surprisingly, the study found that the use of oral contraception was more prevalent among females in less affluent backgrounds but the difference by region was not statistically significant. The study concluded that regional variation in pregnancy rates in Finland cannot be explained by unequal distribution of oral contraceptive use.

Kosunen and Laippala (1996) also examined use of oral contraception in a small survey with a non-representative sample of sexually active 15-16 year old females in Finland. Multivariate analysis using a wide range of variables capturing adolescent life style issues and sexual knowledge, attitude and behaviour indicate that use of oral contraception was significantly associated with early menarche (age < 11 years or younger), frequent intercourse and having a steady partner. Those who believed that their parents would accept their sexual activity if they knew about it, were 4 times more likely to use oral contraceptives, although the effect of high parental monitoring (parental control of coming home in the evening) was not significant. Oral contraceptive users were also more likely to regard sex as a 'very important' part of their life but less likely to express fear about getting pregnant. One interpretation offered by the authors is that 'permissive attitudes' towards sexuality may facilitate oral contraceptive use, although whether such attitudes vary according to socioeconomic circumstances as well as consistency of oral contraceptive use or condom use was not reported.

The Health Behaviour in School-aged Children (HBSC) study in Finland found that positive attitudes towards contraceptives were related to their actual use (Pötsönen and Kontula 1999). Bivariate analysis of the data show that sexually experienced females (15 year old) who had used contraceptives were less likely to say that condom reduces sexual pleasure, and less likely to feel embarrassed about obtaining condoms, compared with sexually experienced females who had used no contraceptives. No such relationship was evident among males. In general, sexually experienced

respondents (26% of the sample) were more likely to display positive attitudes towards condoms compared with the sexually inexperienced respondents with no significant difference by gender.

A cross-sectional survey with a representative sample of the first-year high school students (median age 16 years) in two Swedish cities (Uppsala and Västerås) found that, a quarter of the respondents reporting to have had sexual intercourse (46% of the sample) did not use contraceptive at first intercourse and also used alcohol at first intercourse (Häggström-Nordin, Hanson and Tydén 2002). The study also found that 14% of the respondents also smoked daily. Bivariate analysis of the data indicates no significant gender difference regarding these risky behaviours, but there was a significant difference by school type whereby respondents attending 'practical' (vocational-technical) study programmes were more likely to report previous intercourse, non-use of contraceptives and daily smoking compared with those attending 'theoretical' (college preparatory) programmes. The number of sexual partners tended to be greater among the respondents with a non-Swedish parent ('immigrants') compared with 'native' Swedish respondents, although whether the extent to which this association may be confounded by other factors is not explored. The study also examined the hypothesis that self-confidence may influence sexual activity, alcohol use and smoking, but available evidence from the data did not support this hypothesis.

Though Kosunen et al. (2003) did not directly study predictive factors associated with contraceptive use, they found that non-use of contraception was related to (self-reported) depression. Examining over 20,000 adolescents (mean age 15.5 years) in Finland who reported at least one coital experience, the study found that those reporting non-use of contraception and a high number of sexual partners were more likely to report depression, though rather counter-intuitively, a high number of coital experiences per se appeared to reduce the risk of depression among females. These variables were independently significant after controlling for age, gender and age at menarche/ejaculation, although little data is available regarding respondents' social and economic circumstances, which may partly explain the apparent relationship between reported risky sexual behaviour and depression.

4.5. Factors associated with sexual knowledge and attitudes

Most studies found in this area were descriptive and tend to focus on gender differences. For example, a national youth survey in Italy with over 6500 adolescents attending state schools in 1998 (age 14+) found that, compared with girls, boys were more likely to report having experienced penetrative sex (24% vs. 12%) but also more likely to use condoms in case of penetrative sex (62% vs 47%). A significant gender difference was also evident in terms of attitudes towards sexuality, with boys more likely than girls to value physical pleasure (52% vs. 22%) and less likely to express fear about unwanted pregnancy (23% vs. 40%) or delay first intercourse (11% vs. 31%). Multivariate analysis focusing on sexual health knowledge indicates that girls were significantly more likely to display better knowledge than boys. The analysis also shows that respondents with better knowledge were also more likely to attend humanistic or scientific (as opposed to vocational/technical) schools, to be older and to have been exposed to sex education in school but less likely to be living in Central Italy or South Italy (Donati et al. 2000).

Burack (1999) provides a descriptive report of a questionnaire survey of school pupils and college students (13-18 year old in one Health Authority in England focusing on their attitudes towards sexuality. The results show that nearly 40% of the male respondents were influenced by peer pressure ('My friends make me feel that sex is the main thing in a relationship'), while only a quarter of the female respondents agreed with the statement. Whereas a quarter of the males considered the provision of condoms to be the man's responsibility, more males (23%) than females (9%) said that they would have sex with a partner even if they did not have a condom.

An exploratory study by Hooke et al. (2000) using vignette and 10 open-ended questions in Ayreshire, Scotland also reports on gender differences in sexual attitudes. The study indicates that the majority of females (13-15 year old) tended to believe that sexual intercourse should occur in a steady relationship involving trust and commitment, whereas a greater proportion of boys (21%) than girls (5%) indicated that there was nothing wrong with casual sex.

Grey and Swain (1996) explored the relationship between religiosity and sexual attitudes using two samples of college students (age not specified) in Cork, Ireland. The results suggest that ‘promiscuous’ attitudes (e.g. ‘Casual sex is acceptable’) were less likely to be observed among those who exhibited strong religious belief (predominantly catholic in these samples) and frequent mass attendance, although the effect of gender was far greater, with females less likely than males to display such attitudes.

4.6. Factors associated with service accessibility

As part of the SHARE trial of sex education (15-16 year olds) in Scotland, Parkes et al. (2004) found that individual uptake of sexual health services was associated with greater knowledge of local services, proximity to services and ability to discuss sexual matters with friends. In particular, the likelihood of using services increased with greater sexual experience (i.e. frequent sexual intercourse and large number of sexual partners). Those with low level of parental monitoring and large amount of pocket money (more than £20 per week) were also more likely to have used services. While school leavers, those not living with parents and having a young mother were associated with greater service use, there was no discernible effect by socioeconomic variables such as housing and parental occupation, nor with ethnicity and religiosity, after controlling for sexual experience. Attitudes towards planning protection and self-esteem did not seem to affect the likelihood of using services. Data were obtained through a self-administered questionnaire and were analysed using multilevel and multivariate analysis, accounting for school-level variance.

A number of descriptive studies also investigated the association between sexual experience and service accessibility. For example, Burack (2000) conducted a survey with over 1000 13-15 year old pupils in one Health Authority in England and found that sexually active respondents showed greater awareness that they did not have to be aged over 16 years to obtain contraception from their General Practice (GP) compared with sexually non-active respondents. However, the study also found that sexually active females in the sample were more likely to believe that they had to be over 16

years of age to consult their GP on their own, compared with sexually non-active females. Females in general also tended to be more sceptical than males about GP consultation for fear that information might not be treated confidentially, and also a greater proportion of sexually active females than males suggested that they had decided not to see their GP for fear of wasting either their time or that of the GP.

Another school-based survey in England (aged 15-16 years) conducted by Donovan et al. (1997) reports that respondents who reported having had sexual intercourse were likely to consult their GP more frequently compared with those who were not sexually active. Sexually active respondents were also less likely to feel embarrassed about discussing personal matters, although they revealed a strong fear that the information might be passed onto their parents. Nevertheless, those who had consulted their GPs frequently were more likely to believe GP consultations to be confidential, relative to those who consulted less often.

Similar results were found in a survey with slightly older age groups in the South Thames region in England (age 16-19) (Harden and Ogden (1999). The study found that those who were sexually active were more likely to have positive views about a range of sexual health services including GPs, family planning clinics, specialist youth clinics, chemists and condom machines. Service use was examined with regard to the sexually active respondents only; a clear gender difference emerged whereby females were significantly more likely than males to have used the services, and also males were more likely to have used chemists and condom machines and avoid clinic-based services such as GPs and family planning clinics.

4.7. Other related studies

There are a number of studies that were identified through our search strategy but did not meet all the inclusion criteria. These include, for example, studies reporting prevalence of certain sexual behaviours, studies based on trends, ecological studies comparing characteristics of populations (rather than individual and small area characteristics) or studies with background information. Some of the issues highlighted in these studies are summarised here because they highlight key issues and

also allow broader country representations. References of these studies are listed in Appendix 5 with abstracts (selection of these studies is arbitrary).

We found a number of population-based studies undertaking cross-country comparisons, though most studies are based in the US. Combining data from existing national surveys from France, Great Britain Sweden, Canada and the United States, Darroch *et al.* (2001) suggest that national differences in contraceptive use, rather than differences in sexual activity such as early onset of sexual intercourse and multiple sexual relationships, appear to influence variations in teenage pregnancy rates. Another study by Singh and Darroch (2001) found a strong association between socioeconomic disadvantage and adolescent sexual behaviour in the data collected from five ‘developed’ countries (as above). In particular, the study suggested that relatively large proportions of disadvantaged groups in the US may be associated with its higher teenage pregnancy rates and birth rates than other countries.

Singh and Darroch (2000) found that adolescent pregnancy showed a different trend in many eastern European countries that have recently experienced considerable social changes, compared with other European countries. We found no extensive data on factors associated with teenage pregnancy at the time of writing in those countries (but see Hruban *et al.* 2005 on Czech Republic; Haldre *et al.* 2005 on Estonia; and Latvia’s Association for Family Planning and Sexual Health 2003). It may also be revealing to explore comparisons with non-EU countries where teenage pregnancy rates are relatively high (e.g. Romania, see for example, Centers for Disease Control and Prevention, 1995, 1998, 2001; Population Services International Romania 2005) or conversely very low (e.g. Switzerland, see Narring *et al.* 1996, 2000).

Some descriptive studies looked at the issue of ethnicity in the UK. Evans *et al.* (1998) reported that sexual initiation is earlier among Black women. A study of population trends suggested that teenage childbearing was more common in certain ethnic minorities (e.g. Bangladeshi) (Berthoud 2001), although early childbearing may be culturally more acceptable and desirable in some ethnic groups.

The general trend of teenage pregnancy and fertility should be considered in the context of an overall decline in childbearing across industrialised countries. UK studies highlight increase in mean age at first birth (Botting and Dunnell 2000) and particularly among women with higher qualifications (Rendall and Smallwood 2003). Copas et al. (2002) also highlights a methodological issue related to self-reported sexual behaviours. It is well known that self-reports may be susceptible to a range of biases and in particular the study (based on Natsal) points to a possibility that society's attitudes towards certain sensitive behaviours (e.g. homosexuality, sexual initiation before age 16) may influence respondents' willingness to report such behaviours. The implication is that studies on teenage pregnancy can be highly context-dependent and thus comparisons across different countries would require great caution.

Our review did not include any primary study examining factors associated with repeat pregnancy among adolescents in the EU. Nevertheless, two reviews of risk factors associated with rapid repeat pregnancy (Rigsby, Macones and Driscoll 1998) and of repeat abortion (Meyrick 2001) among adolescents both suggest that factors associated with adolescents' repeat pregnancy may be similar to those associated with first pregnancy. Thus, Rigsby, Macones and Driscoll (1998: abstract) argued that 'the identification of "high-risk" teens may be less important than the development of intervention strategies for all these young women'. Meyrick (2001: abstract) also argues that this finding 'refutes the notion that these women form a special or "hopeless" group, but point towards general problems with contraception and services common to all women that may become compounded through structural vulnerability such as deprivation'.

Rendall (2003) tested the hypothesis that intergenerational cycles of teenage motherhood are a major cause of higher teenage fertility rates in the UK compared with other Western European countries. To explain differences in teenage childbearing in England and Wales and France, a demographic model of fertility was projected alternately for France and for England and Wales, and alternately substituting the teenage childbearing rates of England and Wales for the French rates. Simulation of teenage and non-teenage childbearing across generations was also

performed. The study found that, while higher rates of intergenerational teenage childbearing in England and Wales than in France contributes to the overall difference between these countries, teenage childbearing among daughters of non-teenage mothers was also higher for England and Wales, and this accounts for the majority of the difference. The author concluded that ‘While inter-generational teenage childbearers are a significant group, they do not by themselves sustain more than a minor part of all teenage childbearing’ (p. 36).

A large number of studies were concerned with service accessibility and its potential implications for teenage pregnancy. One Swedish study using a microsimulation model of teenage sexual behaviour suggested that contraceptive use played a key role in a decline of teenage fertility rates in the 1970s through to 1980s when major sexual health reforms were introduced in Sweden (Santow and Bracher 1999). Many of the UK studies tended to focus on a range of barriers to service access, including lack of awareness, embarrassment or perceived lack of confidentiality (Kari et al. 1997; Salihi et al. 2002; Stone and Ingham 2003). However, a small UK review by Allen and Hippisley-Cox (2000) suggests that increased access to services in itself may not lead to reduction of teenage pregnancy. Other studies also note that a high proportion of teenagers who became pregnant appear to be using contraceptives prior to conception (Pearson 1995a, 1995b; Seamark and Gray 1995; Lete et al. 2003) and these authors argue that unintended pregnancies may at least in part be explained by contraceptive failure or inadequate rather than non-use of contraception. It has also been suggested that the actual impact of increased uptake of services on a reduction in teenage pregnancy rate is difficult to measure due to a potential endogeneity problem that sexual health services may be targeted to areas with higher teenage pregnancy rates (Clements et al. 1998).

We also found one qualitative study from the Netherlands focusing on teenage pregnancy (Rutgers Nisso Groep 2005). There are also a few studies using discourse analysis, e.g. the issue of why teenage pregnancy is conceptualised as a social problem in the UK (Bonell 2004), whether social structure rather than individual knowledge and attitudes is key to the issue of teenage pregnancy in the UK (Arai, 2002, 2003), and stigma attached to teenage pregnancy (Whitehead 2001). In future research, it

will be valuable to incorporate findings from such qualitative work and other grey literature to obtain a fuller picture of factors associated with teenage pregnancy.

5. SUMMARY AND CONCLUSIONS

5.1. Main findings

Socio-economic disadvantage, disrupted family structure and limited education appear to show most consistent relation with teenage pregnancy. Many health-compromising lifestyle factors (e.g. risky sexual behaviours, alcohol, drug or tobacco use) were also shown to have some association with teenage pregnancy and also tended to co-occur. Yet, the independent effects of these factors remain unclear. Studies reported higher teenage pregnancy related to a range of self-reports of sexual behaviour, including early sexual initiation, increasing number of partners, and non-use of contraceptives (as immediate precursor behaviours of conception); and one report demonstrates earlier age at sexual initiation independently related to teenage pregnancy (at age <18 years) (Wellings et al. 2001). The associations between sexual health knowledge, attitudes and accessibility of services and lower teenage pregnancy rates are complex and remain less certain, indicating that improved service and access in itself may not be a panacea in reducing teenage pregnancy. It needs to be borne in mind that how these factors interact with one another is still unclear and also the descriptive nature of studies included do not allow us to infer causality.

The factors associated with teenage pregnancy identified in this review are similar to those of previous reports and reviews (Position paper on prevention of teenage pregnancy by Royal Institute of Public Health, Swann et al. 2003). Furthermore, when we considered a further 20 studies for factors associated with early childbearing (a sub-set of teenage pregnancy that excludes abortion), the factors identified remain largely consistent with those for teenage pregnancy. This is not surprising for the factor of socio-economic disadvantage, since, at least in the UK context, teenage conception rates are higher but abortion rates are lower in more deprived areas (Lee et al. 2004), and thus, any socio-economic association is likely to be strengthened with early childbearing. It is worth noting that many of the identified studies on

childbearing took place in the 1980s and 1990s (including longitudinal results from 1950's and 1960's cohort studies), so the possibility of temporal bias in these findings cannot be excluded.

5.2. Limitations of the review

This review has a number of limitations. First, it is constrained to factors associated with the sexual health outcome of teenage pregnancy studied in REPROSTAT countries over the last decade. For example, there were few studies that focus on religious influences and ethnic origins and they may perhaps be perceived as sensitive issues in some societies. The issue of whether pregnancy was intended or unintended is not fully explored, although a number of reports demonstrate that those who become pregnant in their teens do express positive attitudes towards early parenting (Bonell et al. 2005; Kiernan 1997; Manlove 1997; Russell 1998a). Studies focusing on male partners of teenagers are also few and far between; this information may be useful, given that male partners tend to be older and are not always teenagers. Clearly, further information about factors associated with other outcomes such as contraceptive use and sexually transmitted infections (STIs) and synthesis of the evidence about effective interventions to improve teenage sexual health are also of interest. It is worth noting that IPPF Europe (International Planned Parenthood Federation), Lund University and WHO Europe are now collaboratively undertaking a review of factors and interventions related to STIs and contraception.

Second, on the generalisability of the findings, we had excluded the extensive US literature on teenage pregnancy in order to focus on evidence for EU countries. However, most of the studies in this review took place in a minority of EU countries (mainly UK and Nordic countries), thus limiting the generalisability of these findings for all EU countries. This may be due to biases inherent in the electronic databases used, and this may include a language bias or a publication bias. Another reason for the relatively large number of UK studies in this area may be that teenage pregnancy is perceived to be more problematic in the UK compared with the rest of Europe (Bonnell 2004). It is also of note that the findings are from studies that met

prerequisite criteria for inclusion which themselves may introduce bias, e.g. excluding qualitative studies.

Third, and related to the previous point, studies examining factors associated with teenage pregnancy vary widely in terms of method of data collection and study design, and also in terms of population characteristics, sampling strategy, target age groups, question items and outcome measures (see Coleman 1999: 263). This heterogeneity within the studies makes it difficult to interpret and generalise key findings and also explore variation between countries. Furthermore, few studies include examination of factors for both males and females; thus, exploration of potential gender differences with respect to factors associated with early pregnancy is not possible.

5.3. Future research

Future research with standardised measures and methodologies, especially in new EU member states, will help gain insight into the international variation in observed pregnancy rates and better inform interventions. The most comprehensive study in this area is probably the Health Behaviour in School-aged Children (HBSC) study, which has been implemented in over 30 European countries, although whether individuals had experienced pregnancy is not asked in the survey and some questions related to sexual health have been omitted in some countries (e.g. Denmark). Cross-country comparisons are being planned at the Child & Adolescent Health Research Unit (CAHRU), HBSC International Coordinating Centre at the University of Edinburgh, and its outcome would represent a significant contribution to this research area.

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Appendix 1

Electronic search strategy

Ovid MEDLINE(R) <1995 to May Week 2 2005>, **EMBASE** <1995 to 2005 Week 20>

1. exp ADOLESCENT/
2. adolescen\$.tw.
3. youth.tw.
4. teen\$.tw.
5. student\$.tw.
6. pupil\$.tw.
7. (schoolchild\$ or (school\$ adj2 child\$)).tw.
8. ((young or younger) adj2 (adult\$ or people or person\$ or population\$)).tw.
9. school\$.tw.
10. school age\$.tw.
11. or/1-10
12. exp EUROPE/
13. europe\$.tw.
14. austria\$.tw.
15. (belgium or belgian).tw.
16. baltic.tw.
17. estonia\$.tw.
18. latvia\$.tw.
19. lithuania\$.tw.
20. czech\$.tw.
21. hungar\$.tw.
22. (poland or polish).tw.
23. slovakia\$.tw.
24. slovenia\$.tw.
25. (finland or finnish).tw.
26. (france or french).tw.
27. (paris or parisian\$).tw.
28. (german or germany).tw.
29. berlin.tw.
30. (britain or british or UK or (united adj kingdom)).tw.
31. (channel islands or guernsey).tw.
32. (scotland or scottish).tw.
33. (wales or welsh).tw.
34. (england or english).tw.
35. london.tw.
36. (greece or greek).tw.
37. (ireland or irish).tw.
38. (italy or italian).tw.
39. rome.tw.
40. (sicily or sicilian).tw.
41. luxembourg\$.tw.
42. cyprus.tw.
43. (malta or maltese).tw.
44. (netherlands or dutch).tw.
45. (portugal or portuguese).tw.
46. (denmark or danish).tw.

47. (sweden or swedish).tw.
48. (spain or spanish).tw.
49. or/12-48
50. exp pregnancy in adolescence/ or exp pregnancy outcome/ or exp pregnancy rate/
or exp pregnancy, unplanned/ or exp pregnancy, unwanted/
51. exp Abortion, Induced/
52. exp Abortion, Criminal/
53. exp Abortion, Spontaneous/
54. (pregnant or pregnancy or pregnancies).tw.
55. conception\$.tw.
56. (childbearing or child bearing or child birth).tw.
57. (birth\$ adj25 pregnan\$).tw.
58. abortion\$.tw.
59. or/50-58
60. exp Sexual Behavior/
61. exp personality development/
62. exp self concept/
63. exp Reproductive Behavior/
64. exp Contraception/
65. exp Contraceptive Devices/
66. exp sex/
67. exp Psychology, Social/
68. exp double bind interaction/ or exp family/ or exp group processes/ or exp
internal-external control/ or exp interpersonal relations/ or exp life style/ or exp
morale/ or exp morals/ or exp paternalism/ or exp prejudice/ or exp psychosocial
deprivation/ or exp social values/
69. exp Sociology/
70. exp culture/ or exp family/ or exp hierarchy, social/ or exp minority groups/ or exp
secularism/ or exp social change/ or exp social class/ or exp social conditions/ or exp
social control, formal/ or exp social control, informal/ or exp social environment/ or
exp social isolation/ or exp social planning/ or exp social problems/ or exp social
welfare/ or exp social work/ or exp socialization/ or exp socioeconomic factors/ or exp
sociometric techniques/ or exp spatial behavior/
71. exp ATTITUDE/
72. exp Attitude to Health/
73. exp Sex Education/
74. exp birth control/
75. exp household/
76. exp age factors/
77. exp risk factors/
78. exp sex factors/
79. exp Smoking/
80. exp Health Behavior/
81. exp Alcohol Drinking/
82. exp Substance-Related Disorders/
83. exp risk reduction behavior/
84. exp risk-taking/
85. exp adolescent behavior/
86. exp harm reduction/

87. exp Religion/
- 88.exp Sports/
- 89.exp Exercise/
- 90.exp Physical Fitness/
91. (sex\$ adj5 intercourse\$).tw.
92. ((early or first or initiat\$) adj5 (sex\$ or intercourse\$)).tw.
93. ((sex\$ or coitus or coital) adj2 (initiation\$ or debut\$)).tw.
94. (coitus or coital or coitarche).tw.
95. condom\$.tw.
96. (contraceptive\$ or contraception\$).tw.
97. (barrier adj5 method\$).tw.
98. (birth adj5 control\$).tw.
99. ((safe or unsafe) adj5 (sex\$ or intercourse\$)).tw.
100. ((protected or unprotected or protection\$) adj2 (sex\$ or intercourse\$)).tw.
101. (sex\$ adj25 abstinence).tw.
102. ((sex\$ or number\$ or casual or multiple) adj5 partner\$).tw.
103. (casual adj5 sex\$).tw.
104. (reproductive adj4 behavio?r\$).tw.
105. (sex\$ adj10 (behavio?r\$ or experience\$ or active or activity or activities or relation\$ or practice\$)).tw.
106. (sex\$ adj10 (knowledge or attitud\$ or frequenc\$ or belief\$ or believ\$ or confident or confidence or efficacy or disposition or inten\$)).tw.
107. ((sex\$ or health) adj10 risk\$).tw.
108. (self adj3 (esteem or worth or image or concept or control or confident or confidence or efficacy)).tw.
109. (alcohol adj5 (drink\$ or drank or drunk\$)).tw.
110. smoking.tw.
111. ((drug or substance or alcohol) adj5 (usage or misuse or abuse or addction or dependence or disorder\$)).tw.
112. (religion\$ or religious or religiosity or faith).tw.
113. ((factor\$ or determinant\$) adj25 (sex\$ or pregnan\$)).tw.
114. ((factor\$ or determinant\$) adj10 (protective or risk\$)).tw.
115. (sex\$ adj5 (education or knowledge)).tw.
116. ((parent\$ or mother\$ or father\$) adj10 (relation\$ or monitor\$)).tw.
117. (sibling\$s or sister\$ or bother\$).tw.
118. or/60-117
119. 11 and 49 and 59 and 118
120. (editorial or letter).pt.
121. 119 not 120

SSCI: Social Science Citation Index <1995-2005>

1. TS=adolescen*
2. TS=youth
3. TS=teen*
4. TS=student*
5. TS=pupil*
6. TS=(schoolchild* or school child*)

7. TS=((young or younger) same (adult* or people* or person* or population*))
8. TS=school*
9. #1 or #2 or #3 or #4 or #5 or #6 or #7 or #8
10. TS=pregnan*
11. TS=abortion*
12. TS=conception*
13. TS=birth*
14. TS=(childbearing or child bearing)
15. #10 or #11 or #12 or #13 or #14
16. TS=europe*
17. TS=(austria* or belgium or belgian or baltic or estonia* or latvia* or lithuania* or czech* or hungar* or poland or polish or slovakia* or slovenia* or finland or finnish or france or french or paris or parisian* or germany or german or berlin)
18. TS=(britain or british or UK or united kingdom or channel islands or guernsey or scotland or scottish or wales or welsh or england or english or london)
19. TS=(greece or greek or ireland or irish or italy or italian or rome or sicily or sicilian or luxembourg* or cyprus or malta or maltese or netherlands or dutch or portugal or portuguese or denmark or danish or sweden or swedish or spain or spanish)
20. #16 or #17 or #18 or #19
21. #9 and #15 and #20

ASSIA: Applied Social Sciences Index and Abstracts <1995-2005>

1. adolescen*
2. youth
3. teen*
4. student*
5. pupil*
6. schoolchild* or (school within 2 child*)
7. (young or younger) within 2 (adult* or people* or person* or population*)
8. school*
9. or/1-8
10. europe*
11. austria*
12. belgium or belgian
13. baltic
14. estonia*
15. latvia*
16. lithuania*
17. czech*
18. hungar*
19. poland or polish
20. slovakia*
21. slovenia*
22. finland or finnish
23. france or french
24. paris or parisian*
25. germany or german

26. berlin
27. britain or british or UK or (united within 1 kingdom)
28. channel islands or guernsey
29. scotland or scottish
30. wales or welsh
31. england or english
32. london
33. greece or greek
34. ireland or irish
35. italy or italian
36. rome
37. sicily or sicilian
38. luxembourg*
39. cyprus
40. malta or maltese
41. netherlands or dutch
42. portugal or portuguese
43. denmark or danish
44. sweden or swedish
45. spain or spanish
46. ab=10-45
47. ti=10-45
48. de=10-45
49. or/47-49
50. pregnan*
51. abortion*bb
52. conception*
53. birth*
54. childbearing or (child bearing)
55. or/52-56
56. 9 (adolescent) and 49 (EU) and 55 (pregnancy)

Appendix 2

Data extraction table

Ref ID	Study detail	Characteristics of study, factors and methodology	Results	Comments and implications
13	<p>Andersson-Ellström et al., 1996, Sweden</p> <p>Objective: To compare life-style and reproductive health care factors in girls with a coitus debut <15 years of age and girls with a later debut</p> <p>Design: cross-sectional</p> <p>Study outcome: Pregnancy, early sexual initiation</p>	<p>Sample: All girls younger than 18 years (n = 168) commencing their upper secondary school education in the health care program course in Karlstad, a middle-sized Swedish city, were invited to participate between September 1989 and September 1990. Participants made 5 visits to the Teenage clinic with six months interval. 98 girls agreed to participate but complete data was available for only 88 of these girls (age 15-17, mean age 16.1, when entering the study). Sample size and power calculations not performed.</p> <p>Setting: School and clinic (middle-sized city)</p> <p>Description and nature of factors: At the first and last visit the participants answered a self-administered questionnaire about family situation, sexuality, knowledge and attitudes to contraceptives and STDs. A gynaecological history was taken and an examination was also performed at these two visits. Chlamydia tests were also taken when indicated during the course of the study.</p> <ul style="list-style-type: none"> • Sociodemographic: age, socioeconomic background, grown-up in big city, number of siblings • Family: divorced parents, living with parents, family relationship • Psychosocial: smoking, alcohol use, future plan for further education and occupation, appreciation of self, mood, well-being, relations to friends or boyfriends, leisure activities • Sexual knowledge, attitudes, behaviour: age of coitarche, menarche <13 yr, lifetime number of boyfriends, time since coitarche, number of coitus partners during study, life time number of coitus partners, ever used oral contraceptives, oral contraceptives at 	<p>Bivariate analysis: Respondents were divided into 3 groups according to their sexual experience: those who had a sexual debut <15 years of age (Group A, n = 17), those with coitarche ≥15 years (Group B, n = 54) and those who had not had their first intercourse (Group C, n = 17). There was no significant difference between groups in terms of socioeconomic background.</p> <p><u>Pregnancy</u> A greater proportion of the respondents who have first intercourse <15 years (Group A) experienced pregnancy compared with respondents who have first intercourse >15 years (Group B) but the difference was not statistically significant (12% vs. 6%, NS).</p> <p><u>Early sexual initiation</u> Respondents who have first intercourse <15 years (Group A) were:</p> <ul style="list-style-type: none"> • More likely to have more than two siblings (vs. the other groups, p<0.01) • Less likely to be living with their parents (vs. the other groups, p<0.05) • More likely to have a menarche age <13 years (vs. the other groups, p<0.05, p<0.05) • More likely to have STD compared with Group B (29% vs 11%, p<0.05) • Had a greater number of lifetime coitus partners compared with Group B (6.1 vs 3.2, p<0.06). • Less likely to worry about unplanned pregnancy (vs. the other two groups, p<0.05) • More likely to have started drinking before the age 16 (vs. the other two groups, p<0.01) • More likely to smoke (vs. the other two 	<p>Author's conclusion: Early sexual debut is associated with an earlier menarch and a more premature adult life-style and is an important indicator for continued risk behaviour regarding reproductive health.</p> <p>Comments: Questionnaire items used in the study were not provided and for some question items, proportions and associated statistical significance tests were only reported in text or not reported at all.</p>

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		<p>last coitus, ever used condom, use of condom at last coitus, unprotected first coitus, unprotected last coitus, history of STD, preference for early childbearing, attitudes towards unplanned pregnancy, attitudes towards future fertility</p> <p>Follow-up: none</p> <p>Drop-out: There were no statistical difference between those who dropped out and those who completed the study with respect to age, socioeconomic background, age of coitarche, number of coitus partners and use of contraceptives.</p> <p>Unit of analysis: Individual</p>	<p>groups, $p < 0.05$)</p> <ul style="list-style-type: none"> More likely to trust family in the public debate on problems of modern society compared with Group B (69% vs. 33%, $p < 0.05$) <p>There was no significant difference between Group A and Group B in terms of contraceptive use.</p>	
47	<p>Berg-Kelly, 1995, Sweden</p> <p>Objective: To describe findings from a multicentre survey of exploratory behaviour in 4561 young Swedish adolescents and to examine areas where health promotion might be improved for Swedish adolescents.</p> <p>Design: cross-sectional</p> <p>Study outcome: pregnancy, early sexual initiation, sexual behaviour</p>	<p>Sample: 4516 students in grades 7 and 9 of compulsory school and the second year of secondary school ('grade 11') answered the questionnaire in 1990-91. Students were recruited from 7 participating areas (volunteered) including 3 rural communities and 4 cities. Average response rates for each grade were 87% for grade 7 (age 13), 82% for grade 9 (age 15) and 78% for grade 11 (age 17). Non-participation was due to absenteeism. There were no statistical difference in housing, parental employment or foreign background between boys and girls.</p> <p>Setting: compulsory and secondary schools in rural and urban areas</p> <p>Description and nature of factors: The study was based on a self-administered questionnaire survey called 'Q90' on adolescent health, health habits and risk behaviour. The procedure of this study is similar to that described in an earlier report</p>	<p>Bivariate analysis: Test of significance was performed to examine (a) age trends for boys and girls combined and (b) gender-related differences over the whole age span. Key findings are as follows ($p < 0.01$).</p> <p><u>All respondents</u></p> <ul style="list-style-type: none"> Has had sexual intercourse: significant increase with age (girls, grade 7, 5%, grade 9, 27%, grade 11, 55%; boys, grade 7, 7%, grade 9, 26%, grade 11, 46%) <p><u>Grade 9 and 11 respondents who were sexually active</u></p> <ul style="list-style-type: none"> Did not use contraceptive at last intercourse: significant decrease with age (girls, grade 9, 31%, grade 11, 22%; boys, grade 9, 38%, grade 11, 24%) Has had more than 5 partners: significant increase with age (girls, grade 9, 7%, grade 11, 12%; boys, grade 9, 9%, grade 11, 16%) Regular use of alcohol before sex: boys 	<p>Author's conclusion: There was very little experimentation with regard to health habits learned in childhood. Rapid adaptation to adult life-styles occurred, which was similar in both sexes in the younger age groups, but there were significant differences among older students. Alcohol use is of considerable concern.</p> <p>Comments: Although respondents were not randomly selected, author notes that the socioeconomic background of the respondents was similar to the average adolescent background. Data should be interpreted with caution because of the small number of respondents involved in some question items.</p> <p>It is also noted that results regarding grade 11 students should be regarded with caution, since only 90% of students are still in school at this age and only 2 areas are represented and one of those had a drop out rate of 26%.</p>

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		<p>(Berg-Kelly et al. 1991).</p> <ul style="list-style-type: none"> Sociodemographic: age, gender <p>Follow-up: n/a</p> <p>Drop-out: n/a</p> <p>Unit of analysis: individual</p>	<p>more likely than girls (girls, grade 9, 8%, grade 11, 7%; boys, grade 9, 14%, grade 11, 15%)</p> <p>No significant difference by age or gender was found for pregnancy ('has been pregnant', 'has made someone pregnant').</p> <p>Further analysis found that health habits (e.g. no breakfast, smoking) were significantly correlated with early sex and other risky behaviour such as drinking and drug use.</p>	
57	<p>Bonell, Allen, Strange, Copas, Oakley, Stephenson and Johnson, 2005, UK</p> <p>Objective: To examine whether attitude to school is associated with subsequent risk of teenage pregnancy. To test two hypothesised pathways to pregnancy, involving young people having 'alternative' expectations (parenting by age 20) or deficits in sexual health knowledge and confidence.</p> <p>Design: Analysis of longitudinal data arising from a cluster trial of sex education</p> <p>Study outcome:</p> <ul style="list-style-type: none"> Early sexual initiation Contraceptive use (Y/N) at first sex Contraceptive use (Y/N) at last sex Pregnancy 	<p>Sample: 4248 girls (13/14 year old) at baseline, 3749 girls (14/15 year old) at follow up 1, 3230 girls (15/16 year old) at follow up 2. Baseline data were collected in 1997.</p> <p>Setting: 27 mixed-sex comprehensive schools in central and southern England</p> <p>Description and nature of factors: Many of the questionnaire items were based on the questionnaire used previously by Wight et al. (2002) in the SHARE sex education trial. Factors are categorised under 5 groups for statistical purposes.</p> <ul style="list-style-type: none"> Attitude to school (like, ambivalent, dislike) 'Socioeconomic status group' (housing tenure, parental employment) 'Expectation group' (expectations of parenthood by age 20, lack of expectation of education/training at age 20) 'Confidence group' (confidence in rejecting unwanted sex, confidence in discussing sex/contraception with partner) 'Knowledge group' (knowledge of emergency contraception timing, knowledge of access to services/contraception availability) 	<p>Multivariate analysis: For first sex, polytomous logistic regression models were used, for both protected and unprotected sex compared with no sex. For last sex, unprotected sex was compared with protected sex among those who had sex more than once, using logistic regression. For pregnancy, the analysis considered the outcome pregnant or not by follow up 2 using logistic regression with all girls included in the analysis. In a fully adjusted model, adjustment was made for all exposures (factors) except those within the same group.</p> <p>In unadjusted analysis, attitude to school was significantly associated with all outcomes except unprotected first sex between follow up 1 and 2, and these associations remained after adjusting for socioeconomic status and for expectation of parenting, lack of expectation of education/training and various indicators of knowledge and confidence about sexual health. Results from a fully adjusted model are as follows.</p> <p><u>Protected first sex more likely by follow-up 1:</u></p> <ul style="list-style-type: none"> dislike of school: OR = 1.70 (1.16-2.51) 	<p>Author's conclusion: Dislike of school is associated with subsequent increased risk of teenage pregnancy but the mechanism underlying any possible causal link is unlikely to involve "alternative" expectations or deficits in sexual health knowledge or confidence</p> <p>Comments: Limited SES data and no ethnicity data. No possible causal processes involved.</p>

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		<p>Follow-up: one year (baseline + 2 follow ups)</p> <p>Drop-out:</p> <p>Unit of analysis: Individual</p>	<ul style="list-style-type: none"> • non-privately owned housing: 2.09 (1.51-2.90) • lack of full time parental employment: 1.83 (1.33-2.51) • confidence communicating about sex: 1.75 (1.46-2.12) • knowledge of emergency contraception: 1.49 (1.07-2.07) • knowledge of contraception access: 1.51 (1.09-2.09) <p><u>Unprotected first sex more likely by follow up 1:</u></p> <ul style="list-style-type: none"> • dislike of school: 2.66 (1.17-6.06) • non-privately owned housing: 2.34 (1.30-4.19) • parenting expectation: 2.79 (1.58-4.94) • confidence communicating about sex: 1.48 (1.11-1.97) <p><u>Protected first sex more likely between follow up 1 and 2:</u></p> <ul style="list-style-type: none"> • dislike of school: 1.59 (1.07-2.25) • non-privately owned housing: 1.55 (1.08-2.22) • confidence in rejecting unwanted sex: 1.21 (1.04-1.41) • knowledge of emergency contraception: 1.48 (1.16-1.90) <p><u>Unprotected first sex more likely between follow up 1 and 2:</u></p> <ul style="list-style-type: none"> • knowledge of emergency contraception timing: 1.58 (1.04-2.39) <p><u>Unprotected last sex more likely by follow up 2:</u></p> <ul style="list-style-type: none"> • low educational expectation: 3.85 (1.25-11.87) 	

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			<ul style="list-style-type: none"> confidence in rejecting unwanted sex: 0.78 (0.67-0.91) <p><u>Pregnancy</u> more likely by follow up 2:</p> <ul style="list-style-type: none"> dislike of school: 2.04 (0.97-4.26), ns non-privately owned housing: 1.50 (0.80-2.80), ns lack of full time parental employment: 1.93 (1.07-3.46) parenting expectation: 1.83 (1.01-3.33) low educational expectation: 4.89 (1.48-16.10) confidence in rejecting unwanted sex: 1.28 (1.00-1.63) confidence communicating about sex: 1.28 (1.00-1.63) 	
58	<p>Bonell, Strange, Stephenson, Oakley, Copas, Forrest, Johnson and Black, 2003, UK</p> <p>Objective: To test and develop hypotheses on the relation between socioeconomic and educational dimensions of social exclusion, and risk of teenage pregnancy, by examining whether dislike of school and socioeconomic disadvantage are associated with cognitive/behavioural risk measures among 13/14 year olds in English schools.</p> <p>Design: Cross-sectional analysis (using baseline data gathered for a cluster trial of sex education)</p> <p>Study outcome:</p> <ul style="list-style-type: none"> Early sexual initiation Sexual knowledge and attitudes (expectations of parenthood by age 	<p>Sample: 8766 of 9691 eligible Year 9 (13/14 year old) students completed the baseline questionnaire in 1997 (92% response rate). 4248 (48%) were girls and 4516 (52%) were boys. 91% described themselves as 'white' and 9% as Indian, Pakistani, Bangladeshi, Black African, Black Caribbean, Chinese, or other. The mean age was 13.69 years.</p> <p>Setting: 27 mixed-sex state secondary schools in central and southern England</p> <p>Description and nature of factors:</p> <ul style="list-style-type: none"> Sociodemographic: housing tenure Educational: attitude to school (Like school, ambivalent, dislike school) <p>Follow-up: None (but see Bonell et al. 2005).</p> <p>Drop-out: Characteristics of non-respondents not reported</p>	<p>Multivariate analysis: Associations between the pre-hypothesised outcomes and each of the two exposures, i.e. socioeconomic disadvantage (as measured by housing tenure) and attitude to school, were examined using logistic regression. ORs for associations adjusted for the other exposure were generated. All analysis took account of clustering of participants within school, using the survey analysis function of Stata 6. Key findings were as follows.</p> <p>Among boys and girls, socioeconomic disadvantage was significantly and independently associated with:</p> <ul style="list-style-type: none"> low knowledge about sex and contraception: adjusted OR, girls 1.81 (CI 1.45 to 2.27), boys 1.48 (CI 1.22 to 1.80); negative or ambivalent attitudes to condom use: 1.82 (CI 1.39 to 2.38), 1.51 (CI 1.15 to 2.00); a belief that most peers are already having sex: 2.00 (CI 1.52 to 2.65), 1.88 (CI 1.39 to 	<p>Author's conclusion: It is hypothesised that in determining risk of teenage pregnancy, the two exposures are independent. Those disliking school might be at greater risk of teenage pregnancy because they are more likely to see teenage pregnancy as inevitable or positive.</p> <p>Comments:</p>

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	20, knowledge of use of contraception, knowledge of access to contraception, confidence in discussing sex/contraception)	Unit of analysis: Individual	<p>2.56);</p> <ul style="list-style-type: none"> an expectation of being a parent by age 20: 2.34 (CI 1.87 to 2.93), 1.91 (1.53 to 2.39), having sexual intercourse: 1.44 (CI 1.08 to 1.93), 1.89 (CI 1.38 to 2.59). <p>Socioeconomic disadvantage was also associated with higher confidence regarding condom use (0.81 (0.70 to 0.95)) and being drunk monthly or more (1.38 (CI 1.10 to 1.74)) among girls but not boys.</p> <p>Among boys and girls, dislike of school was significantly and independently associated with:</p> <ul style="list-style-type: none"> believing most peers to be having sex: girls 2.80 (2.10 to 3.72), boys 2.07 (1.35 to 3.19), expecting to have sex by age 16: 1.68 (1.33 to 2.10), 1.98 (1.55 to 2.54), expecting to be a parent by age 20: 2.33 (1.79 to 3.04), 1.41 (1.14 to 1.75), having been drunk monthly or more: 3.79 (2.92 to 4.92), 3.77 (2.81 to 5.07), having sexual intercourse: 3.74 (2.40 to 5.81), 2.44 (1.87 to 3.18). higher confidence regarding condom use: 0.77 (0.62 to 0.95), 0.77 (0.64 to 0.92). <p>Adjusted Wald tests indicated that there were no significant interactions between the effects of socioeconomic status and attitude to school on any of the outcomes.</p>	
63	<p>Bradshaw et al., 2005, UK (England)</p> <p>Objective: To find explanations for the variations that exist in the teenage conception rate</p>	Sample: conception rates in 15-17 years old in 352 local authorities in England in 1994-96 and 1997-99, obtained from routinely collected ONS data	Bivariate analysis: Conception rate was moderately or strongly correlated with the DETR domains. Overall the conception rate was higher in more deprived areas (except those with poor geographical access to	Author's conclusion: More than three-quarters of the area variation in the teenage conception rate can be explained by models of deprivation and ethnicity. Other contributing factors are likely to include service provision

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	<p>Design: population data analysis</p> <p>Study outcome: conception</p>	<p>Setting: England</p> <p>Description and nature of factors:</p> <ul style="list-style-type: none"> • Sociodemographic: <ul style="list-style-type: none"> ○ The Department of Environment, Transport and Regions (DETR) deprivation index (Domains are: <i>income</i> from percentage of people in area on means-tested benefits; <i>child poverty index</i> from proportion of children <16 years living in families receiving means-tested benefits; <i>employment</i> from proportion of residents in area who are economically active or incapacitated and who cannot work due to unemployment, sickness or disability; <i>health deprivation and disability</i> measured by mortality rates <65 years, numbers receiving benefits relating to ill health or disability and proportion of low weight births; <i>education, skills and training</i> measured by numbers of working-age adults with no qualifications, children age >16 not in full time education, proportion of 17-19 year olds who have not applied for full time education, key stage 2 results at primary school level, primary school children with English as additional language, absenteeism at primary level; <i>housing</i> based on numbers of people living in homeless households, overcrowded households and poor private sector housing; <i>geographical access to services</i> estimated for post office, food shops, a GP and primary school) ○ Ethnicity <p>Follow-up: n/a</p>	<p>services) and areas with more ethnic minorities</p> <p>Multivariate analysis: Deprivation measures account for high proportion of variation in conception rates, with the health, education and access score significant ($p<0.001$) for both time periods.</p> <p>Looking at variation in conception rates in 97-99 while controlling for the rates in 94-96 and deprivation showed previous rates account for 89% of conception rates, deprivation an additional 1%. Other factors (e.g. policy) must therefore account for the other 10% difference in 94-96.</p> <p>Some local authorities had conception rates that were higher than were predicted by the deprivation level, and some areas had rates that were lower.</p>	<p>or sex education</p> <p>Comments:</p>

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		Unit of analysis: Individual and local authority		
71	<p>Burack, 1999, UK</p> <p>Objective: To examine teenagers attitudes towards risk taking sexual behaviour and their declared sexual behaviour.</p> <p>Design: cross-sectional</p> <p>Study outcome: sexual knowledge, attitudes, behaviour.</p>	<p>Sample: 26 secondary maintained schools within the Barking and Havering Health Authority area were given scores based on the percentages of pupils with educational needs, free school meals, 5+ GCSE attainment, class size and unauthorised absentee rate. Using these scores and geographical location, the schools were divided into 8 clusters and 1 school was randomly selected from each cluster. In addition, 1 of the 2 local sixth form colleges was included to ensure better representation of the 17 to 18 year olds. Of the eligible 1563 13-18 year olds, 1500 completed questionnaires (96%). Sample size and power calculations not reported (but see Burack 2000)</p> <p>Setting: secondary schools (years 9 to 11) and sixth form colleges in Barking & Havering Health Authority, England</p> <p>Description and nature of factors: A questionnaire (previously used by Ryan et al. 1992) was administered either by form tutors or outside facilitators who followed a pre-determined guideline sheet for administering the survey. All pupils were aware that participation was voluntary, confidential and anonymous and they did not have to answer the questions. The questionnaire was answered in 'examination style' conditions to allow pupils extra privacy.</p> <ul style="list-style-type: none"> Sociodemographic: age, gender <p>Follow-up: none</p> <p>Drop-out: none</p>	<p>Bivariate analysis: The sample was divided by age and gender.</p> <p><u>Peer pressure</u></p> <p>Compared with girls, boys were:</p> <ul style="list-style-type: none"> More likely to feel that their friends made them feel as if 'sex is the main thing in a relationship' (38% vs. 11%, $p<0.001$). More likely to think 'It is ok for girls to sleep around' (29% vs. 10%, $p<0.001$). More likely to think 'It is ok for boys to sleep around' (34% vs. 11%, $p<0.001$). <p>Peer pressure remained significantly higher in the younger age groups: among under 16s, those reporting having full sexual intercourse were more influenced by their peers, compared with those who had not yet had full sexual intercourse (35% vs. 25%, $p<0.001$).</p> <p><u>Attitudes towards condoms</u></p> <p>Compared with girls, boys were:</p> <ul style="list-style-type: none"> More likely to view the provision of condoms the man's responsibility (23% vs. 14%) More likely to say they would be prepared to have sex with a partner without using a condom (23% vs. 9%, $p<0.001$). <p>Compared with boys, girls were:</p> <ul style="list-style-type: none"> More likely to be concerned about being clumsy when having to use a condom (43% vs. 32%, $p<0.001$). <p>Younger teenagers (13-14y) were also more likely to feel embarrassed to suggest using a condom with a partner than older teenagers</p>	<p>Author's conclusion: There are many different factors involved in the decision-making processes of teenagers with regards to their sexual behaviour. Teenage boys under 16 years old are particularly vulnerable as they are more likely to be influenced by peer pressure, condone promiscuity and are becoming fully sexually active at an earlier age compared to the teenage girls of comparative age.</p> <p>Comments: Analysis by age subgroups is not reported.</p>

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		Unit of analysis: <i>Individual</i>	(15-18y) (p<0.001).	
70	<p>Burack, 2000, UK</p> <p>Objective: To find out opinions and attitudes of 13-15 year old teenagers towards general practice-based sexual health care services.</p> <p>Design: cross-sectional</p> <p>Study outcome: sexual attitudes</p>	<p>Sample: Study was based on the 10% sample of the 13894 pupils aged 13 to 16 years (school years 9 to 11), attending state schools in Barking and Havering, England. School selection was random and based on locally pre-determined clusters (see Burack 1999 above). Response rate was 98% (1253/1280). The study sample was restricted to respondents aged 13-15 years (n=1045), on the basis that by age 16 some teenagers may have already left school and may thus be underrepresented. Sample size determined by pragmatic decision, as 'there were no comparable data on which to base a sample size estimate' (p. 550). The study took place between Jan and Mar 1996.</p> <p>Setting: State schools in Barking and Havering, England.</p> <p>Description and nature of factors:</p> <ul style="list-style-type: none"> • Sociodemographic: gender, whether sexually active <p>Follow-up: none</p> <p>Drop-out: n/a</p> <p>Unit of analysis: <i>individual</i></p>	<p>Bivariate analysis:</p> <ul style="list-style-type: none"> • Sexually active girls more likely to be aware of pregnancy testing compared with sexually inactive girls (p<0.05, % not reported) • Sexually active girls more likely to believe they had to be over 16 years of age before they could see their GP compared with sexually inactive girls (35% vs 23%, p<0.05) • Sexually inactive teenagers of both genders more likely to believe that they had to be over 16 years of age to obtain contraception from their GP compared with sexually active respondents than those sexually active (61% vs. 38%, p<0.001) • More boys than girls believe that their GP would be helpful in providing sexual health advice (76% vs. 68%, p<0.001) or contraception (80% vs. 77%, p<0.01) • More boys than girls prefer to see their GP on their own (68% vs. 39%, p<0.0001) • More sexually non-active girls would choose to see their GP accompanied by their parents compared with sexually active girls (p<0.01) • More girls than boys and more sexually inactive than active teenagers express a strong preference for seeing a GP of the same sex (98% vs. 73% for gender, 87% vs. 81% for sexual experience) • More sexually active than sexually non-active teenagers (esp. girls) had decided not to visit their GP for fear of wasting either their time or the GP's time (53% vs. 	<p>Author's conclusion: This study suggests that work is needed to improve teenagers' access to, and use of, primary care sexual health services. In particular, identifying strategies that improve teenagers' awareness of services and general practitioners' approaches towards teenagers are priorities.</p> <p>Comments: Largely descriptive report. Statistical analysis according to gender and sexual activity is reported on selected items only. Response rate is calculated based on the total number of returned questionnaires (n=1280) and the number of spoilt questionnaire (n=27); the number of school absentees on the day of the survey is not incorporated.</p>

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			44%, $p<0.05$)	
82	<p>Christofferson, Soothill, 2003, Denmark.</p> <p>Objective: To consider whether parents' abuse of alcohol has an impact on children during their formative years. [Only data pertinent to teenage motherhood are extracted.]</p> <p>Design: longitudinal</p> <p>Study outcome: Teenage motherhood</p>	<p>Sample: Information from a large national database of a cohort of children ($n=84,765$) born in Denmark in 1966. The observation period of the cohort was 1979-1993. Information was analysed from government registers covering health, education, family separation, suicidal behaviour, criminality and unemployment.</p> <p>Setting: Throughout Denmark</p> <p>Description and nature of factors:</p> <ul style="list-style-type: none"> Family: parental alcohol abuse <p>Follow-up: None</p> <p>Unit of analysis: Individual</p>	<p>Bivariate analysis: Parental alcohol abuse increases risk of teenage motherhood ($p<0.05$). Maternal alcohol abuse, in particular, increases risk of teenage motherhood ($p<0.0001$).</p> <p>Multivariate analysis: A discrete time Cox-regression model was used.</p> <p>Unadjusted odds ratio:</p> <ul style="list-style-type: none"> Teenage motherhood more likely with parental alcohol abuse (OR = 2.2, $P<0.0001$) <p>When other factors considered:</p> <ul style="list-style-type: none"> Teenage motherhood more likely with parental alcohol abuse (OR = 1.3, $p<0.05$). 	<p>Author's conclusion: Teenage pregnancy is more likely among children when there is parental alcohol abuse. Mothers' alcohol abuse seems particularly relevant in relation to teenage pregnancy.</p> <p>Comments: Alcohol abuse in this study is defined on the basis of a hospital admission for an alcohol-related condition. This only recognises severe and advanced cases with somatic or psychiatric damages and may have encouraged a greater focus on the effect of male pattern drinking.</p>
85	<p>Churchill, Allen, Pringle, Hippisley-Cox, Ebdon, Macpherson and Bradley, 2000, UK (England)</p> <p>Objective: To determine patterns of consultation in general practice and provision of contraception before teenage pregnancy.</p> <p>Design: Retrospective case-control</p> <p>Study outcome: Pregnancy</p>	<p>Sample: 240 registered patients (cases) with a recorded conception before the age of 20, between 1 January 1995 and 1 January 1998, identified from case notes; and 3 controls per case matched by age and practice. Twin siblings were excluded. 240 cases and 719 matched controls were identified. The median age of cases at conception was 17 years (range 13 to 19). 34 cases (14%) were less than 16 years. 48 cases (20%) had been pregnant at least once previously.</p> <p>Setting: 14 general practices in Trent region of England</p> <p>Description and nature of factors:</p> <ul style="list-style-type: none"> Sociodemographic: Deprivation (Townsend score) Barriers and facilitating conditions: 	<p>Bivariate analysis: Cases were resident in more deprived areas than controls (mean Townsend score 3.2 for cases, 2.4 for controls, $p<0.001$). More cases than controls lived within 2 miles from surgery ($p = 0.045$). The median number of consultations by cases in the year before conception was 4 (range 0 to 29).</p> <p>In the year before conception, cases were more likely than controls:</p> <ul style="list-style-type: none"> to have consulted general practice at least once (93%, $n = 224$): OR = 2.70 (1.56-4.66) to have consulted general practice ≥ 4 times (53%, $n = 128$): OR = 1.68 (1.23-2.30) to have consulted general practice for contraceptive reasons (62%, $n = 148$): OR = 2.15 (1.56-2.97). 	<p>Author's conclusion: Most teenagers who became pregnant attended general practice in the year before pregnancy, and many has sought contraceptive advice. The reluctance of teenagers to attend general practice for contraception may be less than previously supposed.</p> <p>Comments: No information on how the participating general practices were selected out of the 826 practices in the region.</p>

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		<p>Estimated distance to GP surgery based on postcode, consultations in general practice (doctor or practice nurse) in the year before conception, provision of contraception in the year before conception and at any time before conception.</p> <p>Follow-up: N/A</p> <p>Drop-out: N/A</p> <p>Unit of analysis: <i>Individual</i></p>	<ul style="list-style-type: none"> to have consulted general practice for non-contraceptive reason (83%, n = 198): OR = 1.51 (1.03-2.22) <p>Of the 92 cases who had not consulted for contraception, 76 (83%) had consulted for another reason at least once and 24 (26%) had consulted on four or more occasions.</p> <p>Multivariate analysis: Multivariate conditional logistic regression analysis incorporated Townsend scores and distance of residence from surgery. The only significant association was in relation to consultation for contraception, i.e. in the year before conception, cases were more likely than controls:</p> <ul style="list-style-type: none"> to have consulted general practice for contraceptive reasons: OR = 1.78 (1.22-2.60) 	
88	<p>Clements, Stone, Diamond and Ingham, 1998, UK</p> <p>Objective: To determine which factors account for the spatial variation in teenage conception rates within the former Wessex Regional health Authority and what factor accounts for the eventual outcomes of these conceptions [This table reports on the first objective only].</p> <p>These were achieved through relating postcoded data for all teenage conceptions that occurred between 1991 and 1994 to ward-based population characteristics and indicators of accessibility to family planning services.</p>	<p>Sample/Data: Information on individual conceptions which resulted in either a birth, termination or miscarriage and which occurred to residents of the former Wessex Region Health Authority between 1991 and 1994 was collected principally from two sources: the National Health service (NHS) and the British Pregnancy Advisory Service (BPAS). BPAS provided data on both private and NHS agency terminations. After removal of those women aged 20 or over at the time of conception, the initial data set contained 17,485 conceptions. Conceptions occurring to women living outside Wessex and those with invalid or incomplete postcodes were omitted from further analysis. The final data constituted 17,150 conceptions.</p> <p>Setting: Wessex Regional Health Authority, England, (with one of the lowest rates of under</p>	<p>Multivariate analysis: Multivariate logistic regression modelling was used to identify significant factors associated with ward conceptions, after accounting for the ward population and the hierarchical nature of the data. The following variables were included in the final model.</p> <p><u>More likely to experience conception:</u></p> <ul style="list-style-type: none"> Older age groups (vs. 13-15 year olds): RR, 16-17 year olds, 6.49 (6.09-6.92); 18-19 year olds, 10.50 (9.90-11.2) Deprivation (relative risk for each one point increase in index): RR = 1.19 (1.17-1.21) Living in an urban ward (vs. rural): RR = 1.12 (1.02-1.24) % Armed forces: RR = 1.01 (1.00-1.03) Youth Family Planning distance (vs. 0-3 	<p>Author's conclusion: This study has shown that in the Wessex Regional Health Authority between 1991 and 1994 a teenage woman was more likely to experience a conception if she was older and if she was living in a more deprived ward. The distance a young woman lived from the nearest youth oriented family planning clinic affects her chances of having a conception. Also, wards containing proportionally more higher education students and boarding school pupils are likely to have fewer conceptions than wards with otherwise similar characteristics.</p> <p>Comments: The authors utilised a custom deprivation index based on three components derived from the standard deprivation indices. This index, comprising non-car ownership, unemployment and overcrowding, was the better predictor of teenage pregnancy than the</p>

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	<p>Design: population data analysis</p> <p>Study outcome: conception</p>	<p>16 pregnancy in the country)</p> <p>Description and nature of factors:</p> <ul style="list-style-type: none"> Sociodemographic: age, ward deprivation (the Jerman, Carstairs, Townsend and the DOE index); urban/rural (urban = <1.5 persons per hectare); proportion of residents serving armed forces in the ward; proportion of higher educations students and boarding school pupils in the ward; year Barriers and facilitating conditions: service accessibility (as measured by the 'crowfly' (straight line) distance between each ward centroid and each GP/family planning clinic based on their postcodes) <p>Follow-up: n/a</p> <p>Drop-out: n/a</p> <p>Unit of analysis: census ward</p>	<p>km); RR, 3-7 km, 1.11 (1.03-1.20); 7+ km = 1.01 (0.95-1.07)</p> <p><u>Less likely to experience conception:</u></p> <ul style="list-style-type: none"> Year (vs. 1991): RR, year 1992 = 1.00 (0.96-1.04), year 1993, 0.91 (0.87-0.95); year 1994, 0.88 (0.84-0.92) % Higher education students: RR = 0.94 (0.92-0.96) % Boarding school pupils: RR = 0.81 (0.77-0.85) GP distance 1.5+ km (vs. <1.5 km): RR = 0.91 (0.83-0.99) <p>Further analysis shows that the residual unexplained variation in the conception rates within the wards in the constituent districts was greatly reduced after accounting for all the above variables, although statistically significant unexplained variation does still remain.</p>	<p>standard deprivation indices.</p> <p>The authors noted a potential endogeneity problem that family planning placement is more likely in areas with higher conception rates. It was also argued that results for GP distance (being further away from a GP practice was associated with less teenage pregnancy) might be due to the effect of living in a rural area, which was not fully accounted for by the crude urban/rural measure used in the analysis.</p>
112	<p>Dearden <i>et al.</i> 1995, GB.</p> <p>Objective: To describe the life experiences of teen fathers in the UK and compare the life experiences of groups of individuals based on fatherhood status.</p> <p>Design: Retrospective case-control</p> <p>Study outcome: Teenage fatherhood</p>	<p>Sample: Data came from the National Child Development Study (NCDS), a longitudinal investigation that follows all children born in Great Britain between March 3rd and 9th 1958. This study compares teen fathers (those who fathered a child before age 20) with non-teen fathers (those who became fathers between ages 20 and 23) and non-fathers (those who had no child by age 23). Social class was controlled through matching. Of the 5997 men who reported fatherhood status, 209 (4%) were teen fathers, 844 (14%) were non-teen fathers and 4944 (82%) were non-fathers. The number of non-fathers were reduced (n=410) by randomisation using a uniform deviate. Non-fathers were group matched to teen fathers by 2:1.</p>	<p>Bivariate analysis: When social class controlled for, teen fathers were more likely than non-fathers to have the following characteristics:</p> <ul style="list-style-type: none"> Two or more older siblings (OR=2.1) Financial hardship at age 11 (OR=3.6) Left school at 16 years (OR=8.0) At least one count of school absenteeism (OR=2.7) Trouble with the law (OR=2.8) Aggressive (OR=3.8) Teachers assessment poor at age 7 (OR=2.2) age 11 (OR=2.1) and age 16 (OR=2.2) Lack of parental interest at age 11 (OR=2.2) and age 7 (OR=2.1) 	<p>Author's conclusion: Boys who became fathers while in their teens were at increased risk for experiencing problems at home and at school and were more likely to demonstrate aggressive, truant and law-breaking behaviours. Many of these factors were also evident among those who became fathers while in their early 20s.</p> <p>Comments:</p> <p>Re: NCDS – 'It is possible that in some cases, teen fatherhood preceded the manifestation of certain risk factors (for example, parents' perceptions that sons would leave school at the minimum age and teachers' assessment that boys had minimal academic ability,</p>

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		<p>Setting: Throughout Great Britain.</p> <p>Description and nature of factors: 4 univariate and 7 composite measures were used (first 4 variables are univariate measures).</p> <ul style="list-style-type: none"> • Background: birth order, financial hardship (mother's report) • Educational: leave school at 16 (parents thought son would leave school at minimum age), left school at 16, truancy, teacher's assessment of ability, attitudes to school at age 16 (homework and schooling), interest in further education at age 16 • Family: parents interest in education • Psychosocial: Aggressive behaviour, legal conflict (mother's and teacher's report). <p>Follow-up: Data were collected at birth and at 7, 11, 16 and 23 years.</p> <p>Drop-out: N/A</p> <p>Unit of analysis: Individual</p>	<ul style="list-style-type: none"> • Lack of interest in further education (OR=2.1) • Perception of school at age 16 (OR=1.6) <p>Non-teen fathers were similar to teen fathers in most respects.</p> <p>Multivariate analysis: Logistic regression models were constructed with the 11 univariate and composite measures. Highly associated variables (absenteeism, aggression and legal conflict) were entered into separate models. The following variables were risk factors common to all models, even after controlling for social class:</p> <ul style="list-style-type: none"> • Financial hardship at age 11 • Presence of two or more older siblings • parental disinterest in education • Left school at 16 years 	<p>measured when boys were 16). However, only 12 of the 209 boys who became teen fathers were 16 years old or younger at the birth of their first child.</p>
113	<p>Diamond et al., 1999, UK (England)</p> <p>Objective: To identify factors influencing variation in teenage conception rates</p> <p>Design: population data analysis</p> <p>Study outcome: conception</p>	<p>Sample/Data: Conception rates of teenagers aged 13-19 years (divided up into 13-15, 16-17, and 18-19) in the former Wessex Regional Health Authority during 1991-1994. Data were obtained from NHS database and British Pregnancy Advisory Service. The study area consisted of 589 census wards, 198 classed as rural and 391 urban, containing a total female teenage population of 114,770 in 1991 which fell to 111,532 by 1994.</p> <p>Setting: Wessex regional, England.</p> <p>Description and nature of factors:</p>	<p>Multivariate analysis: Multilevel Poisson Models are used to identify factors influencing variation in census ward level teenage conception rates. Analyses were conducted separately for urban and rural wards. Individual components of each of the deprivation indices were fitted in each of the urban and rural models.</p> <p><u>Urban areas:</u></p> <p>Higher conception rates were associated with:</p> <ul style="list-style-type: none"> • Older teenagers (e.g. 18-19 vs. 13-15) 	<p>Author's conclusion: Both individual and spatial characteristics are important in influencing levels of teenage conceptions, especially deprivation and specialised young people's family planning clinics. The latter effect is much lower in rural areas. Custom measures of deprivation may better predict teenage pregnancy.</p> <p>Comments: Authors note the link between service provision and conception rates is complicated. In urban areas specialised clinics are more likely to be in city and town centres and travelling further may represent</p>

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		<ul style="list-style-type: none"> Sociodemographic: age; deprivation (measured using Jarman, Townsend, Department for the Environment (DOE) and Carstairs indices); proportions of students in higher education, boarding school pupils, residents in the armed forces and African-Caribbean and Asian teenage women in wards; year (1991-94); rural or urban ward (based on population density); district health authorities (DHAs) Barriers and facilitating conditions: health service provision determined from information on general practitioners (GP), traditional family planning clinics, family planning clinics with specific youth sessions, generic young people's advice projects offering sexual health services. Road distance and travel time between each service and ward was calculated. <p>Follow-up: n/a</p> <p>Drop-out: n/a</p> <p>Unit of analysis: census ward</p>	<p>years): RR = 10.3 (9.66-11.0)</p> <ul style="list-style-type: none"> Greater deprivation, specifically, <ul style="list-style-type: none"> percentage of 17-year-olds not in full time education, 1.15 (1.10-1.21) the proportion of residents who had moved within the last year, 1.10 (1.07-1.13) proportion of children <5 in ward, 1.07 (1.04-1.10) proportion of households without access to car, 1.40 (1.34-1.47) If living 7-10km from nearest youth-oriented clinic compared to living <7km away (RR 1.10 (1.01-1.20)), although living ≥10km away was not significant (RR 0.99 (0.94-1.04)) <p>Lower conception rates were associated with:</p> <ul style="list-style-type: none"> Greater numbers of students in higher education or boarding-school pupils: 0.51 (0.44-0.60) Net of all other factors, the risk of conceiving had fallen from 1991 to 1994 by 10% (p<0.001). <p>No association is found with distance to nearest GP.</p> <p><u>Rural areas:</u></p> <p>Higher conception rates were associated with:</p> <ul style="list-style-type: none"> Older teenagers (e.g. 18-19 vs. 13-15 years): 14.9 (12.0-18.4) Greater deprivation, specifically: <ul style="list-style-type: none"> non-car ownership, 1.51 (1.06-2.13) proportion of children <5yrs, 1.13 (1.04-1.24) overcrowding, 1.21 (1.03-1.42) lack of basic amenities 1.09 (1.02-1.16) <p>Lower conception rates were associated with:</p>	coming from a more affluent area. Other measures of deprivation may be more suitable for rural areas.

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			<ul style="list-style-type: none"> Greater numbers of students in higher education: 0.53 (0.40-0.69) The risk of conceiving fell from 1991 to 1994 by 18% ($p<0.001$) <p>No association was found with distance to nearest GP or youth-oriented clinic.</p>	
t02	<p>Donati S. et al., 2000, Italy</p> <p>Objective: to examine knowledge, attitude and behaviour on sexual and reproductive health among Italian adolescents</p> <p>Design: cross-sectional</p> <p>Study outcome: sexual and reproductive health knowledge, attitudes and behaviour.</p>	<p>Sample: Probabilistic samples of students attending the first two classes of all high schools in 24 Local Health Units of 11 Italian regions were invited to participate between February and June 1998. Out of the 11 regions that participated in the study, 5 were located in South Italy, 2 in the Centre and 4 in the North. Estimated sample size for each Local Health Unit was ≥ 250 students. Of the eligible 7484 students, 6532 (87.3%) participated. Nobody refused to participate and 952 students (12.7%) were absent at the time of interview. 3396 (52.5%) were boys and 3071 (47.5%) were girls. 75% of the sample was younger than 16 years and the frequency distribution by type of attended school and by geographical area resulted similar to official national data.</p> <p>Setting: Mixed-sex state secondary schools (humanistic, scientific, technical and vocational) in 11 Italian Regions.</p> <p>Description and nature of factors: Questionnaires were designed by a multidisciplinary group (epidemiologists, gynaecologists, paediatricians, midwives, sociologists, social workers, psychologists, teachers and students) and expensively piloted. Questionnaires were administered during school-time by trained facilitators following a predetermined guideline sheet and in collaboration with schoolteachers. All</p>	<p>Bivariate analysis: the sample was divided by gender.</p> <p><u>Sociodemographic:</u></p> <ul style="list-style-type: none"> 75% of the sample was younger than 16 years. 42% of the interviewed was 15 years old, 33% was ≤ 14 years and 25% (29% of the boys vs. 21% of the girl) was older than 15 years. Boys attend more often technical schools compared to girls (44% vs 26%). There was no significant difference between groups in terms of parents' education and profession as well as urban or rural residence. 55% of parents attended >8 years of school. 52% of mothers is housewife (60% in the South and 30% in the North) and 30% is employed. 36% of fathers is employed and 34% is worker. <p><u>Family:</u></p> <ul style="list-style-type: none"> 94% of the parents are married and 5% are separated or divorced. 52% of the interviewed have a brother or a sister, 32% more than one sibling and 16% none. <p><u>Psycho-social:</u></p> <ul style="list-style-type: none"> There was no significant difference by gender in terms of appreciation of pubertal changes. More than 80% refer they are living the pubertal changes with naturalness, curiosity and enthusiasm. 	<p>Author's conclusion: Although only 18% of the sample have had penetrative sex, the results of the survey show healthy adolescents, with a positive attitude towards prevention of unwanted pregnancy and sexually transmitted diseases.</p> <p>Knowledge on sexual and reproductive health is poor and requires commitment for integration between schools and health services. Differences in knowledge related to geographical area require special attention.</p> <p>Comments:</p>

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		<p>students were aware that participation was voluntary, confidential and anonymous. Questionnaires were answered in "examination style" conditions to allow students extra privacy.</p> <ul style="list-style-type: none"> • Sociodemographic: age, gender, parents education and profession, urban or rural residence • Family: parents marital status, number of siblings and family unit composition. • Psycho-social: appreciation of perceived pubertal changes, self mood, well-being, and relations to friends. • Sexual knowledge, attitude, behaviour: attitudes towards sexual education at school, perceived experienced sex education, communication among peers and with adults on sex items, territorial health services knowledge and utilisation, fertile period of the cycle knowledge, contraceptives knowledge and attitude, ever had penetrative sex, ever used contraceptives by method, use of condom among sexually active, attitudes towards unplanned pregnancy, STD and STD prevention knowledge <p>Follow-up: none</p> <p>Drop-out: . Nobody refused to participate and the 952 (12.7%) students who were absent at the time of interview are the physiologic "absence rate" in secondary schools.</p>	<p>Around 5% with discomfort (2% boys vs. 9% girls) and 13% with indifference.</p> <ul style="list-style-type: none"> • 43% of the sample spoke with the parents about pubertal changes (28% boys vs. 60% girls). • Communication among peers is the most frequent (67%) channel for information and advice. • Thoughts associated to sexuality are significantly different by gender. Boys are more likely to mention physical pleasure (52% vs. 22%) and less likely to mention to be afraid of unwanted pregnancy (23% vs. 40%) or to postpone coitarche (11% vs. 31%) . <p><u>Sexual knowledge, attitude, behaviour:</u></p> <ul style="list-style-type: none"> • More than 95% ask for sexual education at school, 23% from age 6 and 58% from age 11. • Among boys and girls 36% have been involved in sexual education activities at school. • 63% believe that besides school and health services youth could discuss with adults in other places like social centres, cultural associations, parish churches, sporting associations, discos and libraries. • 59% know that abortion in Italy is legal, 23% believe it is illegal and 18% does not know. Around one fourth believes that a girl cannot become pregnant at first intercourse. • Only 33% know the fertile period of menstrual cycle. • Over 80% report to know pill and condom and the same percentage intend to use a contraceptive in case of sexual intercourse. 18% of the sample (24% of boys and 12% of girls) have had penetrative sex, 11% without using a 	

Ref ID	Study detail	Characteristics of study, factors and methodology	Results	Comments and implications
			<p>contraceptive method.</p> <ul style="list-style-type: none"> • Compared with girls, boys were more likely to use condom in case of penetrative sex (62% vs. 47%) • 98% consider AIDS an STD and 80% think that condom is useful in preventing STDs. • 25% of the sample (20% boys and 30% girls) are aware of the availability of territorial health services and only 4% attended them. <p>Multivariate analysis: Respondents who reported better knowledge towards sexual education were <u>more likely</u>:</p> <ul style="list-style-type: none"> • to be older than 16 years (OR 1.33 95%I.C. 1.12-1.58) • to be females OR 1.32 (95%I.C. 1.16-1.51) • to having participated in sex education courses (OR 1.21 95%I.C. 1.07-1.38) • To having had sexual intercourse (OR 1.46 95%I.C. 1.22-1.75) • To attend humanistic or scientific high schools (OR 1.40 95%I.C. 1.22-1.60) • To perceive the experienced sex education as adequate (OR 1.93 95%I.C. 1.19-3.11) • To believe that sex education produces more consciousness (OR 2.77 95%I.C. 1.81-4.22) • To disagree in giving to their own children the same sex education received (OR 1.40 95%I.C. 1.16-1.69) • To believe that adults are able to answer to youth questions (OR 1.21 95%I.C. 1.05-1.39) <p><u>Less likely:</u></p> <ul style="list-style-type: none"> • To be resident in Centre Italy (OR 0.53 95%I.C. 0.43-0.66) or in South Italy (OR 0.45 95%I.C. 0.37-0.55) 	

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118	<p>Donovan, Mellanby, Jacobson, Taylor and Tripp, 1997, UK</p> <p>Objective: To discover the attitudes of 15- to 16-year-olds to the General Practice consultation and contraceptive services.</p> <p>Design: cross-sectional</p> <p>Study outcome: attitudes to General Practices</p>	<p>Sample: 4481 year-11 students (age 15/16 years) completed a questionnaire in 1994 (response rate not reported). 61% of respondents lived in a town or a city.</p> <p>Setting: 30 schools in rural, semi-urban, and urban areas of England outside of major conurbations, participating in a peer-based educational programme (from 1990).</p> <p>Description and nature of factors:</p> <ul style="list-style-type: none"> Sociodemographic: gender, sexual activity <p>Follow-up: none</p> <p>Drop-out: n/a</p> <p>Unit of analysis: individual</p>	<p>Bivariate analysis: Respondents were not asked about the content of their general practice consultations, e.g. whether they had requested contraception. Analysis was conducted using chi-square tests.</p> <ul style="list-style-type: none"> Females were likely to consult more often than males (91% vs. 83%, $p<0.0001$) No gender difference regarding perceived confidentiality of GP consultations <p><u>Those who consulted more frequently were:</u></p> <ul style="list-style-type: none"> more likely to consult alone (rather than with a parent or a friend) (46% of those who consulted ≥ 6 times vs. 40% of those who consulted 3-5 times and 27% of those who consulted 0-2 times in the past year, $p<0.0001$). more likely to believe consultations to be confidential (RR=1.07, $p=0.01$), less likely to feel embarrassed when talking about personal problems (41% of those who consulted ≥ 6 times vs. 53% of those who consulted 3-5 times and 60% of those who consulted 0-2 times in the past year, $p<0.0001$) more likely to say they want 'a more sympathetic GP' <p><u>Compared with 'virgins', those reporting previous sexual intercourse were:</u></p> <ul style="list-style-type: none"> likely to consult more often (56% vs. 42%, $p<0.001$) more likely to consult on their own (43% vs. 27%) less likely to feel personal discussions embarrassing (50% vs. 60%, $p<0.0001$) more likely to find it hard to see their GP because their parents would find out (31% vs. 26%, $p=0.005$) 	<p>Author's conclusion: Teenagers who are potentially or actually in need of contraception do consult their GPs frequently. Teenagers in serious relationships, whether they are having sex or not, consult more frequently than other teenagers. It is not known whether these consultations are related to contraception. Sexually active teenagers are not more concerned about the confidentiality of the consultation but are more concerned that their parents will find out that they have seen the GP.</p> <p>Adolescents identify significant factors blocking them from easy access to consultation with their GP. These included lack of trust in confidentiality, lack of staff friendliness, and delay in appointment. Consideration of how these blocks can be removed will assist in providing improved contraceptive services in primary care.</p> <p>Comments: Based on a large but non-representative sample outside major conurbations. Authors note that, while the study found that those teenagers who consulted more frequently were less embarrassed, this may mean (1) those who tend not to be embarrassed consult more, or (2) the process of consulting can improve teenagers' general level of confidence and their own skills in GP consultations.</p>

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			<ul style="list-style-type: none"> less likely to say a GP of the same sex would make the consultations easier (both gender, 62% vs. 65%, $p=0.04$) <p><u>Those in 'very serious' relationships but who had not had sex were:</u></p> <ul style="list-style-type: none"> likely to consult more often than those not in relationships (52% vs. 36%, $p<0.001$) 	
119	<p>Easton, Kiss and Mowery, 2004, Hungary</p> <p>Objective: To examine health behaviour risk factors among secondary school students in Budapest in 1999.</p> <p>Design: cross-sectional</p> <p>Study outcome: pregnancy, early sexual initiation, contraceptive use, sexual behaviour (and health-related risky behaviour)</p>	<p>Sample: A two-stage cluster sampling design was used to produce a representative sample of secondary school students (grades 9-12) in Budapest in 1999. The school response rate was 100% and the overall student response rate was 85% (2615 of 3092 eligible students). Most respondents were aged 15-18 (92%). 83% of the respondents attended traditional schools, while 27% attended the vocational/technical (vo-tech) schools. The study represents the Budapest Student Health Behaviour Survey (BSHBS). Sample size and power calculations not reported.</p> <p>Setting: secondary schools in Budapest</p> <p>Description and nature of factors: Students completed a pre-tested, standardised survey translated and adapted from the US Youth Risk Behaviour Survey and the 1993 Teenage Attitudes Practice Survey.</p> <ul style="list-style-type: none"> Sociodemographic: gender, grade, school type <p>Follow-up: n/a</p> <p>Drop-out: n/a</p> <p>Unit of analysis: individual</p>	<p>Bivariate analysis: Differences by gender, grade and school type were examined using χ^2 tests. Following variables were identified as statistically significant.</p> <p><u>Pregnancy</u></p> <ul style="list-style-type: none"> No significant differences by gender or school type regarding whether respondents had been or got someone pregnant <p><u>Sexual initiation</u></p> <ul style="list-style-type: none"> Vo-tech students were more likely than traditional students to have had sexual intercourse (64% vs. 41%) No gender difference <p><u>Contraceptive use</u></p> <ul style="list-style-type: none"> Male vo-tech students were more likely than female vo-tech students to report condom use (59% vs. 39%) Females were more likely than males (partners' use) to report birth control pill use (39% vs. 24%) <p><u>Sexual behaviour</u></p> <p>Vo-tech students were more likely than traditional students:</p>	<p>Author's conclusion: Many secondary school students in Budapest practice behaviours that place them at risk for serious health problems both in the short and long term.</p> <p>Comments: Little information on differences by grade (age) is provided. Data should be interpreted with caution because of the small number of respondents involved in some question items. Authors note that the data apply only to youth who attended school and are not representative of all persons in this age group (e.g. students who dropped out and approximately 80% of gypsy children who do not attend secondary school; 4% of Hungary's population is Roma).</p>

Ref ID	Study detail	Characteristics of study, factors and methodology	Results	Comments and implications
			<ul style="list-style-type: none"> to be currently sexually active (47% vs. 30%) to have had ≥ 4 sex partners (38% vs. 27%) to have ever been forced to have sexual intercourse (5% vs. 4%) <p>Males were more likely than females:</p> <ul style="list-style-type: none"> to have had ≥ 4 sex partners (35% vs. 24%) to have alcohol or drugs at last intercourse (25% vs. 13%) to be currently abstinent (34% vs. 21%) <p>Females were more likely than males:</p> <ul style="list-style-type: none"> to have ever been forced to have sexual intercourse (6% vs. 2%) <p><u>Health-related risky behaviour</u> Vo-tech students were more likely than traditional students and male students were more likely than female students to report episodic heavy drinking and to have driven after drinking alcohol. Vo-tech students were less likely than traditional students to use seatbelt. Female students were more likely than males to feel sad or hopeless, to have seriously considered suicide, to have made a suicide plan and to have attempted suicide.</p>	
121 & 124	<p>Edgarth, 2002b, Sweden Edgarth, 2000, Sweden</p> <p>Objective: To evaluate the sexual behaviour in 17-year-old students and school non-attenders, using data from a national survey on adolescent sexuality. [Only results from the student sample are extracted]</p>	<p>Sample: A national sample of 17 year olds born in 1973. Self-administered questionnaires with 170 multiple-choice questions were distributed to 2583 boys and girls recruited from theoretical and vocational schools (students) and youth centres (school non-attenders/dropouts) across 284 municipalities. 1943 students (response rate 92%) and 210 school non-attenders (response rate 44%) answered the questionnaire.</p>	<p>Bivariate analysis: Data from boys and girls are analysed separately. Data from students and non-students were also treated separately, though no statistical analysis was performed with the non-student sample.</p> <p>With respect to all responding students, girls living with both biological parents were more likely to report sexual intercourse (OR 1.79). Among boys, attending a vocational school</p>	<p>Author's conclusions: Boys and girls early sexual experience was related to early puberty. Early sexual behaviour was more likely in boys with general adolescent risk-taking behaviour and in girls with high perceived social age. In girls a high number of partners and 1st date intercourse make 'early starters' at increased risk of pregnancy. In boys early sexual behaviour was not predictive of pregnancy, but the associated</p>

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	<p>Design: cross-sectional</p> <p>Study outcome: pregnancy, early sexual initiation</p>	<p>Setting: School, youth centre</p> <p>Description and nature of factors: The survey was carried out in school, although the classroom situation was avoided. Each respondent put his/her questionnaire into an envelope and sealed it.</p> <ul style="list-style-type: none"> • Background: immigrant background, early menarche/puberty • Family: family structure • Educational (truancy, content with school) • Psychosocial: perceived social age, health hazard (smoking, drinking, substance use) • Sexual behaviour: risky sex (five or more lifetime partners, first-date intercourse, anal sex, sex abroad, homo/bisexual experience), STI, contraceptive use, nature of relationship, <p>Follow-up: N/A</p> <p>Drop-out: N/A</p> <p>Unit of analysis: Individual</p>	<p>(1.91), high perceived social age (2.23), smoking (5.32), drinking alcohol (4.09) and early puberty (1.69) were significantly associated with reported intercourse.</p> <p>Among <u>responding female students who were sexually active</u>, sexual initiation at age <15 years was significantly associated (p<0.001) with:</p> <ul style="list-style-type: none"> • Menarche ≤11years • Perceived social age >2 years older • Daily smoker • Studying vocational line (not theoretical) • have >5 partners during lifetime • have 1st date intercourse more than twice • sex abroad • have oral sex • anal sex • STD • pregnancy <p>Among <u>responding male students who were sexually active</u>, sexual initiation before age 15 was significantly associated:</p> <ul style="list-style-type: none"> • Early puberty (OR 3.48) • Drugs (3.62) • Cigarettes (1.90) • Living with both parents (0.56) <p>Among <u>responding male students who were sexually active</u>, pregnancy (impregnating girlfriends, n=18) was significantly associated with:</p> <ul style="list-style-type: none"> • have 1st date intercourse more than twice (14.4 (3.8-54.5)) • Binge drinking (6.3 (1.7-2.3)) <p>However, the associations with sexual initiation before age 15, contraception at first/last intercourse, truancy, smoking, drinking, drug use, early puberty and</p>	<p>high number of "lifetime" sexual partners and 1st date intercourse were predictive factors.</p> <p>Comments: Early sexual behaviour in this study refers to intercourse at <15 years. Students attending big schools in urban areas were under-represented in the (boys) sample and no weighting was performed.</p> <p>Limited data on socioeconomic status – roughly estimated by students' choice of study line.</p> <p>Note that the results for boys and girls are not comparable because they are reported in two separate papers and the focus of each of the papers is different. Description of data and variables used not always clear.</p>

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			perceived social age were not significant.	
123	<p>Edgardh, 2002c, Sweden</p> <p>Objective: To investigate adolescent experience in a low-income high school setting in greater Stockholm</p> <p>Design: Cross-sectional</p> <p>Study outcome: early sexual initiation</p>	<p>Sample: Questionnaires were distributed to 407 second-year high school students (mean age 17) in September 1999, including 305 in natural/social science programmes, 32 in a vocational programme and 70 in 'individual programmes' for those recognised as school drop-outs. Individual programme students were later excluded from the study due to their low response rates. Of the remaining 340 [sic] students, 76% (258) completed the questionnaire. The age range was 15-20 years, with the mean and median age of 17 years. 49% (122) of the respondents had an 'immigrant background' (defined as having one or both parents born outside Sweden), while 83% (212) were born in Sweden and 91% (234) had received all their education in Sweden.</p> <p>Setting: Two high schools in a suburban low-income community in greater Stockholm</p> <p>Description and nature of factors: The study utilised a self-administered questionnaire adapted from the national survey SAM73-90.</p> <ul style="list-style-type: none"> Family: living with both parents, having one or both parents born outside Sweden Educational: truancy Psycho-social: smoking, drinking, illicit drug use <p>Follow-up: N/A</p> <p>Drop-out: as above</p> <p>Unit of analysis: individual</p>	<p>Bivariate analysis: Vaginal intercourse had been experienced by 56% (141) of the respondents, with no significant gender differences. 17% (43) of all respondents reported coitarche before age 15. The χ^2 and Fisher tests were used to compare differences between groups.</p> <p>Compared with 'virgins', the respondents who had coital experience were more likely:</p> <ul style="list-style-type: none"> To be truant weekly To be weekly smokers To get drunk sometimes or often To use illicit drugs <p>Compared with 'virgins', the respondents who had coital experience were less likely:</p> <ul style="list-style-type: none"> To live with both biological parents To attend the theoretical natural science programme <p>An 'immigrant background' was not associated with coital experience.</p>	<p>Author's conclusion: The study confirmed the earlier findings that sexual experience belonged within a pattern of adolescent risk-taking behaviour with truancy, use of cigarettes, alcohol and drugs. Non-experience of intercourse was related to living with both parents, and theoretical study line, which indicates longer parental education.</p> <p>Comments: There appear to be a number of errors in data reported in text and tables. Other variables concerning pregnancy, condom use, risky sex, sexual abuse and emotional distress were also reported but with little or no statistical analysis.</p>
80 & 81	Ekéus and Christensson, 2003a&b, Sweden	Sample: 132 fathers of babies born to primiparous teenage mothers (study group)	Bivariate analysis: The fathers in the study group were 6 years younger with a mean age	Author's conclusion: A high proportion of the fathers of babies with a teenage mother

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	<p>Objective: To describe and compare socioeconomic characteristics as well as sexual and reproductive history of fathers of children born to teenage mothers and those of children born to average-aged mothers.</p> <p>Design: cross-sectional (descriptive comparative)</p> <p>Study outcome: fathering a child by teenage mother, early sexual initiation</p>	<p>and 132 fathers of babies born to primiparous women aged between 25-29 years (comparison group) who were present in the postnatal wards after the birth of their child between May 1997 and April 1997 and also be able to read and write Swedish. For the study group, 152 fathers met the criteria and 20 refused to participate (response rate 87%). For the comparison group, questionnaires were distributed to 145 fathers (response rate 91%).</p> <p>Setting: 11 postnatal wards at the 5 obstetric and gynaecological departments in the Stockholm area</p> <p>Description and nature of factors: A self-administered questionnaire based on Edgardh (1990) was used.</p> <ul style="list-style-type: none"> • Sociodemographic: ethnicity (born in or outside Sweden); major language, level of education, occupation • Family: fathers' parents' marital status • Psycho-social: self-perceived physical maturation relative to peers; social age (perceived older than the actual age by others); smoking; drugs; ever prosecuted; • Sexual knowledge, attitude, behaviour: first intercourse <15 years; age differences between partners; type of relation; contraceptive use at first intercourse; lifetime number of partners; first date intercourse; experience of condom; alcohol regularly when sex; received contraceptive information; has a previous child; <p>Follow-up: n/a</p> <p>Drop-out: n/a</p>	<p>of 23 years. Only 19% of these fathers were teenagers themselves, and 10% were more than 10 years older than the teenage mother. 12% of the fathers in the study group and 8% of the fathers in the comparison group reported having at least one baby by another woman or by other women.</p> <p>Prevalence ratio between the study group and the comparison group with 95% confidence limits were calculated.</p> <p><u>Fathering a child by a teenage mother</u> Compared with the fathers of babies born to non-teenage mothers, fathers of babies born to teenage mothers were more likely to report:</p> <ul style="list-style-type: none"> • lower educational level: prevalence ratio 3.5 (2.1-5.9) • NOT employed: 0.6 (0.5-0.7) • having divorced parents: 1.5 (1.1-2.1) • smoking: 3.4 (2.2-5.3) • NOT born in Sweden: 0.7 (0.6-0.8) • NOT monolingual in Swedish: 0.7 (0.6-0.8) • having used illicit drugs: 1.9 (1.3-2.7) • prosecuted in court: 2.3 (1.5-3.4) • a high social age: 2.7 (1.7-4.3) • first intercourse <15 years: 2.6 (1.7-4.1) • greater age differences between partners <p>No significant difference was found regarding other reported sexual behaviour, e.g. contraceptive use, lifetime number of partners, first date intercourse, use of alcohol when having sex. In both group 36% had their sexual debut with a casual partner.</p> <p><u>First intercourse <15 years</u> Among the fathers of babies born to teenage mothers (study group), those with an early</p>	<p>had a difficult socioeconomic background and had their first sexual intercourse before 15 years. This early sexual debut was not only related to sexual risk behaviours but also to other health hazard, such as use of illicit drugs and cigarette smoking.</p> <p>Comments: Author notes that the results of this study relate to a selective sample of fathers from the greater Stockholm area, namely those that were present in the postnatal wards. Approximately 280 births to teenage mothers occurred in Stockholm during the study period, and only 65% (182) of these teenage women who gave births were accompanied by the father of the baby. The 'attending fathers' may, in comparison with 'non-attending fathers', constitute a selected and probably more advantaged group.</p>

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		Unit of analysis: individual	<p>sexual debut were more likely to report:</p> <ul style="list-style-type: none"> • smoking: 1.6 (1.1-2.2) • drug use: 1.9 (1.8-2.0) • coming from single parent household: 1.5 (1.1-2.0) • >10 lifetime partners: 2.5 (1.5-4.1) • first date intercourse >3 times: 2.2 (1.2-4.3) <p>These factors were not associated with early sex in the comparison group.</p>	
129	<p>Ermisch and Francesconi,. 2001, UK</p> <p>Objective: To estimate the relationship between several outcomes in early adulthood (education, inactivity, early birth, distress and smoking) and experiences of life as a single-parent family during childhood. [Only data pertinent to early birth are extracted here]</p> <p>Design: longitudinal</p> <p>Study outcome: Early childbearing</p>	<p>Sample: Sample of young adults from the first five waves of the British Household Panel Survey (1991-1995) who can be matched with at least one sibling (or half-sibling) and who are observed living with their mother when aged 16 or 17 during any of the first five waves. They are linked to their mothers' family history collected in the second wave (1992) as well as to other information about the mother from the mothers' interviews during the panel, and they are followed over the panel years.</p> <p>In another sample young adults need not be matched with a sibling but must live with their mothers for at least one year during the five panel years.</p> <p>Two samples are used in the analysis. The "individual sample" consists of n=764 individuals with full information on outcomes and family background measures. All are aged 16-21 years, mean age 18.4 years. The "sibling sample" consists of n=411 individuals. 92% are aged <25 years, mean age 20.3 years. Analysis of early births is restricted to women.</p> <p>Setting: individuals selected from a representative sample of British households</p>	<p>Multivariate analysis: Controlling for age, year of birth and mother's education, experience of life in a single-parent family during childhood is associated with significantly higher chances of an early birth: 1.8% per annum higher chance (t-ratio=2.25).</p> <p>After controlling for economic circumstances, this association diminishes, though still quite large: 1.2% per annum higher chance than those who did not experience a single-parent family during childhood (t-ratio=1.531).</p> <p>This is confirmed by the estimates from the Sibling Sample. A women who had experienced a family breakdown has a 2.4% per annum higher chance of early childbearing (t-ratio=1.69)</p> <p>A family disruption in early childhood (when the girl is aged 0-5) exhibits a stronger association in both samples than disruption occurring in adolescence (when the girl is aged 11-15), though these age-specific estimates from either sample are not statistically different from each other.</p>	<p>Author's conclusion: Experience of life in a single parent family is usually associated with disadvantageous outcomes for young adults, such as early birth. Family structure in early childhood (when the child was aged 0-5 years) appears to be more important for shaping achievement, behaviour and mental health than does family structure during primary school years or adolescence. Adverse family structure association generally persists even after controlling for the economic circumstances of the family of origin.</p> <p>Comments: Early childbearing is defined as having had a first birth at age 21 or less. Authors note that women who became mothers early are less likely to be living with their parents in the BHPS relative to ONS statistics. This study examines data from the BHPS from 1991-1995. The study by Ermish <i>et al</i> 2004 examines data from the BHPS from 1991-1999.</p>

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		<p>Description and nature of factors:</p> <ul style="list-style-type: none"> • Sociodemographic: age, year of birth • Family: experience of family breakdown, single parent family; mother's education; mother's employment patters (proportion of months worked) during childhood; mother's age at child's birth; economic circumstances of the family (family income, whether parents are homeowners, value of the house if owners, length of time spent at current (parental) address) <p>Follow-up: N/A</p> <p>Drop-out: N/A</p> <p>Unit of analysis: <i>Individual.</i></p>		
127	<p>Ermisch, Francesconi and Pevalin, 2004 UK</p> <p>Objective: to estimate the relationship between several outcomes in early adulthood (education, inactivity, early birth, distress and smoking) and experiences of life as a single-parent family with jobless parent(s) during childhood. [Only data pertinent to early birth are extracted]</p> <p>Design: longitudinal</p> <p>Study outcome: early childbearing</p>	<p>Sample: Sample of young adults from the first nine waves of the British Household Panel Survey (1991-1999). They are linked to their parents' family history collected in the second wave (1992) and to their parents' job history collected in the third wave (1993) and are followed over the nine years of the survey. Additional information about parents is obtained from parents' own interviews.</p> <p>Two samples are used in the analysis. The 'individual sample' consists of 1787 individuals aged 16 years and above living with one or both of their biological or adoptive parents in at least one of the nine waves. Of these, 1183 are matched with at least one sibling (or half-sibling) and constitute the 'sibling sample'. Analysis of early births is restricted to women.</p> <p>Setting: individuals selected from a representative sample of British households</p>	<p>Multivariate analysis: Experience of life with a single-parent family or with jobless parents is associated with higher risks of early birth.</p> <p>The effect of family structure is significantly greater than the effect of parental worklessness.</p> <p>Whether a family disruption in early childhood has more impact than a disruption in adolescence is inconclusive: the effect of early family disruption when girls are aged between 0 and 5 is smaller, though not significantly, than the effect when girls are aged 11-15.</p> <p>The chance of an early birth is highest, if the girl spent some time with workless parents during ages 6-10 years.</p>	<p>Author's conclusion: Experiences of life in a single-parent family and with jobless parents during childhood are usually associated with disadvantageous outcomes for young adults. The effect of family structure is in general significantly greater than the effect of parental worklessness. Most of the unfavourable outcomes are linked to an early family disruption, when the child was aged 0-5 years, whereas the timing of parental joblessness during childhood has more complex effects, with different outcomes being more strongly influenced by parental worklessness at different ages of the child.</p> <p>Comments: The study extends analysis conducted in Ermish and Francesconi 1998. Fertility and cohabitation histories and job histories are based on retrospective information collected in the 1992 and 1993 waves of the BHPS. Relatively few men in the</p>

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		<p>Description and nature of factors:</p> <ul style="list-style-type: none"> • Sociodemographic: age, year of birth • Family: family structure (ever-lived in a non-intact family during childhood); parent joblessness (ever lived with jobless parents during childhood); age of mother at birth; age of father at birth; mother's education; father's education; number of brothers and sisters; whether the individual is the only child; whether the individual is first-born <p>Follow-up: n/a</p> <p>Drop-out: n/a</p> <p>Unit of analysis: individual</p>		sample had become fathers before their 21st birthday
73	<p>Feinstein and Bynner 2004, UK</p> <p>Objective: To examine the extent to which continuities and discontinuities in cognitive performance between ages 5 and 10 predicted adult income, educational success, household worklessness, criminality, teen parenthood, smoking, and depression. [Only data pertaining to teen parenthood are extracted.]</p> <p>Design: Longitudinal study</p> <p>Study outcome: teen motherhood</p>	<p>Sample: Study sample was obtained from the 1970 British Cohort Study (BCS70) that consisted of a nationally representative sample of children born in 1970 with follow-up surveys at ages 5, 10, 16, 26 and 30. Representativeness of the original birth cohort was maintained at the last survey with only slight biases in the currently participating sample toward women and toward the more educated. Study sample is restricted to individuals (of both gender) with recorded cognitive test scores at ages 5 and 10 (n=9132). Males and females are analysed separately, though teen fatherhood is not assessed, as there are too few reported instances in the data.</p> <p>Setting: Great Britain</p> <p>Description and nature of factors:</p>	<p>Bivariate analysis: The age 5 cognitive ability scores were first grouped by quartile and classified as low (bottom quartile), midrange (second and third quartiles) and high (top quartile). Groups of participants were then defined on the basis of their relative development to age 5 and the continuity or discontinuity in cognitive performance between ages 5 and 10. These are: Low-Low (low scores at ages 5 and 10), Escapers (low score at age 5 but improved by age 10), High-High (high scores at ages 5 and 10), and Fallers (high score at age 5 but deteriorated by age 10). The reference group is participants in the second and third quartiles at age 5. Odds ratios were obtained from logistic regressions.</p> <ul style="list-style-type: none"> • Females in the bottom quartile at age 5 have odds of becoming a teenage mother that are 3.2 times as great as the odds for 	<p>Author's conclusion: The analyses demonstrate considerable predictive power for age 5 cognitive scores, indicating the importance of development up to age 5. For teen motherhood, the effect of poor scores at age 5 was not significantly reduced by improvement during middle childhood (ages 5-10). However, children whose scores were high at age 5 but deteriorated by age 10 did not maintain any advantage over midrange children.</p> <p>Comments:</p>

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		<ul style="list-style-type: none"> • Sociodemographic: gender, family's socioeconomic status • Educational: cognitive tests at age 10 (math, language development), cognitive test at age 5 (human figure drawing tests) <p>Follow-up:</p> <p>Drop-out:</p> <p>Unit of analysis: Individual</p>	<p>females in the highest quartile.</p> <ul style="list-style-type: none"> • Cognitive ability at age 5 tends to persist over time. Nevertheless, cognitive ability scores of participants with lower socioeconomic status are more likely to fall and less likely to improve between ages 5 and 10, compared with those with higher socioeconomic status. <p>Multivariate analysis: Controlling for socioeconomic status:</p> <ul style="list-style-type: none"> • Teenage motherhood is more likely among participants in the Low-Low group (OR 2.09) and the Escapers group (OR 1.60) and less likely in the High-High group (OR 0.54), relative to the reference group. The Fallers group (OR 0.93) are similar to the reference group. • Comparing the Escapers group and the Low-Low group, the difference is not statistically significant ($p=0.151$). • The odds for the Fallers group are higher than for the High-High group, though the difference is not statistically significant ($p=0.101$). 	
140	<p>Fitzpatrick, Fitzpatrick and Turner, 1997, IR</p> <p>Objective: To examine the sociodemographic characteristics of teenage mothers attending an adolescent antenatal booking clinic, their attitudes to pregnancy, contraception and other issues relating to their sexual behaviour.</p> <p>Design: cross-sectional/ case series</p> <p>Study outcome:</p> <ul style="list-style-type: none"> • Early sexual initiation 	<p>Sample: A structured computer-coded questionnaire was administered to 120 consecutive teenage mothers (age range 14-19, mean age 17.7 years) attending a public adolescent antenatal clinic.</p> <p>Setting: Antenatal clinic.</p> <p>Description and nature of factors:</p> <ul style="list-style-type: none"> • Sociodemographic: social class, • Educational: age at leaving school <p>Follow-up: none</p>	<p>Bivariate analysis: Chi-square test was used.</p> <p><u>Sex before age 16</u></p> <ul style="list-style-type: none"> • Those from lower social classes (IV-V) more likely than those from higher social classes (II-III) (20/74 vs. 2/46, $p<0.01$) <p><u>Have used contraception 'at some point'</u></p> <ul style="list-style-type: none"> • Those who had sat the (school) Leaving Certificate examination more likely than those who had not ($p<0.05$) • Those from higher social classes (II-III) more likely than those from lower classes (IV-V) ($p<0.05$) 	<p>Author's conclusion: The age of first coitus, fertility awareness and the use of contraception were significantly influenced by social class and education.</p> <p>Comments: Largely a descriptive report. No information regarding sample characteristics or the area where the study clinic is located. No age specific analysis. Respondents under age 16 are not excluded when analysing the relationship with the school leaving age.</p>

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	<ul style="list-style-type: none"> Sexual knowledge, attitude, behaviour 	<p>Drop-out: n/a</p> <p>Unit of analysis: <i>individual</i></p>	<p><u>Knowledge</u> of the time of maximum fertility in the menstrual cycle</p> <ul style="list-style-type: none"> No significant difference by social class Those who had left school after age 16 were more likely to be correct in their knowledge compared with those leaving school under 16 (19/35 vs. 28/85, $p < 0.05$) Knowledge was associated with use of contraception ($p < 0.001$) 	
S07	<p>Grey <i>et al</i>, 1996, Ireland</p> <p>Objective: To explore the relationship between the sexual attitudes questionnaire factors and gender and religiosity.</p> <p>Design: cross-sectional</p> <p>Study outcome: Sexual attitudes</p>	<p>Sample: Two samples: Sample 1 (n=322) and Sample 2 (n=333) were students at University College Cork in 1991-92 (age not specified). 98% reported to be Roman Catholic. Little information about sampling strategy or sample characteristics is provided.</p> <p>Setting: Students from a University in Cork, Ireland</p> <p>Description and nature of factors: A 43-item sexual attitudes questionnaire developed by Hendrick and Hendrick (1987), and a 3-item religiosity scale as used by Swain (1978), were used.</p> <ul style="list-style-type: none"> Background: gender Psychosocial: religiosity (inc. attendance at mass, religious belief) Sexual attitudes (factor scores): 'promiscuity' (e.g. 'Casual sex is acceptable'); 'self-pleasure' (e.g. 'Sex is primarily the taking of pleasure from another person'); 'sex as love' (e.g. 'Sex is usually an intensive, almost overwhelming experience'); 'sexual responsibility' (e.g. 'A man should share responsibility for birth control') 	<p>Bivariate analysis:</p> <ul style="list-style-type: none"> Males endorse promiscuity more than females. Females rate sexual responsibility (birth control) more highly than males. Those who frequently go to mass endorse promiscuity less than those who were infrequent mass attendees. Those who had strong religious belief are less likely to endorse promiscuity. <p>Multivariate analysis: A stepwise regression analysis was conducted regarding promiscuity.</p> <p>Promiscuity was more likely when:</p> <ul style="list-style-type: none"> Male (explaining 17% of the variance) <p>Promiscuity was less likely when:</p> <ul style="list-style-type: none"> Frequent attendance at mass (explaining a further 7%) Strong belief (explaining a further 3%) <p>A logistic regression analysis was performed separately on the sexual responsibility (birth control) factor.</p> <ul style="list-style-type: none"> The odds of being in high agreement with 	<p>Author's conclusion: The results indicate that gender, frequency of church attendance and attitudes to religion, are significantly related to promiscuous attitudes. Of these, gender is the most important predictor. In respect of Sexual Responsibility, females endorse birth control more than do males.</p> <p>Comments: The 'sexual responsibility' factor was analysed separately, as this was not normally distributed. Regression analysis was only carried out on 'promiscuity' (and not the other factors – 'self pleasure' and 'sex as love') as the predictive factors were only entered into the regression model if they were significant at the $p < 0.05$ level.</p> <p>Author notes that the study is valuable on two points. 1) European researchers have had little baseline material to work with as most current data available are from studies carried out in America. 2) Most research deals with one sample drawn from a particular population. A unique characteristic of this research is the use of two samples [but how these were selected is not stated]</p>

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		<p>Follow-up: None</p> <p>Drop-out: N/A</p> <p>Unit of analysis: Individual</p>	sexual responsibility are greater for females than for males.	
164	<p>Häggström-Nordin, Hanson and Tydén, 1995, SW</p> <p>Objective: To investigate sexual behaviour and attitudes toward sexuality among first-year high school students in Sweden in 1999 and to compare the sexual behaviour with that reported from similar studies in 1979 and 1989.</p> <p>Design: cross-sectional</p> <p>Study outcome: sexual attitude and behaviour</p>	<p>Sample: 10% sample of the first-year high school students (age range 15-20, mean age 16.5 years) selected by a clustered random sample design. The attendance in the theoretical classes (college preparatory) and practical classes (vocational-technical) was 88% (241/274) and 76% (167/218), respectively, on the day of the survey. All 408 students attending their classes on the day agreed to take part (61% females, 39% males). 29% of the respondents had at least one parent who was not a native Swede, though only 13% said they consider themselves as an 'immigrant'.</p> <p>Setting: All high schools in two medium-sized cities, Uppsala (university city) and Västerås (industrial city)</p> <p>Description and nature of factors:</p> <ul style="list-style-type: none"> • Sociodemographic: gender • Education: school type (theoretical vs. practical) <p>Follow-up: none/</p> <p>Drop-out: n/a</p> <p>Unit of analysis: individual</p>	<p>Bivariate analysis: Since no significant differences were found between the students in the two cities, the data were combined. 46% (n=189) of the sample reported to have had sexual intercourse.</p> <ul style="list-style-type: none"> • Females more likely than males to talk about sex with their parents • No significant gender difference was found in reported sexual activity (e.g. ever intercourse, steady relationship, contraceptive use at first sex, ever STD, alcohol use at first intercourse, daily cigarette use, AIDS debate has influenced my own attitude about sex, AIDS debate has influenced others attitudes' about sex) • The median number of sexual partners was greater among 'immigrant' students than 'native' Swedish students (3.0 vs. 2.0, p=0.007) • Those who had been drinking alcohol at their first intercourse were less likely to use contraceptives compared with those who had not (55% vs. 83%, p = 0.001) • Although males had higher 'self-confidence' scores than females (p<0.001), no significant differences were observed between the degree of self-confidence and having had sexual intercourse, smoking or alcohol use. <p>Compared with respondents attending 'theoretical' programme, <u>those attending</u></p>	<p>Author's conclusion: Contraceptive use at coitarche has increased and alcohol use decreased over the 20-year-period. The tendency noted 10 years ago that students attending practical programs put themselves at more health risk than students in theoretical programs continues.</p> <p>Comments: Little information available on socioeconomic variables. Authors note that the survey does not include school dropouts, who are reported to be at higher risk of getting sexual health problems.</p>

Ref ID	Study detail	Characteristics of study, factors and methodology	Results	Comments and implications
			<p>'practical' programme were:</p> <ul style="list-style-type: none"> • more likely to report previous intercourse (60% vs. 37%, $p<0.001$; among females, 65% vs. 35%, $p<0.0001$). • less likely to use contraceptive at first intercourse (64% vs. 80%, $p<0.001$) • more likely to smoke daily (24% vs. 7%, $p<0.001$) • less likely to think that sex education at school was sufficient (55% vs. 68%, $p<0.005$) <p><u>Compared with 1979 (Weiner et al. 1979) and 1989 (Klanger et al. 1989) surveys, in 1999:</u></p> <ul style="list-style-type: none"> • The age of first intercourse remained largely unchanged: median age, 15 years in 1979, 15.5 years in 1989 and 15 years in 1999. • Contraceptive use at first intercourse increased • Alcohol use at first intercourse decreased 	
168	<p>Harden and Ogden, 1999, UK</p> <p>Objective: To examine young men and women's use of, and beliefs about, contraceptive services.</p> <p>Design: cross-sectional</p> <p>Study outcome: use and beliefs about services</p>	<p>Sample: 58 educational institutions were selected from the South Thames area using the Educational Authorities Directory. All sixth form colleges and all further education colleges in the area were included, while sixth forms in schools were randomly selected. Of these 22 institutions agreed to take part. Inner-city sixth forms in schools and colleges were less likely to respond, as were church affiliated schools. 1540 questionnaires were distributed, of which 967 were completed (response rate 67.5%). Ages ranged from 16 to 19.</p> <p>Setting: Educational Authorities in the South Thames area, England</p> <p>Description and nature of factors:</p>	<p>Bivariate analysis: All respondents were asked to rate their beliefs about General Practices (GPs), family planning clinics (FPCs), specialist services for young people, chemists and condom machines, in terms of ease of use, comfort in use and confidentiality of use. Questions regarding whether they had used these services were only asked of respondents who had experienced sexual intercourse only. Two-way ANOVA was used to examine differences by gender and heterosexual experience.</p> <p><u>Beliefs about contraceptive services (all respondents)</u></p> <ul style="list-style-type: none"> • Females were more likely to feel clinic-based services (e.g. GPs and FPCs) were easy to use, comfortable to use and 	<p>Author's conclusion: The results showed variability in both service use and beliefs about services which related to the respondent's sexual experience and gender.</p> <p>Comments: Authors note that, while sexually non-active respondents were found to have negative views about services, it is possible that past experience of contraceptive service results in more positive attitudes.</p>

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		<ul style="list-style-type: none"> Sociodemographic: gender, whether sexually active <p>Follow-up: none</p> <p>Drop-out: n/a</p> <p>Unit of analysis: individual</p>	<p>confidential, compared with males. Specialist services were also perceived to be more comfortable to use and confidential by more females than males.</p> <ul style="list-style-type: none"> Males were more likely to feel condom machines were easy to use, and also feel condom machines and chemists were both comfortable to use and confidential, compared with females. However, condom machines and chemists were rated as the least confidential among both males and females. 'Non-virgins' were generally more likely to have positive beliefs about all services, compared with 'virgins'. There was no significant interaction between gender and heterosexual experience for any of the beliefs. <p><u>Service use (sexually active respondents only)</u></p> <ul style="list-style-type: none"> More females than males had used GPs or FPCs ($p < 0.001$) More males than females had used condom machines ($p < 0.001$) Overall, 87% ($n=465$) of the respondents reporting previous intercourse had used one or more services to obtain contraception. 	
178	<p>Hippisley-Cox, Allen, Pringle, Ebdon, McPhearson, Churchill and Bradley, 2000, UK (England)</p> <p>Objective: To examine variations in teenage pregnancy rates in Trent region and to determine possible associations with local general practice characteristics such as the age and sex of the doctors.</p>	<p>Sample: All teenage (age 13-19) pregnancies (terminations and deliveries) resulting in admission to NHS hospitals between 1994 and 1997 in Trent region between 1994 and 1997. Teenage pregnancy rates were calculated on the basis of all teenagers registered with the practice. Miscarriages were excluded as the data were incomplete. During the study period there were 19,805 pregnancies of which 94.4% could be allocated to a general practice in Trent.</p>	<p>Bivariate analysis: Lower teenage pregnancy rates were associated with a general practice with more nurse time, presence of female or young (<36 years old) doctors and rural practices. Higher teenage pregnancy rates were associated with a general practice with more deprived areas and fundholding status.</p> <p>Multivariate analysis: All variables that reached 0.10 significance on univariate analysis were entered to the multivariate</p>	<p>Author's conclusion: General practices with female doctors, young doctors, or more nurse time had lower teenage pregnancy rates.</p> <p>Comments: Authors note: (1) Cross-sectional, no conclusions drawn about causes.</p> <p>(2) Pregnancies terminated in the private and charity sectors were not included. Results may also have been confounded by the</p>

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	<p>Design: Cross-sectional survey</p> <p>Study outcome: Pregnancy</p>	<p>Setting: All 826 general practices in Trent region, of which 627 (75%) were wholly, predominantly or mainly urban according to Carstairs' categories. The study practices had similar characteristics to other practices in England and Wales, e.g. in terms of the presence of a female doctor.</p> <p>Description and nature of factors:</p> <ul style="list-style-type: none"> • Sociodemographic: Deprivation (Townsend score) and rurality (Carstairs score) • Barriers and facilitating conditions: fundholding status; vocational training status (training or non-training practice); number, age, gender and whole time equivalent of doctors; nurse time (as measured by number of whole time equivalent practice nurses), total list size; distance between each general practice and the nearest family planning clinic (based on postcode) <p>Follow-up: None</p> <p>Drop-out: 5.6% could not be traced to a particular surgery</p> <p>Unit of analysis: GP surgery</p>	<p>Poisson regression analysis. After adjusting for Townsend score, fundholding status, partnership size, list size per whole time equivalent, rurality and general practice training status, pregnancy rates were lower in general practices:</p> <p>with at least one female doctor: OR = 0.94 (0.90-0.99)</p> <p>with at least one young doctor: OR = 0.83 (0.79-0.87)</p> <p>with more nurse time: OR = 0.95 (0.93-0.97)</p> <p>far from family planning clinic (believed to be due to the effect of rurality): OR 0.98 (0.97-0.99)</p> <p>Deprivation and fundholding status remained significantly associated with higher pregnancy rates (Ors not reported).</p>	<p>provision and uptake of school based contraceptive services.</p> <p>(3) Teenagers with repeat pregnancies could not be identified in the study period.</p> <p>NB. One rapid response posted to this article (by M Bland) argues that reported odd ratios are close to one so, 'although these factors may have a relation to teenage pregnancy, it does not seem to be an important one'.</p>
180	<p>Holmberg & Berg-Kelly, 2002, Sweden.</p> <p>Objective: To determine whether there are differences regarding well-being, health habits and health-compromising behaviour between Swedish young men who had never had sexual intercourse (group 1), those who were sexually active but without a pregnancy</p>	<p>Sample: Male students (18year olds) who answered the questionnaire in 1994 (n = 563) and 1998 (n = 612) were included in this study. The response rates were 88% and 81% respectively.</p> <p>Setting: One community in a medium sized Swedish city of 110,000 inhabitants.</p>	<p>Bivariate analysis: The 1994 and 1998 data were combined and were then divided into three groups: boys who had never had sexual intercourse (group I, n = 527), those who had had sexual intercourse but were not aware of any pregnancies (group II, n = 607) and boys who had been involved in pregnancies (group III, n = 41). χ^2 tests were used to test significance for differences between groups.</p>	<p>Author's conclusion: Differences were found in health, health behaviour and risk-taking behaviour between the three groups of young men, with an apparent tendency towards riskier lifestyles from group I, through group II, to group III. Two striking findings were the more frequent use of anabolic steroids and the reported high rate of sexual offences in group III compared with groups I and II.</p>

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	<p>record (group 2), and those who had caused pregnancies (groups 3).</p> <p>Design: cross-sectional survey</p> <p>Study outcome: Pregnancy and early sexual initiation</p>	<p>Description and nature of factors: A self-report questionnaire ('Q90', previously used by Berg-Kelly 1995) was completed by male students in class.</p> <ul style="list-style-type: none"> • Background: early physical development, older social age, rented housing • Family: living at home with parents, speaking only Swedish at home, worrying about parent • Educational: feeling successful, bullied • Psychosocial: feeling healthy, considered suicide, accident or injuries, eat healthily, exercise, use seatbelt, smoking, alcohol, drugs, fighting • Sexual knowledge, attitudes behaviour: use of contraception, number of partners, STIs <p>Follow-up: None</p> <p>Drop-out: N/A</p> <p>Unit of analysis: Individual</p>	<p>By comparing groups 2 and 3, <u>pregnancy</u> is:</p> <p>More likely:</p> <ul style="list-style-type: none"> • Early physical development • Social age >2y above true age • Have considered committing suicide • Have been in fight during last 2 years • Smoke daily • Ever used anabolic steroids • Have had more than 2 sexual partners • Always use contraceptives • Did not use contraceptives last intercourse • Have been victim to sexual offences • Have had a sexually transmitted disease <p>Less likely:</p> <ul style="list-style-type: none"> • Speak only Swedish at home • Live at home with parents • Have breakfast every day • Always use a seatbelt <p>By comparing groups 1 and 2, <u>early sexual intercourse</u> is:</p> <p>More likely:</p> <ul style="list-style-type: none"> • Social age >2y above true age • Family living in rented apartment • Been hospitalised or injured during last 2y • With unhealthy behaviour (fighting, smoking, alcohol, drugs, truancy) <p>Less likely:</p> <ul style="list-style-type: none"> • Living at home with parents • Feeling successful at school • If ever been bullied • Have breakfast every day • Always use a seatbelt 	<p>Comments: Results are derived from only one community and therefore may not be generalisable to other areas.</p>

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181	<p>Hooke, Capewell and Whyte, 2000, UK</p> <p>Objective: To investigate attitudes of 14-15 year olds towards unintended pregnancies and more generally early sex.</p> <p>Design: cross-sectional</p> <p>Study outcome: attitude to early sex and pregnancy</p>	<p>Sample: 129 pupils (age 14-15 years) from two local secondary schools in Ayrshire. The response rate was 98% (n=126).</p> <p>Setting: Secondary schools in Ayrshire</p> <p>Description and nature of factors:</p> <ul style="list-style-type: none"> • Sociodemographic: gender <p>Follow-up: none</p> <p>Drop-out: n/a</p> <p>Unit of analysis: <i>individual</i></p>	<p>Bivariate analysis: A vignette and an open-ended questionnaire with 10 items were used. Six of these questions were directly related to the vignette. The content of all answers was analysed and categorised. For all points raised by 10% or more of the whole sample, categorised responses were analysed for differences between genders using chi-square tests. Significant gender differences found are as follows.</p> <p>Girls more likely:</p> <ul style="list-style-type: none"> • To advocate boys should be involved in contraceptive protection and share responsibility (73% vs. 46%) • To show awareness of the negative consequences of early motherhood on the life of a teenage girl (e.g. restricted education/career, and upheaval/hardship), although boys and girls agreed that teenage fathers would be expected to experience fewer restrictions than mothers. • To say image/reputation (to impress/look 'cool'), or feeling of being grown up/ready for sex, are the reasons why young people have sex • To uphold the virtue of commitment in sexual relationship (54% vs. 27%) <p>Boys more likely:</p> <ul style="list-style-type: none"> • To see nothing wrong with casual sex (21% vs. 5%,). <p>Details regarding the responses to the vignette are not extracted. However, author implies that, overall, boys do seem to possess a considerable sense of responsibility on sexual issues, although this is not as well developed as that for girls.</p>	<p>Author's conclusion: Sex education programmes should explore these gender-related issues.</p> <p>Comments: No information regarding school or sample characteristics is provided.</p>

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210	<p>Kiernan, KE. 1997, UK</p> <p>Objective: To investigate the social, economic and educational backgrounds of young parents, using longitudinal data from the National Child Development study.</p> <p>Design: Longitudinal study</p> <p>Study outcome: childbearing (motherhood and fatherhood)</p>	<p>Sample: Study sample was obtained from the British National Child Development Study (NCDS), originated as a perinatal mortality study. The original cohort includes 17,414 children. It represents a British cohort born in 1958 and followed up from birth through their school years at ages 7, 11 and 16 years and was traced and interviewed at 23 years and 33 years. Between 10-30% of the sample were lost at each follow-up.</p> <p>Full union and pregnancy histories were collected for the first time at the 33-year-old wave. Respondents to this survey provide the basis for the initial sample included in this study.</p> <p>Setting: Data collected for the British National Child Development Study.</p> <p>Description and nature of factors:</p> <ul style="list-style-type: none"> • Sociodemographic: Social class at age 7; financial circumstances at ages 7 and 16 (as assessed by Health Visitor or parent's self-report). • Educational: Educational attainment at ages 7 and 16; age left school; qualifications. • Family: Having a teenage mother. • Psychosocial: behavioural/emotional problems at ages 7 and 16 • Sexual attitudes and behaviour (asked at age 16): about marriage, having children, partnership, planned or unplanned conception. <p>Follow-up: The children were followed up through their school years at ages 7 11 and 16 years and were traced and interviewed at 23 years and 33 years.</p>	<p>Bivariate analysis: Young mothers and fathers are compared with their peers who delay childbearing until later.</p> <p>Sociodemographic: Young parenthood more likely when: their mother had a teenage birth, from lower social class, family experienced financial problems. (P=0.000).</p> <p>Educational: Young parenthood more likely when: left school at minimum age, no qualifications, poor educational attainment. (P=0.000).</p> <p>Sexual attitudes and behaviour: Young parenthood more likely when: more behavioural problems, prefer to marry and have children at younger age. (p=0.000). 26% had planned to have their first child when they did. 25% of women who did not plan child were using contraception.</p> <p>Association with partnership context was not statistically significant.</p> <p>Multivariate analysis: Logistic regression analysis was performed, controlling for whether mother had teenage first birth, social class at age 7, educational attainment scores, emotional and financial well-being and attitude to early childbearing.</p> <p>More likely to be teenage mother when:</p> <ul style="list-style-type: none"> • Own mother was teenage mother (OR=1.6) • Financial difficulties at both ages 7 and 16(OR=2.8) • More behavioural problems at both ages 7 and 16 (OR=2.6) • Low educational attainment at age 16 (OR=6.7) 	<p>Author's conclusion: Young mothers and fathers are more likely to come from economically disadvantaged families and to have lower educational attainment. Teenage mothers are more likely to have mothers who had a child in her teens and were more likely to exhibited higher levels of emotional problems particularly in adolescence. Young women whose educational attainment score deteriorated over time had particularly high probability of becoming young mothers.</p> <p>Comments: Young parents are defined as women who had a child before their 20th birthday and men who became fathers before their 22nd birthday. Author notes that teenage fertility rates have declined dramatically since the 1960s and have remained fairly steady since the 1980s. Youthful childbearing may not be increasing but paradoxically early parenthood has intensified as a social problem. No information regarding possible cases of birth/parenthood before age 16 in the dataset is provided.</p>

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		<p>Drop-out: Between 10-30% at each follow-up</p> <p>Unit of analysis: <i>Individual</i></p>	<ul style="list-style-type: none"> Wanted a child (OR=2.2) <p>More likely to be a young father when:</p> <ul style="list-style-type: none"> Lower social class (OR=1.8) Low educational attainment at age 16 (OR=3.7) Wanted a child (OR=1.6) <p>More likely to be a young parent (mother and father) when:</p> <ul style="list-style-type: none"> Low educational scores at age 7 and 16 (OR=4.3 females, 1.8 males) Deterioration of educational score from age 7 to age 16 (OR=6.8 females, 1.7 males) <p>Further analysis shows that education attainment is the most important factor for women, distinguishing young mothers and older mothers. The chances of becoming a teenage mother are higher for women with lower education score (11-56%) compared with those with higher education score (3-6%).</p>	
220	<p>Kosunen and Laippala, 1996, Finland</p> <p>Objective: To identify factors which are related to use of oral contraceptives at an early age.</p> <p>Design: 2x cross-sections (1988 and 1992)</p> <p>Study outcome: oral contraceptive use</p>	<p>Sample: Sexually experienced 9th grade female students (15-16 year olds) in selected areas who had answered a self-administered questionnaire either in 1988 (n = 189) or 1992 (n = 200). The study areas in Finland were chosen to clearly bring out any known regional variations and included Helsinki, the capital of the country, and a rural area from the most religious part of the country, as well as further rural areas and one small town in southern Finland. Data were collected as part of the KISS study (Kontula et al. 1992).</p> <p>Setting: southern and western Finland</p> <p>Description and nature of factors: As grouped by the authors.</p>	<p>Multivariate analysis: Logistic regression analysis was used to compare oral contraceptive users and non-users. All variables that emerged as significant ($p < 0.10$) were entered in the final model together with all the variables related to 'sexual and contraceptive experiences' above. The following variables were significant in the final model (odds ratios).</p> <p>Oral contraceptive use more likely:</p> <ul style="list-style-type: none"> 10 or more coital experiences (vs. once): 6.30 (2.01-19.7) Perceived parental acceptance of sexual relationship (vs. non-acceptance): 4.00 (2.05-7.78) 	<p>Author's conclusion: The model emphasises permissive attitudes towards adolescent sex life in predicting the choice of effective contraception, both among parents and oral contraceptive users themselves.</p> <p>Comments: Little information regarding socioeconomic status and also accessibility to services, consistency of oral contraceptive use, or condom use. Authors note that the relationship between contraceptive use and the frequency of intercourse works in both directions: positive experiences of a contraceptive method leads to continuation of use and to an increasing frequency of intercourse. Significance of parental attitudes may be greater among younger adolescents,</p>

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		<ul style="list-style-type: none"> • Background: age at menarche; the year of study • Sociodemographic: family structure; planning for future school career; • Hobbies and family: respondent's assumptions about whether her parents would accept her sexual relationship if they knew about it; parental control of coming home in the evening; frequency of going to a disco and/or dancing; • Peers and leisure time: sex of friends with whom the girl spends most of her leisure time; drug use; frequency of meeting peers outside home during leisure time; number of peers who have had sexual intercourse; • Sexual knowledge: having discussed contraception with peers; knowing at which point of the menstrual cycle it is easiest for a woman to get pregnant; knowing that a single drop of semen can make a girl pregnant; • Sexual attitude: the importance of sex in life; attitude to casual sexual relationships; the importance of new experiences; attitude to sex roles in taking the initiative in sexual relationships; • Sexual fears: the fear of getting pregnant; the fear of not finding a sexual partner; the fear that sexual intercourse hurts; • Sexual and contraceptive experiences: total number of coital experiences; age at first kiss; number of times that the girl has fallen in love; age at first intercourse; having a steady dating partner at the moment; age at first petting with clothes on. <p>Follow-up: n/a</p> <p>Drop-out: n/a</p>	<ul style="list-style-type: none"> • Sex very important (=1): 'important' = 0.26 (0.12-0.59), 'not important' = 0.31 (0.13-0.76) • Having a steady partner: 2.06 (1.06-4.39) • Less afraid of getting pregnant (=1): 'often' fear of getting pregnant = 0.15 (0.06-0.38) • Age at menarche 11 or less (=1): '14 or more' = 0.21 (0.06-0.69) 	such as in this study.

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		Unit of analysis: <i>individual</i>		
219	<p>Kosunen <i>et al</i>, 2003, Finland</p> <p>Objective: To study the associations of early sexual activity and self reported depression.</p> <p>Design: cross-sectional survey</p> <p>Study outcome: Sexual behaviour</p>	<p>Sample: Data was obtained from the School Health Promotion Study, an anonymous classroom survey conducted annually since 1995. The data for this study were obtained from the surveys in 1999 (western Finland) and 2000 (eastern Finland). N=47,952 responses from 8th grade and N=47,214 from 9th grade (mean age 15.5 years). Of these pupils n=11,793 girls and n=10,443 boys were included as they reported having ≥ 1 sexual intercourse, mean age 15.5y.</p> <p>64% of respondents lived with both parents and 61% reported stable parental employment. 28% said their parents had academic qualifications.</p> <p>Setting: Secondary schools in Finland</p> <p>Description and nature of factors:</p> <ul style="list-style-type: none"> • Background: age, gender, onset of menstruation/ejaculations • Psychosocial: self reported depression (Beck Depression Inventory) • Sexual behaviour: frequency of intercourse, number of sexual partners, use of contraception <p>Follow-up: none</p> <p>Drop-out: N/A</p> <p>Unit of analysis: <i>Individual</i></p>	<p>Bivariate analysis: The proportion of girls having had at least 10 coital experiences was 45% (of girls having experienced at least one sexual intercourse). The figure was 37% for boys. Among girls and boys, self-reported depression was associated with:</p> <ul style="list-style-type: none"> • the number of reported sexual partners ($p < 0.0001$) • non-use of contraception at most recent intercourse ($p < 0.0001$) <p>Among boys, self-reported depression also increased in line with the number of reported coital experience ($p < 0.0001$), but no such association was found among girls.</p> <p>Multivariate analysis: Forward stepwise logistic regression was performed, using self-reported depression as the dependent variable.</p> <p>Controlling for age and age at menarche oigarche only did not change the above associations.</p> <p>Further controlling for all the sexual behaviour variables in the model, <u>girls were more likely</u> to report depression when:</p> <ul style="list-style-type: none"> • Have Multiple sexual partners (vs. 1 partner): 2 partners (OR=1.3); 3-4 partners (OR=1.7); ≥ 5 partners (OR=2.7) • Not use contraception at most recent intercourse (OR=1.7) <p><u>Girls less likely</u> to report depression if they had had ≥ 5 sexual intercourse (vs. once): 5-9 coital experiences (OR=0.7); ≥ 10 coital experiences (OR=0.7)</p>	<p>Author's conclusion: Multiple sexual partners and non-use of contraception may reflect a depressive disorder in both genders. The sexual health of depressed adolescents warrants special attention.</p> <p>Comments: Little information is available on socioeconomic variables.</p>

Ref ID	Study detail	Characteristics of study, factors and methodology	Results	Comments and implications
			<p><u>Boys more likely</u> to report depression when:</p> <ul style="list-style-type: none"> Have multiple sexual partners (vs. 1 partner): 2 partners (OR=1.2); 3-4 sexual partners (OR=1.5); ≥5 sexual partners (OR=2.5) Not use contraception at most recent intercourse (OR=2.1) 	
223	<p>Kosunen, Rimpelä and Rimpelä, 1995, Finland</p> <p>Objective: To investigate the differences in use of oral contraceptives among 16 year old girls according to socio-economic and regional subgroups between 1981 and 1993.</p> <p>Design: cross-sectional survey</p> <p>Study outcome: oral contraceptive use</p>	<p>Sample: Data was obtained from the Adolescent Health and Lifestyle (biannual) Survey since 1981. A national sample of 14, 16 and 18 year olds were sent a questionnaire. This study focuses on the 16 year old girls. The data from the biannual surveys from 1981 to 1993 were used. The size of the sample for each survey ranged from n=462 to n=1594.</p> <p>Setting: Throughout Finland</p> <p>Description and nature of factors: A 12-page self-administered questionnaire was mailed.</p> <ul style="list-style-type: none"> Background (region, urbanisation level) Family (father's education and occupation, Educational (type of school) <p>Follow-up: N/A</p> <p>Drop-out: N/A</p> <p>Unit of analysis: Individual</p>	<p>Multivariate analysis: Logistic regression adjusted for the time of the survey was performed. Significant associations were found for the following variables. Overall, Oral contraceptive use is more common among girls from families with a lower socioeconomic status and with a lower educational level.</p> <p>Father's occupation (vs. upper white collar):</p> <ul style="list-style-type: none"> Lower white collar (OR=1.56) Worker (OR=1.62) <p>Father's education (vs. low)</p> <ul style="list-style-type: none"> Middle (10-11y of schooling) (OR=0.85) High (≥12y of schooling) (OR=0.64) <p>School type (vs. upper secondary):</p> <ul style="list-style-type: none"> Vocational school (OR=2.14) Not attending school (OR=2.91) <p>Urbanisation (vs. city/large town):</p> <ul style="list-style-type: none"> Live in rural area (OR=0.78) Live in central region (OR=0.87, ns) Live in northern region (OR=0.85, ns) 	<p>Author's conclusion: Oral contraceptives (OC) use was most common in the lower socioeconomic subgroups, in which the experience of sexual intercourse is most frequent (according to earlier studies). Despite earlier reports that the prevalence of teenage pregnancies and abortions are higher in the less developed northern and eastern parts of the country, OC use was similar in different parts of the country.</p> <p>Comments: The results might be peculiar to Finland.</p>
247	<p>Magnusson, 2001, Sweden</p> <p>Objective: To describe changes in adolescent girls' sexual attitudes and relationships with boys between 1970</p>	<p>Sample: Participants were from two cohorts: all eighth grade girls (age 15) in a mid-Swedish community who answered a questionnaire in 1970 and in 1996. Response rates were 88% (n=522) and 92% (n=567)</p>	<p>Bivariate analysis: Spearman correlation coefficients for ranked data was used. In 1996 those who were sexually active were more likely to have the following characteristics:</p>	<p>Author's conclusion: This study shows that perceptual, bodily and behavioural maturation are positively related to each other. The girls with early onset of intercourse matured early both in 1970 and i 1996. They felt sexually</p>

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	<p>and 1996, particularly girls who had early onset of sexual intercourse.</p> <p>Design: cross-sectional</p> <p>Study outcome: early sexual initiation</p>	<p>respectively.</p> <p>Setting: Schools in a mid-Swedish community, Örebro</p> <p>Description and nature of factors: A self-administered questionnaire called The Adjustment Screening Test (Magnusson 1975) was used in both rounds, including following composite measures:</p> <ul style="list-style-type: none"> Family: parents' marital status, parent-child relations, affective relationships with mothers and fathers, Educational: relationships with teachers, school motivation Psychosocial: peer relationships, self-image, want to be older, satisfaction with gender role (e.g. 'Boys are better off than girls'), psychosomatic problems (e.g. headache, wake up at night), depression, want to talk to an outsider for help, problem behaviour (e.g. smoking, drinking, shoplifting), unorganised free time activity (e.g. loitering in town), Sexual attitudes and behaviour: thoughts about sexuality, opposite-sex relations, sexual activity, <p>Follow-up: n/a</p> <p>Drop-out: n/a</p> <p>Unit of analysis: individual</p>	<ul style="list-style-type: none"> a steady boyfriend, feel popular with boys, have first date sex feel more mature than their peers. less likely to think of sex as something frightening or unpleasant. divorced parents, poor relationships with parents (esp. mothers) and teachers, psychosomatic problems problem behaviour. early menarche (age 11 or younger), feel depressed less satisfied with gender roles want to be older. <p>The variables associated with being sexually active were similar in magnitude between 1970 and 1996. Compared with respondents in 1970, fewer respondents in 1996 reported having had sexual intercourse.</p>	<p>more experienced than their age-mates, and they also aspired to be older.</p> <p>Comments: Limited information on family backgrounds</p>
S11	<p>Manlove, J. 1997, UK</p> <p>Objective: To explore if daughters of teen mothers have different fertility patterns than other teens and whether they are more likely to become teen</p>	<p>Sample: Study sample was obtained from the British National Child Development Study (NCDS) that consisted of a cohort of 17,733 children born in 1958.</p> <p>The NCDS was conducted by the National</p>	<p>Bivariate analysis: Compared with daughters of older mothers, daughters of teen mothers were:</p> <ul style="list-style-type: none"> more likely to become teen mothers themselves (20% vs. 8%) ($p < 0.001$) 	<p>Author's conclusion: Even after controlling for family, school, and individual factors, daughters of teen mothers were more likely to have a birth in their teens and into their early 20s. Although the study provides evidence of some mechanisms that contribute to</p>

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	<p>mothers themselves. To examine intervening mechanisms to help explain how early motherhood may be reproduced across generations.</p> <p>Design: Cohort study</p> <p>Study outcome: early childbearing (motherhood)</p>	<p>Children's bureau and originated as the Perinatal Mortality Survey. It is a nationally representative sample of a British cohort of 17,733 children born in 1958. The NCDS continued with follow-ups in 1965 (when the respondents were age 7), in 1969 (age 11), 1974 (age 16), and 1981 (age 23). Data were collected from parents, teachers, schools, health interviews, and the children themselves. At the age 23 follow-up in 1981, information was available for 12,121 people (68% of the original cohort). Up to age 20, diagnostics for sample bias showed a slight underreporting of disadvantaged respondents. However, these effects increased in 1981 when respondents showed more middle-class backgrounds, higher levels of school attainment, and smaller family sizes (author's description, p. 267).</p> <p>Study sample was restricted to 2,183 firstborn daughters with information available on their mothers' timing of birth and the daughters' educational and fertility experiences until age 23. Those who were excluded due to missing data tended to be more disadvantaged, and those excluded due to higher parity were more likely to have a teen birth. None of the sample members gave birth before the survey at age 16.</p> <p>Setting: Individuals selected from the British National Child Development Study.</p> <p>Description and nature of factors: As grouped by the author (selected factors only).</p> <ul style="list-style-type: none"> • Being a daughter of a teen mother • Family characteristics and home environment: parent's social class; mother's education at birth; mother's marital status at birth; living with both 	<ul style="list-style-type: none"> • more likely to have a birth in their early 20s (30% vs. 19%) ($p < 0.001$). <p>Multivariate analysis: Proportional hazards models were created. Independent variables were entered into 5 models, to predict the transition to a first birth. The first model includes only the timing of maternal first birth. The second model includes family characteristics and home environments. The third model includes age at menarche, the fourth model adds school performance and environment and the fifth model includes attitudes towards schooling and early parenting. The following factors are significant in the final model.</p> <ul style="list-style-type: none"> • Daughters of teen mothers are 61% more likely to have a first birth in their teens or early 20s (henceforth referred to as 'early birth'). <p>Family environment</p> <ul style="list-style-type: none"> • Daughters living in a large family are 17% more likely to have an early birth. • Higher social class at birth and living with both biological parents are associated with a reduced likelihood (0.89 and 0.76 times the risk respectively). • Low maternal interest in a daughter's education is associated with a higher risk (1.26 times the risk) of early birth <p>Early menarche</p> <ul style="list-style-type: none"> • Daughters with a late menarche have a lower risk (0.62 times the risk) of early birth, although the menarche variables do not reduce the overall effect of being a daughter of a teen mother. <p>Education</p> <ul style="list-style-type: none"> • Students whose teachers said they showed academic potential at age 16 	<p>intergenerational patterns of teen motherhood, better measures of characteristics may help explain the greater likelihood of having a teen birth.</p> <p>Comments: The results of this study should be understood within the context of a 1958 birth cohort study who experienced their teenage years in the 1970s.</p> <p>Author notes that most daughters of teen mothers (80%) did not have a teen birth (p. 274).</p>

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		<p>biological parents; number of siblings, maternal work status; daughter receiving free school meals; living in council (i.e. subsidised) housing; mother rated (by teacher) as showing little or no interest in their daughter's educational performance (at age 7)</p> <ul style="list-style-type: none"> • Age at menarche (of daughter) • School performance and environment: teacher evaluation of behaviour problem; math and reading tests; teacher rating of math, reading and oral ability, teacher rating of student showing high academic potential; type of secondary school; exams passed by age 16, left full-time school at age 16 • Attitudes at age 16: whether early ideal age to parent was before 21; attitudes towards school (e.g. 'school is largely a waste of time', 'I don't like school') <p>Follow-up: The NCDS sample was followed up in 1965 when respondents were aged 7 years, in 1969 (age 11 years), 1974 (age 16 years), and 1981 (age 23 years)</p> <p>Drop-out: At the 1981 follow up (age 23 years) information was available for 12,121 people (68% of the original cohort and 77% of the original cohort who had not died or emigrated).</p> <p>Unit of analysis: Individual.</p>	<p>years have only 0.65 times the risk of early birth (and this is even after controlling for their school performance).</p> <ul style="list-style-type: none"> • Daughters who pass higher levels of exams at age 16 years have a lower risk (0.72) of early birth. • Leaving full-time schooling at age 16 years is associated with twice the risk of early birth. <p>Attitude</p> <ul style="list-style-type: none"> • Daughters who reported they wanted to have a child in their teens or early 20s are 1.56 times as likely to have an early birth as other teens. • The effect of positive school attitudes is not significant. 	
254	<p>Maughan and Lindelow, 1997, UK</p> <p>Objective: To explore some of the implications of secular changes, specifically teenage motherhood) in social and demographic correlates of psychiatric disorder. [This table</p>	<p>Sample/Data: Two British birth cohort studies: 1946 National survey of health and development (NSHD) and the 1958 National child development study (NCDS). Miscarriages or abortions are not included.</p> <p>From NSHD all legitimate, single births to</p>	<p>Bivariate analysis: The five risk factors examined are: manual social class, low childhood ability, adolescent antisocial behaviour, adolescent emotional problems, no school-leaving qualifications. All factors were associated with increased risk of teenage motherhood, except adolescent emotional</p>	<p>Author's conclusion: Teenage motherhood was strongly associated with both social and educational disadvantage. Taking account of other childhood risks, antisocial behaviour in the mid-teens was a more powerful predictor of teenage motherhood in the more recent cohort than the earlier one. As rates of</p>

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	<p>reports on data on precursors of teenage motherhood only.]</p> <p>Design: Longitudinal</p> <p>Study outcome: Teenage motherhood</p>	<p>mothers from non-manual and agricultural backgrounds, and one quarter of children born to mothers from working-class backgrounds were selected for inclusion in the study (stratified sampling). The original cohort included 5362 men and women born in England, Scotland and Wales during the first week of March, 1946. The data used for analysis were obtained when subjects were aged 36.</p> <p>From the NCDS all cohort was selected to participate except multiple births and illegitimately born children. The original cohort included all children (around 17,000) in Britain born in the first week of March 1956, with follow ups at ages 7, 11, 16, 23 and 33. Any cases with missing data on any of the variables with interest in the study were excluded. Complete data were available for 69% of mothers in the 1946 cohort (n=1004) and 59% (n=2539) in the 1958 study.</p> <p>Setting:</p> <p>Description and nature of factors:</p> <ul style="list-style-type: none"> • Sociodemographic: Family social class in childhood. • Educational: Childhood academic ability from tests age 15 in NSHD and 11 in NCDS; school leaving qualifications • Psychosocial: Teacher-rated adolescent emotional or behavioural problems including antisocial behaviours (interpersonal aggression, disruptiveness, truancy) and emotions (sadness anxiety and social isolation from peers) <p>Follow-up:</p>	<p>problems. The antisocial ratings were the only indicators to show significant differences between the cohorts.</p> <p>Multivariate analysis: Multiple logistic regression analyses were performed, with the above five risk factors, and an indicator for cohort (1946 or 1958). The findings confirmed the pattern suggested in the bivariate analyses.</p> <p>More likely to experience teenage motherhood:</p> <ul style="list-style-type: none"> • Manual family class in childhood: OR = 1.75 (1.23-2.49) • Low childhood academic ability: 1.34 (1.02-2.49) • Lack of school leaving qualifications: 3.16 (2.31-4.32) • Antisocial behaviour in adolescence: 1.97 (1.44-2.70) <p>Antisocial behaviour was a more powerful predictor of teenage motherhood in the more recent cohort (1956) than the earlier one (1946).</p>	<p>teenage motherhood declined in the early 1970s, so the girls at risk of early parenthood were increasingly drawn from groups showing problem behaviour, as well as educational and social disadvantage.</p> <p>Comments: Requirements for complete data on a wide range of measures, drawn from different sweeps, inevitably led to reductions in the numbers available for the analyses.</p>

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		<p>Drop-out: 70-90% of cases responded at each contact</p> <p>Unit of analysis:</p>		
260	<p>McCulloch, 2001, Great Britain</p> <p>Objective: To investigate the association between the spatial concentration of deprived households and teenage non-marital childbearing. Associations with area deprivation are tested before and after allowing for levels of personal deprivation.</p> <p>Design: population data analysis</p> <p>Study outcome: non-marital childbearing</p>	<p>Sample: unmarried women living at home (with at least one parent) and aged 16-19 (n = 22510). The individual data are derived from the 2% sample of anonymised records (SAR) from the census of 1991 in Great Britain, and combined with area data from the 278 districts of residence identifiable in the SAR.</p> <p>Setting: Great Britain</p> <p>Description and nature of factors:</p> <ul style="list-style-type: none"> Sociodemographic: Area deprivation measure (4 components of Townsend index: proportion of labour force unemployed, proportion of households with no car access, proportion of households with one person per room and over, and proportion of households not owning their own home); Individual deprivation measure (housing tenure, car access, the number of earners in the household, room density); Teen mother's current labour force status; Age; Ethnicity; Region <p>Follow-up: n/a</p> <p>Drop-out: n/a</p> <p>Unit of analysis: Individual and area</p>	<p>Multivariate analysis: Greater likelihood of childbearing was found in more deprived areas, controlling only for region.</p> <p>Controlling further for ethnicity, current labour force status and family characteristics (individual deprivation measure), higher rates of childbearing were found among:</p> <ul style="list-style-type: none"> women who are economically inactive women from households with no access to car women from households resident in social housing <p>When individual measures of deprivation are entered into model, area measures are no longer significantly associated with likelihood of teenage childbearing.</p>	<p>Author's conclusion: Both individual and spatial characteristics are important in influencing teenage childbearing, pregnancy associated with deprivation. This seems to be because deprivation is associated with personal disadvantage, which increases the risk of childbearing. Area characteristics are of lesser significance in determining teenage non-marital childbearing than individual and household characteristics.</p> <p>Comments: Authors suggest some caution in interpreting this evidence, since (1) area conditions contributing to child births may not be fully captured; (2) it is difficult to separate the area effect from the individual or household characteristics. Also, teenagers who are not living with their parents are excluded from the analysis.</p>
262	<p>McLeod, 2001, UK (Scotland)</p> <p>Objective: To measure the impact of socioeconomic deprivation on rates of</p>	<p>Sample: Scottish teenagers age 13-19 at time of conception (divided up into 13-15, 16-17, and 18-19) who attended an NHS hospital in either 1981-85 (n=62338) or 1991-95</p>	<p>Multivariate analysis: Multilevel Poisson regression was used to model pregnancy rates and multilevel logistic regression to model maternities, adjusting for marital status,</p>	<p>Author's conclusion: From the 1980s to 1990s the difference in rates of teenage pregnancy between affluent and deprived areas in Scotland widened. While small area</p>

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	<p>teenage pregnancy and the extent of local variation in pregnancy rates in Scotland, and to examine how both have changed over time.</p> <p>Design: population data analysis</p> <p>Study outcome:</p> <ul style="list-style-type: none"> • Pregnancy • Maternity (defined as live birth or stillbirth) 	<p>(n=48514). Routinely collected data were obtained from the Information and Statistics Division (ISD) of the Common Services Agency in Scotland. Records were grouped into postcode sectors, and population estimates were abstracted from the 1981 and 1991 censuses.</p> <p>Setting: Scotland</p> <p>Description and nature of factors:</p> <ul style="list-style-type: none"> • Sociodemographic: socioeconomic deprivation (the Carstairs index); marital status; rurality (as measured by population density) <p>Follow-up: n/a</p> <p>Drop-out: n/a</p> <p>Unit of analysis: Postcode sector</p>	<p>level of local deprivation, and urban or rural locality.</p> <p><u>Changes in the impact of deprivation</u></p> <ul style="list-style-type: none"> • Pregnancy rates and the proportion of pregnancies resulting in maternity were higher in more deprived areas for all age groups and in both time periods. • Differences were greater in 1991-95 than in 1981-85, e.g. adjusted OR for pregnancies in the 13-15 age group in the most deprived areas (vs. most affluent) in 1981-85, 1.9 (1.6-2.2); in 1991-95, 3.0 (2.6-3.4) • Adjusting for marriage reduced deprivation differentials, as marriage was more common in deprived areas, esp. in the 1980s when marriage was more common. <p><u>Effects of deprivation in urban and rural areas</u></p> <ul style="list-style-type: none"> • The observed pregnancy rates and the proportion of maternities were higher in urban areas. However, adjustment for deprivation largely removed this effect. <p><u>Changes in small area variation</u></p> <ul style="list-style-type: none"> • Without adjustment for the effects of deprivation, small area variation increased in pregnancy rates but decreased in the proportion of maternities from the 1980s to the 1990s. • In the 1990s socioeconomic deprivation explained more than 50% of local variation in pregnancy rates in all age groups, more than double the amount explained in the 1980s. The amount of local variation in maternities explained by deprivation also increased over time <p>Based on estimated effects of deprivation and unexplained small variation in 1991-95,</p>	<p>variation existed and may indicate different levels of provision of contraceptive services, eradicating the unexplained local variation would make little difference in terms of reducing numbers of pregnancies, compared with reducing the effects of deprivation.</p> <p>Comments: Only pregnancies resulting in admission to NHS hospitals were included in the analysis. Possible cases of repeat pregnancies could not be estimated and were thus treated independently.</p>

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			possible reduction in the numbers of pregnancies in teenagers under 18 was estimated for two hypothetical situations. If the effects of deprivation were removed and the level of unexplained local variation retained, the number of pregnancies would be halved. If the effects of deprivation were retained and the unexplained variation removed, this reduction would be less than 10%.	
284	<p>Nebot, Borrell and Villabí, 284, Spain</p> <p>Objective: To describe in an urban context in the city of Barcelona the ecological association between the adolescent (15-19 year old) fertility rates and socioeconomic indicators, and to ascertain the effect of using different regional aggregate size.</p> <p>Design: population data analysis</p> <p>Study outcome: adolescent motherhood (fertility rates)</p>	<p>Sample/Data: Data are derived from the Municipal Yearly Statistics report and Population Census. The Barcelona adolescent fertility rates are estimated at the district level (n=10, average population 171,000) and at the neighbourhood level (n=38, average population 43,300) for the period 1980-1992. Larger ecological measures for the whole of Spain using 50 provinces (average population 738,040) and 17 regions (average population 2,170,710) are also used in comparisons.</p> <p>Setting: Barcelona</p> <p>Description and nature of factors:</p> <ul style="list-style-type: none"> Sociodemographic: unemployment rate; illiteracy proportion among the adult population; social class (occupational level); average family income (as measured by the Index of Family Economic Capacity, a composite wealth index incorporating at the neighbourhood and district level a linear function of occupational category, size, power and age of motor vehicles, average cost and expenses of commercial and industrial facilities and average telephone bills). 	<p>Bivariate analysis: Person correlations between socioeconomic indicators and adolescent fertility rates were calculated. At the local level within Barcelona all correlations were high and all were statistically significant ($p < 0.01$ or $p < 0.001$).</p> <p>At District level, fertility rates were associated with:</p> <ul style="list-style-type: none"> IFEC (income) (Pearson coefficient -0.78) % illiteracy males (0.90) % illiteracy females (0.88) % unemployment (0.87) % social class IV-V (0.76) <p>At Neighbourhood level, fertility rates were associated with:</p> <ul style="list-style-type: none"> IFEC (income) (-0.67) % illiteracy males (0.87) % illiteracy females (0.84) % unemployment (0.85) % social class IV-V (0.67) <p>Within Spain, using local (Barcelona's districts or neighbourhoods) or state (provinces and regions) aggregates yields a different degree of ecologic association, with local analysis giving a higher correlation with income (-0.70 at the neighbourhood level, -0.82 at the district</p>	<p>Author's conclusion: Adolescent fertility is strongly associated with socioeconomic distribution. However, the association is stronger and statistically significant at the local level rather than at the province and region level. This study supports the use of local aggregates in ecologic studies.</p> <p>Comments:</p>

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		<p>Follow-up: n/a</p> <p>Drop-out: n/a</p> <p>Unit of analysis: small area</p>	level), which is lower and statistically non-significant at the province or regional level.	
289	<p>Ni Bhrolchain, M <i>et al</i>, 2000, UK.</p> <p>Objective: To evaluate the association between family structure and a range of outcomes in adolescence and young adulthood.</p> <p>Design: Cohort study</p> <p>Study outcome: Early childbearing</p>	<p>Sample: Data from the National Child Development Study (NCDS), also known as the 1958 Birth Cohort was used. Survey information was collected by interview at time of birth in 1958 and at ages 7 (1965), 11 (1969), 16 (1974) and 23 (1981) and 33 (1991). The information was collected from the parents (usually the mother) teachers, the school doctor and on occasion a health visitor with some knowledge of the family.</p> <p>Study sample is restricted to people who were in intact families (i.e. living with both natural parents) at age 7 and who were present at both the 16- and 23-year-old rounds (n=7866, 58% of the sample ever present).</p> <p>Setting: Individuals selected from the NCDS study</p> <p>Description and nature of factors:</p> <ul style="list-style-type: none"> Family: family stability/disruption and family history/structure (two natural parents, parents divorced or died, step family, lone mother, lone father) A wide range of 'background' factors are also included in the model, e.g. father's social class, housing tenure, and when father left school. <p>Follow-up: At ages 7, 11, 16 and 23 years</p> <p>Drop out:</p> <p>Unit of analysis: Individual</p>	<p>Multivariate analysis: Logistic regression models was carried out. A separate model was fitted for each family history/structure classification and for each sex.</p> <p>Among girls family disruption in general is associated with a higher risk of early parenthood. In particular,</p> <ul style="list-style-type: none"> women whose parents divorced: OR 2.32 (1.32-3.36) women who were in step families at 16: 3.39 (2.0-5.75) women who were living with a lone father at 16: 3.60 (2.0-6.48) <p>The increased risk associated with a step family or a lone-father family appears to be present irrespective of whether the parental marriage ended in death or divorce.</p> <p>The analysis identified no family type in which boys have a greater risk of early parenthood than those in intact families.</p>	<p>Author's conclusion: Among the comparisons between disrupted family types, young women in stepfamilies appear to be at higher risk of an early birth than those in lone-mother families, but this is attributable to the group having experienced parental death rather than parental divorce. The only other significant difference is young women in lone-father families have higher risk of an early birth</p> <p>Comments: "Early parenthood" is defined here as before age 23 for men and before age 20 for women. The results reported here relate only to a sample of children whose family was disrupted after age 7, while an estimated 31% of those born into a two-parent family who experienced a broken family by age 16 had experienced the break before age 7. Whether this is likely to have affected the results is unknown. ('The choice of children in intact families at age 7 is made so that we have observations on social and other characteristics before any family disruption took place. It was not possible to initiate the sample before age 7 because very little information was collected on the family and on the parents at the first (1958) interview' (p. 70).</p> <p>Authors note that the greater effect found for lone-father families relative to lone-mother as well as intact families may reflect not the causal influence of being with a lone father but greater family difficulties associated with lone-</p>

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				father families, e.g. children may be with a father because of the mother's problem behaviour such as alcoholism.
300	<p>Otterblad Olausson et al., 2000, Sweden</p> <p>Objective: To evaluate the contribution of the genetic and environmental factors to the risk of teenage childbearing, and to study whether life style, socio-economic conditions, and personality traits could explain possible familial effects.</p> <p>Design: experimental (twin research)</p> <p>Study outcome: Early childbearing</p>	<p>Sample: Data from the population-based Swedish Twin Register, including data on all twins born in Sweden from 1926-58 who were alive and living in Sweden in 1970, and the Swedish Medical Birth Register covering 99% of all births since 1973. The study population covers all female twins born from 1953 to 1958 who answered the questionnaire in 1973 (91%) and first gave birth before the age of 30, recorded in the Medical Birth Register (n=1885). For the quantitative genetic analyses, only complete twin pairs with known zygosity could be used (260 monozygotic and 370 dizygotic pairs).</p> <p>Setting: Throughout Sweden</p> <p>Description and nature of factors: In 1973 a questionnaire was sent to all like-sex twin pairs where both individuals were alive.</p> <ul style="list-style-type: none"> • Background: housing condition • Educational: schools beyond elementary • Psychosocial factors: smoking, alcohol, neuroticism, introvert-extrovert <p>Follow-up: N/A</p> <p>Drop-out: N/A</p> <p>Unit of analysis: Individual</p>	<p>Multivariate analysis: Quantitative genetic analyses were used to evaluate the genetic and environmental effects for liability to teenage childbearing. Logistic regression analyses were used to estimate the effects of psychosocial factors and to study whether these factors could explain possible familial effects.</p> <p>The importance of genetic and environmental effects was gauged on the basis of similarities (or dissimilarities) in monozygotic and dizygotic twin pairs.</p> <p>The data were consistent with the hypothesis that the familial aggregation of teenage childbearing is completely explained by genetic factors, although the alternative hypothesis that familial aggregation is entirely explained by shared environmental factors cannot be ruled out.</p> <p>The analysis of psychosocial factors, adjusting for maternal age at delivery, shows that teenage motherhood was associated with:</p> <ul style="list-style-type: none"> • living in rented flat (OR=1.7) • no school beyond elementary (OR=2.0) • current smoker (OR=2.3) • Regular smoker at <13 years (OR=2.2) <p>No significant associations were found for alcohol intake and personality traits (neuroticism and introversion-extraversion scores).</p> <p>When adjusting for the significant psychosocial factors above, odds ratios for</p>	<p>Author's conclusion: There is familial effects on the risk of early childbearing, although these are not associated with similarities in lifestyle and socio-economic position. Significant effects of smoking, housing conditions and educational level were found in relation to risk of early childbearing.</p> <p>Comments: No data collected on the onset of menarche and age of first sexual intercourse. Genetic influences on variability of onset of menarche are strong and well documented.</p>

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			the familial effects of teenage childbearing were attenuated from 4.2 (2.8-6.3) to 3.1 (2.0-4.9) but remained statistically significant.	
305	<p>Parkes, Wight and Henderson, 2004, Scotland</p> <p>Objective: To explore the hypothesis that use of sexual health services will depend on a range of factors related to perceived need, knowledge and ability to access, by comparing characteristics of sexual-health service users vs. non-users</p> <p>Design: Analysis of a follow-up self-administered questionnaire administered as part of a controlled trial of the SHARE sex education programme</p> <p>Study outcome: Use of sexual health services</p>	<p>Sample: 15-16 year old schoolchildren (n = 5747) were questioned about their use of sexual health services in the SHARE trial of a school sex education programme in Scotland. 69% of the total eligible sample participated in the follow-up survey.</p> <p>Setting: 25 non-denominational state secondary schools in Lothian and Tayside regions, Scotland</p> <p>Description and nature of factors: A self-administered questionnaire was used.</p> <ul style="list-style-type: none"> • Sociodemographic: gender, housing, ethnicity, social class (manual vs. non-manual) • Family: mother's age (40+ years), living with both parents • Educational: Educational status • Psychosocial: whether or not religious, pocket money, parental monitoring, self-esteem • Sexual knowledge, attitudes behaviour: sexual experience, boy/girlfriend, expectations of relationship in 2 years, knowledge of sexual health, knowledge of services, comfortable talking about sex, talked to friends about using condoms/contraception, attitude towards importance of planning ahead for protection • Barriers and facilitating conditions: distance to youth clinics <p>Follow-up: None</p> <p>Drop-out: 94% initial recruitment, 69% of</p>	<p>Multivariate analysis: Multilevel logistic regressions were performed.</p> <p>More likely to use services:</p> <ul style="list-style-type: none"> • School leaver (vs. at school): OR 1.36 (1.13-1.64) • Live with one or no parents (vs with both parents): OR 1.41 (1.21-1.65) • Mother under 40 (vs. 40+): OR 1.23 (1.04-1.44) • Increasing sexual experience (vs none): once, OR 2.34 (1.67-3.27); more than once with same partner, 3.77 (2.69-5.28); more than once, more than one partner, 5.72 (4.35-7.53) • Boy/girlfriend (vs none): used to have one, OR 1.40 (1.07-1.81); currently have one, 1.71 (1.28-2.30) • Expectation in next 2 years (vs. none): living with partner, OR 1.38 (1.08-1.76); child(ren), 1.48 (1.01-2.18) • Proximity to youth clinics: OR (with increasing distance), 0.86 (0.77- 0.97) • More pocket money (vs. under £20 per week): OR 1.17 (1.00-1.36) • Low parental monitoring (vs high): OR 1.47 (1.21-1.78) • High knowledge of sexual health (vs low): OR 1.29 (1.07- 1.56) • Comfortable talking about sex (vs low): high: OR 1.60 (1.33-1.93) • Talk to friends about contraception (vs not): OR 2.12 (1.80-2.50) <p>Socioeconomic variables (housing, parents' occupational class), ethnicity and religiosity</p>	<p>Author's conclusion: The study confirmed the hypothesis that perceived need, knowledge and ability to access are all important factors in shaping patterns of service use. There is potential to influence service use through better knowledge and confidence imparted through school sex education, and by improving the links between services and schools.</p> <p>Comments: Little information is available on quality of care or the timing of service visits. The analysis used weighted data to compensate for the greater attrition for boys, lower social class and those reporting sex at baseline, maintaining the representativeness of the sample compared to the 1991 census that was established at baseline (Wight et al. 2002, Henderson et al. 2004). This study found no evidence for a direct effect of the SHARE sex education programme on service use in bivariate exploration.</p>

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		<p>which responded to this questionnaire</p> <p>Unit of analysis: <i>Individual, and variance tested at school level</i></p>	<p>were significant in the initial analysis but became insignificant once sexual experience and future expectations were controlled for. Self-esteem and attitudes towards planning protection were not significant.</p> <p>Further controlling for school characteristics, teenagers with high opinions of the coverage of school sex education were no more likely to visit services, although those with high opinions of their sex education's effectiveness were more likely to have used a service (OR 1.28 (1.05-1.56).</p> <p>Overall, boys were less likely to have used a service than girls.</p>	
307	<p>Paton, 2002, UK</p> <p>Objective: To examine whether improved access to family planning services for under 16 is likely to help in achieving the aim of reducing underage conceptions</p> <p>Design: macro-level economic analysis</p> <p>Study outcome: conception</p>	<p>Sample/Data: Mean conception rates at the level of the Regional Health Authorities (RHAs). Regional data on conception rates (including both live births and abortions) for under 16 and 16-19 year olds are taken from the Birth statistics series for England and from relevant series published by Scottish and Welsh Offices. Regional data on attendances at family planning clinics each year for the two age groups are obtained from the Department of Health for the English RHAs and from the Welsh and Scottish Offices for Scotland and Wales.</p> <p>Setting: Great Britain</p> <p>Description and nature of factors:</p> <ul style="list-style-type: none"> Sociodemographic: socioeconomic (unemployment rate, rate of children in statutory care, proportion of young people staying on in post-compulsory education) Barriers and facilitating conditions: access to family planning 	<p>Multivariate analysis: A simple model of rational choice is introduced which suggests that improving access to family planning can have an ambiguous impact on underage conception rates. On the one hand, family planning reduces the probability of pregnancy amongst those who use it. On the other hand, by making sexual activity less risky, it raises the likelihood of engaging in sexual activity in the first place. The overall effect may be either to increase or decrease underage conceptions.</p> <p>The model is tested on panel data on regions within the UK over the period of 1984-1997 using two approaches. The first test is whether the 1984 Gillick ruling had a differential impact on two groups: under 16 for whom access to family planning was restricted by the ruling and older teenagers who were not affected. The second test uses instrumental variables to estimate conception rates for under 16 as a function of attendance at family planning clinic.</p>	<p>Author's conclusion: The results provide strong support for many of the policy initiatives currently proposed in the UK. Measures which improve educational and work prospects of those groups most at risk seem likely to help achieve the stated aim of reducing underage conceptions. However, the UK experience suggests that improving access to family planning will not, in itself, be successful in reducing the rate of underage conceptions.</p> <p>Comments:</p>

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		<p>Follow-up: n/a</p> <p>Drop-out: n/a</p> <p>Unit of analysis: region or county</p>	<p>With both approaches, no evidence is found that the provision of family planning reduces underage conception rates. There is some evidence that greater access is associated with an increase in conception rates for under 16s in the UK over the sample period. As expected, socio-economic variables such as the proportion of children in statutory care, unemployment rates and participation rates in post-compulsory education are found to be significant predictors of underage pregnancies.</p>	
318	<p>Pötsönen and Kontula, 1999, Finland</p> <p>Objective: To investigate 15-year-old girls' and boys' attitudes towards using and purchasing condoms in 1990 and 1994. To find out how attitudes towards condoms are related to their sexual experiences and the contraceptive methods used in their past sexual intercourse, and how these relationships have changed between 1990 and 1994.</p> <p>Design: Cross-sectional</p> <p>Study outcome:</p> <ul style="list-style-type: none"> Contraceptive use Attitudes towards condoms 	<p>Sample: Two cross-sections of 9th grade pupils (age 15 years) selected from the representative samples based on the Finnish school register in 1990 and 1994. Response rates were 91% in 1990 (N = 928) and 85% in 1994 (N = 1183).</p> <p>Setting: 46 schools (1990) and 64 schools (1994) in rural and urban areas.</p> <p>Description and nature of factors: Self-administered questionnaires were conducted as part of the international Health Behaviour in School-aged Children (HBSC) study (Wold et al. 1994; Currie et al. 1997).</p> <ul style="list-style-type: none"> Sociodemographic: gender, sexual experience <p>Follow-up: N/A</p> <p>Drop-out: n/a</p> <p>Unit of analysis: individual</p>	<p>Bivariate analysis: Data from the 1994 survey are extracted.</p> <p><u>Perceived effectiveness of condoms</u></p> <ul style="list-style-type: none"> No significant difference by gender or sexual experience reported. Around 90% of respondents agreed that condoms are effective protection against pregnancy. <p><u>Attitudes towards using condoms</u> (e.g. 'Condoms are easy to use')</p> <ul style="list-style-type: none"> Sexually experienced: boys (95%) vs. girls (88%) Sexually inexperienced: boys (79%) vs. girls (59%) <p><u>Attitudes towards purchasing and carrying condoms</u> (e.g. feel embarrassed to buy condoms)</p> <ul style="list-style-type: none"> Sexually experienced respondents were significantly more likely to display positive attitudes (less embarrassed) compared with sexually inexperienced respondents of both gender, e.g. sexually experienced boys (17%) and girls (19%) vs. sexually inexperienced boys (40%) and girls (42%). When the above scores were combined 	<p>Author's conclusion: Many adolescents still reported difficulties in purchasing condoms. Attitudes towards purchasing condoms had changed among girls between 1990 and 1994. Sexually experienced girls reported that for them it was as easy as for sexually experienced boys to buy or carry a condom.</p> <p>Comments: Largely descriptive report. Statistical significance is reported in text only when in excess of 0.05.</p>

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			<p>with those of the other two statements ('embarrassed to carry', 'easy to get when necessary'), there was a significant difference between sexually experienced and inexperienced adolescents in both 1990 and 1994 ($p < 0.001$). Gender differences were found only among sexually inexperienced adolescents in 1990 ($p < 0.001$).</p> <p><u>Relationship between attitudes towards condoms and contraceptive method used at last intercourse</u></p> <ul style="list-style-type: none"> • <i>Attitudes towards effectiveness of condoms against unwanted pregnancy:</i> no significant relationship found in 1990 or 1994 • <i>Attitudes towards using condoms:</i> in 1990 and 1994: girls who had used condoms were less likely to agree that 'condoms make sex less enjoyable', compared with girls who had used contraceptive pills or had used no contraceptive methods at all (1990, $p = 0.001$; 1994, $p = 0.004$). No such relationship was found for boys. • <i>Attitudes towards purchasing and carrying condoms:</i> A significant relationship was found among girls in 1994 only ($p = 0.003$), e.g. those who had used no contraceptive method were the most negative, followed by those who had used condoms. Those who had used contraceptive pills had the most positive attitudes. 	
335	<p>Roberts et al., 2004, UK (England)</p> <p>Objective: To investigate links between child sex abuse (occurring before 13 years old), later mental health, family organisation, parenting</p>	<p>Sample: Sub sample of the Avon Longitudinal Study of Parents and Children (ALSPAC) enrolled through midwives and local publicity and direct contact of non-enrolled mothers. ALSPAC design included all women in Avon who gave birth between April 1st 1991 and</p>	<p>Bivariate analysis: 127 respondents indicated prior child sexual assault (CSA). Regression analyses were performed to examine the relationship between CSA and teenage pregnancy (among other outcomes).</p>	<p>Author's conclusion: CSA has long-term repercussions for adult mental health, parenting relationships and child adjustment in succeeding generation.</p> <p>Comments: The relationship between</p>

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	<p>behaviours and adjustment in offspring [Only data pertaining to teenage pregnancy are extracted here]</p> <p>Design: cross-sectional</p> <p>Study outcome: childbearing (births)</p>	<p>December 31st 1992 where an estimated 85-90% of the eligible population participated. A (sub)sample of 8292 families met inclusion criteria for identifiable family type (on the basis of the questionnaire data obtained 33 months postpartum) and completed self-report data on prior sexual assault. Respondents who reported sexual assault later than their teenage years and those who reported a sexual assault but did not give their age at the time were excluded.</p> <p>Setting: Avon respondents to ALSPAC survey</p> <p>Description and nature of factors:</p> <ul style="list-style-type: none"> Family: family type (single mother, biological family, stepmother/complex stepfamily and stepfather) Psychosocial: child sexual abuse; emotional and physical cruelty during childhood <p>Follow-up: n/a</p> <p>Drop-out: n/a</p> <p>Unit of analysis: Individual</p>	<p>26% of respondents who reported CSA first became pregnant during their teens and this association was highly significant ($p = 0.002$, $OR = 2.20$, $\beta = 0.05$).</p> <p>Those who reported CSA were also more likely to report:</p> <ul style="list-style-type: none"> physical cruelty and emotional cruelty during childhood current membership of single mother and stepfather families higher levels of depression lower levels of self-esteem cohabiting relationship less satisfaction and poorer communication in relationship with partner less positive relations between their partner and child less positivity in own relationship with the child less maternal confidence <p>Multivariate analysis: After adjusting for emotional and physical childhood cruelty, teenage pregnancy was more likely in those reporting CSA ($p = 0.004$, $OR = 1.83$, $\beta = 0.04$).</p>	<p>teenage pregnancy and variables other than CSA is beyond the scope of this study.</p> <p>Limitations: (1) Data rely on a self-report measure of CSA, as recalled from adulthood. (2) Data were not obtained on whether the abuse was perpetrated from within or outside the family.</p>
345	<p>Russell, 1998a, GB</p> <p>Objective: To examine the degree to which family characteristics from the teenage years mediate and are mediated by physical development, psychosocial characteristics, academic performance and attributes and future plans.</p> <p>Design: Cohort study</p>	<p>Sample: Data from the National Child Development Study of Great Britain (NCDS) which included every child born during 3-9 March 1958 in England, Scotland and Wales was used. Data was collected from members of the cohort, their parents, school representatives, and medical examiners at age 16 years. At age 23, the cohort members were interviewed.</p> <p>Data collected at birth (1974) and ages 23</p>	<p>Multivariate analysis: Proportional hazards model was used. Models that only include family risk factors find that low social class, having parents with few years of schooling, having a young mother, having been born out of wedlock, having a large number of siblings, experiencing frequent residential moves, parental divorce, death of a mother, lack of maternal interest in education and parent-child argument are risk factors for teen parenthood. Children whose parents did not approve of</p>	<p>Author's conclusion: Family may be the primary influence on adolescents' lives, however it can be argued that family life can be influenced by other dimensions of adolescents' lives, psychosocial factors in particular.</p> <p>Comments: The findings of this study must be understood within the social context of Great Britain during the 1970s. Today's teenagers may think differently about</p>

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	Study outcome: childbearing	<p>(1981) are used. Only those cohort members without missing parenthood information at age 23 were included. Study sample includes 4868 females and 4885 males. 693 females and 250 males reported that they became parents during the teenage years.</p> <p>Setting: Throughout Great Britain</p> <p>Description and nature of factors: According to author's classification.</p> <ul style="list-style-type: none"> • Gender • Family: Fathers social class, parents' education, ethnicity, mother's age, born out of wedlock, residential moves, number of siblings, mother works, parental divorce, ill parent, death of mother, death of father, parent-teacher meeting, parents wish child had quit school, mother's interest in education, father's interest in education, parent-child argue index (reported by parent), quarrel with siblings, disapprove of male friends, disapprove of female friends • Physical maturation: pubertal development (rated by medical examiners), age at menarche (girls) or when voice broken (boys) (reported by parent) • Psychosocial: happiness, seen psychologist, health habits (smoking, drinking), truancy, problem behaviour • School: academic performance (reading and math scores), attitudes to school ('I feel school is largely a waste of time', 'I think homework is a bore', 'I don't like school') • Future plans: plan to continue education, best age to get married and start a family <p>Follow-up: Date collected at birth and at ages 16 years (1974) and 23 years (1981) was used in this study.</p>	<p>their female friends were at higher risk, although disapproval of male friends had no effect. No significant effect is found for ethnicity, due to the very small proportion in this sample that were non-white.</p> <p>Separate models for all factors other than family risk factors find that problem behaviour, truancy, smoking (for girls), drinking (for boys) and increase risk of teen parenthood. Children with emotional problems that led them to psychologists, and also children with negative attitude to school, poor grades at school, no educational plan, and desire to get married and start a family at younger ages had increased risk. The risk for becoming a teen father was lower for unhappy boys. Physical maturation has no direct effects on teen parenthood risk.</p> <p>In combined models, using family risk factors as the baseline model, other factors were added in 4 stages, i.e. physical maturation (Model 1), psychosocial factors (Model 2), school attitudes and performance (Model 3) and future plans (Model 4). The following factors remained significant in the final model (Model 4):</p> <ul style="list-style-type: none"> • Fathers social class-high (risk ratio=0.87) – all models • Parent's education-high (0.99) – all models • Born out of wedlock (1.52) • Number of siblings (1.12) – all models • Parental divorce (1.29) • Death of mother (1.94) – all models • Mother's interest in education (0.87) – all models • Parents disapprove of female friends (1.07) 	<p>educational plans or marriage and family formation.</p> <p>Those individuals who became parents at age 16 or younger were included (60 females and 10 males). 'In those cases, teen parenthood would precede the age-16 factors that are considered in this research to be antecedent.' However, by limiting the sample to teen parents who were older than 16 years old, the results changed little. (p. 429)</p>

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		<p>Drop-out: At age 23 years 31.6% dropout</p> <p>Unit of analysis: <i>Individual</i></p>	<ul style="list-style-type: none"> • Seen psychologist (1.27) – all models • Truant from school (1.63) – all models • Problem behaviour (1.86) – all models • Good grades at school (0.96) • Had education plans (0.83) • Thought best to marry & begin family at older age (0.97). <p>Age of menarche/when voice broken (risk ratio=0.92) became significant once social class was controlled for.</p>	
S23	<p>Russell, 1998b, GB</p> <p>Objective: To examine the sex education lessons reported at age 16 by subjects and their school head teachers, and the subject's report of teenage motherhood at age 23 years.</p> <p>Design: Cohort study</p> <p>Study outcome: Sexual knowledge, attitudes and behaviour, Early childbearing.</p>	<p>Sample: Data from the National Child Development Study of Great Britain (NCDS) which included every child born during 3-9 March 1958 in England, Scotland and Wales was used. Date collected when the cohort was 16 years (1974) and 23 years (1981) was used in this study. The sample was limited to females for whom both age 16 and age 23 data was available, and for whom all sex education data were available (n = 5036).</p> <p>Setting: Throughout Great Britain</p> <p>Description and nature of factors:</p> <ul style="list-style-type: none"> • Socioeconomic and family background factors (as control variables): being born out of wedlock, parental divorce, number of siblings, mother's and father's age when they left full-time education, father's social class, school characteristics (as measured by headteacher's report of the percentage of female students who stayed in full-time education in the past year) • Sexual knowledge, attitudes, behaviour: Cohort members answered questions about their sex education. (how babies were conceived and born, how people get 	<p>Multivariate analysis: Head teachers reported specific sex education topics were taught more frequently than the female students in the cohort reported having learned them.</p> <p>Reported teaching and learning of sex education was contingent upon school characteristics. In general, sex education was more likely to be taught in schools where more female students left full-time education at minimum age (16), after controlling for socioeconomic and family background factors.</p> <p>Logistic regression was performed, controlling for family characteristics and the effects of female students staying in full-time education.</p> <p>Teenage motherhood is <u>more likely</u>:</p> <ul style="list-style-type: none"> • born out of wed-lock (OR = 1.96) • parental divorce (2.32) • having many siblings (1.2) • father's social class (vs. lower class, 0.99) • father's school-leaving age (vs. fewer years of education, 0.86) • student reporting lessons on baby care (1.36) • student reporting lessons on family life 	<p>Author's conclusion: Sex education may be associated either positively or negatively, depending on the topic.</p> <p>Comments: The findings may not be generalisable to other groups in other times.</p> <p>Author notes (and tested) possible selection in to sex education classes. It is likely that schools in areas for which teenage parenthood was a visible social problem may have been more likely to include sex education in school curricula. In other words, it may be that children who were exposed to sex education were initially at greater risk for becoming teenage parents.</p>

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		<p>VD, the care of babies, how children grow and develop, practical problems of family life). School head teachers were asked if members of the cohort in their school will have had lessons concerned with physiological aspects of hum reproduction, emotional and personal aspects of sexual reproduction, contraception and venereal diseases.</p> <p>Follow-up: The sample was interviewed at 16 years and at 23 years. Information regarding parenthood was collected at age 23.</p> <p>Drop-out: Over 77% of the original sample were surveyed at age 23 years.</p> <p>Unit of analysis: <i>Individual</i></p>	<p>(1.31).</p> <p>Teenage motherhood is <u>less likely</u>:</p> <ul style="list-style-type: none"> • student staying in full time education (0.38) • student reporting lessons on conception (0.66). <p>Head teachers' reports of sex education topics do not have direct effects on the odds of becoming a teenage mother.</p>	
344	<p>Russell, 2002, UK</p> <p>Objective: To examine the effect of family life risk factors on teenage childbearing, and how the effects vary depending on the childhood age at which they were experienced</p> <p>Design: longitudinal</p> <p>Study outcome: Teenage childbearing (birth at age 19 or younger when interviewed at age 23)</p>	<p>Sample: National childhood development study of Great Britain (NCDS) which included every child born in the first week of March 1958 in England, Scotland and Wales (n=17733). Surveys at age 7, 11, 16 and 23 of child. Parent (usually mother) interviewed until age 16. School headmasters interviewed when child aged 7, 11 and 16. At age 23, 77% of the target sample was interviewed (15712). For this cases were female respondents to surveys at age 16 and 23 and answered the questions on childbearing (4928, 81% of available sample of women at age 23).</p> <p>Setting: Great Britain</p> <p>Description and nature of factors:</p> <ul style="list-style-type: none"> • Sociodemographic: Mother's age at time of cohort members birth, ethnicity, English not primary language, father's social class 	<p>Bivariate analysis:</p> <p>Teen motherhood more likely:</p> <ul style="list-style-type: none"> • Low parental educational attainment • born to single mothers • born to younger mothers • low social class • working mother at age 7 and 11, • more siblings, • parental illness at age 7, • mother's death (greatest at age 16, also at age 11) <p>Teen motherhood less likely:</p> <ul style="list-style-type: none"> • Maternal interest in child's education <p>Parental separation or divorce had no significant effect.</p> <p>Multivariate analysis: Proportional hazards models were used, controlling for family life events during teenage years (age 16) and</p>	<p>Author's conclusion: Data from early childhood significantly contribute to the understanding of teenage childbearing risk.</p> <p>Comments:</p> <p>Re: NCDS – 'Non respondents were from lower social class backgrounds, had larger families of origin, and had grown up in poorer housing than did respondents; these biases are statistically significant but small' (p. 310).</p>

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		<p>at cohort member's age 7, 11 and 16, mother in employment until cohort member age 16</p> <ul style="list-style-type: none"> Family: Marital status of mother at time of cohort member's birth, number of siblings Educational: Education level of parent (age left full time education), parental involvement in education (mother's interest, meet with teacher) Psychosocial: Family stress (divorce/separation, parental illness, parental death) <p>Follow-up: Surveys at birth, 7, 11, 16 and 23 years</p> <p>Drop-out: At age 23, 77% of the sample (alive and still living in Britain) were interviewed</p> <p>Unit of analysis: <i>Individual</i></p>	<p>factors from early (age 7) and middle (age 11) childhood:</p> <p>Teen motherhood more likely:</p> <ul style="list-style-type: none"> Declines in father's social class growth in number of siblings, in middle childhood mothers working, in early and middle childhood death of mother, during adolescence waning maternal interest in education <p>Teen motherhood less likely:</p> <ul style="list-style-type: none"> Maternal interest in education, regardless of child's age Increases in father's social class from age 7 to 16 <p>Adding information from age 11 improved the explanatory power of the age 16 model. Adding information from age 7 improved the explanatory power further.</p>	
354 & 355	<p>Seamark and Gray, 1997/1998, UK</p> <p>Objective: To use general practice records to detect differences between pregnant and non-pregnant teenagers in relation to their mother's experience, and to compare recorded smoking habits (as an example of risk-taking activity) of pregnant and non-pregnant girls.</p> <p>Design: case-control</p> <p>Study outcome: pregnancy</p>	<p>Sample: Of the 522 girls aged 13-19 registered with the practice on January 1994, all 37 girls who had had at least one teenage pregnancy by 1 January 1996 were selected for the study. A control group was established comprising one girl for each of the pregnant teenagers: the one who was nearest in age, who was registered with the same general practitioner (GP), and who had not had a teenage pregnancy by 1 January 1996.</p> <p>Setting: A general practice in the East Devon market town of Honiton and surrounding rural areas</p> <p>Description and nature of factors:</p>	<p>Bivariate analysis: The mothers of the girls in each group were sought using the computer records, the knowledge of the GPs and a directory of all households in the area. For 31 girls in the study group (pregnant teenagers) and for 34 girls in the control group it was possible to establish whether the mother had had a teenage pregnancy. Smoking history was also found for 36 girls in the study group and 33 girls in the control group using the computer records. The study group and the control group were compared using the χ^2 test.</p> <p>Compared with the control group, the study group were significantly more likely:</p> <ul style="list-style-type: none"> to have a mother who had also had a 	<p>Author's conclusion: The study confirmed the hypothesis that pregnant teenagers in the 1990s are more likely to have a mother who had a teenage pregnancy than non-pregnant mothers. Girls who had had a teenage pregnancy were also more likely to smoke than those who had not conceived as teenagers.</p> <p>Comments: A very small study from a single general practice, but the authors note that it has some advantages that all pregnancies, including those that miscarried, were studied and that the records were more comprehensive than patients' self-report. The study was part of a larger study looking at teenage pregnancy in a general practice</p>

Ref ID	Study detail	Characteristics of study, factors and methodology	Results	Comments and implications
		<ul style="list-style-type: none"> Family: living in a rented or owner-occupied home; having a mother who had had a teenage conception Psycho-social: smoking <p>Follow-up: none</p> <p>Drop-out: n/a</p> <p>Unit of analysis: individual</p>	<p>teenage conception (52% vs. 24%, $p < 0.05$)</p> <ul style="list-style-type: none"> to have smoked at some stage (61% vs. 21%, $p < 0.01$) <p>There were more girls in the study group who came from rented homes, but this was not statistically significant.</p> <p>The study also found that the daughters of teenage mothers were more likely to continue rather than terminate their pregnancies.</p>	setting.
365	<p>Sloggett and Joshi, 1998, England and Wales</p> <p>Objective: To investigate the association between the level of social deprivation in electoral wards and various life events. Life events include mortality, self reported long term illness, and for women: stillbirth, underweight birth, birth while a teenager, and sole registered birth. Associations with area deprivation are tested before and after allowing for levels of personal deprivation. [Only data pertinent to teenage births are extracted here]</p> <p>Design: Prospective census follow up, using the Office for National Statistics Longitudinal Study.</p> <p>Study outcome: childbearing (teenage births)</p>	<p>Sample: A random sample of more than 300 000 people enumerated at the 1981 census, and aged 10 to 64 in 1981. Outcomes in the decade 1982-1992 are investigated. Follow up of teenage births is restricted to women under 20 ($n = 33647$).</p> <p>Setting: England and Wales</p> <p>Description and nature of factors:</p> <ul style="list-style-type: none"> Sociodemographic: Area deprivation score (proportion of the labour force unemployed; proportion of households with no car access, proportion of households not owner occupied, proportion of employed men and women in Social Class 4 or 5); Individual deprivation score, including (i) personal measure (unemployment, low social class) and (ii) household measure (home ownership, car access); Age; Geographical zone (north/south) <p>Follow-up: 1982-92</p> <p>Drop-out: None</p> <p>Unit of analysis: area and individual</p>	<p>Multivariate analysis: Multiple logistic regression analysis tested the hypothesis that area deprivation intensifies individual disadvantage.</p> <p>Controlling for age and geographical zone only, teenage birth is more likely with increasing level of area deprivation.</p> <p>Teenage birth odds ratio = 1.26 (1.23-1.28) per townsend category. Relative odds for residing in the most deprived compared with the least deprived = 6.23.</p> <p>When the 'household' components of the 'individual' deprivation score are added to the model, area deprivation effects are attenuated, though remained significant. Household factors outweigh the area deprivation in areas above average deprivation.</p> <p>Teenage birth more likely among:</p> <ul style="list-style-type: none"> women from household not owner occupied: OR 2.34 (2.16-2.55). women from household with no access to car: OR 1.63 (1.50-1.77). 	<p>Author's conclusion: A variety of adverse or "inauspicious" life events show association with residence in more deprived areas. These are particularly strong for teenage birth and sole registered birth, but are also stronger for long-term illness than mortality. These associations seem to be largely because residence in more deprived areas is associated with personal disadvantage, which is more damaging to life chances than area of residence.</p> <p>Our main finding is to confirm that ecological associations of various adverse outcomes with a census based indicator of area deprivation are largely, if not entirely, accounted for by the individual level measures of the same indicators.</p> <p>Comments: Authors note other potentially important variables are omitted from the analysis, such as ethnicity, parent's employment, and the fertility history of the teenager's own mother.</p>

Ref ID	Study detail	Characteristics of study, factors and methodology	Results	Comments and implications
			The 'personal' components of the 'individual' deprivation score are not included in the model for child birth, as they are connected to labour market and the population at risk were very young.	
396	<p>Vikat et al., 2002, Finland</p> <p>Objective: To analyse socioeconomic differences in the occurrence of pregnancies to 14-19 year olds and changes in these differences over time</p> <p>Design: Follow up of adolescent surveys using registers (retrospective)</p> <p>Study outcome: pregnancy</p>	<p>Sample: Dataset is formed by an individual level linkage of all registered pregnancies (abortions, births and miscarriages treated in a hospital, n = 2743) to all female respondents (n = 28914) to Adolescent Health and Lifestyle Survey (AHLS) from 1987 to 1998. In the AHLS self-administered questionnaires were mailed every second year to independent samples of 12, 14, 16 and 18 year olds representative for Finland. The follow up time starts from the month of response to AHLS or at the 14th birthday for those who answered the questionnaire at age 12, and ends either with the respondent's 20th birthday or at the end of the observation period (February 1998).</p> <p>Setting: Female population (age 12,14, 16 and 18) in Finland</p> <p>Description and nature of factors:</p> <ul style="list-style-type: none"> • Sociodemographic: age and year; socioeconomic status (measured by occupation and education level of father or guardian); region; urbanisation; mother tongue (Finnish or Swedish) • Family: family structure <p>Follow-up: Follow up was by routine data, therefore no drop off from original survey</p> <p>Drop-out: A pregnancy rate for girls who did not return a filled questionnaire was 71% higher than that of the respondents.</p>	<p>Bivariate analysis: Intensity (hazard) regression was used to estimate models of pregnancy risks of teenagers. Controlling only for age, significantly higher chance of becoming pregnant was found:</p> <ul style="list-style-type: none"> • for all lower socioeconomic groups • not living with both parents (those living with step families higher risk than those living with single parent) • Finnish speakers compared to Swedish speakers • in northern regions and capital • those living in urban areas <p>Multivariate analysis: Variables included in the model are: age, year of study, occupation, education, family structure, mother tongue, and province.</p> <p>Pregnancy more likely:</p> <ul style="list-style-type: none"> • having father or guardian with 'blue collar' occupation (vs. upper white collar): RR = 1.61 (1.35-1.90) • having father or guardian with lower education level: 1.63 (1.36-1.95) • Not living with both parents: 2.24 (2.06-2.44) • Living in northern regions (1.29 (1.07-1.56)) and capital • NOT speaking Swedish as first language (vs. Finnish as 1): 0.68 (0.50-0.93) <p>Level of urbanisation was not significant.</p>	<p>Author's conclusion: Although the reduction of socioeconomic and regional differences has been a general objective in Finnish social and health policies, the relative differences in teenage pregnancies have not decreased.</p> <p>Comments: Author notes that Finnish pregnancy rate is less than a third of that in the US or England and Wales and this may in part explain relatively small differences by socioeconomic status.</p>

Ref ID	Study detail	Characteristics of study, factors and methodology	Results	Comments and implications
		Unit of analysis: <i>Individual</i>	<p>Further analysis is performed on family structure. Compared with those living with both parents, pregnancy was more likely among:</p> <ul style="list-style-type: none"> • living in a one parent family: 1.96 (1.74-2.22) • living in a step parent family: 2.59 (2.27-2.96) • living with own partner: 5.13 (4.29-6.15) <p>Despite a decline in teenage pregnancies in Finland until the mid-1990s and a levelling off after that, there was no systematic change over time in most sociodemographic differentials except family structure (difference in risk of pregnancy between girls living in intact families and other family types slightly increased over time). The regional socioeconomic differences did not explain regional differences in teenage pregnancy.</p>	
404	<p>Wellings <i>et al.</i> 2001, UK.</p> <p>Objective: To explore the determinants of early sexual behaviour.</p> <p>Design: cross-sectional</p> <p>Study outcome: Pregnancy (early motherhood + abortion), early sexual initiation</p>	<p>Sample: A probability sample survey between 1999 and 2001, of men and women aged 16-44 years in Britain. 11,161 respondents (4762 men, 6399 women) were interviewed (response rate 65.4%) using a combination of computer-assisted face-to-face and self-completion questionnaires. The study represents the second National Survey of Sexual Attitudes and Lifestyles (Natsal 2000).</p> <p>Setting: Throughout Britain.</p> <p>Description and nature of factors:</p> <ul style="list-style-type: none"> • Background: age at menarche (<13 years vs. ≥13 years) • Socio-demographic: socioeconomic status of parents (manual vs. non-manual) • Family: Family structure (Lived with both natural parents to 16 years vs. Lived with 0 	<p>Bivariate analysis: Among 18-24 year olds who had first heterosexual intercourse before 18 years, the prevalence of <u>pregnancy (motherhood and abortion) before 18 years</u> was higher among women who had first intercourse before age 16 years and those who left school at 16 years.</p> <p>Prevalence of <u>motherhood before 18 years</u> was also higher among women who did not live with both parents to age 16 years.</p> <p>Among 16-24 year olds who have had heterosexual intercourse, the prevalence of <u>first intercourse before age 16 years</u> was higher among men and women who did not live with both parents until age 16 years, those who left school at age 16 years, women who were less than 13 years old at menarche, men and women whose parents were manual</p>	<p>Author's conclusion: Early age at first intercourse is significantly associated with early pregnancy. Early menarche is associated with early sexual intercourse. For these outcomes the association is stronger for education than for family background. Family disruption and lower parental socio-economic status is also associated, but weaker, with the outcomes.</p> <p>Comments: Results are susceptible to bias from recall and honesty (see Copas <i>et al.</i> 2002, our ref ID 94).</p> <p><i>Note</i> - 'With time, early experiences may be recast, with the wisdom of hindsight and subsequent experience, or forgotten. However, ability to recall an event is</p>

Ref ID	Study detail	Characteristics of study, factors and methodology	Results	Comments and implications
		<p>or 1 parent to age 16 years);</p> <ul style="list-style-type: none"> • Education: Educational level (left school 17+ years vs. Left school at 16 years with or without qualifications), • Sexual behaviour: Age at first intercourse (≥ 16 years vs. < 16 years); Communication with parents about sex (discussed vs. not discussed); Main source of information about sex (Lessons at school vs. Parents vs. Friends and other); Sexual competence (as measured by willingness, regret, autonomy of decision and contraception at first intercourse) <p>Follow-up: N/A</p> <p>Drop-out: N/A</p> <p>Unit of analysis: <i>Individual</i></p>	<p>workers and those whose main source of information about sex was not lessons at school.</p> <p>Among respondents (age 16-24) who have had heterosexual intercourse, lack of 'sexual competence' also increases with declining age at first intercourse. 91% of girls and 67% of boys aged 13-14 years at first intercourse were not 'sexually competent'.</p> <p>Multivariate analysis: Logistic regression was performed with all variables except sexual competence to determine the factors that were associated with each outcome for all respondents aged 16-24 years (pregnancy for 18-24 year olds, early intercourse for 16-24 year olds, as in bivariate analysis above). Men and women were analysed separately. Following variables remained significant.</p> <p><u>Pregnancy (motherhood and abortion) before 18 years</u> was more likely among:</p> <ul style="list-style-type: none"> • women who had first intercourse before age 16 years (vs. ≥ 16 years): adjusted OR for motherhood, 2.78 (1.32-5.88), abortion 2.70 (1.23-5.92) <p><u>Motherhood before 18 years</u> was also more likely among:</p> <ul style="list-style-type: none"> • women who left school at 16 with qualifications (vs. left school 17+): 12.16 (3.66-40.36) • women who left school at 16 with no qualifications (vs. left school 17+): 41.55 (12.26-140.90) <p><u>First intercourse before age 16</u> was more likely among:</p> <ul style="list-style-type: none"> • Men and women who did not live with both parents until age 16: adjusted OR men 	<p>dependent not only on the time lapsed since its occurrence, but also its emotional salience. In the case of first intercourse, less than 1% of respondents were unable to remember, with accuracy, their age at first intercourse. We have therefore examined trends in age at first intercourse by comparing the experiences of successive age-groups within Natsal 2000, rather than between Natsal 1990 and Natsal 2000, in order to avoid possible bias resulting from the differences in methods used in the two surveys and from a change in the social climate facilitating reporting. This is further discussed elsewhere (Copas et al. in press)'.</p>

Ref ID	Study detail	Characteristics of study, factors and methodology	Results	Comments and implications
			<p>2.29 (1.50-3.47), women 1.65 (1.12-2.42)</p> <ul style="list-style-type: none"> Men and women who left school at 16 with qualifications (vs. left school 17+): men 3.00 (1.99-4.53), women 3.25 (2.19-4.82) Men and women who left school at 16 with no qualifications (vs. left school 17+): men 4.55 (2.32-8.94), women 1.88 (1.06-3.34) Men and women whose main source of info about sex was friends and other (vs. lessons at school): men 3.11 (1.91-5.05), women 1.97 (1.30-2.98) Women whose parents were manual workers (vs. non-manual): 1.71 (1.23-2.36) Women who were less than 13 years at menarche (≥ 13 years=1): 0.48 (0.35-0.66) 	
408	<p>Wielandt <i>et al</i>, 2002, Denmark</p> <p>Objective:To evaluate the correlation between the reported use of contraception among representative samples of 16-20 year olds in 1989 and the rate of teenage pregnancies in Denmark as determined by the registers.</p> <p>Design: cross-sectional</p> <p>Study outcome: pregnancy</p>	<p>Sample: Data collected from 16-20 years old Danes in October 1989. 461 females and 524 males selected at random from the computerised Danish central population register. Of these 359 females and 400 males accepted for interview (response rates 78% and 76% respectively). Interviewed at home using structured questionnaire. No difference between respondents and non-respondents was seen according to age, marital status or county of residence. Only female respondents were considered in the analysis. No sample calculation was reported.</p> <p>Setting: Throughout Denmark</p> <p>Description and nature of factors:</p> <ul style="list-style-type: none"> Sexual behaviour: contraceptive use <p>Follow-up: N/A</p> <p>Drop-out: N/A</p>	<p>Mutivariate analysis: 95% of the young women who had experienced sexual intercourse reported contraceptive use at last intercourse. In order to support the validity of this finding a model was developed to estimate an expected number of conceptions in the age groups concerned. The model included both the information on reported coital frequency and use of contraception from the questionnaire and available efficacy rates on contraception.</p> <ul style="list-style-type: none"> Approximately 50% of the estimated conceptions occurred in spite of use of a condom. Around 25% of the estimated conceptions occurred in spite of use of oral contraception. Overall distribution of contraceptive failures does not change substantially with age. <p>The estimated number of conceptions derived by the model was highly correlated (<0.70) with (and slightly higher than) the number of</p>	<p>Author's conclusion: The results support the validity of self-reported sexual and contraceptive behaviour and indicate that contraceptive failure is a much greater problem than non-use of contraception for teenagers in Denmark.</p> <p>Comments: The analysis is based on thorough estimations of comparative failure rates for the different contraceptive methods. These estimates refer to data on contraception sampled in 1976 and 1982 and it can be argued that the efficiency of both the condom and oral contraception may have improved during the 1980s.</p>

Ref ID	Study detail	Characteristics of study, factors and methodology	Results	Comments and implications
		Unit of analysis: Individual	births and induced abortions derived from public registers.	
416	<p>Woodward, 1995, UK</p> <p>Objective: To compare teenagers who become unintentionally pregnant and teenagers who have never been pregnant but are using contraception on matters related to family/partner stability, and communication with a parent or stable sexual partner about sexual matters.</p> <p>Design: cross-sectional</p> <p>Study outcome: pregnancy</p>	<p>Sample: 30 teenagers (aged 19 or under) with an unplanned pregnancy were recruited from an antenatal clinic (the 'pregnant' group). 31 teenagers attending a family planning clinic who were using contraception and who had no history of pregnancy were also recruited (the 'never-pregnant' group). Teenagers attending the antenatal clinic were identified by scanning records and noting the appointment detail, while the family planning clinic was organised on a 'drop-in' basis and possible participants were identified as they registered with the clinic receptionist. Recruitment was undertaken in May-July 1992.</p> <p>Setting: a hospital antenatal clinic and community-based family planning clinic</p> <p>Description and nature of factors: Respondents answered a self-administered questionnaire with 29 items, partially based on an instrument constructed by Raviv et al. (1990).</p> <ul style="list-style-type: none"> • Sociodemographic: age, ethnicity, living arrangements, parents' occupations, religion, school or employment details • Educational: academic achievement • Sexual knowledge, attitude, behaviour: communication on sexual matters; source of information, menarche, dating boys, sexual experience and current relationships, contraceptive use, details of the precautions taken against pregnancy and STD, use of different contraceptive methods and experience of contraceptive failure 	<p>Bivariate analysis: Comparisons of the responses between the 'pregnant' group (age range 16-19) and the 'never pregnant' group (age range 15-19) were made using the Mann-Whitney test or χ^2 test.</p> <p>Compared with the 'never-pregnant' group, the 'pregnant' group was:</p> <ul style="list-style-type: none"> • Less likely to be living with parents (50% vs. 84%, not tested) • More likely to be living with boyfriend (30% vs. 6%, not tested) • Less likely to be in education or in employment (29% vs. 96%, $p < 0.001$) • Going out with their boyfriends longer (mean, 19.7 months vs. 14.1 months, $p = 0.02$) • More likely to seek information about sexual matters from their mothers (40% vs. 12%, $p = 0.05$) <p>There were no significant differences between the two groups with respect to:</p> <ul style="list-style-type: none"> • mean age • ethnic group (caucasian or not) • religious affiliation • academic achievement (O level & A level) • mean age at first intercourse • mean number of sexual relationships • mean interval between commencing relationship and first intercourse • embarrassment about discussing sexual matters <p>Results for contraceptive use were not reported, other than that 7 respondents in the 'pregnant' group used no form of</p>	<p>Author's conclusion: There is no simple model of teenage sexual or contraceptive behaviour which would assist in developing strategies to stem the continuing rise of unplanned pregnancy in the teenage years.</p> <p>Comments: Because of the small sample size it was not possible to test for statistical significance between groups on all variables. A comparison of socioeconomic status was not possible because 19 in the 'pregnant' group and 10 in the 'never-pregnant' group did not respond to the question about parents' occupation.</p>

Ref ID	Study detail	Characteristics of study, factors and methodology	Results	Comments and implications
		<p>Follow-up: none</p> <p>Drop-out: A total of 65 questionnaires were issued, but 3 respondents did not meet the inclusion criteria and 1 questionnaire was incomplete.</p> <p>Unit of analysis: individual</p>	contraception at the time of conception.	
417	<p>Wojnarowska B. et al, 2004, POLAND</p> <p>Objective: 1/ Presentation of frequency of sexual debut and use of condoms and the other contraceptives among 15-year old adolescents in Poland, 2/ The examination of the trends of change in these sexual behaviours in Poland in the period of 1990-2002.</p> <p>Design: Cross-sectional analysis of the data collected in representative sample of adolescents in Poland.</p> <p>Study outcome: 1/ Median age of the sexual debut in adolescents (mean age of the respondents - 15.7 year old), 2/ Use of the contraception in these adolescents, 3/ Comparison of the some reproductive behaviours in adolescents aged 15 year in 1990 and in 2002.</p>	<p>Sample: <u>1st step:</u> randomisation of 48 administrative regions out of app. 368 regions of Poland, finally 48 clusters of the secondary schools were selected in this way. <u>2nd step:</u> randomisation of the 308 Classes out of all last Classes of the Secondary Schools located in the already selected 48 clusters. All pupils from the selected Classes were included into the survey.</p> <p>Of the eligible 7273 15-year-olds, 6452 completed questionnaires (89%). During the check-up of the questionnaires the other forms were excluded from the analyse, and finally the 6383 (88%) questionnaires were analysed. Sample size and power calculations not performed (at least elaboration not done in the analysed paper).</p> <p>Setting: secondary schools in Poland</p> <p>Description and nature of factors: The survey was carried out in the frame of the Health Behaviour in School-aged Children; a WHO Collaborative Cross-National Study (HBSC) with participation of app. 30 countries.</p> <ul style="list-style-type: none"> • Sociodemographic: age, gender, break-out for; living in the cities and the other settings, • Sexual behaviour: year of the sexual debut, 	<p>Bivariate analysis: Respondents were divided into four groups regarding the gender and place of living.</p> <p><u>Sexual debut</u> 20.9% of boys and 9.2% of girls reported sexual intercourse with mean ages respectively 14.1 and 14.7 years. The frequency of sexual initiation was higher in boys, and the mean age was lower among adolescents living in towns by comparison to those living in the other places. More matured adolescents had earlier sexual initiations.</p> <p><u>Contraceptive use</u> 27% of sexually active adolescents reported that either they or their partners had used any method of contraception during their last intercourse. The risky sexual behaviour (no contraception) was more frequent in adolescents living in "other than town" sittings (respectively; in boys 30.2% vs 23.9% and in girls 42.9% vs 19.7%). The most popular method of contraception was a condom.</p> <p><u>Change over time</u> Due to the major difference in the method of respondents selection in 1990 vs 2002, the data on comparison of the some reproductive behaviour in adolescents aged 15 year in 1990 and 2002 are not extracted (the collected cohorts were varying too much from</p>	<p>Author's conclusion: At risk sexual behaviours are relatively common among 15-year-old adolescents in Poland, especially in adolescents living in the settings "other than town".</p> <p>Regarding the international comparison; In Polish adolescents the risk of unplanned pregnancy and STI is higher than in most of the other countries. Future monitoring of sexual behaviour is necessary for prevention (including school sexual education) of at risk sexual behaviour.</p> <p>Comments:</p>

Ref ID	Study detail	Characteristics of study, factors and methodology	Results	Comments and implications
		<p>use of the contraceptives.</p> <p>Follow-up: none</p> <p>Drop-out: n/a</p> <p>Unit of analysis: individual</p>	each other).	

Appendix 3

Inclusion and exclusion checklist

Methodological quality assessment checklist

REPROSTAT 2 A systematic review on factors associated with teenage pregnancy in the EU

Inclusion and exclusion criteria checklist

REVIEWER NAME		REF ID
FIRST AUTHOR		YEAR OF PUBLICATION
COUNTRY	LANGUAGE OF PUBLICATION	
OBJECTIVE OF STUDY		

Inclusion criteria checklist			
	yes	no	Can't tell
1. Does the study contain data on any of the EU countries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Does the study contain data on teenagers (13-19 year olds)? If it is based on a larger population survey (e.g. 16-45 year olds), age-specific analysis on teenage subgroups must be provided.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3a. Does the study contain data on any of the specified outcomes? To be included in the review, studies must examine (a) conception, (b) early sexual initiation, (c) contraceptive use, or (d) sexual health knowledge, attitudes and behaviour.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3b. Regarding the outcomes (b), (c) and (d) above, are they discussed in the context of pregnancy? If the author assumes that these are associated with pregnancy (e.g. As teenage abortions are increasing in Sweden, the study aims to investigate adolescent sexual experience in a low-income school in Stockholm'), the question should be answered yes. Studies that examine, for example, condom use in the context of STIs but not pregnancy should be answered no.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Does the study contain data on individual-level factors? If the study focuses only on macro-level, population data analyses (e.g. general trend in birth rates), the question should be answered as no. Examples of potential individual-level factors include: age, gender, ethnicity, family type, self-esteem, school attainment, risk-taking behaviour, parental monitoring, religiosity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Exclusion criteria checklist			
	yes	no	Can't tell
5. Does the study solely focus on factors associated with decision about continuing or terminating the pregnancy?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Does the study solely focus on knowledge and use of emergency contraception?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Does the study solely focus on clinical pregnancy outcomes such as low birth weight?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Does the study solely focus on long-term consequences of teenage births for mothers (e.g. income)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Additional information	
9. What is the study design used in the study? Tick one box only.	
Randomised studies or other experimental study (e.g. randomised controlled trials, controlled before-and-after)	<input type="checkbox"/>
Non-randomised but comparative study (e.g. cohort with a control or comparison group, case-control studies)	<input type="checkbox"/>
Non-comparative study (e.g. cohort without a control or comparison group, longitudinal, cross-sectional)	<input type="checkbox"/>
Case study	<input type="checkbox"/>
None of the above (specify below)	<input type="checkbox"/>
10. What type of analysis is used to assess the main outcomes? Tick all that apply.	
Multivariate analysis	<input type="checkbox"/>
Univariate or bivariate analysis	<input type="checkbox"/>
Description only, no statistical analysis	<input type="checkbox"/>
Can't tell	<input type="checkbox"/>
11. What type of data is provided? Tick all that apply.	
Odds ratios or relative risk	<input type="checkbox"/>
Proportions (numbers and %)	<input type="checkbox"/>
Other (specify below)	<input type="checkbox"/>
12. Please write any other information regarding whether this study should be considered for our review:	

REPROSTAT 2 systematic review – Quality assessment form

REVIEWER NAME	REF ID
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Section A. All studies			
	Yes	No	Can't tell
Clarity of question and definition of outcome:			
1. Is the purpose of the study clearly described?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Is there a clear definition of the main outcomes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Description of study sample:			
4. Is the method of selection of the sample adequately described?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Are the study exclusion and inclusion criteria stated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Is the sample clearly described in terms of basic demographic characteristics (age, gender, socioeconomic status etc)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Was the sample size justified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The question should be answered no if the size of effect being sought is not specified and a formal sample size and power calculation is not carried out to determine how big the study should be to detect this effect.			
Selection bias			
8. Are the individuals selected to participate in the study likely to be representative of the target population?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The study must identify the target population for potential subjects and describe how the subjects were selected. Subjects would be representative if they comprised the entire source population (e.g school), or a random sample. Where a study does not report the proportion of the source population from which the subjects are derived, the question should be answered as 'can't tell'.			
	70-100% agreement	<70% agreement	Can't tell
9. What percentage of selected individuals agreed to participate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section B. This section is for EXPERIMENTAL and COMPARATIVE studies only; If the study does not have a control or comparison group, go to Section C

Study design:

10. Was the study described as randomised? No ☐ -> Go to question 14
Yes ☐
11. If Yes, was the method of randomisation described? No ☐ -> Go to question 14
Yes ☐
12. If Yes, was the method appropriate? No ☐
Yes ☐

Confounders

13. Were there important differences between groups at the baseline? No ☐ -> Go to section C
Yes ☐
The following are examples of confounders:
ethnicity, gender, family type, marital status, SES (income or class), education, health status.
Can't tell ☐
14. If Yes, were relevant confounders controlled, either in the design (e.g. stratification, matching) or analysis? No ☐
Yes ☐
Can't tell ☐

Section C. This section is for studies with a follow-up; if the study has no follow-up (e.g. cross-sectional survey), go to Section D

Withdrawals and drop-outs:

15. Were withdrawals and drop-outs reported in terms of numbers and reasons per group? No ☐
Yes ☐
Can't tell ☐
16. Indicate the percentage of participants completing the study. (If the percentage differs by groups, record the lowest). 80-100% ☐
60-79% ☐
Less than 60% ☐
Can't tell ☐

Section D. All studies

Data collection methods:

17. Were data collection tools shown to be valid and reliable? (Thomas 1999) Yes ☐ No ☐ Can't tell ☐
- For studies where the outcome measures are clearly described, or that demonstrates the outcome measures are accurate, the question should be answered yes. For studies which refer to other work (e.g. existing questionnaire items), the questions should be answered as yes.

Section E. All studies			
Analysis:	Yes	No	Can't tell
18. Is the statistical significance of the main findings assessed? The question should be answered no if the study provides a description only (e.g. 'XX% of the pregnant teenagers in the sample were of South Asian origin'). The study should be analysed using comparison between groups.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Has type of statistical test been stated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Are statistical tests appropriate to study? The statistical techniques used must be appropriate to the data. For example non-parametric methods should be used for small sample sizes. Where little statistical analysis has been undertaken but where there is no evidence of bias, the question should be answered yes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Have actual probability values been reported (e.g. 0.035 rather than <0.05) for the main outcomes except where the probability value is less than 0.001?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Were relevant confounders controlled in the analysis? This question should be answered no for trials if: the main conclusions of the study were based on analyses of treatment rather than intention to treat; the distribution of known confounders in the different treatment groups was not described; or the distribution of known confounders differed between the treatment groups but was not taken into account in the analyses. In non-randomised studies if the effect of the main confounders was not investigated or confounding was demonstrated but not adjustment was not made in the final analyses the question should be answered as no. (D&B)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Are conclusions justified by the data presented? If conclusions are simply the author's own opinion and not related to the data presented, the question should be answered as no.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Notes/Comments:			

Appendix 4

Methodological quality of selected studies

Our ref ID	Study (first author)	Outcome measured by self-report	Outcome measured by medical records or data bases	Factor measured by self-report	Factor measured by medical records or data bases	Sample representative of the target population	Description of sample characteristics	Response rate (study sample size)	Type of analysis
13	Andersson-Ellström et al. 1996, SW	+	-	+	-	-	+	52% (n = 88)	bivariate
47	Berg-Kelly, 1995, SW	+	-	+	-	-	+	80-85% (n = 4516)	bivariate
57/58	Bonell et al. 2003, 2005, UK	+	-	+	-	-	+	96% (8766 at baseline)	multivariate
63	Bradshaw et al. 2005, UK	-	+	-	+	+	-	n/a	multivariate
71	Burack, 1999, UK	+	-	+	-	-	-	96% (n = 1500)	bivariate
70	Burack, 2000, UK	+	-	+	-	+	-	98% (n = 1280)	bivariate
82	Christoffersen et al. 2003, DK	+	-	+	-	+	-	n = 41362	multivariate
85	Churchill et al., 2000, UK	-	+	-	+	-	-	240 cases & 3 controls per case	multivariate
88	Clements et al. 1998, UK	-	+	-	+	+	-	N = 17150	multivariate
112	Dearden et al. 1995, UK	+	-	+	-	+	-	n = 5997	multivariate
113	Diamond et al. 1999, UK	-	+	-	+	+	+	n/a	multivariate
t02	Donati et al. 2000, IT	+	-	+	-	+	+	87% (n = 6532)	multivariate
118	Donovan et al. 1997, UK	+	-	+	-	-	-	response rate not reported (n = 4481)	bivariate
119	Easton et al., 2004, HU	+	-	+	-	+	-	85% (n = 2615)	bivariate
121/124	Edgardh, 2000, 2002b, SW	+	-	+	-	+	-	44-92% (n = 1943 & 210)	multivariate
123	Edgardh, 2002c, SW	+	-	+	-	-	-	76% (n = 258)	bivariate

Our ref ID	Study (first author)	Outcome measured by self-report	Outcome measured by medical records or data bases	Factor measured by self-report	Factor measured by medical records or data bases	Sample representative of the target population	Description of sample characteristics	Response rate (study sample size)	Type of analysis
80/81	Ekéus and Christensson, 2003a, 2003b, SW	+	-	+	-	-	+	87-91% (n = 264)	bivariate (comparative)
129	Ermisch and Francesconi, 2001, UK	+	-	+	-	+	+	n = 764 & 411	multivariate
127	Ermisch et al., 2004, UK	+	-	+	-	+	+	n = 1787	multivariate
73	Feinstein and Bynner, 2004, UK	+	-	+	-	+	-	n = 9132	multivariate
140	Fitzpatrick et al., 1997, IR	+	-	+	-	-	-	n = 120	bivariate
s07	Grey and Swain, 1996, IR	+	-	+	-	-	-	response rate not reported (n = 655)	multivariate
164	Häggström-Nordin et al., 2002, SW	+	-	+	-	+	-	76-88% (n = 408)	bivariate
168	Harden and Ogden, 1999, UK	+	-	+	-	-	-	68% (n = 967); 22/58 institutions agreed to take part	bivariate
178	Hippisley-Cox et al., 2000, UK	-	+	-	+	+	+	100%	multivariate
180	Holmberg and Berg-Kelly, 2002, SW	+	-	+	-	-	-	81-88% (n = 1175)	bivariate
181	Hooke et al., 2000, UK	+	-	+	-	-	-	98% (n = 126)	bivariate
210	Kiernan, 1997, UK	+	-	+	-	+	-	n = 17414 in original cohort	multivariate
220	Kosunen and Laippala, 1996, FI	+	-	+	-	-	-	response rate not reported (n = 389)	multivariate
223	Kosunen et al. 1995, FI	+	-	+	-	+	-	86-91% (n = 462-1594 each year)	multivariate
219	Kosunen et al. 2003, FI	+	-	+	-	+	+	response rate not reported (n = 22236)	multivariate

Our ref ID	Study (first author)	Outcome measured by self-report	Outcome measured by medical records or data bases	Factor measured by self-report	Factor measured by medical records or data bases	Sample representative of the target population	Description of sample characteristics	Response rate (study sample size)	Type of analysis
247	Magnusson, 2001, SW	+	-	+	-	-	-	88-92% (522 & 567)	bivariate (comparative)
s11	Manlove, 1997, UK	+	-	+	-	+	-	n = 2183	multivariate
254	Maughan and Lindelow, 1997, UK	+	-	+	-	+	-	n = 1004 & 2539	multivariate
260	McCulloch, 2001, UK	+	-	+	-	+	-	n/a	multivariate
262	McLeod 2001, UK	-	+	-	+	+	+	n/a	multivariate
284	Nebot et al., 1997, SP	+	-	+	-	+	-	n/a	bivariate
289	Ní Bhrolcháin et al. 2000, UK	+	-	+	-	+	-	n = 7866	multivariate
300	Otterblad Olausson et al. 2000, SW	-	+	-	+	+	-	91% (n = 1885)	multivariate
305	Parkes et al., 2004, UK	+	-	+	-	+	-	69% (n = 5747)	multivariate
307	Paton, 2002, UK	-	+	-	+	+	-	n/a	multivariate
318	Pötsönen and Kontula, 1999, FI	+	-	+	-	+	-	response rate not reported (n = 2111)	bivariate
335	Roberts et al. 2004, UK	+	-	+	-	+	-	n = 8292	multivariate
345	Russell, 1998a, UK	+	-	+	-	+	-	n = 9753	multivariate
s23	Russell, 1998b, UK	+	-	+	-	+	-	n = 5036	multivariate
344	Russell, 2002, UK	+	-	+	-	+	-	n = 4928	multivariate
354/355	Seamark and Gray, 1997, 1998, UK	-	+	-	+	-	-	37 cases & one control per case	bivariate
365	Sloggett and Joshi, 1998, UK	+	-	+	-	+	-	n = 33647	multivariate

Our ref ID	Study (first author)	Outcome measured by self-report	Outcome measured by medical records or data bases	Factor measured by self-report	Factor measured by medical records or data bases	Sample representative of the target population	Description of sample characteristics	Response rate (study sample size)	Type of analysis
396	Vikat et al., 2002, FI	-	+	+	+	+	+	86% (n = 28914)	multivariate
404	Wellings et al. 2001, UK	+	-	+	-	+	+	65% (n = 11161)	multivariate
408	Wielandt et al. 2002, DK	-	+	+	-	+	-	78% (n = 359)	multivariate
416	Woodward 1995, UK	+	-	+	-	-	+	response rate not reported (n = 61)	bivariate
417	Wojnarowska et al. 2004, PL	+	-	+	-	+	+	88% (n = 6383)	bivariate

Appendix 5

Abstracts of other relevant studies identified by
our search strategy

1. Allen, J. & Hippiusley-Cox, J. 2000, "Teenage pregnancy in the UK: Where are we going wrong?", *International Journal of Adolescent Medicine & Health*, vol. 12, no. 4, pp. 261-273.
Ref ID: 11
Abstract: Young people in the United Kingdom (UK) are experiencing sex at an earlier age than ever before and many of these are putting themselves at risk of pregnancy and or sexually transmitted diseases. United Kingdom has a rate of teenage pregnancy at present at 9 per 1,000 for women under 16 years, which is double that of some countries in Europe. This review provides background information on teenage pregnancy in the UK, characteristics of the young women who become pregnant, health and social outcomes, options, the legal aspects, contraception, service aspects, interventions and educational aspects. There is a need for further studies into the differences between the attitudes and sexual behaviour in the UK and other European countries in order to learn, where and how intervention and prevention should take place
2. Arai, L. 2003, "British policy on teenage pregnancy and childbearing: the limitations of comparisons with other European countries", *Critical Social Policy*, vol. 23, no. 1, pp. 89-102.
Ref ID: 18
Abstract: British policy makers justify their concern about youthful pregnancy and childbearing by comparing relatively high British teenage pregnancy rates with lower rates in other European countries. These comparisons are a feature of 'technical/educational' explanations for youthful childbearing (explanations that depict adolescent pregnancy as a consequence of a lack of sex education and poor use of contraception). Such comparisons are inappropriate for a number of reasons. They fail to take account of the variation in adolescent reproductive behaviour and outcomes in the rest of Europe (such as variation in pregnancy rates and differential use of abortion). They also attribute low rates of teenage pregnancy to sexual openness and sex education, yet the evidence for this is mixed. In addition, such comparisons assume that Britain can learn from the experience of other European nations, despite evidence that Britain is unique, in some respects, within Europe. Policy makers must recognize the multiple reasons for early childbearing
3. Arai, L. 2003, "Low expectations, sexual attitudes and knowledge: explaining teenage pregnancy and fertility in English communities. Insights from qualitative research", *Sociological Review*, vol. 51, no. 2, pp. 199-217.
Ref ID: 17
Abstract: In the UK, youthful pregnancy and parenthood is considered an important social and health problem and is the focus of current government intervention. Contemporary policy approaches depict early unplanned pregnancy as a consequence of relative deprivation and a lack of opportunity, leading to 'low expectations' among youth, and as the result of sexual 'mixed messages' or poor knowledge about contraception. This small scale, qualitative study explores how well these explanations accord with accounts of pregnancy and motherhood provided by young mothers and Teenage Pregnancy Local Co-ordinators in diverse English localities. The results suggest that structural factors may be more important in explaining early pregnancy than those relating to sexual attitudes and knowledge. The tension between the idea of early motherhood as problematic, or even pathological, and early motherhood as rational is also considered
4. Baraitser, P., Fettiplace, R., Dolan, F., Massil, H., & Cowley, S. 2002, "Quality, mainstream services with proactive and targeted outreach: a model of contraceptive service provision for young people.[see comment]", *Journal of Family Planning & Reproductive Health Care*, vol. 28, no. 2, pp. 90-94.
Ref ID: 30
Abstract: INTRODUCTION: High teenage pregnancy rates in the UK reflect low levels of contraceptive use. Young people have a negative perception of contraceptive services and experience significant practical barriers to their use. Dedicated young people's services are considered an effective way to improve access. However it is costly to provide two parallel

services (one for older and one for young clients) and competition for resources between two services limits the opening hours of both. In this way access by clients of all ages may be reduced. We have piloted an alternative approach. We provide quality mainstream services (open to clients of all ages) with extended hours and no appointment necessary. This is combined with targeted outreach to facilitate access by the under-25s. The outreach programme includes the development of close links between the clinic and local schools, youth services, social services and voluntary sector organisations. This paper presents one part of the evaluation of this service. METHODS: Patients registering in the 6 months before and 18 months after the development of the new service completed an anonymous questionnaire. This collected demographic details and data on their source of information about the service. RESULTS: The number of clients of all age groups registering at the new service in the first year doubled. The number of new users aged under 16 years increased by 12-fold in the first 18 months. The number of young people citing a school sex education class as their source of information about the clinic increased by more than five-fold. CONCLUSION: This model of contraceptive service provision significantly increases service access by young people. It represents an effective alternative to dedicated services for young people

5. Berne, L. A. & Huberman, B. K. 2000, "Lessons learned: European approaches to adolescent sexual behavior and responsibility", *Journal of Sex Education & Therapy*, vol. 25, no. 2-3, pp. 189-199.
Ref ID: 48
Abstract: Teenagers in the US have poorer sexual health indicators than their peers in most countries of western Europe. In 1998 and again in 1999, two study tours were conducted. Adolescent health experts, teen journalists, and graduate students examined factors contributing to lower rates of teen pregnancy, STDs, and other indicators in France, Germany, and the Netherlands. Participants examined media campaigns and social marketing strategies; reproductive and sexual health services for youth; sexuality education in schools; reproductive and sexual health policies; and the impact of family, community, and religion on adolescent sexual health. This article presents the findings, discusses the impacts on professional practice among the participants, and presents recommendations for US public health policy
6. Berthoud, R. 2001, "Teenage births to ethnic minority women", *Population trends* no. 104, pp. 12-17.
Ref ID: 49
Abstract: This article analyses British age-specific fertility rates by ethnic group, with a special interest in child-bearing by women below the age of 20. Birth statistics are not analysed by ethnic group, and teenage birth rates have been estimated from the dates of birth of mothers and children in the Labour Force Survey. The method appears to be robust. Caribbean, Pakistani and especially Bangladeshi women were much more likely to have been teenage mothers than white women, but Indian women were below the national average. Teenage birth rates have been falling in all three South Asian communities
7. Bonell, C. 2004, "Why is teenage pregnancy conceptualized as a social problem? A review of quantitative research from the USA and UK", *Culture, Health & Sexuality*, vol. 6, no. 3, pp. 255-272.
Ref ID: 56
Abstract: To explore why teenage pregnancy is regarded by researchers from the USA and UK as a major social problem, a systematic review was conducted of published research on the social influences on teenage pregnancy. Papers published in the USA and UK between 1981 and 2000 were examined with respect to samples, social influences and outcomes. UK studies often justified investigating teenage pregnancy in terms of health. Research from the USA more often viewed teenage pregnancy as problematic because of associated welfare expenditure. A few studies from the USA regarded teenage parenting as mediating the intergenerational transmission of poverty. Such studies often focused on Black and

minority ethnic populations. Most research considered economic and cultural influences, with a bias in research from the USA on cultural factors, and in the UK on economic factors. Overall, there were significant differences between research in the USA and UK. These may have arisen from a combination of political, religious and research design factors. (C) 2004 Taylor & Francis Ltd

8. Botting, B., Rosato, M., & Wood, R. 1998, "Teenage mothers and the health of their children", *Population trends* no. 93, pp. 19-28.
Ref ID: 60
Abstract: Teenage mothers continue to present challenges to social policy and remain of topical interest to the media. This article discusses trends in teenage conception rates, their outcomes and long term consequences. In 1996, 7 per cent of all births were to girls aged under 20. On average children born to teenage girls have lower birthweights, increased risk of infant mortality and an increased risk of some congenital anomalies. They are less likely to be breastfed and more likely to live in deprived circumstances. These factors in turn influence their health and long term opportunities.; In 1996, 7% of all births in England and Wales were to young women under 20 years of age. Only 12% of these births took place inside of marriage. This article reviews the literature on the trends in teenage conception rates, their outcomes, and long-term consequences. Teen pregnancy has considerable implications for the health and socioeconomic status of both mothers and children. On average, the offspring of teenagers have lower birth weights, an increased risk of infant mortality, and an increased likelihood of some congenital anomalies. They are less likely to be breast-fed and more apt to live in conditions of socioeconomic deprivation. The lack of education and training found in most teen mothers reduces their long-term opportunities to improve their socioeconomic status. Initiatives to reduce the incidence of unplanned and unwanted adolescent pregnancies would thus improve socioeconomic conditions for young women and their future children
9. Botting, B. & Dunnell, K. 2000, "Trends in fertility and contraception in the last quarter of the 20th century", *Population trends* no. 100, pp. 32-39.
Ref ID: 59
Abstract: The late 1960s and early 1970s saw major changes in access to birth control. This article reviews trends in fertility and contraception between 1976 when the Family Formation Survey was undertaken and 1998, the latest year for which data are available. There has been an increase in mean age at childbirth over the period. Some of this increase is possibly a result of childbearing in second and subsequent relationships when the women will be older on average. This also has had an impact on their patterns of contraception use. Teenage pregnancy is high on the Government's agenda. Teenage pregnancy continues at constant levels. As the estimated age of first intercourse decreases, there is a continued need for sufficient, accessible and appropriate family planning services
10. Brodie, I., Berridge, D., & Beckett, W. 1997, "The health of children looked after by local authorities. [Review] [25 refs]", *British Journal of Nursing*, vol. 6, no. 7, pp. 386-390.
Ref ID: 67
Abstract: There are some 40,000 children 'in care' in England and Wales, i.e. being 'looked after' by local authorities and living in foster and residential homes. These children come from highly disadvantaged social backgrounds and are likely to experience more serious health problems than the wider population. Despite this, there is evidence to suggest that their health needs are frequently neglected. This is reflected in the dearth of research information. Health professionals play a key role in combating child abuse and are particularly concerned about future mental health, self-injury and high levels of pregnancy in this group of children. Health promotion is therefore vital, but is complicated by the fact that this group of children often do not attend school. The Department of Health has introduced a major initiative which has a strong health dimension to help promote better care planning and monitoring for children who have been separated from their parents. [References: 25]

11. Centers for Disease Control and Prevention 1995, *Romania: Reproductive Health Survey 1993*, Centers for Disease Control and Prevention, Atlanta.
Ref ID: T21
Abstract: The 1993 Romanian Reproductive Health Survey was designed to obtain data on reproductive behaviors and other selected women's health issues from a representative sample of women aged 15-44 years. Complete interviews were obtained from 4,861 women, a response rate of 92%. Final report. 202 pages; March 1995

12. Centers for Disease Control and Prevention 1998, *Romania: Young Adult Reproductive Health Survey, 1996*, Centers for Disease Control and Prevention, Atlanta.
Ref ID: T22
Abstract: The first national reproductive health survey among youth was conducted in Romania between July and October 1996. Using a multistage random sampling design, the survey interviewed 2,047 men aged 15-24 years (of 2,351 identified in the sample) and 2,025 women aged 15-24 years (of 2,171 identified) about their background characteristics, sexual and reproductive behaviors, contraceptive knowledge and use, sex education, and knowledge of sexually transmitted diseases and HIV/AIDS. 252 pages; February 1998

13. Centers for Disease Control and Prevention 2001, *Romania: Reproductive Health Survey 1999*, Centers for Disease Control and Prevention, Atlanta.
Ref ID: T23
Abstract: The 1999 Romania Reproductive Health Survey (RRHS-99) is the second national reproductive health survey in that country. The 1993 survey included only females and the RRHS-99 included independent samples of females and males of reproductive age. The RRHS-99 female samples over sampled three judets (counties) where USAID-supported reproductive health projects are implemented. The 1999 survey consists of complete interviews for 6,888 women (90% response rate) and 2,434 men (87% response rate). 534 pages; September 2001

14. Centraal Bureau 2005, *Teenage birth rate dwindling further. Web magazine, 21 June 2005.* <http://www.cbs.nl/nl-NL/menu/themas/mens-maatschappij/bevolking/publicaties/artikelen/2005-1730-wm.htm>
Ref ID: T31
Abstract: In 2004 girls under the age of 20 gave birth to 3, 004 children. The corresponding figure for 2003 was 3, 311. Thus the downward trend, which started in 2002, continues. The reduction in teenage births in 2004 by more than 9 percent was more sizeable than the decline in the overall birth rate by 3 percent. **Upward trend reversed:** In the late 1960s and early 1970s approximately 12 thousand babies were born to young girls under 20. Since then the teenage birth rate has fallen dramatically. The decrease was not evenly spread over the years. In the latter half of the 1990s, for example, there was a temporary, but noticeable increase in teenage pregnancies. The trend was reversed when prevention of teenage pregnancies got renewed attention. **Strongest decline among very young girls:** Preventative measures prove to be most effective in very young girls. The birth rate among 19-year-old girls was reduced by 7 percent, among 17 and 18-year-olds by 10 percent and among 15 and 16-year-olds by 17 percent. **Gap between foreign and native Dutch girls diminishing:** The probability of teenage motherhood among foreign girls has declined since 2001. The decline among native Dutch girls started one year later. In 2001 the probability of teenage motherhood was more than 6 times as high for non-western foreign girls as for native Dutch teenagers, as against 4.5 times in 2004. **Still considerable differences between the first and second generation:** There are striking differences between the various generations of non-western girls. The probability of becoming a mother before the age of 20 is almost 8 times as high for first-generation Turkish women as for their second-generation counterparts. The probability of teenage motherhood is only marginally higher for second-generation Turkish and Moroccan girls than for native Dutch girls. This is also true for girls in the category 'other non-western', whose parents were born in, for instance, Afghanistan, Iraq, China and Iran. **Turkish and Moroccan teen mothers**

are usually married: The majority of Turkish and Moroccan teenage mothers are 19 years old and married at the moment they give birth to their first child. The decrease in this group is mostly the result of delayed family formation. This does not apply to Surinamese and Antillean girls. First-generation Antillean girls run the greatest risk of becoming teenage mothers. Most of them are single. The birth rate among second-generation Surinamese girls is significantly lower than among first-generation girls. *Joop Garssen*

See also, 'Teenage mothers often single for a long time', web magazine, 20 Sep 2005, <http://www.cbs.nl/en-GB/menu/themas/mens-maatschappij/bevolking/publicaties/artikelen/2005-1778-wm.htm>

For years now, the Netherlands has been one of the countries with the lowest rates of teenage motherhood. In 2004 3 thousand babies were born to mothers who were younger than 20. This means that only one in 65 newborn babies had a teenage mother. Even fewer babies had a teenage father. **One in three teenage mothers is single:** Children of teenage mothers are more likely to live with only their mother than children with older mothers. Over one third of children with a young mother live in a one parent family. For children of mothers who were around thirty when they had their children this is one tenth.

Many young mothers stay single for a long time: Although some single teenage mothers move in with a partner at some time, most of them live alone with their children for a prolonged period. The percentage of children of teenage mothers living with only their mother decreases only slowly as they grow up: 39 percent of 0-4 year-olds live in a one-parent family, compared with 30 percent of 10-14 year-olds. For children with older mothers, on the other hand, this percentage increases from 6 to 13 percent. **Antillean single**

mothers: Nearly half of teenage mothers in the Netherlands are non-western foreigners. The risk for a young mother to become a single parent differs strongly by ethnic origin. Antillean/Aruban girls not only have the highest risk of being a teenage mother, they also have the highest risk of being a single parent. More than seven out of every ten children of teenage mothers in this ethnic group grow up in a single parent family. In a number of African groups, too, (girls from Angola, Somalia, Sierra Leone, Ghana and Cape Verde) young single mothers are a relatively common occurrence. Most Turkish and Moroccan teenage mothers married. The situation for Turkish and Moroccan girls in the Netherlands is very different. Although teenage mothers are relatively more common than among native Dutch girls, by far most of them are married when they have their babies. Most of them marry and start a family under the age of twenty. **Father often not officially known:** For about one in five children younger than 15 years born to a teenage mother there is no official information about the father. This information is lacking for only 2 percent of Turkish and Moroccan children. The percentage is by far highest for children of Antillean teenage mothers: for 58 percent of these children, there is no official information about their fathers. The fathers about whom information is known were usually no longer teenagers. About one in seven babies of teenage mothers also have a teenage father. This percentage varies from just over 1 percent among Moroccans, to 20 percent among Antilleans. *Joop Garssen and Carel Harmsen*

15. Choquet, M., Du Pasquier Fediaevsky, L., & Manfredi, R. 1997, "Sexual behavior among adolescents reporting chronic conditions: a French national survey", *Journal of Adolescent Health*, vol. 20, no. 1, pp. 62-67.

Ref ID: 79

Abstract: PURPOSE: To compare sexual behavior in adolescents with a physical handicap or a chronic illness (HCI, n = 604) to a healthy group (HG, n = 7,332). METHODS: Data drawn from a French national health survey carried out among 7,936 adolescents (mean age = 16.2 years) were used. A self-report questionnaire concerning health behavior, sexual behavior, and chronic illness was used in 136 public secondary schools. HCI and HG groups were compared on reported sexual behavior as well as on information (on sexuality, AIDS, and pregnancy) given by the parents. Logistic regression was performed for boys and girls to explore the relationship of health status (HCI or HG) to sexual intercourse, adjusted for sociodemographic variables. RESULTS: Fifty-two percent of HCI boys and 38% of HCI

girls reported sexual intercourse (vs. 42% of HG boys and 28% of HG girls). The HCI girls reported more often than HG girls changing partners, pregnancy, and use of oral contraceptives. The HCI boys reported more often than HG boys receiving information on sexuality from their parents. CONCLUSIONS: French HCI adolescents were found to be at high risk for pregnancy and sexually transmitted diseases (STD)

16. Coleman, L. 1999, "Comparing contraceptive use surveys of young people in the United Kingdom. [Review] [16 refs]", *Archives of Sexual Behavior*, vol. 28, no. 3, pp. 255-264.
Ref ID: 90
Abstract: Two sets of findings that emerged from a review of surveys assessing young people's use of contraception in the U.K. are outlined. First, the paper presents estimates of contraceptive use for this population subgroup and, second, it notes several limitations of surveys under review. The surveys use a wide range of indices in measuring these different aspects of contraceptive (including condom) use, which has made accurate cross-study comparisons difficult; hence most findings can only be presented as broad estimates (usually depicted within a percentage range), rather than as precise values. Nonuse of contraception among young people at last intercourse is 20 to 30% and nonuse of the condom lies between 40 and 50%. In light of this review process, the paper presents a critique of the indices used, labels the importance of using standardized and easily understood questions and measures, and highlights the most effective means of recording the potential for conception and/or sexually transmitted infection. Recommendations for those about to conduct further research in this area are added. [References: 16]
17. Copas, A. J., Wellings, K., Erens, B., Mercer, C. H., McManus, S., Fenton, K. A., Korovessis, C., Macdowall, W., Nanchahal, K., & Johnson, A. M. 2002, "The accuracy of reported sensitive sexual behaviour in Britain: exploring the extent of change 1990-2000", *Sexually transmitted infections*, vol. 78, no. 1, pp. 26-30.
Ref ID: 94
Abstract: OBJECTIVES: The 1990-1 British national probability sample survey of sexual attitudes and lifestyles (Natsal 1990) was repeated in 1999-2001 (Natsal 2000) to update population estimates of risk behaviours, and assess change over time. We examine whether changes in prevalence estimates may partly result from changes in measurement accuracy. Methods: Taking Natsal 2000 (11 161 respondents) and Natsal 1990 (13 765 respondents aged 16-44) we compared the response rate, sample representativeness, reporting of abortion last year (relative to official statistics), and selected attitudes. Among the common birth cohort eligible for both surveys (aged 16-34 Natsal 1990, 26-44 Natsal 2000), we compared reporting of experiences before 1990. Results: The response rate (66.8% Natsal 1990, 65.4% Natsal 2000) and completeness of reporting abortion were unchanged (84% Natsal 1990, 86% Natsal 2000). Attitudes were significantly changed in Natsal 2000 relative to Natsal 1990—for example, increased tolerance of male homosexual sex, OR (95% CI) 2.10 (1.93-2.29) men and 2.95 (2.74 to 3.18) women. In the common birth cohort reporting of heterosexual intercourse before 16 (OR 1.15 (1.02 to 1.29) men, 1.49 (1.31 to 1.69) women), and homosexual experience (OR 1.80 (1.46 to 2.21) men, 2.00 (1.61 to 2.48) women) were significantly increased. Conclusions: The results are consistent with improved reporting accuracy for some sensitive behaviours in Natsal 2000, in line with greater social tolerance and improved survey methodology. However, the evidence is not conclusive, and may not be generalisable to all such behaviours. The increase found in the reported prevalence of STI risk behaviours between Natsal 1990 and Natsal 2000 is likely to be somewhat overstated
18. Creatsas, G. C. 1995, "Adolescent pregnancy in Europe", *International Journal of Fertility & Menopausal Studies*, vol. 40, no. Suppl 2, pp. 80-84.
Ref ID: 99
Abstract: The International Federation of Pediatric and Adolescent Gynecology surveyed physicians from 11 European countries to ascertain the countries' adolescent pregnancy and abortion rates. Pregnancy rates tended to remain stable or decrease through the

1980s, with some notable exceptions. Germany, Federal Republic exhibited the highest adolescent pregnancy rates; the rate increased from 16% to 21% among 16- to 18-year-olds from 1985 to 1987, and then decreased to 13% by 1989. The United Kingdom had the second highest rate of adolescent pregnancy, although in the 16- to 18-year-old group, the rate decreased from 9.1% in 1985 to 8.6% by 1989. The Netherlands and Denmark had the lowest adolescent pregnancy rates, with a cumulative total of 0.9% in both countries for adolescents under age 18 years in 1985 and 1987; data for 1989 were not available at the time of the survey. Abortion rates among adolescents--expressed as a percentage of the total number of abortions performed in each country--increased in most countries during the 1980s. By 1989, Hungary and Finland had the highest abortion rates, 11% and 9.5%, respectively. Belgium had the lowest rate; only 1% of abortions performed were in women aged 18 years and younger. Most of the countries included in this survey require parental consent for termination of pregnancy. Although the medical complications of pregnancy and birth in adolescents can be minimized with good management and follow-up, the social and psychological implications continue to take a toll. Sex-education programs are one means of reducing the rate of adolescent pregnancy. For adolescents who do become pregnant, however, psychological and social support must be provided in addition to medical care.; Findings are reported from the International Federation of Pediatric and Adolescent Gynecology's compilation of national adolescent abortion and pregnancy statistics. Data are obtained from physicians from 11 European countries: Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Italy, the Netherlands, and the United Kingdom. Information was collected on adolescent pregnancy, Caesarean section, perinatal mortality, and abortion. Findings indicate that adolescent pregnancy rates during 1985-89 remained stable or declined. The exceptions were Germany, where pregnancy rates increased among adolescents aged 16-18 years from 16% in 1985 to 21% in 1987. Rates decreased among other adolescent age groups. Germany had the highest rates of adolescent pregnancy, followed by the United Kingdom. The lowest rate of adolescent pregnancy was in the Netherlands. Adolescent abortion rates as a percentage of total abortions performed increased during 1985-89 from 1.6% to 3.8% in Denmark, from 8.1% to 9.5% in Finland, and from 8% to 11% in Hungary. Adolescent abortion rates decreased in Germany, Greece, and the United Kingdom. The Netherlands had the lowest adolescent abortion rate (0.4% in 1987). For many countries that had a minimum age limit for abortion, the age limit was 16 years. The gestational age limit for an abortion was 12 weeks in all countries. Most of the 11 countries required parental consent and a physician's approval. There was no agreement on the protocol among countries for handling adolescent pregnancies and complications. Data could not be interpreted due to nonuniform reporting methods. All physicians concurred that adolescent pregnancy would be reduced by reducing the prevalence of premarital sexual activity through a comprehensive sex education curriculum

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Ref ID: 108

Abstract: CONTEXT: Adolescent pregnancy, birth, abortion and sexually transmitted disease (STD) rates are much higher in the United States than in most other developed countries. METHODS: Government statistics or nationally representative survey data were supplemented with data collected by private organizations or for regional or local populations to conduct studies of adolescent births, abortions, sexual activity and contraceptive use in Canada, the United States, Sweden, France and Great Britain. RESULTS: Adolescent childbearing is more common in the United States (22% of women reported having had a child before age 20) than in Great Britain (15%), Canada (11%), France (6%) and Sweden (4%); differences are even greater for births to younger teenagers. A lower proportion of teenage pregnancies are resolved through abortion in the United States than in the other countries; however, because of their high pregnancy rate,

U.S. teenagers have the highest abortion rate. The age of sexual debut varies little across countries, yet American teenagers are the most likely to have multiple partners. A greater proportion of U.S. women reported no contraceptive use at either first or recent intercourse (25% and 20%, respectively) than reported nonuse in France (11% and 12%, respectively), Great Britain (21% and 4%, respectively) and Sweden (22% and 7%, respectively). CONCLUSIONS: Data on contraceptive use are more important than data on sexual activity in explaining variation in levels of adolescent pregnancy and childbearing among the five developed countries; however, the higher level of multiple sexual partnership among American teenagers may help explain their higher STD rates

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Ref ID: 116
Abstract: OBJECTIVES: To assess differences in sexual health behaviors, outcomes, and potential sociocultural determinants among male college students in the United States and the Netherlands. METHODS: Survey data were collected from random samples of students from both national cultures. RESULTS: American men were more likely to report inadequate contraception, HIV/STD infection, and unintended pregnancy than were Dutch men. Religiosity and sexuality education were able to explain national differences in these sexual health outcomes. CONCLUSIONS: Findings suggest that sexuality education seems to decrease, rather than increase, sexual risk in heterosexually active male college students
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Abstract: In Sweden, society's attitudes towards teenage sexual relationships are liberal, and sexual and reproductive health issues are given high priority. Family and sex education has been taught in schools since the 1950s. The age of sexual consent is 15 years. Since 1975, abortion has been free on demand. Contraceptive counselling is free, easily available at family planning and youth health clinics. Screening for genital chlamydial infection is performed at these clinics, thus providing a "one stop shop" service. Condoms and oral contraception are available at low cost, emergency contraception is sold over the counter. Teenage childbearing is uncommon. However, sexual and reproductive health problems are on the increase among young people. During the 1990s, a period of economic stagnation in Sweden, schools have suffered budget cut backs. Sex education is taught less. Social segregation, school non-attendance, smoking, and drug use have increased. Teenage abortion rates have gone up, from 17/1000 in 1995 to 22.5/1000 in 2001. Genital chlamydial infections have increased from 14,000 cases in 1994 to 22,263 cases in 2001, 60% occurring among young people, and with the steepest increase among teenagers. Thus, a question of major concern is whether and how adolescent sexual behaviour has shifted towards more risky practices during the late 1990s
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Ref ID: 130
Abstract: OBJECTIVES: To compare variables of sexual behaviour and incidence of genital infections among women of different racial origins and lifestyles. DESIGN: A prospective cross sectional study of sexual behaviour reported by a standardised self administered questionnaire in new patients who presented for screening and diagnosis. SETTING: A genitourinary medicine clinic in west London. SUBJECTS: 1084 consecutive women newly attending in 1992. MAIN OUTCOME MEASURES: Variables relating to sociodemographic status, sexual lifestyle, condom use, sexually transmitted diseases, and other genital infections stratified by racial origin. RESULTS: There were 948 evaluable women, of whom 932 (98.3%) were heterosexual and 16 (1.7%) were lesbian. Previous heterosexual

intercourse was reported by 69% of lesbian women and their most frequent diagnosis was bacterial vaginosis (38%). The majority of heterosexual women were white (78%) and 16% were black. The black women were more likely to be teenagers (18% cf 8%; $p = 0.0004$) or students (28% cf 15%; $p = 0.0008$), and to have had an earlier coitarche (48% cf 38% before aged 17; $p < 0.004$). They also had a higher proportion of pregnancies (58% cf 38%; $p < 0.00001$) and births (38% cf 20%; $p < 0.00001$). The white women showed significantly more sexual partners during the preceding year ($p = 0.004$) and in total ($p < 0.00001$) and more reported non-regular partners (48% cf 35%; $p = 0.004$) with whom they were more likely to use condoms ($p = 0.009$). However, the black women were more likely to have gonorrhoea (7% cf 2% $p < 0.0003$), chlamydial infection (12% cf 5% $p < 0.002$), trichomoniasis (10% cf 2% $p < 0.00001$), or to sexual contacts of men with non-gonococcal urethritis (19% cf 12% $p < 0.02$). They were less likely to have genital warts (3% cf 12% $p = 0.002$). Logistic regression showed that all these variables were independently associated with the black women. The Asian women (2%), none of whom had a sexually transmitted disease, had commenced intercourse later (mean 19.7 years) than both black women (mean 16.8 years) and white women (mean 17.6 years). **CONCLUSIONS:** Sexual intercourse commenced approximately 1 year earlier in the black women, who were more likely to have become pregnant, had children, and to have acquired a bacterial sexually transmitted infection than were the white women

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Ref ID: 133

Abstract: This paper draws upon the international literature to support the thesis that poverty is more the cause, then the effect, of single teenage childbearing. The paper demonstrates that the rate of single teenage births has dramatically declined over the past twenty years while the level of government support for sole parents has significantly increased over the same period (an example of current rates of payment is included). The author asserts that there is no direct relationship between the level of welfare support and the incidence of adolescent childbearing. Midwives who function as primary health care providers should be aware of the socio-political environment as it affects disadvantaged young women.; In Australia, the rate of births to adolescents dropped from 55.2/1000 in 1971 to 22/1000 in 1990, but the number of births to unmarried adolescents increased from 35% on 1971 to 78% in 1989. The decreased rate of births has mirrored a decrease in the UK but has not been achieved in the US. The factors associated with adolescent childbearing include early initiation of sexual activity, sexual abuse as a child, access to free and confidential family planning services, abortion, poverty, and educational attainment. Poverty is the single best predictor of adolescent pregnancy. In Sweden, for example, the lack of poverty has led to a virtual end to pregnancy under age 18. The alternative life course theory proposed to explain the willingness of Black adolescents to become mothers posits that a kinship network exists to provide child care so that the mothers can continue their education. Such a theory may apply in Australia only in the aboriginal community. Girls faced with few prospects of employment may also choose motherhood to attain status. Adolescents with poor academic achievement are three times more likely to become parents. 20% of girls with low achievement who live in poverty will become mothers versus 4% of girls with average academic records who also live in poverty. Despite common beliefs, the existence of welfare programs does not encourage adolescent childbearing. In Australia, public assistance allows single adolescent mothers to live above the poverty line, but, in the UK and US, benefits have been decreased and requirements increased. Adolescent pregnancy will not be eliminated by reducing welfare entitlements. Instead, the elimination of unemployment and poverty will offer young women lives which include hopes for the future that would be jeopardized by an early pregnancy. Midwives must be prepared to act as advocates for young mothers if policy changes are recommended which would place young mothers at a disadvantage

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Ref ID: 143
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Ref ID: 165
Abstract: Background. Major socio-economic changes, including health care reforms and changes in the school curriculum, took place in Estonia after the country regained its independence in 1991. These changes affected people's reproductive behavior in many ways. In this article, the impact of the changes on the reproductive behavior of teenage girls, measured by adolescent fertility and abortion rates between 1992 and 2001, is analyzed. Methods. National data on abortions and births were obtained from official medical statistics, particularly from the Estonian Abortion Registry and the Estonian Medical Birth Registry. Female population denominators for the age group 15- 19 were obtained from the Statistical Office of Estonia. Results. In teenagers, the birth rate decreased more than two times, from 49.7 per 1000 in 1992 to 23.8 per 1000 in 2001. The abortion rate per 1000 decreased from 55.5 in 1992 to 30.4 in 2001. Compared with all women of fertile age (15-49 years), at the beginning of the decade, teenagers decided more often to have a baby, and, at the end of the decade, they decided more often to terminate the pregnancy. Two-thirds of all pregnancies in teenagers end in abortion - either legally induced abortion (legal abortion and therapeutic abortion) or spontaneous abortion. In 2001, the abortion ratio was 116.4 among ethnic Estonians and 147.9 among non-Estonians. Conclusions. The case in Estonia again proves that the availability of information, contraceptives, services and education, and the existence of other goals in life besides childbearing, have an impact on teenage birth and abortion rates. Successful health promotion activities should take into consideration the differences in the reproductive behavior of different ethnic groups
26. Hruban, L., Dostálová, Z., Unzeitig, V., & Pernicová, D. Retrospective analysis of adolescent pregnancy. draft. 2005.
Ref ID: T25
Abstract: Background: The number of adolescent pregnancies has increased throughout the world and an association with a higher rate of maternal and fetal complications is reported. Aim of the study: To evaluate a trend in pregnancy rates for adolescent mothers (17 years of age and less) during the last 5 years and determine association between early maternal age and pregnancy outcome. To analyse abortion rates among adolescents. Methods: A retrospective study of 22 348 births that were recorded at our department from 1997 to 2001. During this 5-year period 119 adolescent mothers delivered. We compared the data of adolescent mothers with the data of adult mothers. Abortion rates among adolescents have also been evaluated. Results: The number of adolescent mothers remained on the same level during the study period without a tendency to increase or decrease (0,5% of all births). The Cesarean Section and the operative vaginal delivery rates were not higher for adolescent mothers in comparison to adult mothers (11,76% versus 15,58%). Preeclampsia, preterm delivery and low birthweight were found more frequently in adolescent pregnancies and the differences were statistically significant (7,56% versus 1,17%; 28,57% versus 12,21% and 19,30% versus 10,0%). The abortion rate in girls aged 17 years and younger was also on the same level (2,04%) as that of adult mothers. Conclusion: The annual number of teenage mothers was constant and low at our department in comparison to the studies from other countries. Early maternal age was associated with an increased risk of pregnancy complications such as preeclampsia, preterm delivery and low birthweight. Abortion rates among adolescents was constant and low. Essential socio-economical changes in Czech Republic haven't influenced sexual behaviour of adolescents

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Abstract: Objective: To characterize general trends in research on the impact of provider variables on adolescent contraceptive behavior and to identify useful frameworks for designing clinic-based programs aimed at reducing unintended adolescent pregnancy. Data Sources: A computerized search of Psychological Abstracts, Sociological Abstracts, and MEDLINE identified English-language articles from 1990 to 1995 on adolescent contraceptive behavior in the United States. All relevant citations within these articles also were examined. Methods of Study Selection: Studies were selected that focused on any aspect of provider characteristics as they relate to adolescent contraceptive behavior. Tabulation, Integration, and Results: Based on a conceptual integration of the articles, three general research issues on provider characteristics were identified; 1) the effectiveness of adolescent-based clinic programs and provider variables that discriminate successful versus unsuccessful programs, 2) the effects of parental notification policies on adolescent clinic use, and 3) whether the presence of clinics promotes sexual activity on the part of adolescents. Issues that must be considered in the structuring of provider-based programs include the strategic focus of the program, the target behaviors, the target population, and the structuring of educational materials. Conclusion: The effectiveness of adolescent-based clinic programs is mixed. Parental notification of adolescent use of a clinic can, in some cases, decrease the likelihood of clinic use. There is little convincing evidence that the presence of adolescent clinics promotes sexual activity
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Abstract: A questionnaire-based survey, undertaken in North London state secondary schools, illustrated some stumbling blocks and a lack of knowledge that is likely to inhibit an effective use of general practice among 12-18 year olds. A review of the current arrangements and some adjustment of current services might increase the likelihood of achieving Health of the Nation targets for teenage pregnancies, and may also improve health care for this important and vulnerable section of the population
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Abstract: BACKGROUND: To analyze the trends in legally induced abortions among women younger than 30 years in the five Nordic countries, Denmark, Finland, Iceland, Norway and Sweden, since the liberalized abortion laws came into force. METHODS: Data stem from national registrations of vital events. Some have been published in the national vital statistics while others have been retrieved for this study. General and age-specific abortion rates are used to analyze the trends. Further, an index has been calculated by dividing the age-specific abortion rates by the Nordic average. RESULTS: The analysis reveals an overall reduction in the general abortion rates in the Nordic countries, apart from Iceland. The rates have been highest in Denmark and Sweden and lowest in Finland since the early 1980s. In the mid-1980s, the abortion rates increased among 15-19-year-old women in Sweden and among 20-24-year-old women in Denmark, Norway and Sweden, followed by a reduction. In Iceland the very low age-specific abortion rates for all age groups under 30 years at the beginning of the study period increased and Iceland had the highest rate for 15-19-year-old women in the late-1990s. CONCLUSIONS: The relatively low abortion rates in Finland demonstrate effective preventive efforts, although the recent increase challenges further studies on the relationship between abortion rates and counseling activities. The rise

in abortion rates in Iceland indicate a need for improved sex education, contraceptive services and availability of contraceptive methods for young people

30. Latvia's Association for Family Planning and Sexual Health 2003, *Reproductive health of the population. Study on situation in Latvia (1997-2003)*, Latvia's Association for Family Planning and Sexual Health, Riga.

Ref ID: T03

Abstract: The project aims to evaluate the changes of reproductive health of population of Latvia since 1997. January 2003 - May 2004, Latvia. OBJECTIVES. 1) to repeat the population survey on reproductive health carried out in 1997, 2) to evaluate the main activities in sexual and reproductive health (SRH) carried out by governmental and non-governmental organizations since 1997, 3) to assess at what level the health care system meets the needs of population in Latvia, 4) to assess the implementation of the recommendations of 1997, 5) to prepare the progress document in SRH for ICPD+10, international community and government of Latvia, 6) to prepare the final report with situation analysis and recommendations for the next period. IMPLEMENTATION. Development of the Consultative expert team, associating representatives from Ministry of Health, Ministry of Welfare, Ministry of Education and Science, from different state and non-governmental organizations dealing with different reproductive health aspects. The updating of the questionnaire of 1997 to adapt them to the RH situation in 2003. The quantitative survey has been implemented. In total, 1251 woman and 1201 man aged 15-49 in the whole territory of Latvia were questioned. Particular attention were paid to analyzing the reproductive health of young people (aged 15-24). The themes of the survey: 1) Questions on lifestyle. 2) Questions on visits to medical care specialists. 3) Menstruation (period). 4) Attitude towards contraceptives. 5) HIV/AIDS, sexually transmitted infections. 6) Questions on sexual experience. 7) Questions on pregnancies. 8) Questions on the last pregnancy that finished in childbirth. 9) Other questions (children, health education, special reproductive health procedures). 10) Demographic questions. The qualitative research (4 focus group discussions) were held with young people aged 18- 23 to analyse their attitudes towards family related issues, male involvement, pregnancy, childbirth. The seminar to elaborate the recommendations for the future policy and approaches to RH. The final document has been prepared titled "Reproductive health of the population. Study on situation in Latvia (1997-2003)". The study is based on the research carried out and provides the analysis on RH situation, the recommendations for improvement of the situation. The chapters of the document are following: 1) Reproductive Health Policy in International Context, 2) Reproductive Health Policy in Latvia, 3) Reproductive Health and Gender Equality, 4) Sexual and Reproductive Health in Human Relationships: Family, Sex and Violence, 5) Reproductive Health: Population and the Health Care System, 6) Reproductive Health and Education, 7) Young people, 8) Reproductive Health indicators. The English and Latvian version of the study "Reproductive health of the population. Study on situation in Latvia (1997-2003)" is available free of charge in the office of the Association. Please contact us to obtain your copy! PARTNERS. The project was financially supported by the UNFPA. We would like to thank World Health Organization, UNDP, AIDS prevention Center, Health Promotion Center, Association of Gynaecologists, Ministry of Health, Ministry of Welfare, Ministry of Education and Science, Educational Center for Families and Schools, coordinator of the "Coordinated support for young people - ČOs health and development", Center of Demographic studies of University of Latvia, Faculty of Medicine in University of Latvia, Faculty of Public Health and Epidemiology in Riga Stradina University and and Research Center SKDS for collaboration. Special thanks to Dr. Dace Rezeberga and Dr. Ingūna Puķīte, to Ieva Strode un Maruta Pranka from SKDS, to the international expert Gunta Lazdāne and to the authors of the final report Aivita Putniņa, Iveta Kelle, Inese Birzule and Zane Krastiņa. Special thanks to Ilze Jēkabsone - for resistance.

31. Lete, I., Bermejo, R., Coll, C., Duenas, J. L., Doval, J. L., Martinez-Salmean, J., Parrilla, J. J., & Serrano, I. 2003, "Spanish population at risk of unwanted pregnancy: results of a national survey", *European Journal of Contraception & Reproductive Health Care*, vol. 8, no.

2, pp. 75-79.

Ref ID: 243

Abstract: OBJECTIVE: We performed a personal survey in 2218 Spanish women aged from 15 to 49 years to establish the contraceptive methods used by this population and to determine the number of Spanish women of childbearing age exposed to unwanted pregnancy. METHODS: Stratified random sampling was performed to select the women to be interviewed; this sampling design ensured adequate representation of the sample in Spain. RESULTS: At the time of the survey, 69.1% of the women were using some contraceptive method, but 5% of them used poorly effective contraceptive methods, and their exposure to the risk of an unwanted pregnancy was therefore high. Moreover, among the 30.9% not using any contraceptive method, 21.1% were at risk because they were having sexual intercourse, did not want to become pregnant and did not use a contraceptive method. CONCLUSIONS: A little over one million Spanish women are exposed to the risk of having an unwanted pregnancy. Compiling the data on this significant problem is the first step in designing appropriate solutions

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Ref ID: 265

Abstract: "They don't get pregnant twice unless they are hopeless." This was one Doctor's reported assessment of women who had more than one abortion. There is some evidence that the repeated use of pregnancy testing 'scares', emergency contraception and abortion is increasing across all women. However, there may also be an interaction between this general trend and the difficulties faced by particularly vulnerable groups of teenagers who also have higher rates of teenage parenthood. This paper aims to provide an overview of the research and international statistics in this sparsely researched area. It will draw on the author's own qualitative work with 'high risking' teenage girls, and that of other researchers, in order to attempt to reach an understanding of the mechanisms behind this increasingly common phenomenon. The indications from this work refutes the notion that these women form a special or 'hopeless' group, but point towards general problems with contraception and services common to all women that may become compounded through structural vulnerability such as deprivation. [References: 55]

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Ref ID: 281

Abstract: In many countries, health care and prevention professionals face serious lack of data regarding health status, health care utilisation and lifestyles of adolescents. With reference to a survey on health and lifestyles of Swiss teenagers 15-20 years old, this paper reviews the different methodological issues linked with the conception and the realization of such a study. The main objective of the so-called "SMASH" project (Swiss Multicentric Adolescent Survey on Health) is, like other similar researches, to gather health indicators; that is, to measure attitudes and behaviour regarding different aspects of health and lifestyles, to identify the perceived health needs of the respondents and to describe their utilisation of health care services. The main issues which are addressed in the paper are related to: 1) the choice of the channel and the instrument to be used (telephone, vs. face-to-face interview vs. self-administered questionnaire; 2) the sampling procedures (pure random vs. cluster school-based samples; size of the sample); 3) the design and the content of the questionnaire (choice of the areas to be covered, selection and wording of the questions); 4) the ethical considerations linked with the collection of data. One of the

specificities of SMASH is the inclusion of youth participation at various steps and levels: the design of the questionnaire, the strategies used to gather the data, and the analysis of the results. Two important issues emerge from this review. First, the importance in the future of being able to rely on common indicators that could be used in different countries and settings through the construction of a validated instrument. Second, the fact that most of the surveys conducted in this field neglect several sub-populations of adolescents with special and important needs: handicapped adolescents, drop-outs and recent immigrants coming either as unskilled workers or as refugees. Surveys in such special in-need groups will have to be planned with specific designs, both in terms of content and of approach. [References: 86]

35. Narring, F., Michaud, P. A., & Sharma, V. 1996, "Demographic and behavioral factors associated with adolescent pregnancy in Switzerland", *Family planning perspectives*, vol. 28, no. 5, pp. 232-236.
Ref ID: 282
Abstract: Switzerland has the lowest adolescent fertility rate in Western Europe. According to data collected in 1993 as part of the Swiss Multicentre Adolescent Survey on Health, 5% of 1,726 sexually active adolescents in a group of 3,993 15-20-year-old women enrolled in academic or vocational classes had ever been pregnant; most of these women (80%) had terminated their pregnancy. Adolescents who had ever been pregnant did not differ significantly from those who had not by demographic characteristics. Multiple logistic regression analysis identified seven factors associated with pregnancy: having had four or more sexual partners; not having used contraceptives at first intercourse; ever use of less-effective contraceptive methods; having used illicit drugs during the last 30 days; living apart from one's parents; recently experiencing stress; and perceiving a lack of future prospects.; Switzerland has the lowest adolescent fertility rate in Western Europe. Data collected in 1993 as part of the Swiss Multicenter Adolescent Survey on Health indicate that 5% of 1726 sexually active adolescents in a group of 3993 15-20 year old women enrolled in academic or vocational classes had ever been pregnant; 80% had terminated their pregnancy. The authors analyzed this data in order to identify which demographic and behavioral factors may be associated with adolescent pregnancy in Switzerland. The adolescents who had ever been pregnant did not have significantly different demographic characteristics compared to the young women who had not been pregnant. Having had four or more sex partners, nonuse of contraception at first intercourse, ever use of less effective contraceptive methods, having used illicit drugs during the past 30 days, living apart from one's parents, recently experiencing stress, and perceiving a lack of future prospects were identified through multiple logistic regression as factors associated with pregnancy
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Ref ID: 283
Abstract: BACKGROUND: The onset of sexual activity represents an important development stage with positive aspects, such as love, discovery, intimate relationships, plans for the future, but also with fears of pregnancy, of sexually transmitted diseases and of AIDS. OBJECTIVE: To study perceptions, attitudes, and behaviour related to sexual life, AIDS and contraception; to explore the onset of first sexual relationships and the process of choice of a contraceptive method by the adolescents, in order to improve prevention programmes for young people. METHOD: Analysis of data from a Swiss national survey on adolescent sexuality using a computerised self-administered questionnaire, involving 2075 girls and 2208 boys between the ages of 16 and 20. The use of computers helps improve confidentiality, response rates and acceptability since survey questions are limited to the subjects' sexual experience only. RESULTS: The young people's responses emphasised the importance of emotion in sexual relationships, girls choosing intimacy and fidelity while boys attached more importance to physical pleasure. Three out of four respondents have had a sexual experience and one out of two have had penetrative sexual intercourse. The

percentages of condom or oral contraception use are high: at first sexual intercourse, 86.5% used one or the other, while 7.4% did not declare any contraceptive method. The percentages are lower when age at first intercourse is below 15 years, when a girl had an older partner (age difference 7 years and more) and when the 1st relationship is a casual one. During their first stable relationship 41.1% of girls and 30.9% of boys say they have changed their contraceptive method from condom to contraceptive pill, 2.4% of girls and 2.9% of boys say they have given up any form of contraception. Among girls, condom use at first sexual intercourse with a new partner decreases in favour of oral contraception between first and last steady relationships (75.6 vs 58.0%, $p < 0.05$), the decrease being insignificant between the first and last casual relationships (73.5 and 62.2%, n.s.). Among boys the rates of condom use are equal at first intercourse with the first and last partner (steady relationship: 74.1 and 77.2%; casual relationship: 78.3 and 76.2% respectively). CONCLUSION: The use of condoms is high among Swiss adolescents, particularly at first sexual intercourse. By integrating the prevention of sexually transmitted diseases and of unwanted pregnancies, preventive programmes would address adolescents' needs more effectively

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Ref ID: 296

Abstract: Multifactorial analyses of data from representative British and German national contraception surveys were used to examine the principal demographic determinants of contraceptive use by women. Contraceptive use appeared to be determined mainly by reference to 'reproductive status' (the combined impact of age, marital status, parity and future child wish). Women who were postponing pregnancies were using oral contraceptives, whereas those who wanted no more children relied more on intrauterine devices or sterilisation. Differences between the countries suggested that the choice of contraceptive method was influenced by health care policy, the organisation of the relevant services and differential provider preferences. The contraceptive method used was also related to having occasional rather than steady sexual partners (more condom use), lower educational level (less oral contraceptive use) and frequent church attendance (greater use of condoms and periodic abstinence). Contraception decisions appeared to follow a fixed pattern, based more on a couple's demographic situation (reproductive status, country, educational level and religious beliefs) than on the characteristics of the contraceptive methods. This resulted in an unnecessarily restricted choice of methods.; This study examines the demographic determinants of contraceptive use in Great Britain and Germany. The author conducted two nationally representative population surveys in 1992 among a sample of 967 women 15-45 years old in Great Britain and 1064 same-age women in Germany. The data for both countries were statistically weighted to correspond to national demographic characteristics. 646 British women and 1023 German women used contraception. Analysis included multiple logistic regression techniques and principal components and segmentation techniques. Contraceptive use patterns differed between East Germany, West Germany, and Great Britain. Oral contraceptive (OC) use and periodic abstinence rates were higher in West and East Germany. Sterilization rates were lower in Great Britain. In the analysis of reunified Germany compared to Great Britain, OC use declined with increasing age in both countries. IUD use and sterilization increased with an increase in age. Only in Great Britain was OC use greater in urban areas compared to rural areas. Both countries had higher periodic abstinence in larger cities. IUD use and sterilization rates were higher, and OC use rates were lower among married women compared to never married women. The association between employment status and use was unclear. Increased church attendance was associated with higher use of condoms and periodic abstinence and lower use of OCs. Having occasional partners was associated with a higher condom use rate. Multivariate findings on differential use by country suggest that choice of contraceptive method was related to health care policy, service provision, and differences in provider preferences. Contraceptive decisions were primarily based on

reproductive status, country, educational level, and religious beliefs rather than on the characteristics of the method

38. Parker, R. M., Williams, M. V., Baker, D. W., & Nurss, J. R. 1996, "Literacy and contraception: exploring the link", *Obstetrics & Gynecology*, vol. 88, no. 3 Suppl, pp. 72S-77S.

Ref ID: 304

Abstract: OBJECTIVE: To describe what is known about the relation of literacy skills to contraceptive use and to suggest directions for future research. An overview of what is known about the literacy skills of Americans and the prevalence of inadequate functional health literacy is presented. Information about reading requirements for various methods of contraception and advice from health educators on dealing with low-literate populations are described. DATA SOURCES: MEDLINE, PsychInfo, and ERIC searches for the last 20 years were completed using the terms literacy, literacy and health, family planning, health status, educational status, risk factors, contraception, and pregnancy. METHODS OF STUDY SELECTION: The primary literature searches identified 125 articles. After reviewing abstracts for these articles, we excluded 79, because they contained no specific mention of literacy or educational status relating to contraception. TABULATION INTEGRATION, AND RESULTS: We were unable to identify and study specifically devoted to the relation between functional literacy and actual use of contraceptives. Forty-six with relevant background or related information were identified: literacy and health (19), adult literacy (nine), literacy and contraception (11), and literacy and family planning (seven). Over one-third of English-speaking and 62% of Spanish-speaking patients had inadequate or marginal functional health literacy in a study conducted at two urban public hospitals. Studies by health educators have demonstrated that information for many types of contraceptives is frequently above the patient's reading level. Available epidemiologic information on the relation between educational status and unplanned pregnancy is also presented. CONCLUSIONS: Although no study has specifically addressed how functional health literacy affects contraceptive use, it is reasonable to hypothesize that functional health literacy influences contraceptive knowledge, attitudes, and behaviors. Future research should focus on the relation between functional health literacy and actual use of various contraceptives

39. Pearson, V. A., Owen, M. R., Phillips, D. R., Gray, D. J., & Marshall, M. N. 1995, "Teenage pregnancy: a comparative study of teenagers choosing termination of pregnancy or antenatal care.[see comment]", *Journal of the Royal Society of Medicine*, vol. 88, no. 7, pp. 384-388.

Ref ID: 311

Abstract: A comparative study of 167 pregnant teenagers in Devon attending either antenatal booking clinics or for National Health Service (NHS) termination of pregnancy was carried out to determine differences in their characteristics, use and experience of local family planning services. Teenagers presenting for termination of pregnancy were younger and more likely to say that they had wished to avoid getting pregnant. Whether the teenager was in a stable relationship was strongly associated with the outcome of the pregnancy, with single girls being more likely to choose a termination of pregnancy. The termination of pregnancy group were also more likely to be condom users, and to have learned about their method of contraception from school rather than from health care professionals. Teenagers' frequency of contact with family planning services suggested that teenagers choosing a termination were less likely than antenatal attenders to have attended regularly. This was mainly due to differences in behaviour among teenagers attending their general practitioner (GP) for contraceptive advice: teenagers having a termination were more likely to describe their visit to their GP as embarrassing. These findings have implications for local family planning services attempting to reduce the number of unwanted teenage pregnancies.; 167 pregnant teenagers were interviewed in England to determine if those opting for abortion had different characteristics and patterns of use of local family planning (FP) services from those continuing their pregnancies. The teenagers were interviewed in 1 of 4 health districts

during the period of August 1992 to January 1994. 95 of the teenagers had an abortion, and 72 were receiving prenatal care. It was found that the teenagers who chose abortion were significantly younger than the other group, were more likely to describe themselves as having tried to avoid pregnancy, were more likely to have relied on condoms for contraception, and were less likely to be involved in a stable relationship with a young man. Six of the teenagers receiving prenatal care had planned their pregnancies, and those planning to keep their babies were more likely to have used oral contraceptives. The teenagers choosing abortion were more likely to have received contraceptive information from a school teacher than from a clinic. These teenagers also found visiting a general practitioner to be embarrassing. With this confirmation of the study's broad hypothesis that differences exist between these two groups, more research is indicated to point out the relative importance of each difference as a factor in preventing unplanned and unwanted pregnancies

40. Pearson, V. A., Owen, M. R., Phillips, D. R., Gray, D. J., & Marshall, M. N. 1995, "Pregnant teenagers' knowledge and use of emergency contraception.[see comment]", *BMJ*, vol. 310, no. 6995, p. 1644.

Ref ID: 312

Abstract: Emergency contraception is an effective way to prevent pregnancy from occurring after unprotected sexual intercourse. The authors report a descriptive study of pregnant teens in Devon, England, which examined the awareness and use of emergency contraception, and its potential for preventing unwanted teenage pregnancy. Findings are based upon interviews conducted with 167 pregnant women aged 13-19 years between August 1992 and January 1994. 57% were attending for a National Health Service termination 8-12 weeks pregnant, while 43% were attending booking appointments at hospital antenatal clinics 16-17 weeks pregnant. 12% of pregnancies were planned, 73% were unplanned, and in 25 pregnancies the teen was equivocal at the time of conception about preventing pregnancy. 81% of teenagers had heard of emergency contraception, although 88% did not obtain it. Of the 16 teens who did obtain postcoital contraception, the approach failed in 11 cases, one woman took the pills incorrectly, and four failed to take the pills

41. Pearson, V. A. H., Owen, M. R., Phillips, D. R., Pereira Gray, D. J., & Marshall, M. N. 1995, "Family planning services in Devon, UK: Awareness, experience and attitudes of pregnant teenagers", *British Journal of Family Planning*, vol. 21, no. 2, pp. 45-49.

Ref ID: 313

Abstract: A survey of 167 pregnant teenagers in Devon attending either antenatal booking clinics or for NHS termination of pregnancy was carried out to determine their awareness and experience of, and attitudes to, family planning services in Devon. The majority (92 per cent) of teenagers admitted using contraceptives and contraceptive advice. Two thirds had become pregnant whilst using condoms as their method of contraception. General practitioners (GPs) were the principal providers of contraceptive advice, with twice as many teenagers (60 per cent) having seen a GP about contraception compared to family planning clinics (30 per cent). The majority of teenagers had received contraceptives from family planning clinics and GPs, and, overall, there was a high level of satisfaction with the service. Once accessible services for teenagers exist, there is still the need to deliver an acceptable and equitable service. Specific criticisms from teenagers included the need for assured confidentiality, improvements in approachability of staff and the quality of service offered, and, for family planning clinics, a need for improved privacy, and better advertising and accessibility. Teenagers' high awareness of, use of, and contact with, local services implies that the majority of cases of teenage pregnancy in this study resulted from risk-taking behaviour and errors in the use of contraceptives. Both service and non-service issues need to be addressed if there is to be a reduction in the incidence of teenage pregnancy in Devon

42. Population Services International Romania 2005, *Romanian Sexual Behavior and Condom Use Survey*, Population Services International Romania.
Ref ID: T24
43. Price, S. J., Barrett, G., Smith, C., & Paterson, C. 1997, "Use of contraception in women who present for termination of pregnancy in inner London", *Public health*, vol. 111, no. 6, pp. 377-382.
Ref ID: 320
Abstract: OBJECTIVES: To describe the contraceptive usage of women undergoing termination of pregnancy in order to identify problems with contraception, and therefore suggest ways in which contraceptive services can be improved. DESIGN: Prospective study of attenders for NHS termination of pregnancy over a three month period. SETTING: Community based assessment clinics for NHS termination of pregnancy in inner London. SUBJECTS: Two hundred and sixty-nine women asking for assessment for NHS termination of pregnancy. MAIN OUTCOME MEASURES: Source of contraception, method used around time of conception, and problems experienced. RESULTS: Respondents tell into three groups: those using contraception around the time they became pregnant; those who had ceased to use contraception; and those that had never used contraception. The method of contraception used by the majority of the first group was the condom and the main source of the method was the chemist shop. The second group had most commonly used oral contraceptives in the past and had ceased use in many cases as a result of side effects. The majority of the third group did not speak English and had limited knowledge of methods of contraception. CONCLUSIONS: High usage of chemists means women avoid service providers who could offer help and advice. Women were prepared to put themselves at risk of unwanted pregnancy rather than return for further help and the lack of knowledge about emergency birth control was of some concern. The needs of black and ethnic minority women requires detailed work to improve access and acceptability of contraceptive services.; To assess the contraceptive needs of induced abortion patients, a 3-month (1992-93) prospective study was conducted of 269 women presenting to a National Health Service clinic in London, England, for pregnancy termination. 163 women (62.6%) had been using contraception--primarily condoms--around the time they became pregnant, but 86 failed to use the method correctly. Another 81 women (31.2%) had used contraceptives in the past, but not at the time of the index conception. 73 of these women were former pill users and 39 had used condoms. 39.5% of these women had discontinued use because of contraceptive side effects, particularly nausea. Finally, 16 women (6.2%) had never used a contraceptive method. 15 of these women were from outside the UK and had difficulties speaking English. When asked what form of contraception they would like to use in the future, 48.8% of abortion patients identified the pill, 11.9% wanted Depo-Provera, 7.3% chose condoms, and 6.5% wanted the IUD. Chemists were a major source of contraceptive supplies for women in this study, and this trend may represent a way of avoiding discussions of sexual activity with health professionals. Among the recommendations emerging from this study are more widespread education about and availability of emergency contraception, health promotion education in pharmacies, enhanced training of general practitioners in pill prescribing criteria and counseling, efforts to prevent repeat unwanted pregnancies, and the preparation of educational materials for non-English speaking family planning clients
44. Putnam, F. W. 2003, "Ten-year research update review: Child sexual abuse", *Journal of the American Academy of Child and Adolescent Psychiatry*, vol. 42, no. 3, pp. 269-278.
Ref ID: 322
Abstract: Objective: To provide clinicians with current information on prevalence, risk factors, outcomes, treatment, and prevention of child sexual abuse (CSA). To examine the best-documented examples of psychopathology attributable to CSA. Method: Computer literature searches of Medline and PSYCInfo for key words. All English-language articles published after 1989 containing empirical data pertaining to CSA were reviewed. Results: CSA constitutes approximately 10% of officially substantiated child maltreatment cases,

numbering approximately 88,000 in 2000. Adjusted prevalence rates are 16.8% and 7.9% for adult women and men, respectively. Risk factors include gender, age, disabilities, and parental dysfunction. A range of symptoms and disorders has been associated with CSA, but depression in adults and sexualized behaviors in children are the best-documented outcomes. To date, cognitive-behavioral therapy (CBT) of the child and a nonoffending parent is the most effective treatment. Prevention efforts have focused on child education to increase awareness and home visitation to decrease risk factors. Conclusions: CSA is a significant risk factor for psychopathology, especially depression and substance abuse. Preliminary research indicates that CBT is effective for some symptoms, but longitudinal follow-up and large-scale "effectiveness" studies are needed. Prevention programs have promise, but evaluations to date are limited

45. Rademakers, J., Coenders, A., Dersjant-Roorda, M., & Helmerhorst, F. M. 1996, "A survey study of attitudes to and use of the 'double Dutch' method among university students in the Netherlands", *British Journal of Family Planning*, vol. 22, no. 1, pp. 22-24.

Ref ID: 325

Abstract: In the Netherlands, it was feared that the sole promotion of condom use in order to prevent AIDS and sexually transmitted diseases (STDs) would jeopardise the low unwanted pregnancy and abortion rates. Therefore in health education programmes the use of the 'double Dutch' method (combining oral contraceptive and condom use) was encouraged. A survey study among 303 university students shows that most of them think positively of the 'double Dutch' method and regard it as a feasible course of action. One out of five students has ever used the method oneself. Condom use is perceived as the main disadvantage. Women are more positive about the method. The main reason for not practising AIDS/STD prevention is only having sex within a monogamous relationship. Asked about their intention, four out of five students think they would use the 'double Dutch' method in future sexual contacts where the risk of contracting AIDS or STDs cannot be excluded

46. Rendall, M. S. & Smallwood, S. 2003, "Higher qualifications, first-birth timing, and further childbearing in England and Wales", *Population trends* no. 111, pp. 18-26.

Ref ID: 331

Abstract: This article examines how strong the association is between the obtaining of higher educational qualifications and later entry to motherhood, and how these are associated with levels and pace of second and subsequent childbearing. Data from the ONS Longitudinal Study are used to estimate these associations for women born in England and Wales between 1954 and 1958. Average age of entry to motherhood is found to be five years later for women with higher qualifications than for those without. Increasing age of motherhood is always associated with a lower likelihood of going on to have another child, but the decline with age is less pronounced for women with a higher qualification. Moreover, for any given age of childbearing, mothers with a higher qualification are more likely than those without to have another child, and are more likely to do so quickly

47. Rendall, M. S. 2003, "How important are intergenerational cycles of teenage motherhood in England and Wales? A comparison with France", *Population trends* no. 111, pp. 27-37.

Ref ID: 330

Abstract: Teenage fertility has fallen substantially in every Western European country except the United Kingdom. This article examines the hypothesis that repetition of teenage motherhood from mother to daughter is a major cause of the UK being the exception. A simple demographic model of fertility across generations is estimated with comparable data from England and Wales and France. The main finding is that mother-daughter repetition can account for only a minor part of the total difference in teenage childbearing between the two countries, especially over the long term. The higher teenage childbearing in England and Wales of those whose mothers began childbearing after their teenage years dominates

48. Rigsby, D. C., Macones, G. A., & Driscoll, D. A. 1998, "Risk factors for rapid repeat pregnancy among adolescent mothers: a review of the literature. [Review] [53 refs]", *Journal of Pediatric & Adolescent Gynecology*, vol. 11, no. 3, pp. 115-126.
Ref ID: 332
Abstract: STUDY OBJECTIVE: To review risk factors for rapid repeat pregnancy that have been studied among adolescents, and to determine which of these factors serve as useful predictors for second pregnancy. DESIGN: A Medline search of journal articles from 1966 to 1997 identified English language articles addressing repeat pregnancy among adolescents. All relevant citations within these articles were also included. MAIN OUTCOME MEASURES: Risk factors that were correlated with rapid repeat pregnancy in studies using rigorous statistical analysis were considered to be significant. RESULTS: Significant predictors of rapid repeat pregnancy included younger age, low socioeconomic status, low education of teen's mother or head of household, marriage, intended or desired first pregnancy, and use of a contraceptive method other than Norplant postpartum. CONCLUSIONS: There is little consensus as to which risk factors are the most important predictors of recidivism. With as many as half of teenage mothers conceiving again within two years, the identification of "high-risk" teens may be less important than the development of intervention strategies for all these young women. [References: 53]
49. Rutgers Nisso Groep 2005, *Gebrek aan regie: Een kwalitatief onderzoek naar de achtergronden van tienerzwangerschappen* [Lack of direction: a qualitative study into the backgrounds of teenage pregnancies], Rutgers Nisso Groep, Utrecht.
Ref ID: T04
50. Salihi, S., Brown, D. W., Melrose, E., & Merchant, S. 2002, "Revisiting a pilot survey involving contraception and teenage pregnancy in Ayrshire and Arran", *Journal of Family Planning & Reproductive Health Care*, vol. 28, no. 1, pp. 37-38.
Ref ID: 346
Abstract: Context. How to respond to the challenge of reducing unplanned pregnancy rates in Ayrshire and Arran. Objectives. (1) To improve understanding of the educational needs of 11-15-year-olds regarding contraception which could be used to inform planning of future sex education in schools in Ayrshire and Arran. (2) To put this in context by reviewing contraceptive usage amongst 14-16-year-old pregnant teenagers. Design. (1) A questionnaire given to 11-15-year-olds during a sex education class. (2) A retrospective study of pregnant 14-16-year-olds. Participants. (1) School pupils aged 11-15 from an area of mixed social background (n = 80). (2) Pregnant 14-16-year-olds presenting at Ayrshire Central Maternity Hospital between September 1997 and March 1998 (n = 74). Results. (1) Ninety-nine percent of the teenagers said they would use contraception. Seventy-three percent of girls, but only 52% of boys, were aware of the services available. Ninety percent of girls knew about emergency contraception, but only 59% of boys. Thirty-three percent thought they received too little sex education at school. Thirty-two percent received no sex education from home, and 10% 'too little'. More information about sexually-related diseases, safe sex and having a baby was requested. (2) The study of pregnant teenagers showed that 69% went ahead with their pregnancies, that 71 % were not habitually using contraception and only 4% were using contraception at the time of conception. Discussion. Teenagers said they would use contraception. However, boys were not aware of local services giving advice and help to young people, nor about emergency contraception. Teenagers felt they had no or 'too little' sex education at home. They felt too young to become a parent and be 'tied down'. Conclusions. (1) Teenagers at school want information about a wider range of sexual issues. (2) There is a gap between learning about contraception and its practical use, including emergency contraception. (3) Discussion and reinforcement of sex education at home may not exist for many teenagers. (4) Teenagers at school felt that they were not ready to be parents as this would restrict their social lives and disrupt their education. (5) It is recognised that young men are less well-informed than young women are, and this could impact on safe sex

51. Santow, G. & Bracher, M. 1999, "Explaining trends in teenage childbearing in Sweden", *Studies in family planning*, vol. 30, no. 3, pp. 169-182.
Ref ID: 349
Abstract: The teenage fertility rate fell precipitately in Sweden after 1966 and is now one of the lowest in Europe. This decline can be seen in the context of major reforms enacted in 1975 whereby the school sex-education curriculum was revised, contraceptive services were improved, and abortion was provided free and on demand. By means of microsimulation, the possible roles of contraception and induced abortion in causing teenage fertility to fall are examined. Before 1975, the decline appears to have been caused primarily by an increase in the number of induced abortions. After that date, however, an increase in the use of highly efficient methods of contraception led to a decline in the pregnancy rate in such a way that, even though the proportion of teenagers who sought abortion increased, the abortion rate declined. Parallels are drawn with the experience of other European countries, and contrasts with that of the United States, where no such developments have occurred, are noted.; This study examines the role of contraception and induced abortion in causing teenage fertility to fall in Sweden. The data used were drawn from the 1992 Swedish Family Survey, which sought event-history data from more than 3000 women born variously in 1949, 1954, 1956, 1964, and 1969. From these studies, it was found out that in the middle of 1970s, three interrelated changes occurred. First, the school sex education curriculum was revised in 1975; it no longer recommended abstinence among the youth, nor did it emphasize that sexual activity should take place only within marriage. Second, the abortion law was revised in 1975 to allow abortion on demand without charge. The pervasive fear was that relaxation of the law would lead to abortion's being used as a substitute for contraception. Third, the revision of the school sex-education curriculum, therefore, was accompanied by explicit contraceptive education, and special youth clinics were instituted to provide free contraceptives to young people. Due to the major reforms enacted in 1975, pregnancy rate declined primarily by an increase in the number of induced abortion. But after 1975, the decline was due to increased use of highly efficient contraceptive methods, which also caused the decline in the abortion rate
52. Seamark, C. J. & Gray, D. J. P. 1995, "Do Teenagers Consult General-Practitioners for Contraceptive Advice", *British Journal of Family Planning*, vol. 21, no. 2, pp. 50-51.
Ref ID: S25
Abstract: Teenage sexuality and conception are areas of concern in the United Kingdom. There has been little information regarding the provision of care in general practice. Other agencies have suggested that many teenagers have nowhere to go for help as they are distrustful of the general practice service. This study shows that this may not be the situation for the majority of teenage girls. In the two practices studied over 50 per cent of the 405 girls aged 16-19 had consulted and been counselled on contraception
53. Singh, S. & Darroch, J. E. 2000, "Adolescent pregnancy and childbearing: Levels and trends in developed countries", *Family planning perspectives*, vol. 32, no. 1, pp. 14-23.
Ref ID: 361
Abstract: Context: Adolescent pregnancy occurs in all societies, but the level of teenage pregnancy and childbearing varies from country to country. A cross- country analysis of birth and abortion measures is valuable for understanding trends, for identifying countries that are exceptional and for seeing where further in-depth studies are needed to understand observed patterns. Methods: Birth, abortion and population data were obtained from various sources, such as national vital statistics reports, official statistics, published national and international sources, and government statistical offices. Trend data on adolescent birthrates were compiled for 46 countries over the period 1970- 1995. Abortion rates for a recent year were available for 33 of the 46 countries, and data on trends in abortion rates could be gathered for 25 of the 46 countries. Results: The level of adolescent pregnancy varies by a factor of almost 10 across the developed countries, from a very low rate in the Netherlands (12 pregnancies per 1,000 adolescents per year) to an extremely high rate in the Russian Federation (more than 100 per 1,000). Japan and most western European

countries have very low or low pregnancy rates (under 40 per 1,000); moderate rates (40-69 per 1,000) occur in Australia, Canada, New Zealand and a number of European countries. A group of five countries - Belarus, Bulgaria, Romania, the Russian Federation and the United States - have pregnancy rates of 70 or more per 1,000. The adolescent birthrate has declined in the majority of industrialized countries over the past 25 years, and in some cases has been more than halved. Similarly, pregnancy rates in 12 of the 18 countries with accurate abortion reporting showed declines. Decreases in the adolescent abortion rate, however, were less prevalent. Conclusions: The trend toward lower adolescent birthrates and pregnancy rates over the past 25 years is widespread and is occurring across the industrialized world, suggesting that the reasons for this general trend are broader than factors limited to any one country: increased importance of education, increased motivation of young people to achieve higher levels of education and training, and greater centrality of goals other than motherhood and family formation for young women

54. Singh, S., Wulf, D., Samara, R., & Cuca, Y. P. 2000, "Gender differences in the timing of first intercourse: Data from 14 countries", *International Family Planning Perspectives*, vol. 26, no. 1, pp. 21-28, 43.

Ref ID: 363

Abstract: Context: Early initiation of intercourse and the context within which sexual activity begins are key indicators of adolescents' potential risk for unplanned pregnancy, abortion and sexually transmitted diseases. Comparative information on the sexual behavior of male and female adolescents in different countries assists health planners and service providers in meeting adolescents' needs. Methods: Data from the most recent nationally representative surveys of reproductive behavior in 14 countries throughout the world were used to assess regional variations in young people's sexual behavior. Analyses focus on 15-19-year-olds, but also use data from 20-24-year-olds to provide a more complete picture of gender differences in behavior during adolescence. Results: In most countries, roughly one-third or more of teenage women have had intercourse; in four countries (Ghana, Mali, Jamaica and Great Britain), about three in five are sexually experienced. Between about one-half and three-quarters of adolescent males in seven countries have ever had intercourse, but the proportion is one-third or less in Ghana, Zimbabwe, the Philippines and Thailand. In most countries, sexual intercourse during the teenage years occurs predominantly outside marriage among men but largely within marriage among women. Never-married young people are considerably less likely to be currently sexually active than to be sexually experienced. For example, in Ghana, 49% of never-married adolescent women have had intercourse, but only 23% have done so within the past month. Conclusions: In most of these countries, a high proportion of adolescents are potentially at risk for a range of poor reproductive health outcomes. Program planners must find ways to help sexually active adolescents consistently use effective means of protection against both pregnancy and sexually transmitted diseases

55. Singh, S., Darroch, J. E., & Frost, J. J. 2001, "Socioeconomic disadvantage and adolescent women's sexual and reproductive behavior: the case of five developed countries", *Family planning perspectives*, vol. 33, no. 6, pp. 251-258.

Ref ID: 362

Abstract: CONTEXT: Differences among developed countries in teenagers' patterns of sexual and reproductive behavior may partly reflect differences in the extent of disadvantage. However, to date, this potential contribution has received little attention. METHODS: Researchers in Canada, France, Great Britain, Sweden and the United States used the most current survey and other data to study adolescent sexual and reproductive behavior. Comparisons were made within and across countries to assess the relationships between these behaviors and factors that may indicate disadvantage. RESULTS: Adolescent childbearing is more likely among women with low levels of income and education than among their better-off peers. Levels of childbearing are also strongly related to race, ethnicity and immigrant status, but these differences vary across countries. Early sexual activity has little association with income, but young women who have little education

are more likely to initiate intercourse during adolescence than those who are better educated. Contraceptive use at first intercourse differs substantially according to socioeconomic status in some countries but not in others. Within countries, current contraceptive use does not differ greatly according to economic status, but at each economic level, use is higher in Great Britain than in the United States. Regardless of their socioeconomic status, U.S. women are the most likely to give birth as adolescents. In addition, larger proportions of adolescents are disadvantaged in the United States than in other developed countries. CONCLUSIONS: Comparatively widespread disadvantage in the United States helps explain why U.S. teenagers have higher birthrates and pregnancy rates than those in other developed countries. Improving U.S. teenagers' sexual and reproductive behavior requires strategies to reduce the numbers of young people growing up in disadvantaged conditions and to help those who are disadvantaged overcome the obstacles they face

56. Stephenson, J. M., Oakley, A., Johnson, A. M., Forrest, S., Strange, V., Charleston, S., Black, S., Copas, A., Petruckevitch, A., & Babiker, A. 2003, "A school-based randomized controlled trial of peer-led sex education in England", *Controlled clinical trials*, vol. 24, no. 5, pp. 643-657.

Ref ID: 375

Abstract: This article discusses the design of an ongoing cluster-randomized trial comparing two forms of school-based sex education in terms of educational process and sexual health outcomes. Twenty-nine schools in southern England have been randomized to either peer-led sex education or to continue with their traditional teacher-led sex education. The primary objective is to determine which form of sex education is more effective in promoting young people's sexual health. The trial includes an unusually detailed evaluation of the process of sex education as well as the outcomes. The sex education programs were delivered in school to pupils ages 13-14 years who are being followed until ages 19-20. Major trial outcomes are unprotected sexual intercourse and regretted intercourse by age 16 and cumulative incidence of abortion by ages 19-20. We discuss the rationale behind various aspects of the design, including ethical issues and practical challenges of conducting a randomized trial in schools, data linkage for key outcomes to reduce bias, and integrating process and outcome measures to improve the interpretation of findings

57. Stephenson, J. M., Strange, V., Forrest, S., Oakley, A., Copas, A., Allen, E., Babiker, A., Black, S., Ali, M., Monteiro, H., Johnson, A. M., & RIPPLE study team 2004, "Pupil-led sex education in England (RIPPLE study): cluster-randomised intervention trial.[see comment]", *Lancet*, vol. 364, no. 9431, pp. 338-346.

Ref ID: 376

Abstract: BACKGROUND: Improvement of sex education in schools is a key part of the UK government's strategy to reduce teenage pregnancy in England. We examined the effectiveness of one form of peer-led sex education in a school-based randomised trial of over 8000 pupils. METHODS: 29 schools were randomised to either peer-led sex education (intervention) or to continue their usual teacher-led sex education (control). In intervention schools, peer educators aged 16-17 years delivered three sessions of sex education to 13-14 year-old pupils from the same schools. Primary outcome was unprotected (without condom) first heterosexual intercourse by age 16 years. Analysis was by intention to treat. FINDINGS: By age 16 years, significantly fewer girls reported intercourse in the peer-led arm than in the control arm, but proportions were similar for boys. The proportions of pupils reporting unprotected first sex did not differ for girls (8.4% intervention vs 8.3% control) or for boys (6.2% vs 4.7%). Stratified estimates of the difference between arms were -0.4% (95% CI -3.7% to 2.8%, p=0.79) for girls and -1.4% (-4.4% to 1.6%, p=0.36) for boys. At follow-up (mean age 16.0 years [SD 0.32]), girls in the intervention arm reported fewer unintended pregnancies, although the difference was borderline (2.3% vs 3.3%, p=0.07). Girls and boys were more satisfied with peer-led than teacher-led sex education, but 57% of girls and 32% of boys wanted sex education in single-sex groups. INTERPRETATION: Peer-led sex education was effective in some ways, but broader strategies are needed to

improve young people's sexual health. The role of single-sex sessions should be investigated further

58. Stone, N. & Ingham, R. 2003, "When and why do young people in the United Kingdom first use sexual health services?", *Perspectives on Sexual & Reproductive Health*, vol. 35, no. 3, pp. 114-120.
Ref ID: 380
Abstract: CONTEXT: Many young people think about and take steps to obtain adequate protection only after having sexual intercourse for the first time. Consequently, they are at increased risk of unintended pregnancy and sexually transmitted infections. METHODS: Between June and August 1999, a self-administered questionnaire was distributed to attendees at UK youth-targeted sexual health services to investigate when and why they first use a sexual health service, reasons for delaying use, and sexual behavior and contraceptive practice before first use. RESULTS: Of the 747 respondents, 29% had used a sexual health service before ever having sex, most commonly "to be prepared." In contrast, 61% of respondents had used a service after sexual debut; some of these had obtained condoms elsewhere (25% of women and 33% of men who gave a reason for delay) or had not known about services or their location (11-19%). Among the women, 20-24% had been embarrassed or scared, or concerned about confidentiality or age; 32% had visited a provider because they had had unprotected sex. Sixty-three percent of men who had delayed using a service reported that the ability to obtain free condoms had prompted their first visit. Only 43% of respondents who postponed service use had practiced contraception consistently before visiting a provider. CONCLUSIONS: Young people need to be realistic about the possibility of having sex. Service use could be increased by providing more youth-specific services and by improving publicity and links between the youth, education and health sectors to dispel fears and myths about services
59. Sutton, H. 2001, "Sexual health promotion: reducing the rate of teenage pregnancy", *Paediatric nursing*, vol. 13, no. 3, pp. 33-37.
Ref ID: 383
60. Thomson, C., Currie, C., Todd, J., & Elton, R. 1999, "Changes in HIV/AIDS education, knowledge and attitudes among Scottish 15-16 year olds, 1990-1994: findings from the WHO: Health Behaviour in School-aged Children Study (HBSC)", *Health education research*, vol. 14, no. 3, pp. 357-370.
Ref ID: 387
Abstract: There is concern about the high prevalence of adolescent sexual health problems, such as sexually transmitted diseases (STDs) and unwanted pregnancies, that currently exist in the UK. If young people are to reduce their risk from HIV/AIDS and other STDs it is imperative, in the first instance, they know what the risks are and how they can avoid them. However, effective school-based sex education can only be delivered if there are accurate data on young people's current levels of knowledge and existing sex education needs. This paper details findings from the WHO: Health Behaviours of School-aged Children Study on the changes that have occurred between 1990 and 1994 in Scottish school-children's knowledge, attitudes and perceived educational needs in relation to HIV/AIDS. There have been significant changes in knowledge and attitudes that may affect their sexual behaviour, e.g. in their attitudes to condom use, risk of HIV/AIDS and other STDs, and also other sexual health problems, such as the risk of unwanted pregnancies and abortions. Finally, areas that require future research and recommendations for future sexual health education interventions are highlighted
61. Tountas, Y., Creatsas, G., Dimitrakaki, C., Antoniou, A., & Boulamatsis, D. 2004, "Information sources and level of knowledge of contraception issues among Greek women and men in the reproductive age: a country-wide survey", *European Journal of Contraception & Reproductive Health Care*, vol. 9, no. 1, pp. 1-10.
Ref ID: 388

Abstract: OBJECTIVE: Good reproductive health depends to a great extent on how well informed people are on contraception issues. Contrary to the situation existing in many European countries, in Greece there has been a lack of studies investigating how well informed Greek women and men are. Also, the sources on which they draw are equally important. The aim of this study was to examine the knowledge of Greek women and men on issues of contraception, with the ultimate goal of identifying which groups should be the focus of prevention planning programs. METHOD: A country-wide survey was conducted through a self-administered questionnaire. The sample, numbering 1500 people, was representative of the Greek population aged 16-45 years. RESULTS: A key finding was that only a small percentage of the respondents were able to answer correctly 50% or more of the questions on knowledge of basic contraceptive issues (30.6% of women and 14.7% of men). Regarding sources of information, media and friends were reported as the primary sources of information for men of all ages and young women. The gynecologist becomes a significant source of consultation for women only after the age of 25 years. Even then, only 4% of women visiting a gynecologist do so to obtain information on prevention of pregnancy. The majority of women asking professional advice have already experienced an unwanted pregnancy. CONCLUSION: The need for health education is apparent, especially for young people

62. Tydén, T., Olsson, S., & Häggström-Nordin, E. 2001, "Improved use of contraceptives, attitudes toward pornography, and sexual harassment among female university students", *Womens Health Issues*, vol. 11, no. 2, pp. 87-94.
Ref ID: 390
Abstract: This study describes sexual behavior over a 10-year period in a female student population. The use of condoms at first coitus increased from 40% to 77%. Sexually transmitted diseases decreased from 26% to 14%, and abortions from 11% to 5.5%. One-fourth of students had had anal intercourse, and 86% had performed oral sex. Half of the women had read pornography. The majority of women with experience of oral sex graded it as positive, whereas they graded anal sex as mostly negative. Twelve percent of the women had been sexually harassed, mainly by their male peers (80%)
63. Whitehead, E. 2001, "Teenage pregnancy: on the road to social death", *International journal of nursing studies*, vol. 38, no. 4, pp. 437-446.
Ref ID: 406
Abstract: This paper describes research into perceptions of teenage pregnancy at two different demographical locations in the UK. Ninety-five semi-structured interviews were conducted on a teenage pregnant population and a non-pregnant teenage population. Thematic analysis revealed three levels of influence causing social pressures on the teenage pregnancy and were structured as primary, secondary and subordinate depending on the emphasis within the discourse analysis. From this binary oppositions were identified which formed the theoretical constructs relating to the transition from one state to another which can be termed 'becoming'. When these states are negatively perceived they cause a form of impending doom and create social exclusion for the recipient. Finally, it was revealed that they succumb to the weight of social sanction and feel the prophecy of a 'social death'
64. Wight, D., Raab, G. M., Henderson, M., Abraham, C., Buston, K., Hart, G., & Scott, S. 2002, "Limits of teacher delivered sex education: interim behavioural outcomes from randomised trial.[see comment][erratum appears in BMJ 2002 Aug 24;325(7361):435]", *BMJ*, vol. 324, no. 7351, p. 1430.
Ref ID: 410
Abstract: OBJECTIVE: To determine whether a theoretically based sex education programme for adolescents (SHARE) delivered by teachers reduced unsafe sexual intercourse compared with current practice. DESIGN: Cluster randomised trial with follow up two years after baseline (six months after intervention). A process evaluation investigated the delivery of sex education and broader features of each school. SETTING: Twenty five

secondary schools in east Scotland. PARTICIPANTS: 8430 pupils aged 13-15 years; 7616 completed the baseline questionnaire and 5854 completed the two year follow up questionnaire. INTERVENTION: SHARE programme (intervention group) versus existing sex education (control programme). MAIN OUTCOME MEASURES: Self reported exposure to sexually transmitted disease, use of condoms and contraceptives at first and most recent sexual intercourse, and unwanted pregnancies. RESULTS: When the intervention group was compared with the conventional sex education group in an intention to treat analysis there were no differences in sexual activity or sexual risk taking by the age of 16 years. However, those in the intervention group reported less regret of first sexual intercourse with most recent partner (young men 9.9% difference, 95% confidence interval -18.7 to -1.0; young women 7.7% difference, -16.6 to 1.2). Pupils evaluated the intervention programme more positively, and their knowledge of sexual health improved. Lack of behavioural effect could not be linked to differential quality of delivery of intervention. CONCLUSIONS: Compared with conventional sex education this specially designed intervention did not reduce sexual risk taking in adolescents

65. Wilson, A. & Williams, R. 2000, "Sexual health services: What do teenagers want?", *Ambulatory Child Health*, vol. 6, no. 4, pp. 253-260.

Ref ID: 411

Abstract: Background. Multi-agency approaches based on assessment of local need have been recommended to reduce the incidence of teenage pregnancy. This paper explores the views of local teenagers on current and future provision of sexual health services in one part of Leicester, UK. Aim. To examine current provision and the views of teenagers on how these could be improved. Method. A questionnaire was developed from literature review and focus group interviews. It was administered to 13-16-years-olds in two schools, and by post to 16-19-years-olds, using the age-sex registers of five of the seven local practices. Results. Of the 399 school attenders aged 13-16 years sampled, 394 (98.7%) completed the questionnaire. The postal questionnaire was sent to 1255 teenagers aged 16-19 years. After removal of wrong addresses, the response rate was 317 of 1213 (26.1%). In total, 711 people completed the questionnaire, of whom 459 (64.6%) were male. General practitioners and pharmacists were the main suppliers of contraception for females and males, respectively, with lack of awareness of the range and location of sexual health services. Major barriers included fears about embarrassment, confidentiality and being examined, especially in general practice. Conclusions. Our results suggest that in this locality, the priority should be informing teenagers about existing services, and ensuring confidentiality is both practised and publicised. A leaflet to this effect has been produced and disseminated. Implications for practice. Qualitative and quantitative methods are helpful in assessing local need for teenage services and in directing their development

66. Wood, R. 1996, "Subnational variations in conceptions", *Population trends* no. 84, pp. 21-27.

Ref ID: 414

Abstract: Conception statistics are derived from information collected at the registration of live births, still births, and legal abortions. This article looks at how conception rates vary across England and Wales using the 1991 ONS area classification of DHAs (Population Trends 79). A comparison is made between age-specific conception rates for different area classification groups in 1993, and changes between 1983 and 1993 are examined. Correlations between certain social and economic factors and conception rates are also analysed.; This article describes the patterns in conceptions (live births, stillbirths, and legal abortions) in England and Wales in 1993 and changes between 1983 and 1993. Patterns are described by age, ethnicity, household size, and ONS area classification of District Health Authorities (DHAs). Each of the 11 ONS groups was similar in demographic, social, and economic characteristics. The main findings are that subnational differences in conceptions were due to the age distribution of females 15-44 years old. In the "Inner London" and "Services and Education" groups of DHAs, there were both higher conception rates and higher than average proportions of conceptions ending in legal abortion. The

highest maternity rates during 1983-93 were in the "Manufacturing" group. The greatest absolute and percentage increase was in the "Most Prosperous" group during 1983-93. During 1990-93 the underage conception rates declined, with the exception of 27 DHAs that had increases. Socioeconomic factors were associated with underage conceptions. The age distribution of conceptions varied across subnational groups. In 1993, there was a high proportion of women in their 20s with conceptions in "Inner London," "Services and Education," "Ports and Industry," and "Manufacturing." Conceptions were highest among women 15-19 years old across all area groups. In "Inner London" and "Manufacturing" conception rates peaked among women 20-24 years old. There was a statistically strong correlation between a high proportion of women who used public transportation and a high conception rate. Abortion rates remained comparatively low at all ages and varied little between area groups. Abortion rates and proportions of conceptions terminated by abortion were higher in "Inner London" and "Services and Education." Abortions outside marriage were higher among young women

67. Zoritch, B., Roberts, I., & Oakley, A. 1998, "The health and welfare effects of day-care: A systematic review of randomised controlled trials", *Social science & medicine*, vol. 47, no. 3, pp. 317-327.

Ref ID: S31

Abstract: Day-care has long been a controversial aspect of social policy in countries such as the U.K. What evidence is there about the effects of out-of-home day-care on educational, health and welfare outcomes for children and their families? This paper applies to day-care studies, the methodology of the systematic review as pioneered in the health care field, in order to establish the evidence-base for day-care provision. Randomised controlled trials of day-care for pre-school children were identified using electronic databases, hand searches of relevant literature and contacts with authors. A total of 8 trials were identified after examining 920 abstracts and 19 books. All the trials were carried out in the U.S.A. European research on this topic is extensive but we did not identify any studies using trial design. Instead observational, case controlled and cohort studies were prominent. The trials were assessed for methodological quality. Results showed that day-care promotes children's intelligence, development and school achievement. Long-term follow up demonstrates increased employment, lower teenage pregnancy rates, higher socio- economic status and decreased criminal behaviour. There are positive effects on mothers' education, employment and interaction with children. Effects on fathers have not been examined. Few studies look at a range of outcomes spanning the health, education and welfare domains. Most of the trials combined non-parental day-care with some element of parent training or education (mostly targeted at mothers); they did not disentangle the possible effects of these two interventions. The trials had other significant methodological weaknesses, pointing to the importance of improving on study design in this field. There is a need for well designed research on day-care to provide an evidence-base for British social policy. (C) 1998 Elsevier Science Ltd. All rights reserved

Appendix 6

Example of excluded studies

Ref ID	<i>Studies excluded</i>	<i>Reasons for exclusion</i>
1	Reducing health inequalities: local government and the NHS working together. Health Service Journal 2003 13 Mar;2-19.	not a primary study
2	Contraception in teenagers. Drug & Therapeutics Bulletin 2002 01 DEC 2002;40(12):92-95.	no factor
8	Adler MW. Sexual health--a Health of the Nation failure.[see comment]. BMJ 1997 Jun 14;314(7096):1743-1747.	no factor
9	Allaby MA. Contraceptive services for teenagers: do we need family planning clinics? BMJ 1995 Jun 24;310(6995):1641-1643.	no factor
10	Allaby MAK. Risks of unintended pregnancy in England and Wales in 1989. British Journal of Family Planning 1995;21(3):93-94.	no factor
14	Andreasen EE, Hindso K, Andersen B. [Induced abortions in relation to the use of contraceptive agents].[see comment]. [Danish]. Ugeskrift for laeger 1996 Oct 14;158(42):5928-5932.	no available data at the time of writing
15	Aneblom G, Larsson M, Od lind V, Tyden T. Knowledge, use and attitudes towards emergency contraceptive pills among Swedish women presenting for induced abortion. BJOG: an International Journal of Obstetrics & Gynaecology 2002 Feb;109(2):155-160.	emergency contraception
19	Arciti C, Pistone M, Marcello L, Di Salvo C. The prevention of smoking: Ten years health education for school-children. [Italian]. Lotta Contro la Tuberculosi e Le Malattie Polmonari Sociali 1996;66(3-4):281-286.	no relevant outcomes
20	Arciti C, Pistone M, Persici P, Barbieri A, Santi L. Ten years of anti-smoking programs in Italy: a review. American Journal of Health Promotion 1995 Jan-Feb;9(3):190-200.	smoking, no pregnancy
22	Armitage B, Babb P. Population review: (4). Trends in fertility. Population trends 1996(84):7-13.	trends, no teenage focus
23	Aubeny E, Buhler M, Colau JC, Vicaut E, Zadikian M, Childs M. Oral contraception: patterns of non-compliance. The Coraliance study. European Journal of Contraception & Reproductive Health Care 2002 Sep;7(3):155-161.	no teenage focus (>18 yrs)
24	Bajos N, Moreau C, Ferrand M, Bouyer J. [Access to health care for an induced abortion: qualitative and quantitative approaches]. [French]. Revue d Epidemiologie et de Sante Publique 2003 Dec;51(6):631-647.	no teen focus
25	Bajos N, Warszawski J, Gremy I, Ducot B. AIDS and contraception. Unanticipated effects of AIDS prevention campaigns. European journal of public health 2001 Sep;11(3):257-259.	no teenage focus (>18 yrs)

Ref ID	<i>Studies excluded</i>	<i>Reasons for exclusion</i>
26	Baker K. Young, pregnant ... and pleased. Practising Midwife 1999 Mar;2(3):14-16.	essay, no factors
29	Bankole A, Singh S, Haas T. Characteristics of women who obtain induced abortion: A worldwide review. International Family Planning Perspectives 1999 JUN;25(2):68-77.	abortion trends and reasons for abortion
33	Barrett G, Peacock J, Victor CR. Are women who have abortions different from those who do not? A secondary analysis of the 1990 national survey of sexual attitudes and lifestyles. Public health 1998 May;112(3):157-163.	no teenage focus (16-39)
36	Bastianelli C, Lucantoni V, Papale S, Farris M, Niccoli VS, Subrizi DA, et al. [Contraception and voluntary termination of pregnancy. Survey of a sample of 500 women]. [Italian]. Minerva ginecologica 1996 Sep;48(9):359-363.	no relevant outcomes
38	Battin MP. A better way of approaching adolescent pregnancy. Social science & medicine 1995;41(9):1203-1205.	opinion/editorial
39	Beckinsale C. Why choose motherhood? The older teenage client's perspective. [Review] [25 refs]. Practising Midwife 2003 Mar;6(3):10-13.	essay, no factors
45	Benitez Robredo T, Llerena Achutegui P, Lopez Gimenez R, Brugera Moreno C, Lasheras Lozano L, Grupo de Trabajo del Programa de Atencion al Nino en Situacion Social de Riesgo. [Socioeconomic determinants in immigrant families]. [Spanish]. Anales de Pediatria 2004 Jan;60(1):9-15.	no teenage focus, not related to pregnancy
50	Bettarini SS, D'Andrea SS. Induced abortion in Italy: levels, trends and characteristics. [Review] [19 refs]. Family planning perspectives 1996 277; Nov-Dec;28(6):267-271.	abortion trends
53	Boelskifte J, Saval PM, Rasmussen KL. [Sexual activity and contraception habits among adolescents over the last 14 years. An investigation among 9th grade pupils in the municipality of Viborg]. [Danish]. Ugeskrift for laeger 2002 Jun 10;164(24):3207-3211.	sexual debut but not related to pregnancy
61	Boulton-Jones C, McInnery K. Teenage pregnancy and deprivation.[comment]. BMJ 1995 Feb 11;310(6976):398-399.	letter to the editor
62	Bradley T, Cupples ME, Irvine H. A case control study of a deprivation triangle: teenage motherhood, poor educational achievement and unemployment. International Journal of Adolescent Medicine & Health 2002 Apr-Jun;14(2):117-123.	no available data at the time of writing

Ref ID	<i>Studies excluded</i>	<i>Reasons for exclusion</i>
64	Bremberg S. Does an increase of low income families affect child health inequalities? A Swedish case study. <i>Journal of Epidemiology & Community Health</i> 2003 Aug;57(8):584-588.	no specified outcomes, abortion rates and low income family
65	Bridgeman J. Declared innocent? <i>Medical Law Review</i> 1995;3(2):117-141.	medical law (inc. Gillick ruling)
74	Carrasco Rodriguez A, Munoz Cobos F, Espinosa Almendro JM. [The application of risk strategy to a maternal-child program at a health center]. [Spanish]. <i>Atencion Primaria</i> 1997 Apr 30;19(7):362-366.	no teenage focus
75	Carriero C, Ceci OR, Melilli GA, Fanelli M, Nappi L, Di Gesu G, et al. Socio-demographic factors and indications in second trimester voluntary abortion. <i>Panminerva medica</i> 2000 Mar;42(1):33-37.	abortion, no teenage focus
77	Chenet L. Teenage fertility in the European Union. <i>Entre Nous Cph Den</i> 1996 May(32):10.	no available data at the time of writing
83	Christopher E. The relevance of ethnic monitoring in the experience of Haringey Healthcare NHS trust community family planning clinics. <i>British Journal of Family Planning</i> 1999 Jan;24(4):123-127.	no teenage focus (15-49 yrs)
84	Churchill D, Allen J, Pringle M, Hippisley-Cox J. Teenagers at risk of unintended pregnancy: identification of practical risk markers for use in general practice from a retrospective analysis of case records in the United Kingdom. <i>International Journal of Adolescent Medicine & Health</i> 2002 Apr-Jun;14(2):153-160.	no available data at the time of writing
89	Cohall AT, Dickerson D, Vaughan R, Cohall R. Inner-city adolescents' awareness of emergency contraception. <i>Journal of the American Medical Womens Association</i> 1998;53(5 Suppl 2):258-261.	non-EU (US)
92	Connor TO, Dunn J, Golding J, Roberts R, The ALSPAC Study Team. The effects of child sexual abuse in later family life; mental health, parenting and adjustment of offspring. <i>Child Abuse and Neglect</i> 2004 May;28(5):pp.525-545.	duplicate - see 335
95	Corlyon J. She's leaving home. <i>Community Care</i> 1998 10 Sep:24-25.	essay
97	Coulon A, Strumeyer C. [Risks of poor development]. [French]. <i>Soins.Pediatric</i> 2003 Oct;Puericulture(214):16-17.	not a primary study
100	Creatsas GK, Vekemans M, Horejsi J, Uzel R, Lauritzen C, Osler M, et al. Adolescent sexuality in Europe: A multicentric study. <i>Adolescent & Pediatric Gynecology</i> 1995;8(2):59-63.	no available data at the time of writing
105	Darj E, Bondestam K. [Adolescents' view on the use of condoms]. [Swedish]. <i>Lakartidningen</i> 2003 3515-6; Oct 30;100(44):3510-3512.	not related to pregnancy, attitudes towards condoms

Ref ID	<i>Studies excluded</i>	<i>Reasons for exclusion</i>
107	Darroch JE. Adolescent pregnancy trends and demographics. [Review] [39 refs]. Current Women's Health Reports 2001 Oct;1(2):102-110.	non-EU (US)
114	DiCenso A, Guyatt G. Authors' reply on reducing adolescent unintended pregnancy.[comment]. BMJ 2002 Nov 23;325(7374):1243.	comment
117	Donati S, Grandolfo M, Spinelli A, Medda E. [Knowledge and attitudes on reproductive health among adolescents]. [Italian]. Epidemiologia e prevenzione 1996 Apr-Sep;20(2-3):122-123.	desription of preliminary results only
132	Faculty of Family Planning and Reproductive Health Care Clinical Effectiveness,Unit. FFPRHC Guidance (October 2004) contraceptive choices for young people. [Review] [189 refs]. Journal of Family Planning & Reproductive Health Care 2004 quiz 251; Oct;30(4):237-250.	guidelines
135	Falk G, Falk L, Hanson U, Milsom I. Young women requesting emergency contraception are, despite contraceptive counseling, a high risk group for new unintended pregnancies. Contraception 2001 Jul;64(1):23-27.	no teenage focus
136	Feinstein L, Bynner J. The importance of cognitive development in middle childhood for adulthood socioeconomic status, mental health, and problem behavior. Child development 2004 Sep-Oct;75(5):1329-1339.	duplicate, see 73
137	Ferdinand RF, van der Ende J, Verhulst FC. Parent-adolescent disagreement regarding psychopathology in adolescents from the general population as a risk factor for adverse outcome. Journal of abnormal psychology 2004 May;113(2):198-206.	psychopathology
142	Free C, Ogden J. Contraceptive risk and compensatory behaviour in young people in education post-16 years: A cross-sectional study. Journal of Family Planning & Reproductive Health Care 2004;30(2):91-94.	no available data at the time of writing
144	Garcia-Cervera J, Pereiro I, Perez-Campos E. [The existing differences between adolescent girls served on a first visit in a family planning center in 2 time periods]. [Spanish]. Atencion Primaria 1997 Sep 30;20(5):237-241.	no factor, evaluation of FPC programme
145	Garel M, Crost M, Kaminski M. [Psychological and social characteristics of women having repeated induced abortions. A French study in three centers]. [French]. Fertilité Contraception Sexualité 1996 Jan;24(1):72-77.	no teen focus

Ref ID	<i>Studies excluded</i>	<i>Reasons for exclusion</i>
146	Ghebrehewet S, Ashton J. A review of induced abortion rates in England and Wales, 1969-1994.[see comment]. [Review] [8 refs]. British Journal of Family Planning 1998 Jan;23(4):120-126.	abortion trend
151	Gooder P. Knowledge of emergency contraception amongst men and women in the general population and women seeking an abortion. British Journal of Family Planning 1996;22(2):81-84.	emergency contraception
152	Goraya A, Prakash M. Contraceptive knowledge and practice of pregnant teenagers requesting termination of pregnancy in inner-city London.[see comment]. Family practice 1998 Apr;15(Suppl 1):S14-5.	no factor, description
153	Gordon AF, Owen P. Emergency contraception: change in knowledge of women attending for termination of pregnancy from 1984 to 1996. British Journal of Family Planning 1999 Jan;24(4):121-122.	emergency contraception + other cont'v but no teenage focus (16-25 yrs)
155	Graham A, Green L, Glasier AF. Teenagers' knowledge of emergency contraception: questionnaire survey in south east Scotland.[see comment]. BMJ 1996 Jun 22;312(7046):1567-1569.	emergency contraception
156	Graham A, Moore L, Sharp D, Diamond I, Raine T. Teacher-led intervention improved teenagers' knowledge of emergency contraception without altering sexual activity. Evidence-Based Healthcare 2002;6(4):178-179.	emergency contraction; related to 155
157	Graugaard CL, Rasmussen B, Boisen KA. [Sexual knowledge, attitudes and behavior among young Danes. A questionnaire study]. [Danish]. Ugeskrift for laeger 2002 Oct 7;164(41):4810-4814.	sexual debut but not related to pregnancy
159	Greene S. Deconstructing the "unplanned" pregnancy: social exclusion and sexualhealth strategies in Scotland. Youth and Policy, 82, 27-46. 2003.	no available data at the time of writing
161	Grin W, Huber M, Wierrani F, Grunberger W. Sexual behavior in 13 to 19 year-old girls: A study on 1200 teenagers from Vienna. [German]. Journal fur Fertilitat und Reproduktion 2000;10(1):25-30.	no factor
170	Heinemann LA, Thiel C, Assmann A, Mohner S. [Frequency and reasons for switching/stopping use of oral contraceptives.Results of the German Cohort Study on Women Health]. [German]. Zentralblatt fur Gynakologie 2001 Oct;123(10):568-577.	no available data at the time of writing
171	Heise L, Ellsberg M, Gottmoeller M. A global overview of gender-based violence. International Journal of Gynecology & Obstetrics 2002 SEP;78:S5-S14.	no teenage focus

Ref ID	<i>Studies excluded</i>	<i>Reasons for exclusion</i>
172	Henderson LR. A survey of teenage pregnant women and their male partners in the Grampian region. British Journal of Family Planning 1999 Oct;25(3):90-92.	abortion decision making
177	Hingson RW, Howland J. Comprehensive community interventions to promote health: implications for college-age drinking problems. [Review] [50 refs]. Journal of Studies on Alcohol - Supplement 2002 Mar(14):226-240.	no teenage focus
179	Hobcraft J, Kiernan K. Childhood poverty, early motherhood and adult social exclusion. British Journal of Sociology 2001 Sep;52(3):495-517.	no specified outcomes
189	Jacobson LD, Wilkinson C, Pill R. Teenage pregnancy in the United Kingdom in the 1990s: the implications for primary care. [Review] [60 refs]. Family practice 1995 Jun;12(2):232-236.	primary care, no factors
191	Jaffer K, Newton JR. Contraception prior to counselling for termination of pregnancy.[erratum appears in Eur J Contracept Reprod Health Care 2000 Dec;5(4):305]. European Journal of Contraception & Reproductive Health Care 2000 Sep;5(3):192-197.	no teenage focus (15-43 yrs)
193	Jewell D, Tacchi J, Donovan J. Teenage pregnancy: Whose problems is it? Family practice 2000;17(6):522-528.	qualitative/descriptive
195	Jones MB, Jones DR. Preferred pathways of behavioral contagion. Journal of psychiatric research 1995 May-Jun;29(3):193-209.	very old data (1881 and 1910)
198	Kallipolitis G, Stefanidis K, Loutradis D, Siskos K, Milingos S, Michalas S. Knowledge, attitude, and behavior of female students concerning contraception in Athens, Greece. Journal of Psychosomatic Obstetrics & Gynecology 2003 Sep;24(3):145-151.	no teenage focus (17-25 yrs)
201	Karimova G, Hawkins PJ, Richards D, Hildreth AJ, Hinshaw K. Psycho-social aspects of young pregnant women in urban populations of Sunderland (UK) and Tashkent (Uzbekistan). Journal of Reproductive and Infant Psychology 2002 AUG;20(3):186-186.	no available data at the time of writing
202	Karro H. Abortion in the framework of family planning in Estonia. Acta Obstetrica et Gynecologica Scandinavica - Supplement 1997;164:46-50.	abortion, Estonia
212	Kingston MA, White C, Carlin EM, Ahmed-Jushuf IH. Genitourinary medicine: an opportunity to reduce unwanted pregnancy.[see comment]. International Journal of STD & AIDS 2004 Mar;15(3):192-194.	no teenage focus, no factors

Ref ID	<i>Studies excluded</i>	<i>Reasons for exclusion</i>
213	Kirby D. Sex and HIV/AIDS education in schools. British medical journal 1995 12 Aug;311(7002):403.	editorial
214	Klein M. [Psychosocial aspects of risk behaviour of adolescents in respect of drug abuse]. [German]. Gesundheitswesen 2004 Feb;66(Suppl 1):S56-60.	no available data at the time of writing
218	Kohli HS. Teenage pregnancies in Scotland. National Medical Journal of India 2000 Jan-Feb;13(1):39-40.	essay/letter
221	Kosunen E, Sihvo S, Hemminki E. Knowledge and use of hormonal emergency contraception in Finland. Contraception 1997 Mar;55(3):153-157.	no teenage focus (18-24 yrs)
222	Kosunen E, Vikat A, Rimpela M, Rimpela A, Huhtala H. Questionnaire study of use of emergency contraception among teenagers. British medical journal 1999 10 JUL 1999;318(7202):91.	emergency contraception
224	Kosunen EA, Rimpela MK. Towards regional equality in family planning: teenage pregnancies and abortions in Finland from 1976 to 1993. Acta Obstetrica et Gynecologica Scandinavica 1996 Jul;75(6):540-547.	trend
225	Kosunen EA, Vikat A, Gissler M, Rimpela MK. Teenage pregnancies and abortions in Finland in the 1990s. Scandinavian journal of public health 2002;30(4):300-305.	trends, no factors
228	Kovacs L. From abortion to contraception in Europe. [Review] [18 refs]. European Journal of Contraception & Reproductive Health Care 1999 Dec;4(4):229-236.	abortion, no teenage focus
229	Kozinszky Z, Bartai G. Contraceptive behaviour of teenagers requesting abortion. European Journal of Obstetrics, Gynecology, & Reproductive Biology 2004 Jan 15;112(1):80-83.	not a valid comparison
230	Kozinszky Z, Boda K, Bartfai GY. Determinants of abortion among women undergoing artificial termination of pregnancy. European Journal of Contraception & Reproductive Health Care 2001 Sep;6(3):145-152.	no teenage focus
234	Larsson M, Aneblom G, Odland V, Tyden T. Reasons for pregnancy termination, contraceptive habits and contraceptive failure among Swedish women requesting an early pregnancy termination. Acta Obstetrica et Gynecologica Scandinavica 2002 Jan;81(1):64-71.	not a relevant comparison
235	Larsson M, Eurenus K, Westerling R, Tyden T. Emergency contraceptive pills over-the-counter: a population-based survey of young Swedish women. Contraception 2004 Apr;69(4):309-315.	no teen focus, emergency contraception
236	Larsson M, Hedberg C, Milsom I, Odland V, Tyden T. [Increasing number of teenage pregnancies--multicultural approach in the preventive work is needed]. [Swedish]. Lakartidningen 2003 3074; Sep 25;100(39):3070-3072.	not a primary study

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241	Lehner R, Loranth K, Foldy M, Schober P, Strohmer H, Husslein P. Contraceptive knowledge and behavior of conventionalists, careerists, idealists, bouncers, desperadoes, and outsiders. Archives of Gynecology & Obstetrics 1999 Nov;263(1-2):17-22.	no teenage focus (14-24 yrs), Austria
244	Lete I, Cabero L, Alvarez D, Olle C. Observational study on the use of emergency contraception in Spain: results of a national survey. European Journal of Contraception & Reproductive Health Care 2003 Dec;8(4):203-209.	emergency contraception
249	Mann MC, Radcliffe KW, Basarab M. Knowledge of emergency contraception amongst female patients attending a department of genitourinary medicine. British Journal of Family Planning 1999 Jul;25(2):58-62.	no teenage focus
250	Maroto de Agustin A, Moreno Bueno MA, Rubio Moreno MM, Ortiz Valle C, Escobar Rabadan F. [Knowledge and use of contraceptive methods by the female population in a health-care district]. [erratum appears in Rev Esp Salud Publica 1999 Jan-Feb;73(1):95-6]. [Spanish]. Revista espanola de salud publica 1998 Nov-Dec;72(6):547-557.	not related to teen pregnancy; focus on women of childbearing age (15-45)
252	Martin CW, Anderson RA, Cheng L, Ho PC, van der Spuy Z, Smith KB, et al. Potential impact of hormonal male contraception: cross-cultural implications for development of novel preparations. Human Reproduction 2000 Mar;15(3):637-645.	no teenage focus (16-59 yrs)
253	Masters L, Nicholas H, Bunting P, Welch J. Family planning in genitourinary medicine: an opportunistic service?[see comment]. Genitourinary medicine 1995 Apr;71(2):103-105.	no teenage focus (<16-40+)
256	Mavroforou A, Koumantakis E, Michalodimitrakis E. Adolescence and abortion in Greece: Women's profile and perceptions. Journal of Pediatric & Adolescent Gynecology 2004;17(5):321-326.	descriptive, no factor, cont'v methods used by abortion applicants
258	Mayor S. Young women in deprived areas in Britain are less likely to have an abortion. BMJ 2004 Jul 3;329(7456):14.	news
264	Meschke LL, Bartholomae S, Zentall SR. Adolescent sexuality and parent-adolescent processes: promoting healthy teen choices. [Review] [117 refs]. Journal of Adolescent Health 2002 Dec;31(6 Suppl):264-279.	US review, parenting and intervention
273	Moos MK, Bartholomew NE, Lohr KN. Counseling in the clinical setting to prevent unintended pregnancy: an evidence-based research agenda. [Review] [44 refs]. Contraception 2003 Feb;67(2):115-132.	no teenage focus, review
274	Moreau C, Bouyer J, Goulard H, Bajos N. The remaining barriers to the use of emergency contraception: Perception of pregnancy risk by women undergoing induced abortions. Contraception 2005;71(3):202-207.	no teenage focus

Ref ID	Studies excluded	Reasons for exclusion
275	Morrison CL, Ruben SM, Beeching NJ. Female sexual health problems in a drug dependency unit. <i>International Journal of STD & AIDS</i> 1995 May-Jun;6(3):201-203.	no teenage focus (16-50 yrs)
277	Murgraff V, Parrott A, Bennett P. Risky single-occasion drinking amongst young people - definition, correlates, policy, and intervention: a broad overview of research findings. <i>Alcohol and Alcoholism</i> 1999 Jan/Feb;34(1):3-14.	drinking, no teen focus in terms of pregnancy
279	Mygind L, Nielsen RT, Wielandt HB. [Evaluation of sex education and contraception instruction at the contraception clinic in Odense]. [Danish]. <i>Ugeskrift for læger</i> 1996 Mar 11;158(11):1503-1507.	not related to pregnancy, intervention evaluation
288	Nguyen L, Bianchi-Demicheli F, Ludicke F. Women's knowledge and opinions of emergency contraception. <i>International Journal of Gynecology & Obstetrics</i> 2003 01 AUG 2003;82(2):229-230.	non-EU (Switzerland), age 14-46
290	Nicoll A, Catchpole M, Cliffe S, Hughes G, Simms I, Thomas D. Sexual health of teenagers in England and Wales: Analysis of national data. <i>British medical journal</i> 1999 15 MAY 1999;318(7194):1321-1322.	no factors
295	Oddens BJ. Contraceptive use and attitudes in Italy 1993. <i>Human Reproduction</i> 1996 Mar;11(3):533-539.	no teenage focus (15-45 yrs)
297	Oddens BJ, Milsom I. Contraceptive practice and attitudes in Sweden 1994. <i>Acta Obstetrica et Gynecologica Scandinavica</i> 1996 Nov;75(10):932-940.	no teenage focus (15-45 yrs)
299	Otterblad Olausson P, Haglund B, Weitoff GR, Cnattingius S. Teenage childbearing and long-term socioeconomic consequences: a case study in Sweden. <i>Family planning perspectives</i> 2001 Mar-Apr;33(2):70-74.	consequences of teen motherhood; v. small report on pre-existing socioeconomic disadvantage
302	Parazzini F, Negri E, Ricci E, Franceschi S, La Vecchia C. Correlates of oral contraceptive use in Italian women, 1991-93. <i>Contraception</i> 1996 Aug;54(2):101-106.	no teenage focus
303	Parera N, Suris JC. Sexuality and contraception in adolescents from Barcelona, Spain. <i>Journal of Pediatric & Adolescent Gynecology</i> 1997 Aug;10(3):153-157.	no available data at the time of writing
315	Perslev A, Rorbye C, Boesen HC, Norgaard M, Nilas L. Emergency contraception: knowledge and use among Danish women requesting termination of pregnancy. <i>Contraception</i> 2002 Dec;66(6):427-431.	emergency contraception
316	Podlinski K, Porsch B, Krussel JS, Bender HG, Beckmann MW, Binder H. Knowledge about contraception of women in the reproductive age: The German results of a survey initiated by the European Group of Contraception (EGOC). [German]. <i>Geburtshilfe und Frauenheilkunde</i> 2004;64(9):941-952.	no available data at the time of writing

Ref ID	<i>Studies excluded</i>	<i>Reasons for exclusion</i>
327	Rasch V. Contraceptive failure--results from a study conducted among women with accepted and unaccepted pregnancies in Denmark. <i>Contraception</i> 2002 Aug;66(2):109-116.	abortion, no teenage focus
333	Rimpela M, Rimpela A, Kosunen E. From control policy to comprehensive family planning: success stories from Finland. <i>Promotion et Education</i> 1996 48; Sep;3(3):28-32.	description of Finish family planning
334	Roberts H. Socioeconomic determinants of health. Children, inequalities, and health. <i>BMJ</i> 1997 Apr 12;314(7087):1122-1125.	no relevant outcomes
339	Rotondi M, Labriola D, Ammaturo FP, Perone C, Manzo E, Magliole A, et al. Induced abortion and contraception: survey of 576 young women in Naples. <i>Clinical & Experimental Obstetrics & Gynecology</i> 2000;27(1):47-50.	no teenage focus (18-39 yrs)
340	Rowlands S, Devalia H, Lawrenson R. Use of the combined oral contraceptive pill by under 16s. <i>Journal of Family Planning and Reproductive Health Care</i> 2001 JAN;27(1):17-19.	prevalence of oral contraception, no factors
341	Ruddock V, Wood R, Quinn M. Birth statistics: recent trends in England and Wales. [Review] [16 refs]. <i>Population trends</i> 1998(94):12-18.	trends
342	Ruiz Jimenez MA, Carnicer Fuentes I, Castro Yuste C, Garcia Cabanillas MJ, Moreno Corral LJ. [Adolescence and contraception]. [Spanish]. <i>Revista de Enfermeria</i> 1997 Jun;20(226):61-64.	no statistical analysis
348	Santos RS. [Pregnancy in adolescent mothers. Study in the district of Beja 1986-1991]. [Portuguese]. <i>Acta Medica Portuguesa</i> 1997 Oct;10(10):681-688.	no statistical analysis
350	Saxena S, Oakeshott P, Hilton S. Contraceptive use among South Asian women attending general practices in southwest London. <i>British Journal of General Practice</i> 2002 May;52(478):392-394.	no teenage focus
351	Scally G. Tackling teenage pregnancy in the UK. <i>Lancet</i> 1999 Jun 26;353(9171):2178.	comment
364	Skouby SO. Contraceptive use and behavior in the 21st century: a comprehensive study across five European countries. <i>European Journal of Contraception & Reproductive Health Care</i> 2004 Jun;9(2):57-68.	very limited report on teenagers
366	Smith LF, Whitfield MJ. Women's knowledge of taking oral contraceptive pills correctly and of emergency contraception: effect of providing information leaflets in general practice.[see comment]. <i>British Journal of General Practice</i> 1995 Aug;45(397):409-414.	no teenage focus (17-44 yrs)

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371	Stembera Z, Velebil P. [Trends in the reproductive health of women in the Czech Republic 1993-1997. V. International comparisons]. [Czech]. Ceska Gynekologie 2000 Nov;65(6):398-405.	no relevant outcomes
378	Stloukal L. Changing patterns of extramarital conceptions in the Czech Republic, 1960-93. Journal of Biosocial Science 1997 Oct;29(4):471-489.	trends, no factors
381	Stuart MA, van der Wal MF, Schilthuis W. [Births and abortions among Amsterdam teenagers according to ethnicity, 1996-1998]. [Dutch]. Nederlands tijdschrift voor geneeskunde 2002 Feb 9;146(6):263-267.	no available data at the time of writing
384	Svare EI, Kjaer SK, Thomsen BL, Bock JE. Determinants for non-use of contraception at first intercourse; a study of 10841 young Danish women from the general population. Contraception 2002 Nov;66(5):345-350.	no teenage focus
389	Tyden T, Aneblom G, von Essen L, Haggstrom-Nordin E, Larsson M, Od lind V. [No reduced number of abortions despite easily available emergency contraceptive pills. Studies of women's knowledge, attitudes and experience of the method]. [Swedish]. Lakartidningen 2002 4735; Nov 21;99(47):4730-4732.	not a primary study
391	Tyden T, Wetterholm M, Od lind V. Emergency contraception: the user profile. Advances in Contraception 1998 Dec;14(4):171-178.	no teenage focus (13-48 yrs)
392	Uria M, Mosquera C. Legal abortion in Asturias (Spain) after the 1985 law: sociodemographic characteristics of women applying for abortion. European journal of epidemiology 1999 Jan;15(1):59-64.	abortion
394	van Enk WJ, Gorissen WH, van Enk A. [Teenage pregnancy distribution by ethnicity in the Netherlands, 1990-1993]. [Dutch]. Nederlands tijdschrift voor geneeskunde 1999 Feb 27;143(9):465-471.	clinical outcome
398	Vuylsteke B, Vandenbruaene M, Vandenbalcke P, Van Dyck E, Laga M. Chlamydia trachomatis prevalence and sexual behaviour among female adolescents in Belgium.[see comment]. Sexually transmitted infections 1999 Jun;75(3):152-155.	factors associated with STIs, association between STIs and pregnancy
401	Weiss P, Zverina J. On the relationship of sexual attitudes and age in the population of the Czech Republic. [Czech]. Ceska a Slovenska Psychiatrie 1998;94(4):198-205.	not related to pregnancy; comparison with attitudes of those aged 60+
403	Wellings K, Kane R. Trends in teenage pregnancy in England and Wales: how can we explain them? Journal of the Royal Society of Medicine 1999 Jun;92(6):277-282.	trends, no factors
405	Westerstahl A, Bjorkelund C, Marklund B, Bengtsson C, Hagen D, Hoglund D, et al. Focusing on the pregnancy test. Acta Obstetrica et Gynecologica Scandinavica 1998 Mar;77(3):322-326.	no teenage focus (15-44 yrs)

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407	Widmer ED, Treas J, Newcomb R. Attitudes toward nonmarital sex in 24 countries. <i>Journal of sex research</i> 1998;35(4):349-358.	no teenage focus
419	Wulff M, Lalos A. The condom in relation to prevention of sexually transmitted infections and as a contraceptive method in Sweden. <i>European Journal of Contraception & Reproductive Health Care</i> 2004 Jun;9(2):69-77.	no teenage focus (18-24 yrs)
420	Yang M. Adolescent sexuality and its problems. [Review] [40 refs]. <i>Annals of the Academy of Medicine, Singapore</i> 1995 Sep;24(5):736-740.	review of US/Singapore surveys, trends
422	Ziebland S, Scobie S. Could a publicity campaign for emergency contraception reduce the incidence of unwanted pregnancy and how would we know if it did? <i>British Journal of Family Planning</i> 1995;21(2):68-71.	no teenage focus (15-44 yrs)
s01	Arnett JJ, Jensen LA. Risk behavior among adolescents: Developmental processes and culture patterns. Danish]. <i>Nordisk Psykologi</i> 1996 MAR;48(1):21-39.	no pregnancy
s02	Bajos N, Warszawski J, Ducot B, Spira A. Should condom use be promoted for contraception to prevent transmission of sexual transmitted diseases and AIDS? <i>Revue D Epidemiologie Et De Sante Publique</i> 1998 NOV;46(5):391-397.	no available data at the time of writing
s09	Kenney JW, Reinholtz C, Angelini PJ. Ethnic differences in childhood and adolescent sexual abuse and teenage pregnancy. <i>Journal of Adolescent Health</i> 1997 JUL;21(1):3-10.	non-EU (US), ages 18-22 yrs
s21	Reinecke J, Schmidt P, Ajzen I. Birth control versus AIDS prevention: A hierarchical model of condom use among young people. <i>Journal of Applied Social Psychology</i> 1997 MAY 1;27(9):743-759.	no teenage focus (14-25 yrs); German survey testing theory of planned behaviour
s28	Tursz A. Problems in conceptualizing adolescent risk behaviors: International comparisons. <i>Journal of Adolescent Health</i> 1997 AUG;21(2):116-127.	no relevant outcomes
t01	Bundeszentrale für gesundheitliche Aufklärung. Jugendsexualität: Wiederholungsbefragung von 14– bis 17-Jährigen und ihren Eltern, Ergebnisse der Repräsentativbefragung aus 2001. [German]. 2002.	no available data at the time of writing
t05	Rutgers Nisso Groep. Landelijke Abortus Registratie 2004. [Dutch]. 2005.	abortion
t06	cRZ. Abortus in België. 2002 - 2003: Een analyse van de gegevens. [Dutch]	abortion

Ref ID	Studies excluded	Reasons for exclusion
t07	Jacquemyn Y, Temmerman M, Martens G, Dom A. Adolescent pregnancies in Flandria. [Dutch]. Tijdschrift voor Geneeskunde 2001 15 AUG 2001;57(16):1077-1082.	abortion
t08	Socialstyrelsen EPIDEMIOLOGISKT CENTRUM. Fakta om mammor, förlossningar och nyfödda barn: Medicinska födelseregistret 1973 till 2000 [Facts about mothers, deliveries and newborn infants]. [Swedish]. 2002.	trend (by abstract)
t09	Aborter i Sverige 2000, jan–dec. Preliminär sammanställning. [Abortions in Sweden, 2000, Jan – Dec. A preliminary summary]. [Swedish]. 2001.	abortion (by abstract)
t10	Persson E, Holtzberg M, Edgardh K. Sexual experience, abortion and sexually transmitted diseases among young women at a contraceptive clinic. [Swedish]. Acta Obstet Gynecol Scand. 1991;70(1):63-67.	publication year before 1995, abortion & STIs (by abstract)
t11	Danielsson M, Rogala C, Sundstrom K. Få tonårsgravititeter i Sverige - Jämförelse mellan fem västländer. Samhällets stöd och attityder en viktig förklaring till skillnaderna [Few teenage pregnancies in Sweden--a comparison between five Western industrialized countries. Support from and attitudes in the society explain the differences]. [Swedish]. Läkartidningen 2003;100(23):2063-2066.	duplicate, see 104 (by abstract)
t12	Mittendorfer-Rutz E, Rasmussen F, Wasserman D. Restricted fetal growth and adverse maternal psychosocial and socioeconomic conditions as risk factors for suicidal behaviour of offspring: a cohort study. Lancet 2004;364(9440):1102-1104.	Consequences to teen mums and their children, Sweden (by abstract)
t13	Larsson M. Tonåringars inställning till abort och preventivmedel. [Swedish].	abortion (by abstract)
t14	Holmberg L. Unga män och oplanerad graviditet. Riskbeteende och behov av stöd. [Swedish].	duplicate, see 180 (by abstract)
t15	Larsson M, Hedberg C, Milsom I, Odland V, Tyden T. [Increasing number of teenage pregnancies--multicultural approach in the preventive work is needed]. [Swedish]. Lakartidningen 2003;100(39):3070-3072, 3074.	duplicate, see 236 (by abstract)
t16	Leik-Engre Hoflandsdal, ongoing project - Förebyggande av oönskade tonårsgravititeter. [Swedish].	STI (by abstract)
t17	[Chlamydia study A collaboration project between the Swedish Institute for Infectious Disease Control (SMI) and the Unit for Infectious Disease Control at Uppsala County Council] [Swedish]. Klamydiastudien.	Chlamydia (by abstract)
t18	The Swedish Institute for Infectious Disease Control (SMI). Statistik -- Anmälningspliktiga sjukdomar -- Klamydiainfektion [Statistics, Chlamydia infection, Distribution of age based on all cases]. [Swedish].	Chlamydia (by abstract)

Ref ID	<i>Studies excluded</i>	<i>Reasons for exclusion</i>
t19	The Swedish Institute for Infectious Disease Control (SMI). Molecular epidemiological typing and improved contact tracing of chlamydia infections. [Swedish]	Chlamydia (by abstract)
t20	The Swedish Institute for Infectious Disease Control (SMI). Collaborative studies: Control and prevention of sexually transmitted infections. [Swedish]	STIs (by abstract)
t26	Orvos H, Hajdú J, Pál A, Nyirati I, Kovács L. Fiatalok anyák szociális helyzete és újszülöttjeinek állapota. A fogamzástól a változás koráig 1998 november. [Hungarian]	clinical outcome (by abstract)
t27	Orvos H, Nyirati I, Hajdú J, Pál A, Nyári T, Kovács L. Is adolescent pregnancy associated with adverse perinatal outcome? Journal of Perinatal Medicine 1999;27:199-203.	clinical outcome, Hungary (by abstract)
t28	Latvia's Association for Family Planning and Sexual Health. Preventing and managing reproductive tract infections in Latvia: Demonstrating effectiveness of a broad based approach in two communities. 2002-2004.	Intervention, STIs (by abstract)
t29	Latvia's Association for Family Planning and Sexual Health. Media as public awareness building tool about abortions. 2002.	intervention, abortion (by abstract)
t30	Latvia's Association for Family Planning and Sexual Health. HIV/ AIDS prevention through improvement of sexuality education and sexual health services for adolescents in the Baltic countries. 2003.	intervention, HIV/AIDS (by abstract)

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