Summary

Risk and Protective Factors Affecting Adolescent Reproductive Health in Developing Countries

An analysis of adolescent sexual and reproductive health literature from around the world.

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Family and Community Health
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Introduction

Over the past decade, adolescent sexual and reproductive health concerns have increasingly been on national agendas. For many countries, this concern has been driven by the high prevalence of HIV/AIDS among young people. In other countries, a central concern has been early childbearing; and still others have focused predominantly on sexual behaviours among adolescents. Increasingly research and programme experience has shown that it is neither feasible nor productive to focus on one isolated behaviour without addressing a broader set of adolescent sexual and reproductive health concerns. In addition, there is mounting evidence that the most effective interventions enhance protective factors of young people and do not simply attempt to reduce risk.

Concurrent with this increased focus on young people has been a vast proliferation of research exploring factors associated with a number of health outcomes. So too, there has been a rising interest in identifying those factors that not only predispose to harm but also diminish risk.

By definition, factors are called "protective" if they discourage one or more behaviours that might lead to negative health outcomes (e.g., having sex with many partners) or encourage behaviours that might prevent a negative health outcome (e.g., using condoms and contraception). Similarly, factors are labelled "risk" if they either encourage or are associated with one or more behaviours that might lead to a negative health outcome or discourage behaviours that might prevent them (Kirby, 2002).

In order to determine which risk and protective factors are important for adolescent sexual and reproductive health behaviours, the Department of Child and Adolescent Health and Development (CAH) commissioned a comprehensive review of the literature. Knowing what these factors are, and how they operate, will not only help to target those youth who are at greatest risk for negative health outcomes, but will also help to design more effective programmes.

How was the review done?

There were a total of 11,102 articles, reports, books and proceedings that were identified from a wide variety of published and unpublished databases dealing with adolescent sexual and reproductive health issues. Subsequently, all citations were entered into an Endnotes® file (available upon request from WHO: e-mail: cah@who.int), coded to indicate whether it was from a developing or industrialized country, and as to the type of study (e.g., intervention, descriptive, etc.). Additionally, the Endnotes® software allows searching by keywords such as by country, health problem, or type of study.

Additionally, all abstracts, titles, and key words were reviewed to identify which articles were likely to meet the criteria for inclusion in the analysis:

- sample size over 100
- publication 1990 or later
- over half of sample was 10-24 years of age
- a focus on one or more developing countries
- analytic methods used multivariate statistics

Over 1900 studies were retrieved, read, and sorted. Of those, 158 studies were included in the report (a copy of the comprehensive report is available on-line: www.who/int/child-adolescent-health).

Thus, approximately 1.5% of the developing world's literature over the past 14 years met relatively modest criteria for sample size and analytic sophistication on studies related to risk and protective factors for adolescents.

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Research limitations

Despite the vast quantity of published material on adolescent sexual and reproductive health (ASRH), many gaps remain:

- Most publications are from sub-Saharan Africa, Latin America, South-east and South Asia — and even then, most research is clustered in a few countries (e.g., India, Kenya, Thailand and Uganda).
- There is a paucity of data on ASRH from North Africa, Eastern Europe, Central Asia or the Caribbean.
- While sexual coercion and other forms of sexual abuse are major factors in HIV and STD transmission, there is very little research exploring these issues.
- Polygyny and other multiple partner family structures are relatively common in many communities, but little has been written exploring the impact on children or adolescents.
- With very few longitudinal samples of adolescents anywhere in the world, policymakers are frequently left to deduce causality from associations seen in cross-sectional samples.

- Most of the studies are cross-sectional. Even when sophisticated statistics are used causality cannot be determined.
- There are nearly no studies examining risk and protective factors among adolescents for clandestine abortion, those who use abortion, and its sequelae for ASRH.
- Very few studies explore the contextual factors associated with ASRH — whether it is government policy, the economic climate, family functioning, school climate and relationships, peer or community; rather, most research focuses on adolescent knowledge, attitudes, and beliefs with little attention as to how these are derived.
- While there is an extensive body of research on gay, lesbian, bisexual and transgender (GLBT) young people in the industrialized world, one is hard pressed to find any studies from developing countries.

Important factors warranting further research

In Broadening the Horizon*, CAH commissioned analyses from developing country datasets exploring risk and protective factors for youth health. These findings together with research from industrialized countries suggest a set of critical factors yet to be well researched and published in the developing country literature:

School
- connection to school
- teacher expectations and support
- being treated fairly

Peers
- social isolation
- perceived vs. actual peer behaviour
- prejudice
- positive peer models

Family
- connection to parents
- family size/child spacing
- parenting styles
- domestic violence
- family mental illness
- single parent

Community
- community/cultural norms, values expectations
- media exposure
- migration
- role models

While these have been shown to be important factors in industrialized countries, current research in developing countries is too scanty to say.

*Broadening the Horizon: Balancing Protection and Risk for Adolescents. Department of Child and Adolescent Health and Development, World Health Organization, Geneva, 2002.

Research findings

The tables below list the risk (R) and protective (**P**) factors that were found to be statistically significant ($p<.05$) in at least two studies. Using $p<.05$ means that there is less than a 5% likelihood that the association occurred by chance alone. This is a measure of statistical significance. The numbers in parenthesis indicate the number of studies in which the factor was found to be significant (out of the total number of studies). For example, in Table 1 below, being male was found to be a significant risk factor in 8 out of 10 studies that examined this factor. Except where otherwise noted, the findings apply both to males and females.

Table 1: Factors Related to Sexual Debut		
Individual-level Factors		
Early onset of puberty (4/4)	R	
Male gender (8/10)	R	
Older age (24/28)	R	
In-school - females (6/6)		**P**
Permissive attitudes towards sex (8/8)	R	
Cigarette smoking - males (3/5)	R	
Drug use (4/7)	R	
Alcohol use (8/9)	R	
Views pornography - males (3/4)	R	
Peer-level Factors		
Friends who are sexually active (10/10)	R	
Discussed SRH* issues with friends (2/3)	R	
Family-level Factors		
Polygamous family structure (2/2)	R	
Lives with both parents (9/16)		**P**
Family stability/connection (3/3)		**P**
Urban residence (3/4)	R	

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Table 2: Factors Related to Pregnancy Occurrence		
Individual-level Factors		
Employed (2/2)	R	
Higher education level (2/2)		**P**
Knowledge about contraception (2/3)		**P**
Low future aspiration (2/2)	R	
Peer-level Factors		
Has a pregnant friend (2/2)	R	
Family-level Factors		
Lives with both parents - females (4/4)		**P**

Table 3: Factors Related to HIV Infection		
Individual-level Factors		
Older age (7/12)	R	
Commercial sex worker (2/2)	R	
Early age at becoming commercial sex worker (2/3)	R	
Commercial sex worker who works in brothel (2/2)	R	
High numbers of sexual partners (11/14)	R	
Current/history of genital ulcer (4/4)	R	
Unprotected anal sex (2/3)	R	
Current/history of STI (11/13)	R	
Regular use of condoms (3/7)		**P**
Peer-level Factors		
Usual partner circumcised (2/2)		**P**

Table 4: Factors Related to Contraceptive Use		
Individual-level Factors		
Older age (5/10)		**P**
Early age at first sex - for "ever use" (2/3)		**P**
Higher education level (12/16)		**P**
Knowledge about contraception (4/5)		**P**
Permissive attitudes about contraceptive use (8/8)		**P**
No children (4/4)	R	
Partner-level Factors		
Partner has lower education level (2/2)	R	
Discussed sex/contraception with partner (5/5)		**P**
Partner approves of contraception (2/3)		**P**
Family-level Factors		
Urban residence (6/8)		**P**
High SES* (5/6)		**P**

*Socioeconomic Status

Research findings

Reference Codes	
ℝ	Risk factor
P	Protective factor

Table 5: Factors Related to Condom Use		
Individual-level Factors		
Higher education level (9/14)		**P**
Perceived risk of contracting HIV (7/13)		**P**
Positive attitudes about using condoms (6/9)		**P**
Self-efficacy in condom use (8/9)		**P**
Perceives many barriers to condom use (4/5)	ℝ	
Knows where to buy condoms (2/2)		**P**
History of STI (2/3)		**P**
Partner-level Factors		
Has steady partner (3/3)		**P**
Discussed SRH* issues with partner (3/4)		**P**
Partner has negative attitudes about condoms (2/3)	ℝ	
Family-level Factors		
Lives with both parents (2/3)		**P**
School-level Factors		
Discussed SRH with teacher (2/2)		**P**

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Table 6: Factors Related to Early Childbearing		
Individual-level Factors		
Older age (2/3)	ℝ	
Early onset of puberty (2/2)	ℝ	
Older age at first marriage (2/2)	ℝ	
Higher education level* (2/4)		**P**
Cigarette smoking (2/3)	ℝ	
Alcohol use (2/3)	ℝ	
Family-level Factors		
Lives with both parents (2/2)		**P**

*As education level increases, the risk of early child bearing decline.

Table 7: Factors Related to Multiple Sexual Partners		
Individual-level Factors		
Male (4/7)	ℝ	
Older age (5/10)	ℝ	
Married (3/3)		**P**
Employed - males (2/2)	ℝ	
Perceived risk of contracting HIV (2/2)	ℝ	
Alcohol use (3/4)	ℝ	
Early age of first sex (2/3)	ℝ	
Peer-level Factors		
Friends who are sexually active (3/3)	ℝ	
Drinks alcohol with friends (2/2)	ℝ	
Discussed SRH* issues with friends - females	ℝ	

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Table 8: Factors Related to STI Infection		
Exchange of money for sex - males (2/2)	ℝ	
Higher numbers of sexual partners (5/10)	ℝ	
Unprotected anal sex (2/2)	ℝ	
Current/history of another STD (4/7)	ℝ	
Regular use of condoms (3/3)		**P**

Research findings: Cross-cutting factors

When examining the various sexual and reproductive health behaviours of adolescents, there are many risk and protective factors that are common to multiple adolescent sexual and reproductive health outcomes. Having the knowledge of what these factors are will allow policy makers and programme managers to develop effective interventions that target those factors known to influence behaviours, and hence, outcomes.

The table below lists the factors which cross-cut the adolescent sexual and reproductive health outcomes studied. Factors noted to be significant in the table were identified for at least two different outcomes.

Reference Codes

- R Risk factor
- **P** Protective factor

	Sexual Debut	# Sexual Partners	Condom Use	Contraception	Pregnancy	Childbearing	HIV/AIDS	STDs/STIs
Individual								
Early onset of puberty	R				R			
Older age	R	R		**P**		R	R	
Male	R	R						
Perceived high risk of HIV/AIDS		R	**P**				R	
History of STD/STI		**P**					R	R
Substance use	R	R				R		
Commercial sex work							R	R
Anal intercourse							R	R
Condom/contraceptive knowledge and/or self-efficacy			**P**	**P**	**P**			
Family								
Two-parent family	**P**		**P**		**P**	**P**		
Urban residence	R			**P**				
Peers								
Friends have had sex	R	R			R			
Married/permanent sexual partner		**P**	**P**					
Partner opposed to condom or contraception			R	R				
School								
Higher educational level/school enrollment	**P**		**P**	**P**	**P**	**P**		

Conclusion

A number of important themes emerge from this review:

- Of the more than 11,000 published and non-published papers that focused on adolescent sexual and reproductive heath, only 158 met the criteria for inclusion in this review – approximately 1%.
- Even though international evidence suggests that the context in which adolescents live influence their sexual risk taking behaviours, relatively few studies have explored any contextual factors. Rather, the preponderance of research focuses on individual-level factors.
- Factors unique to non-westernized regions of the world have not been substantially explored. The only exception, polygamous family structure, was found to be associated with earlier sexual initiation.
- While there is evidence that adolescents are primary targets of coercive sexual practices, there are less than five published papers from the developing world's literature that examine the risk and protective factors associated with either being a victim or perpetrating coercive sexual practices.
- Finally, sociodemographic factors, such as age, sex, socioeconomic status, and geographic location – many of which are not amenable to programmatic interventions – were the most commonly analyzed factors.

Despite these challenges, the review highlights a number of important risk and protective factors that should be addressed through programmes and policies. This review shows that the following factors matter most:

- education and schooling
- knowledge and attitudes related to condoms and contraception
- perceived sexual behaviour of friends
- partner approval/support for using condoms and contraception.

Education and schooling were shown to be key factors for not only reducing the risk of early sexual initiation, pregnancy, and early childbearing, but also for increasing the likelihood that adolescents will use condoms and contraception when they have sexual intercourse. Programmes and policies that focus on improving school enrollment, retention, and performance among adolescents should, therefore, be given high priority and evaluated for improving adolescent sexual and reproductive health outcomes.

At the same time, having knowledge and positive attitudes about using condoms and contraception is also important for increasing the likelihood that sexually-active adolescents will use them. Therefore, partner support and approval for using condoms and contraception appears to be critical. Sexual education programmes that aim at improving both knowledge and attitudes about condoms and contraception, as well as improving communication and negotiation skills may have promise based on the findings related to the influence that these factors appear to have.

Finally, the review demonstrates that adolescents who perceive their friends or peers to be sexually active are significantly more likely to engage in sex themselves, as well as have multiple sexual partners. In fact, the perception that one's peers are sexually active was one of the strongest identified risk factors. Programmes that target peer norms and influences about sex, therefore, hold promise for changing behaviours related to sexual initiation or having multiple partners.

That having been said, one comes away from this review with a sense that there is not one factor that explains most adolescent sexual or reproductive health behaviour. Thus, there is not one simple or magic solution. The factors that put young people at risk for health compromising sexual health behaviours are multifaceted. So, too, the factors that protect young people from harm are equally complex. The complexity should not and cannot stop us from acting. Rather, this report should give programme planners and policy makers some clues of where the evidence lies as to what influences sexual and reproductive health outcomes.

It is clear that there is a need for a broader research base on the risk and protective factors related to adolescent sexual and reproductive health in developing countries. In particular, there is a need for both longitudinal research to determine causality and for research that more clearly defines the contextual factors that influence behaviour. Moreover, the use of common indicators of risk and protective factors as well as outcomes would assist in comparing findings across studies. However, it is equally clear that we cannot wait until all the data are in. We must act, and build our programmes on what the evidence suggests today are best practices and best bets.

References

Abraham and Kumar (1999): "Sexual Experiences and their Correlates among College Students in Mumbai City, India." In International Family Planning Perspectives 25(3):139-146,152.

Abraham, Rubaale, and Kipp (1995): "HIV-preventive Cognitions Amongst Secondary School Students in Uganda." In Health Education Research 10(2):155-162.

Acyei and Migadde (1995): "Demographic and Sociocultural Factors Influencing Contraceptive use in Uganda." J Biosoc Sci 27:47-60.

Addai (1999): "Ethnicity and Contraceptive use in Sub-Saharan Africa: The Case of Ghana." J Biosoc Sci 31:105-120.

Adetunji (2000): "Condom Use in Marital and Nonmarital Relationships." In International Family Planning Perspectives 26(4):196-200.

Adetunji and Meekers (2001): "Consistency in Condom Use in the Context of HIV/AIDS in Zimbabwe." In Journal of Biosocial Science 33:121-138.

Adih and Alexander (1999): "Determinants of Condom Use to Prevent HIV Infection among Youth in Ghana." In Journal of Adolescent Health 24:63-72.

Agha (2000): "Is Low Income a Constraint to Contraceptive Use among the Pakistani Poor?" J Biosoc Sci 32:161-175.

Ahmed et al. (2001): "HIV Incidence and Sexually Transmitted Disease Prevalence Associated with Condom Use: A Population Study in Rakai, Uganda." In AIDS 15:2171-2179.

Anteghini et al. (2001): "Health Risk Behaviors and Associated Risk and Protective Factors among Brazilian Adolescents in Santos, Brazil." In Journal of Adolescent Health 28:295-302.

Arowojolu and Adekunle (2000): "Perception and Practice of Emergency Contraception by Post-Secondary School Students in Southwest Nigeria." Afr Reprod Health 4(1):56-65.

Asamoah-Adu et al. (2001): "HIV Infection among Sex Workers in Accra: Need to Target New Recruits Entering the Trade." JAIDS 28:358-366.

Auvert et al. (2001): "HIV Infection Among Youth in a South African Mining Town is Associated with Herpes Simplex Virus-2 Seropositivity & Sexual Behaviour." AIDS 15:885-898.

Baburajan (1998): "Psycho-Social Factors Associated with Contraceptive Initiation: A Multivariate Analysis." Psychol Studies 43(1&2):37-43.

Ben-Zur et al. (2000): "Denial of HIV/AIDS and Preventive Behavior among Israeli Adolescents." In Journal of Adolescence 23:157-174.

Borgdorff et al. (1994): "Sexual Partner Change and Condom Use among Urban Factory Workers in Northwest Tanzania." In Genitourinary Medicine 70:378-383.

Bui et al. (2001): "Cross-sectional Study of Sexual Behavior and Knowledge about HIV among Urban, Rural, and Minority Residents in VietNam." In Bulletin of the World Health Organization 79:15-21.

Bulterys et al. (1994): "Incident HIV-1 Infection in a Cohort of Young Women in Butare, Rwanda." AIDS 8:1585-1591.

Calves and Meekers (1997): "Gender Differences in Premarital Sex, Condom Use, and Abortion: A Case Study of Yaounde, Cameroon" PSI Research Division, Working Paper No.10

Carmel et al. (1992): "Gender Differences in AIDS-related Behavioral Changes among 18-19 year olds in a Low Incidence Country." In Health Education and Research 7(2):217-228.

Carpenter et al. (2002): "Independent Effects of Reported Sexually Transmitted Infections and Sexual Behavior on HIV-1 Prevalence Among Adult Women, Men, and Teenagers in Rural Uganda." JAIDS 29:174-180.

Castor et al. (2002): "Determinants of Gonorrhoea Infection Among STD Clinic Attenders in Trinidad — I: Sociodemographic Factors, Knowledge, Risk Perception and History of STD." Int J STD/AIDS 13:39-45.

Chirinos et al. (2000): "A profile of sexually active male adolescent high school students in Lima, Peru". In Cad. Saude Publica, Rio de Janeiro, 16(3):733-746

Choe et al. (2001): "Early Marriage and Childbearing in Indonesia and Nepal." East-West Center Working Papers. Population Series No. 108-15.

Choe et al. (2001): "Sex and Marriage: How Closely are they Related in the Philippines, Taiwan, and Thailand?" East-West Center Working Papers No. 108-14.

Choe and Lin (2001): "Effect of Education on Premarital Sex and Marriage in Taiwan." East-West Center Working Paper 108-16.

Cruz, Laguna, and Raymundo (2001): "Family Influences on the Lifestyle of Filipino Youth." East-West Center Working Papers No. 108-8.

Dowe et al. (1999): "High Prevalence of Genital Chlamydia Trachomatis Infection in Women Presenting in Different Clinical Settings in Jamaica: Implications for Control Strategies." Sex Trasm Inf 75:412-416.

Edem and Harvey (1995): "Use of Health Belief Model to Predict Condom Use among University Students in Nigeria." In International Quarterly of Community Health Education 15(1):3-14.

Eggleston (1998): "Use of Family Planning at First Sexual Intercourse Among Young Adults in Ecuador." J Biosoc Sci 30:501-510.

Ersheng et al. (1997): "Shanghai Premarital Adolescent Use of Contraceptive Methods and Analysis of Influencing Factors." Chin J Pop Sci 9(4):375-388.

Fikree et al. (2001): "What Influences Contraceptive Use Among Young Women in Urban Squatter Settlements of Karachi, Pakistan?" Int Fam Plann Perspect 27(3):130-136.

Flisher et al (1996): "Risk-taking Behaviors of Cape Peninsula High School Students: Multivariate Relationships among Behaviors." In South African Medical Journal 86:1094-1098.

Gregson et al. (2002): "Sexual Mixing Patterns and Sex-Differentials in Teenage Exposure to HIV Infection in Rural Zimbabwe." Lancet 359:1896-1903

Gupta (2000): "Sexual Initiation and Contraceptive Use among Adolescent Women in Northeast Brazil." In Studies in Family Planning 31(3):228-238.

Gupta and Leite (1999): "Adolescent Fertility Behavior: Trends and Determinants in Northeastern Brazil." Int Fam Plann Perspect 25(3):125-130.

Gupta and Mahy (2003): "Sexual Initiation among Adolescent Girls and Boys: Trends and Differentials in sub-Saharan Africa." In Archives of Sexual Behavior 32(1):41-53.

Herold et al (1994): "Unintended Pregnancy and Sex Education in Chile: A Behavioural Model." J Biosoc Sci 26:427-439.

Hoque and Murdock (1997): "Socioeconomic Development, Status of Women, Family Planning, and Fertility in Bangladesh: A District Level Analysis." Soc Biol 44(3-4):179-197.

Huerta-Franco et al (1999): "Factors associated with the Sexual Experiences of Underprivileged Mexican Adolescents." In Adolescence 34(134): 389-400.

Hunter, et al. (1994): "Sexual Behavior, Sexually Transmitted Diseases, Male Circumcision and Risk of HIV infection among Women in Nairobi, Kenya." AIDS 8:93-99.

Isarabhakdi, P. (1999): "Factors Associated with Sexual Behavior and Attitudes of Never-Married Rural Thai Youth." In Journal of Population and Social Studies 8(1): 21-44.

Islam and Islam (1998): "Contraceptive use Among Married Adolescent Girls in Rural Bangladesh." J Fam Welfare 44(1):32-40.

Jiuling et al. (2002): "Contraceptive Use Behavior Among Never Married Young Women who are Seeking Pregnancy Termination in Beijing." Chinese Med J 115(6):851-855.

Kamya et al. (1997): "Condom Use with Casual Partners by Men in Kampala, Uganda." In AIDS 11(suppl.1): S61-S66.

Kane et al. (1993): "Sexual Activity, Family Life Education, and Contraceptive Practice Among Young Adults in Banjul, The Gambia." Studies Fam Plann 24(1):50-61.

Kapiga (1996): "Determinants of Multiple Sexual Partners and Condom Use among Sexually Active Tanzanians." In East African Medical Journal 73(7):435-442.

Kapiga et al. (1998); "The Incidence of HIV Infection Among Women Using Family Planning Methods in Dar es Salaam, Tanzania." AIDS 12:75-84.

Kapiga et al. (1998): "Evaluation of Sexually Transmitted Diseases Diagnostic Algorithms among Family Planning Clients in Dar es Salaam, Tanzania." In Sexually Transmitted Infections 74:S132-8.

Kapiga et al. (2002): "HIV-1 Epidemic Among Female Bar and Hotel Workers in Northern Tanzania: Risk Factors and Opportunities for Prevention." JAIDS 29:409-417.

Karim et al. (2000): Reproductive Health Risk and Protective Factors among Unmarried Youth in Ghana. Washington DC: FOCUS on Young Adults Program Final Report.

Katz and Naré (2002): "Reproductive Health Knowledge and use of Services Among Young Adults in Dakar, Senegal." J Biosoc Sci 34:215-231.

Kirunga and Ntozi (1997): "Socio-Economic Determinants of HIV Serostatus: A Study of Rakai District, Uganda." Health Trans Rev 7(Suppl):175-188.

Kiragu and Zabin (1993): "The Correlates of Premarital Sexual Activity among School-Age Adolescents in Kenya." In International Family Planning Perspectives 19: 92-97.

Klepp et al (1996): "Predictors of Intention to be Sexually Active among Tanzanian School Children." In East African Medical Journal 73(2):95-100.

Klomegah (1999): "Socio-Demographic Characteristics of Contraceptive Users in Ghana." Marriage Fam Rev 29(1):21-34.

Laguna (2001): "On Their Own: Effect of Home-and School-leaving on Filipino Adolescents' Sexual Initiation." East-West Center Working Papers No.108-19.

Lahai-Momoh and Ross (1997): "HIV/AIDS Prevention-Related Social Skills and Knowledge among Adolescents in Sierra Leone, West Africa." In African Journal of Reproductive Health 1(1):37-44.

Lacson et al. (1997): "Correlates of Sexual Abstinence among Urban University Students in the Philippines." In International Family Planning Perspectives 23:168-172.

Lam et al (2001): "Prevalence and Correlates of Smoking and Sexual Activity among Hong Kong Adolescents." In Journal of Adolescent Health 29:352-358.

Lee (2001): "Family and Adolescent Childbearing." J Adolesc Health 28:307-312.

Lee and Chou (2001): "Association of Risk-Taking Behaviors with Adolescent Childbearing." J Formos Med Assoc 100(8):533-538.

Limpakarnjanarat et al. (1999): "HIV-1 and Other Sexually Transmitted Infections in a Cohort of Female Sex Workers in Chiang Rai, Thailand." Sex Transm Inf 75:30-35.

Little, Myer, and Mathews (2002): "Barriers to Accessing Free Condoms at Public Health Facilities Across South Africa." In South African Medical Journal 92(3):218-220.

London et al. (1997): "Socio-demographic Correlates, HIV/AIDS Related Cofactors, and Measures of Same-Sex Sexual Behaviour among Northern Thai Male Soldiers." In Health Trans Review 7:33-60.

Lugoe et al (1996): "Sexual Debut and Predictors of Condom Use among Secondary School Students in Arusha, Tanzania." In AIDS CARE 8(4):443-452.

Lugoe and Biswalo (1997): "Self-restraining and Condom Use Behaviours: The HIV/AIDS Prevention Challenges in Tanzanian Schools." In International Journal of Adolescence and Youth 7: 67-81.

Lule and Gruer (1991): "Sexual Behavior and Use of the Condom among Ugandan Students." In AIDS CARE 3(1):11-19.

Magnani et al (2001): "Correlates of Sexual Activity and Condom Use among Secondary-school Students in Urban Peru." In Studies in Family Planning 32(1):53-66.

Magnani et al (2002): "Reproductive Health Risk and Protective Factors among Youth in Lusaka, Zambia." In Journal of Adolescent Health 30:76-86.

Mahmud & Islam (1995): "Adolescent Contraceptive Use and Its Determinants in Bangladesh: Evidence from Bangladesh Fertility Survey 1989." Contraception 52:181-186.

Makinwa-Adebusoye (1992): "Sexual Behavior, Reproductive Knowledge and Contraceptive Use among Young, Urban Nigerians." In International Family Planning Perspectives 18:66-70.

Marques et al. (1991): "The Antecedents of Adolescent Pregnancy in a Brazilian Squatter Community." J Trop Pediatr 37:194-198.

Maswanya et al (1999): "Knowledge, Risk Perception of AIDS and Reported Sexual Behavior among Students in Secondary Schools and Colleges in Tanzania." In Health Educ Research 14:185-196.

Mathai et al. (1997): "Concomitants of HIV/STD Risk Behaviors and Intention to Engage in Risk Behaviors in Adolescents in India." In AIDS Care 9(5):563-576.

Meekers (1994): "Sexual Initiation and Premarital Childbearing in Sub-Saharan Africa." In Population Studies 48(1):47-64.

Meekers and Ahmed (2000): "Contemporary patterns of Adolescent Sexuality in urban Botswana" In Journal of Biosocial Science 32: 467-485.

Meekers and Calves (1999): "Gender Differentials in Adolescent Sexual Activity and Reproductive Health Risks in Cameroon." In African Journal of Reproductive Health 3(2):51-67.

Meekers and Klein (2002): "Determinants of Condom Use among Young People in Urban Cameroon." In Studies in Family Planning 33(4):335-346.

Mensch et al (2001): "Premarital Sex, Schoolgirl Pregnancy, and School Quality in Rural Kenya." In Studies in Family Planning 32(4):285-301.

Messersmith et al. (2000): "Who's at Risk? Men's STD Experience and Condom Use in Southwest Nigeria." In Studies in Family Planning 31(3):203-216.

Morio et al. (2000): "Behavioural and Serological Human Immunodeficiency Virus Risk Factors Among Female Commercial Sex Workers in Cambodia." Int Epidemiol Assoc 29:344-354.

Murray et al. (1998): "Gender Differences in Factors Influencing First Intercourse among Urban Students in Chile." In International Family Planning Perspectives 24(3):139-144, 152.

Nelson et al. (1993): "Risk Factors for HIV Infection Among Young Adult Men in Northern Thailand." JAMA 270(8):955-960.

Norman, L. and Uche, C. (2001): "Prevalence and Determinants of Sexually Transmitted Diseases: An Analysis of Young Jamaican Males." In Sexually Transmitted Diseases 29(3):126-132.

Nunn et al. (1994): "Risk Factors for HIV-1 Infection in Adults in a Rural Ugandan Community: A Population Study." AIDS 8(1):81-86.

Okonofua (1995): "Factors Associated with Adolescent Pregnancy in Rural Nigeria." J Youth Adolesce 24(4):419-438.

Olayinka and Osho (1997): "Changes in Attitude, Sexual Behavior, and the Risk of HIV/AIDS Transmission in Southwest Nigeria." In East African Medical Journal 74(9):554-560.

Otor, Pandey (1999): "Adolescent Transition to Coitus and Premarital Childbearing in Sudan: A Biosocial Context." J Biosoc Sci 31:361-374.

Park et al. (2002): "Correlates of HIV Risk among Ecuadorian Adolescents." In AIDS Education and Prevention 14(1):73-83.

Peltzer, K. (2000): "Factors Affecting Condom Use Among Senior Secondary School Pupils in South Africa." Central African Journal of Medicine 46(11):302-308.

Pick de Weiss et al. (1991): "Sex, Contraception, and Pregnancy among Adolescents in Mexico City." In Studies in Family Planning 22(2):74-82

Pillai and Barton (1999): "Sexual Activity among Zambian Female Teenagers: the Role of Interpersonal Skills." In Adolescence 34(134):381-387.

Podhisita et al. (2001): "The Risk of Premarital Sex among Thai Youth: Individual and Family Influences." East West Center Working Papers, No. 108-5.

Porto et al. (1994): "Prevalence and Risk Factors for HBV Infection Among Street Youth in Central Brazil." J Adolesc Health 15:577-581.

Rahman et al. (1996): "Users of Traditional Methods of Contraception in Bangladesh: 1981-91." J Biosoc Sci 28:257-264.

Raymundo and Laguna (2001): "Filipino Adolescent Sexuality, Risk Behaviors, and Gender." Paper presented at the 2001 International Conference on Asian Youth at Risk. UP Population Institute.

Reddy et al. (2000): "Determinants of Condom Use Behavior among STD Clinic Attendees in South Africa." In International Journal of STDs and AIDS 11(8):521-30.

Rodrigues et al. (1995): "Risk Factors for HIV Infection in People Attending Clinics for Sexually Transmitted Diseases in India." BMJ 311:283-286.

Rosero-Bixby (1991): Premarital Sex in Costa Rica: Incidence, Trends, and Determinants." In International Family Planning Perspectives 17(1):25-29.

Rwenge, M. (2000): "Sexual Risk Behaviors among Young People in Bamenda, Cameroon." In International Family Planning Perspectives 26(3):118-123, 130.

Sakyi (1992): "Determinants of Current Contraceptive use Among Ghanaian Women at the Highest Risk of Pregnancy." J Biosoc Sci 24:463-475.

Sauvé et al. (2002): "The Price of Development: HIV Infection in a Semiurban Community of Ghana." JAIDS 20:402-408.

Scivoletto et al. (2002): "Use of Psychoactive Substances and Sexual Risk Behavior in Adolescents." In Substance Use and Misuse 37(3):381-398.

Selvan et al. (2001): "Study of Perceived Norms, Beliefs, and Intended Sexual Behavior among Higher Secondary School Students in India." In AIDS Care 13(6):779-788.

Shrikhande et al. (1998): "Risk Factors and Protective Factors of Pelvic Inflammatory Disease: A Case-Control Study." Ind J Pub Health 42(2):42-47.

Simeon et al. (1996): "Characteristics of Jamaicans who Smoke Marijuana Before Sex and their Risk Status for Sexually Transmitted Diseases." W I Med J 45:9-13.

Slap et al. (2003): "Sexual Behavior of Adolescents in Nigeria: Cross Sectional Survey of Secondary School Students." In BMJ 326:1-6.

Somse, Chapko and Hawkins (1993): "Multiple Sexual Partners: Results of a National HIV/AIDS Survey in the Central African Republic." In AIDS 7:579-583.

Stanton et al. (1999): "HIV risk behaviors, intentions, and perceptions among Namibia Youth as assessed by theory-based questionnaire". In AIDS Education and Prevention, 11(2):132-149.

Suligoi et al. (2001): "Prevalence and Risk Factors for Herpes Simplex Virus Type 2 Infection among Adolescents and Adults in Northern Cameroon." In Sexually Transmitted Diseases 28(12): 690-693.

Trent (1990): "Teenage Childbearing: Structural Determinants in Developing Countries." J Biosoc Sci 22:281-292.

Twa-Twa (1997): "The Role of the Environment in the Sexual Activity of School Students in Torotoro and Pallisa Districts of Uganda." In Health Transition Review, Supplement to Volume 7:67-81.

Van Griensven et al. (1995): "Socio-Economic and Demographic Characteristics and HIV-1 Infection." AIDS Care 7(5):557-565.

VanLandingham et al (1993): "Sexual Activity among Never-Married Men in Northern Thailand." In Demography 30(3):297-31.

Van Rossem, Meekers, and Akinyemi (2001): "Consistent Condom Use with Different Types of Partners: Evidence from Two Nigerian Surveys." In AIDS Education and Prevention 13(3):252-267.

Velez et al. (1997): "Intention to Postpone Sexual Initiation among Puerto Rican Female Adolescents." In Puerto Rico Health Sciences Journal 16(2):154-161.

Vieria De Souza et al. (1999); "Perception of Vulnerability to HIV Infection in a Cohort of Homosexual/Bisexual Men in Rio de Janeiro, Brazil." AIDS Care 11(5):567-579.

Vundule et al. (2001): "Risk Factors for Teenage Pregnancy Among Sexually Active Black Adolescents in Cape Town." S Afr Med J 91:73-80.

Wang & Chou (1999): "Risk Factors for Adolescent Primigravida in Kaohsiung County, Taiwan." Am J Prev Med 17(1):43-47.

Wang & Chou (2001): "Characteristics of Males who Father Babies Born to Adolescents Versus Older Adult Women in Taiwan." J Adolesc Health 28:509-512.

Wang and Lin. (1995): "Epidemiologic Differences Between Candidial and Trichomonal Infections as Detected in Cytologic Smears in Taiwan." Public Health 109:443-450.

Wawer et al. (2001): "Prevalence of Kaposi Sarcoma-Associated Herpes virus Compared with Selected Sexually Transmitted Diseases in Adolescents and Young Adults in Rural Rakai District, Uganda." Sex Transm Dis 28(2):77-81.

Weiss et al. (2001): "The Epidemiology of HSV-2 Infection and its Association with HIV Infection in Four Urban African Populations." In AIDS 15(supplement 4):S97-S108.

Wilson and Lavelle (1992): "Psychosocial Predictors of Intended Condom Use among Zimbabwean Adolescents." In Health Education Research 7(1):55-68.

Wilson, Manual and Lavelle (1991): "Psychological Predictors of Condom Use to Prevent HIV Transmission among Zimbabwean Students." In International Journal of Psychology 26(6):705-721.

Wyatt et al (1999): "Correlates of First Intercourse among Women in Jamaica." In Archives of Sexual Behavior 28(2):139-157.

Zanetta et al. (1999): "HIV Infection and Related Risk Behaviours in a Disadvantaged Youth Institution of São Paulo, Brazil." Int J STD/AIDS 10:98-104.

Zelaya et al. (1996): Gender and Social Differences in Adolescent Sexuality and Reproduction in Nicaragua." In Journal of Adolescent Health 21:39-46.

Zulkifli and Low (2000): "Sexual Practices in Malaysia: Determinants of Sexual Intercourse among Unmarried Youths." In Journal of Adolescent Health 27:276-280.

Nelson et al. (1993): "Risk Factors for HIV Infection Among Young Adult Men in Northern Thailand." JAMA 270(8):955-960.

Norman, L. and Uche, C. (2001): "Prevalence and Determinants of Sexually Transmitted Diseases: An Analysis of Young Jamaican Males." In Sexually Transmitted Diseases 29(3):126-132.

Nunn et al. (1994): "Risk Factors for HIV-1 Infection in Adults in a Rural Ugandan Community: A Population Study." AIDS 8(1):81-86.

Okonofua (1995): "Factors Associated with Adolescent Pregnancy in Rural Nigeria." J Youth Adolesce 24(4):419-438.

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Otor, Pandey (1999): "Adolescent Transition to Coitus and Premarital Childbearing in Sudan: A Biosocial Context." J Biosoc Sci 31:361-374.

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Peltzer, K. (2000): "Factors Affecting Condom Use Among Senior Secondary School Pupils in South Africa." Central African Journal of Medicine 46(11):302-308.

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among Adolescents in Mexico City." In Studies in Family Planning 22(2):74-82
Pillai and Barton (1999): "Sexual Activity among Zambian Female Teenagers: the Role of Interpersonal Skills." In Adolescence 34(134):381-387.
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Raymundo and Laguna (2001): "Filipino Adolescent Sexuality, Risk Behaviors, and Gender." Paper presented at 2001 International Conference on Asian Youth at Risk. UP Population Institute.
Reddy et al. (2000): "Determinants of Condom Use Behavior among STD Clinic Attendees in South Africa." In International Journal of STDs and AIDS 11(8):521-30.
Rodrigues et al. (1995): "Risk Factors for HIV Infection in People Attending Clinics for Sexually Transmitted Diseases in India." BMJ 311:283-286.
Rosero-Bixby (1991): Premarital Sex in Costa Rica: Incidence, Trends, and Determinants." In International Family Planning Perspectives 17(1):25-29.
Rwenge, M. (2000): "Sexual Risk Behaviors among Young People in Bamenda, Cameroon." In International Family Planning Perspectives 26(3):118-123, 130.
Sakyi (1992): "Determinants of Current Contraceptive use Among Ghanaian Women at the Highest Risk of Pregnancy." J Biosoc Sci 24:463-475.
Sauvé et al. (2002): "The Price of Development: HIV Infection in a Semiurban Community of Ghana." JAIDS 20:402-408.
Scivoletto et al. (2002): "Use of Psychoactive Substances and Sexual Risk Behavior in Adolescents." In Substance Use and Misuse 37(3):381-398.
Selvan et al. (2001): "Study of Perceived Norms, Beliefs, and Intended Sexual Behavior among Higher Secondary School Students in India." In AIDS Care 13(6):779-788.
Shrikhande et al. (1998): "Risk Factors and Protective Factors of Pelvic Inflammatory Disease: A Case-Control Study." Ind J Pub Health 42(2):42-47.
Simeon et al. (1996): "Characteristics of Jamaicans who Smoke Marijuana Before Sex and their Risk Status for Sexually Transmitted Diseases." W I Med J 45:9-13.
Slap et al. (2003): "Sexual Behavior of Adolescents in Nigeria: Cross Sectional Survey of Secondary School Students." In BMJ 326:1-6.
Somse, Chapko and Hawkins (1993): "Multiple Sexual Partners: Results of a National HIV/AIDS Survey in the Central African Republic." In AIDS 7:579-583
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Suligoi et al. (2001): "Prevalence and Risk Factors for Herpes Simplex Virus Type 2 Infection among Adolescents and Adults in Northern Cameroon." In Sexually Transmitted Diseases 28(12): 690-693.
Trent (1990): "Teenage Childbearing: Structural Determinants in Developing Countries." J Biosoc Sci 22:281-292.
Twa-Twa (1997): "The Role of the Environment in the Sexual Activity of School Students in Torotoro and Pallisa Districts of Uganda." In Health Transition Review, Supplement to Volume 7:67-81.
Van Griensven et al. (1995): "Socio-Economic and Demographic Characteristics and HIV-1 Infection." AIDS Care 7(5):557-565.
VanLandingham et al (1993): "Sexual Activity among Never-Married Men in Northern Thailand." In Demography 30(3):297-31.
Van Rossem, Meekers, and Akinyemi (2001): "Consistent Condom Use with Different Types of Partners: Evidence from Two Nigerian Surveys." In AIDS Education and Prevention 13(3):252-267.
Velez et al. (1997): "Intention to Postpone Sexual Initiation among Puerto Rican Female Adolescents." In Puerto Rico Health Sciences Journal 16(2):154-161.
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Wang & Chou (2001): "Characteristics of Males who Father Babies Born to Adolescents Versus Older Adult Women in Taiwan." J Adolesc Health 28:509-512.
Wang and Lin. (1995): "Epidemiologic Differences Between Candidial and Trichomonal Infections as Detected in Cytologic Smears in Taiwan." Public Health 109:443-450.
Wawer et al. (2001): "Prevalence of Kaposi Sarcoma-Associated Herpes virus Compared with Selected Sexually Transmitted Diseases in Adolescents and Young Adults in Rural Rakai District, Uganda." Sex Transm Dis 28(2):77-81.
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Wilson and Lavelle (1992): "Psychosocial Predictors of Intended Condom Use among Zimbabwean Adolescents." In Health Education Research 7(1):55-68.
Wilson, Manual and Lavelle (1991): "Psychological Predictors of Condom Use to Prevent HIV Transmission among Zimbabwean Students." In International Journal of Psychology 26(6):705-721.
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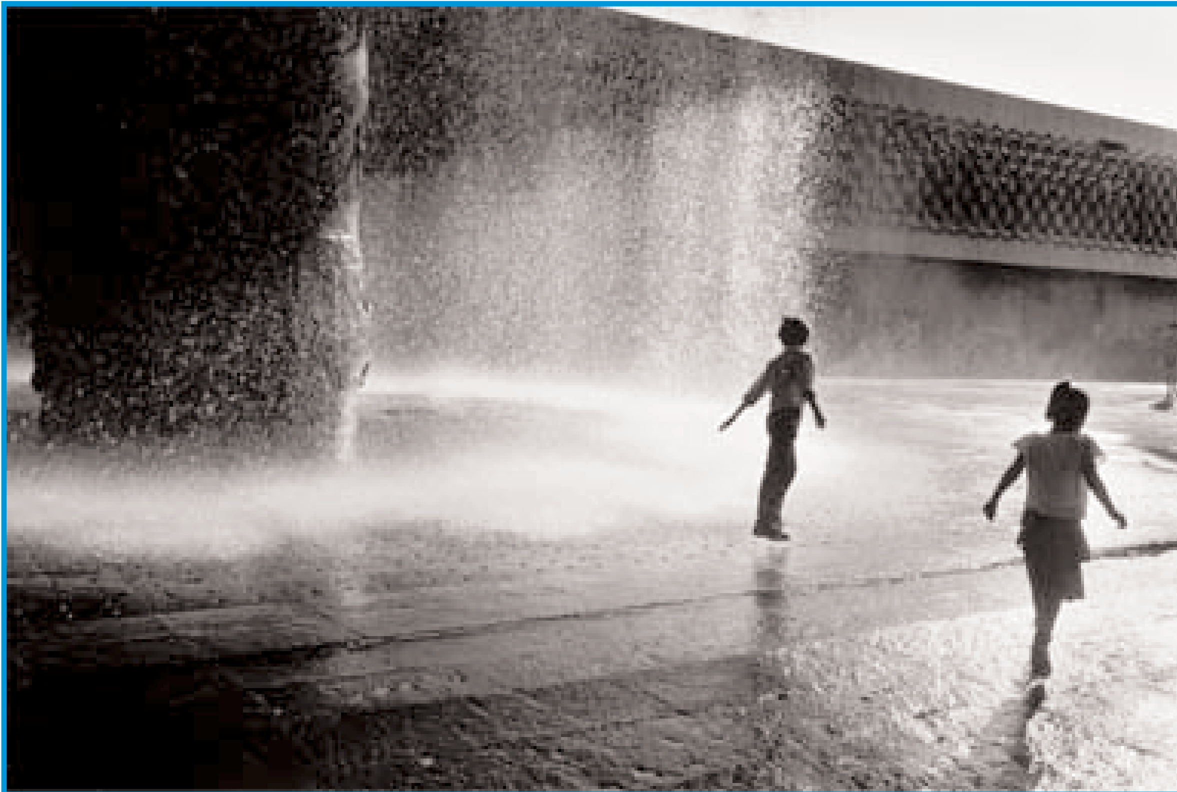
Zanetta et al. (1999): "HIV Infection and Related Risk Behaviours in a Disadvantaged Youth Institution of São Paulo, Brazil." Int J STD/AIDS 10:98-104.
Zelaya et al. (1996): Gender and Social Differences in Adolescent Sexuality and Reproduction in Nicaragua." In Journal of Adolescent Health 21:39-46.
Zulkifli and Low (2000): "Sexual Practices in Malaysia: Determinants of Sexual Intercourse among Unmarried Youths." In Journal of Adolescent Health 27:276-280.



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