Early marriage and sexual and reproductive health vulnerabilities of young women: a synthesis of recent evidence from developing countries

K.G. Santhya

Population Council, New Delhi, India

Correspondence to K.G. Santhya, Associate, Population Council, Zone 5A, Ground Floor, India Habitat Centre, Lodhi Road, New Delhi 110003, India
Tel: +91 11 2464 2901/2902;
fax: +91 11 2464 2903;
e-mail: kgsanthya@popcouncil.org

Current Opinion in Obstetrics and Gynecology
2011, 23:334–339

Purpose of review
To review current evidence on the links between early marriage and health-related outcomes for young women and their children.

Recent findings
Every third young woman in the developing countries excluding China continues to marry as a child, that is before age 18. Recent studies reiterate the adverse health consequences of early marriage among young women and their children even after a host of confounding factors are controlled. The current evidence is conclusive with regard to many indicators: unintended pregnancy, pregnancy-related complications, preterm delivery, delivery of low birth weight babies, fetal mortality and violence within marriage. However, findings present a mixed picture with regard to many other indicators, the risk of HIV and the risk of neonatal, infant and early childhood mortality, for example.

Summary
The findings call for further examination of the health consequences of early marriage. What are even less clear are the pathways through which the associations between early marriage and adverse outcomes take place. There is a need for research that traces these links. At the same time, findings argue strongly for programmatic measures that delay marriage and recognize the special vulnerabilities of married adolescent girls.

Keywords
developing countries, early marriage, infant and child health, sexual and reproductive consequences, young women

Curr Opin Obstet Gynecol 23:334–339

1040-872X

Introduction

Although the prevalence of early marriage is declining, considerable proportions of young women continue to marry as children, that is before age 18 [1,2]. It is globally recognized that early marriage truncates girls' childhood and circumscribes several rights of girl children outlined in the 1989 Convention on the Rights of the Child (CRC), including the right not to be separated from their parents against their will (Article 9), the right to freedom of expression (including seeking and receiving information and ideas, Article 13), the right to education (Articles 28 and 29), the right to rest and leisure and to engage in play and recreational activities (Article 31) and the right to protection from sexual exploitation and abuse (Article 34) [3]. Moreover, an increasing body of evidence from diverse settings suggests that the long-held assumption that marriage is a safe haven for adolescent girls is untenable and that a number of health consequences are associated with early marriage. This article synthesizes what is known about the links between early marriage and sexual and reproductive health vulnerabilities of young women in developing countries.

In this overview, I have gathered evidence from studies published primarily in the last 3 years on early marriage and its consequences. Most studies that have explored consequences of early marriage included in this review are cross-sectional which raises concerns about inferring causality. I note, however, that early marriage occurred much before the outcomes assessed in these studies and, therefore, temporal ordering of events and causal influence of early marriage can be safely assumed.

Magnitude of early marriage

The State of the World's Children 2011 that focuses on adolescence observes that every third young woman (20–24 year old) in the developing countries, excluding China (data on the prevalence of early marriage are not available for China; moreover, early marriages are rare in China, for example data for the year 2000 indicate that

 DOI:10.1097/GCO.0b013e32834a93d2

just 1% of 15–19 year-old girls were ever married and that the singulate mean age at marriage for women was 23.3 years), was married as a child [1]. Moreover, one in nine young women was married by age 15 [2]. These averages, however, mask the huge variations within and between regions across the world. For example, in south Asia and sub-Saharan Africa, 46 and 38% of young women, respectively, were married as children; the proportion is as high as 55 and 50% in the rural areas of these two regions, respectively [1]. In countries such as Bangladesh, Central African Republic, Chad, Ethiopia, Guinea, Malawi, Mali, Mozambique, Nepal and Niger, one-half to three-quarters of girls were married before their 18th birthday [2].

Key points

- Every third young woman in the developing countries excluding China continues to marry as a child, that is before age 18.
- Early marriage is clearly correlated with a range of adverse health consequences among young women and their children even after a host of confounding factors are controlled: unintended pregnancy, pregnancy-related complications, preterm delivery, fetal mortality and violence within marriage.
- Findings are not conclusive about the association between early marriage and the risk of HIV and the risk of neonatal, infant and early childhood mortality.

Sexual and reproductive health consequences

Studies reviewed in this article, by and large, indicate that early marriage is associated with a range of adverse sexual and reproductive health outcomes for young women and poor health outcomes for children they bear. Findings, moreover, show that it compromises young women's ability to adopt health promoting practices and seek timely care.

Unintended pregnancy

Studies in a number of south Asian countries, including Bangladesh, India and Nepal, show a direct association between early marriage and unintended pregnancy, irrespective of the measure of unintended pregnancy or the study sample used in the analysis. For example, a study of married young women aged 20–24 years in India reports that young women married early were 1.7 times more likely than those married late to have experienced any unwanted pregnancy even after controlling for confounding factors such as level of education, place of residence, household economic status and religion. They were, moreover, more than twice as likely to have experienced multiple unwanted pregnancies [4]. Similarly, a study of married women of reproductive ages who were pregnant at the time of the survey in Nepal reports that almost half (46%) of women married below 16 years compared with one-third (36%) of those married at 16 years or later reported their current pregnancy as unintended; the association remained significant in the multivariate analysis too [odds ratio (OR) 0.94] [5]. A study in Bangladesh, likewise, reports that women who married below 18 years were somewhat more likely than their late-marrying counterparts to report the most recent birth during the 5 years preceding the interview as unintended; the association, however, did not assume statistical significance in the multivariate analysis [6].

The exact pathways through which early marriage leads to unintended pregnancy need further study. However, a primary explanation lies in the constraining effect of early marriage on a young woman's ability to effectively practise contraception. For example, a number of studies in India show that young women who married early were less likely than their late-marrying counterparts to have used contraceptives to delay their first pregnancy [4,7•].

HIV

Studies exploring the links between early marriage and sexually transmitted infections have focused on young women's risk of HIV; most of these studies were conducted in sub-Saharan African countries. Evidence from these studies presents a mixed picture with regard to the links between early marriage and young women's risk of HIV.

Studies that have compared the prevalence of HIV infection in married adolescents aged 15–19 years and their sexually active unmarried counterparts in a number of sub-Saharan African countries – Kenya, Tanzania and Cameroon for example – suggest that married adolescent girls have higher rates of HIV infection than do sexually active unmarried girls [8]. It is argued that being married at a young age is associated with engaging in frequent unprotected sex, having older sexual partners and having less exposure to sources of information, all of which increase married adolescent girls' vulnerability.

This assertion, however, has been questioned by several recent studies. Using ecological data from 33 countries in sub-Saharan Africa and individual-level data from Kenya and Ghana, a study found that a long period of premarital sexual experience contributes to the spread of HIV (an additional year of premarital sexual intercourse raised HIV prevalence by 1.52%) and that the annual risk of infection is significantly higher for exposure before than after first marriage (OR 1.21 vs. 1.11 in Kenya; 1.22 vs. 1.08 in Ghana) [9]. The higher risk of HIV infection among sexually active never married women is attributed to a higher rate of partner change and higher infectivity of partners. Similar findings were observed in studies in Tanzania and Cameroon as well. For example, a study of

3780 women attending antenatal clinics in Tanzania reports that the odds of infection increased by 10% for each extra year spent sexually active before marriage [10]. Similarly, a study of women aged 20–24 years in Cameroon reports that women married at age 20 or later were 3.5 times more likely than those married at age 16 or earlier to be HIV infected, even after controlling for age at first sex and current age [11]. A study in rural Malawi using a life course approach to evaluate the relationship between different sexual and marital trajectories and HIV infection, moreover, observes that the sequence of events (e.g. sexual initiation, premarital sexual activity, marriage and marital dissolution) matters more than any single event. For example, women who had initiated sex after age 15 and did not marry their first sexual partner (i.e. had engaged in premarital sex) were 2.5 times more likely than women who had initiated sex after age 15 and married their first sexual partner to be HIV infected. Those who had initiated sex earlier (i.e. age $\leq$15) within a premarital or marital partnership were no more likely than those who had delayed sexual initiation and married their first sexual partner to be HIV infected [12]. Finally, evidence from India, where sexual initiation takes place more often within than before marriage for young women [13], suggest that girls may not be exposed to an elevated risk of infection because of early marriage. A study of a subsample of ever-married women aged 20–24 years who were selected and agreed to be tested for HIV in a nationally representative survey indicates that compared with young women married at ages 20–24 those married at ages 16–17 years were significantly less likely to be HIV positive (OR 0.2); those married at ages 14–15 years were also less likely to be HIV positive, although the association was not statistically significant [14].

Pregnancy-related morbidity and mortality

In most early marrying settings, particularly in Asia and sub-Saharan Africa, women are expected to bear a child as soon as possible after marriage in order to secure themselves in the marital home, and early marriage, correspondingly, translates into childbearing in childhood for many. It is estimated at the global level that girls aged 15–19 years are twice as likely to die from childbirth as are women in their 20s, whereas girls younger than age 15 face a risk that is five times higher [15].

Although mortality is the tip of the iceberg, other adverse outcomes are also associated with early childbearing. Indeed, complications during pregnancy and childbearing are the leading cause of death for girls aged 15–19 years in developing countries [15]. A case–control study of adolescent girls (<18 years) and adult women (20–34 years) delivered in a tertiary hospital in Nigeria observes that adolescents were twice as likely as adult women to have experienced at least one pregnancy-related complication, namely preeclampsia, eclampsia, premature rupture of membrane, antepartum haemorrhage and postpartum haemorrhage (44 vs. 22%, respectively); incidence of such conditions as eclampsia and preeclampsia was six times higher among adolescents than adult women (20 vs. 3%, respectively) [16]. Several studies in a malaria endemic area – Nigeria for example – report that pregnant adolescent women were more likely than adult women to be infected with malaria infection, a finding that may be attributed to differences in nutritional status and the level of acquired immunity [17–19]. For example, a study of recently delivered women and their newborns in four geopolitical zones of Nigeria reports that adolescent mothers were 2.3–2.6 times more likely than adult mothers to be positive for peripheral and placental parasitaemia [18]. Additionally, young women who marry early and begin childbearing early are at higher risk of such debilitating conditions as obstetric fistula [20–22].

Long-term consequences have also been reported, for example the risk of cervical cancer. In a case–control study involving 1864 cervical cancer cases and 1719 controls from eight developing countries, sexual initiation before age 17 (for 92% of women age at sexual initiation was the same as the age at marriage) and subsequent early pregnancy increased the risk of cervical cancer by 2.5 times [23]. In a small-scale study comprising 100 women diagnosed with cervical cancer in Iran, some 84% of women were married before age 18 [24].

Closely related to the experience of pregnancy-related morbidity and mortality is limited pregnancy-related care seeking among young women married early [7•,14,25]. For example, a study among ever married young women aged 15–23 years at the time of the interview with a birth in the previous 3 or 5 years in Bangladesh, India, Indonesia and Nepal reports that those who were aged 18 years or younger at last birth were less likely than those who were aged 19–23 years at last birth to have sought antenatal care (OR 0.55–0.87) and delivery care (OR 0.54–0.78) [25].

Fetal, infant and early childhood morbidity and mortality

A considerable body of evidence exists on the links between early marriage and/or early childbearing and the risk of fetal, infant and early childhood morbidity and mortality. The links are definitive on such indicators, such as preterm delivery, low birth weight, fetal loss, but weak on many others, such as neonatal, infant and early childhood mortality, for example.

Studies in several countries including Gabon, India, Nigeria and Turkey show that adolescent mothers were more likely than adult women to experience preterm delivery and that infants born to them were more likely to be of low birth weight [26–29]. For example, a

case–control study of adolescent (≤16 years) and adult (>16 years) women delivering in hospitals in Gabon reports that adolescent mothers were 2.7 times more likely to have delivered low birth weight babies even after controlling for gestational age, parity, intake of intermittent preventive treatment of malaria in pregnancy and peripheral parasitaemia at delivery [26]. A somewhat weak association was, however, observed in a study in India that assessed the risk of giving birth to low birth weight babies among young women married below age 18 compared with those married at age 18 or later. Although the unadjusted OR was significant, the effect did not remain significant when controlled for the effects of such covariates as sex of the child, parity, rural–urban residence, religion, maternal age at birth, maternal education and maternal BMI. The authors note that early marriage is probably a marker for maternal vulnerabilities that compromise the health of infants and young children [30•].

An emerging body of evidence, primarily from India, indicates that early marriage is associated with increased risk of fetal mortality as well. A study drawing on data pertaining to married women aged 20–24 years from a nationally representative survey reports that young women who married early were 1.5 times more likely to have ever experienced fetal loss, as defined by ever having experienced miscarriage, induced abortion or still birth, even after controlling for confounding factors [4]. The second study reports that compared with young women married early, those who married late had 60% reduced risk of ever experiencing miscarriage or stillbirth [7•]. These findings, perhaps, reflect the elevated risk of pregnancy-related complications among women who become pregnant at a young age or differences between early-marrying and late-marrying women in the adoption of preventive care practices and the utilization of healthcare services during pregnancy.

The link between early marriage and/or early childbearing and the risk of neonatal, infant and early childhood mortality, however, is weak. Although several recent studies have observed a direct association between early marriage and/or early childbearing and the risk of neonatal, postnatal, infant or early childhood mortality in bivariate analysis, the association did not assume significance when controlled for potentially confounding factors. For example, a study in rural Nepal reports that although infants born to mothers aged 12–15 years were more than twice as likely as those born to mothers aged 20–24 years to die before their first birthday in bivariate analysis, the association did not remain significant when a range of confounding factors were controlled for, and the authors note that the increased risk of neonatal mortality associated with adolescent pregnancy was primarily mediated through elevated rates of preterm delivery and small for gestational age infants born to these mothers [31]. Likewise, a study of neonatal mortality due to birth asphyxia in Nepal reports that although infants born to adolescent mothers (<16 years) had an unadjusted OR of 1.88 of experiencing mortality due to birth asphyxia compared with those born to mothers aged 20–24 years, this risk was drastically reduced when antenatal and intrapartum risk factors including parity and prematurity were controlled [32]. Studies in Pakistan and Indonesia have also observed a weak association between young maternal age and the risk of neonatal mortality [33,34].

A prospective, community-based study in rural Burkina Faso found that adolescent mothers (<20 years) were no more likely than adult mothers to have experienced perinatal mortality [35]. Finally, a study in India reports that when controlled for such confounding factors as parity, maternal age at birth, maternal education and maternal BMI, young women who married early were no more likely than those who married late to report infant or childhood mortality (0–5 years mortality) [30•].

Child malnutrition

Studies exploring the links between early marriage and the risk of infant and child malnutrition are sparse. The one that is included in this review reports that children born to women married early were 1.2 times more likely to be stunted and underweight, respectively, even after controlling for demographic characteristics and maternal BMI [30•]. These findings may reflect the disempowering effects of early marriage on young women's ability to make decisions for themselves and their children, including the choice and quantity of food.

Physical and sexual violence

A number of studies, all from India, report that young women married early have an elevated risk of experiencing physical and sexual violence within marriage which in turn is associated with a range of adverse sexual and reproductive health outcomes for young women [36]. One of these studies reports that young women who married early were 1.8 times more likely to have ever experienced physical or sexual violence and 1.5 times more likely to have experienced such violence in the 12 months preceding the interview than those who married later [37]. The second study reports that compared with young women who married early, those who married late had reduced odds of having experienced physical violence (OR 0.63) and sexual violence (OR 0.73) within marriage [7•].

Conclusion

This review reiterates that early marriage compromises sexual and reproductive health of young women in a multiple of ways; it also highlights that the adverse consequences of early marriage are borne not only by young

women but also by children they bear. The current evidence is conclusive with regard to many indicators: unintended pregnancy, pregnancy-related complications, preterm delivery, delivery of low birth weight babies, fetal mortality and physical and sexual violence within marriage, for example. However, findings present a mixed picture with regard to many other indicators, the risk of HIV and the risk of neonatal, infant and early childhood mortality, for example. These findings call for further examination of the health consequences of early marriage. What are even less clear are the pathways through which the associations between early marriage and adverse outcomes take place. There is a need for research, both quantitative and qualitative, that traces these links. Research is also needed that address what works in delaying child marriage and in mitigating the adverse outcomes for girls who were married as children. At the same time, findings argue strongly for programmatic measures that delay marriage and recognize the special vulnerabilities of married adolescent girls.

Acknowledgements

The author would like to acknowledge the support of the John D. and Catherine T. MacArthur Foundation for covering the time spent for preparing this review. The author would also like to thank Shireen J Jejeebhoy for her insightful comments on an earlier version of the manuscript, and to Komal Saxena and MA Jose for their support and assistance in preparing the manuscript.

Conflicts of interest

There are no conflicts of interest.

References and recommended reading

Papers of particular interest, published within the annual period of review, have been highlighted as:

- • of special interest
- •• of outstanding interest

Additional references related to this topic can also be found in the Current World Literature section in this issue (p. 397).

1 United Nations Children's Fund. The state of the world's children 2011: adolescence an age of opportunity. New York: UNICEF; 2011.

2 Population Reference Bureau. Who speaks for me? Ending child marriage. Washington, District of Columbia: PRB; 2011.

3 United Nations. Convention on the rights of the child. General Assembly Resolution 44/25. New York, New York: UN; 1989.

4 Raj A, Saggurti N, Balaiah D, Silverman JG. Prevalence of child marriage and its effect on fertility and fertility-control outcomes of young women in India: a cross-sectional, observational study. Lancet 2009; 373:1883–1889.

5 Adhikari R, Soonthorndhada K, Prasartkul P. Correlates of unintended pregnancy among currently pregnant married women in Nepal. BMC Int Health Hum Rights 2009; 9:17.

6 Kamal M, Islam A. Prevalence and socioeconomic correlates of unintended pregnancy among women in rural Bangladesh. Salud Publica Mex 2011; 53:108–115.

7 • Santhya KG, Ram U, Acharya R, *et al.* Associations between early marriage and young women's marital and reproductive health outcomes: evidence from India. Int Perspect Sex Reprod Health 2010; 36:132–139.

This study, drawing on data pertaining to over 8000 young women from early marrying settings in India, found that early marriage places young women at higher risk of experiencing physical and sexual violence within marriage and pregnancy loss, and that it compromises young women's healthcare seeking practices, including contraceptive use to delay their first pregnancy and institutional delivery for the first birth.

8 Clark S, Bruce J, Dude A. Protecting young women from HIV/AIDS: the case against child and adolescent marriage. Int Fam Plan Perspect 2006; 32:79–88.

9 Bongaarts J. Late marriage and the HIV epidemic in sub-Saharan Africa. Popul Stud (Camb) 2007; 61:73–83.

10 Kumogola Y, Slaymaker E, Zaba B, *et al.* Trends in HIV and syphilis prevalence and correlates of HIV infection: results from cross-sectional surveys among women attending antenatal clinics in northern Tanzania. BMC Public Health 2010; 10:533.

11 Adair T. HIV status and age at first marriage among women in Cameroon. DHS Working Papers #33. Calverton, Maryland: Macro International; 2007.

12 Boileau C, Clark S, Bignami-Van Assche S, *et al.* Sexual and marital trajectories and HIV infection among ever married women in rural Malawi. Sex Transm Infect 2009; 85 (Suppl 1):i27–i33.

13 Santhya KG, Acharya R, Jejeebhoy SJ, Ram U. Timing of first sex before marriage and its correlates: evidence from India. Cult Health Sex 2011; 13:327–341.

14 Raj A. When the mother is a child: the impact of child marriage on the health and human rights of girls. Arch Dis Child 2010; 95:931–935.

15 UNFPA. Fact Sheet: Motherhood and Human Rights. New York: UNFPA; 2009. http://www.unfpa.org/public/cache/offonce/home/factsheets/pid/3851.

16 Adeyinka DA, Oladimeji O, Adekanbi TI, *et al.* Outcome of adolescent pregnancies in southwestern Nigeria: a case–control study. J Matern Fetal Neonatal Med 2010; 23:785–789.

17 Akanbi OM, Odaibo AB, Ademowo OG. The burden of malaria infection on pregnant women and birth weight of infants in south western Nigeria. East Afr J Public Health 2009; 6:63–68.

18 Mokuolu OA, Falade CO, Orogade AA, *et al.* Malaria at parturition in Nigeria: current status and delivery outcomes. Infect Dis Obstet Gynecol 2009; doi: 10.1155/2009/473971.

19 Nnaji GA, Okafor CI, Ikechebelu JI. An evaluation of the effect of parity and age on malaria parasitaemia in pregnancy. J Obstet Gynaecol 2006; 26:755–758.

20 Muleta M, Fantahun M, Tafesse B, *et al.* Obstetric fistula in rural Ethiopia. East Afr Med J 2007; 84:525–533.

21 Ijaiya MA, Rahman AG, Aboyeji AP, *et al.* Vesicovaginal fistula: a review of Nigerian experience. West Afr J Med 2010; 29:293–298.

22 Tebeu PM, de Bernis L, Doh AS, *et al.* Risk factors for obstetric fistula in the far north province of Cameroon. Int J Gynaecol Obstet 2009; 107:12–15.

23 Louie KS, de Sanjose S, Diaz M, *et al.* Early age at first sexual intercourse and early pregnancy are risk factors for cervical cancer in developing countries. Br J Cancer 2009; 100:1191–1197.

24 Karimi Zarchi M, Akhavan A, Gholami H, *et al.* Evaluation of cervical cancer risk factors in women referred to Yazd-Iran hospitals from 2002 to 2009. Asian Pac J Cancer Prev 2010: 11:537–538.

25 Reynolds HW, Wong EL, Tucker H. Adolescents' use of maternal and child health services in developing countries. Int Fam Plan Perspect 2006; 32:6–16.

26 Kurth F, Belard S, Mombo-Ngoma G, *et al.* Adolescence as risk factor for adverse pregnancy outcome in Central Africa: a cross-sectional study. PLoS One 2010; 5:e14367.

27 Banerjee B, Pandey GK, Dutt D, *et al.* Teenage pregnancy: a socially inflicted health hazard. Indian J Community Med 2009; 34:227–231.

28 Omole-Ohonsi A, Attah RA. Obstetric outcome of teenage pregnancy in Kano, north-western Nigeria. West Afr J Med 2010; 29:318–322.

29 Edirne T, Can M, Kolusari A, *et al.* Trends, characteristics and outcomes of adolescent pregnancy in eastern Turkey. Int J Gynaecol Obstet 2010; 110:105–108.

30 • Raj A, Saggurti N, Winter M, *et al.* The effect of maternal child marriage on morbidity and mortality of children under 5 in India: cross-sectional study of a nationally representative sample. BMJ 2010; 340:b4258.

This study assessed the association between early marriage and morbidity and mortality of children under 5 in India; the study reports that when controlled for a range of maternal vulnerabilities, early marriage is not associated with low birth weight or infant and early childhood mortality.

31 Sharma V, Katz J, Mullany LC, *et al.* Young maternal age and the risk of neonatal mortality in rural Nepal. Arch Pediatr Adolesc Med 2008; 162:828–835.

32 Lee ACC, Mullany LC, Tielsch JM, *et al.* Risk factors for neonatal mortality due to birth asphyxia in southern Nepal. Pediatrics 2008; 1221:e1381–e1390.

33 Jehan I, Harris H, Salat S, *et al.* Neonatal mortality, risk factors and causes: a prospective population-based cohort study in urban Pakistan. Bull World Health Organ 2009; 87:130–138.

34 Titaley CR, Dibley MJ, Agho K, *et al.* Determinants of neonatal mortality in Indonesia. BMC Public Health 2008; 8:232.

35 Dialo AH, Meda N, Zabsonre E, *et al.* Perinatal mortality in rural Burkina Faso: a prospective community-based cohort study. BMC Pregnancy Childbirth 2010; 10:45.

36 Jejeebhoy SJ, Santhya KG, Acharya R. Health and social consequences of marital violence: a synthesis of evidence from India. New Delhi: Population Council and UNFPA; 2010.

37 Raj A, Saggurti N, Lawrence D, *et al.* Association between adolescent marriage and marital violence among young adult women in India. Int J Gynaecol Obstet 2010; 110:35–39.