Summary and Keywords

Adolescence, spanning 10 to 19 years of age, begins with biological changes while transitioning from a social status of a child to an adult. For millions of adolescents in low- and middle-income countries (LMICs), this is a period of exposure to vulnerabilities and risks related to sexual and reproductive health (SRH), compounded by challenges in having their SRH needs met. Globally, adolescent sexual and reproductive ill-health disease burden is concentrated in LMICs, with sexually transmitted infections and complications from pregnancy and childbirth accounting for the majority of the burden. Adolescents around the world are using their voices to champion access to high-quality, comprehensive SRH information and services. Thus, it is imperative that adolescents’ SRH and rights be reinforced and that investments in services be prioritized.

Keywords: adolescent sexual and reproductive health, sexual education, contraception, adolescent sexual behavior, sexual knowledge, sexual attitudes

Introduction

The World Health Organization (WHO) (2019B) defines adolescence as the period between 10 and 19 years of age, when children transition into adults. In 2020, there will be an estimated 1.25 billion adolescents in the world, with almost 90% of them residing in low- and middle-income countries (LMICs). Adolescence is a phase marked by both biological changes and brain development. However, the biological maturity often precedes psychosocial maturity, affecting how young people respond to the new risks and opportunities that also emerge in adolescence (World Health Organization, 2019A). The unique physical, cognitive, social, emotional, and sexual development that takes place during adolescence requires special attention in national development policies, programs, and plans (World Health Organization, 2017B). Adolescence represents a time when young people experiment with independence, forge new relationships, develop social skills, and learn behaviors that will last the rest of their lives (World Health Organization, 2019B). If they are engaged in meaningful ways and supported in all aspects of their lives, adolescents are more likely to grow into thriving adults, making lasting contributions to their families and society. Investing in adolescent health and well-being brings a triple dividend
of benefits that affect not only the future adult life of those adolescents but also the next generation of children (Patton et al., 2016).

In sub-Saharan Africa, for example, where births by adolescents and young adults (15–24 years of age) contribute significantly to fertility, access to comprehensive SRH could lead to declines in fertility. This decline could result in changes in the age structure of the population, which would allow countries to benefit from of a window of opportunity for economic growth, thus harnessing the first demographic dividend (Prata, 2017). Given the high return on investment, adolescent health is firmly on the global agenda and prominent in many initiatives. There is widespread recognition that the Sustainable Development Goals (SDGs), which seek to achieve global economic, social, and environmental sustainable development by 2030, will not be realized without investments in adolescent health and well-being (World Health Organization, 2017B). A report, Health for the World’s Adolescents, was released by the WHO in 2014 and showed that the considerable gains already made from investments in maternal- and child-health programs would not be sustained without corresponding investments in adolescent health (World Health Organization, 2014). This is particularly the case when it comes to adolescent sexual and reproductive health (ASRH). In all regions of the world, young people are reaching puberty earlier, often engaging in sexual activity at a younger age, and in many places marrying later. As a result, young people are sexually active for longer before marriage than at any other time in history (Bearinger, Sieving, Ferguson, & Sharma, 2007; Blanc, Tsui, Croft, & Trevitt, 2009; Chen et al., 2007; Morris & Rushwan, 2015).

The gap between first sex and marriage has implications for program and policies in supporting ASRH. Yet various political, economic, and sociocultural factors continue to restrict the delivery of ASRH information and services, failing to recognize the rights of adolescents to make independent decisions surrounding sexual activity and marriage. At the same time, healthcare workers often act as a barrier to care by failing to provide young people with supportive, nonjudgmental, youth-appropriate services (Morris & Rushwan, 2015). The ASRH disease burden is concentrated in LMICs. Despite steady declines in the global number of HIV-related deaths, among adolescents and young people the number of HIV-related deaths increased by 50% between 2005 and 2017 (United Nations Children’s Fund, 2017). The highest adolescent AIDS mortality rate is found in sub-Saharan Africa, with 17 deaths per 100,000 adolescents in African LMICs (World Health Organization, 2017B). This can be largely attributed to a generation of children infected with HIV perinatally who are now adolescents. About two thirds of adolescents living with HIV in 2015 acquired the disease during their mothers’ pregnancies or deliveries or in the first months of life, whereas the remaining one third of adolescents living with HIV were infected as adolescents (Joint United Nations Programme on HIV/AIDS, 2016). Adolescents are less likely than adults are to be tested for HIV and less likely to be linked to services, whether they test positive or negative (World Health Organization, 2013).

In addition to HIV risk, sexually active adolescents have a particularly high risk of acquiring other sexually transmitted infections (STIs) compared to other age groups as a result of increased exposure, biological susceptibility to infection, and relatively poor access to
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or use of health services. Data on STIs are limited and inconsistent between and within regions and countries, particularly data disaggregated by age and sex (World Health Organization, 2017B). However, existing data on women of reproductive age (15-49 years) indicate the highest concentration (31%) of herpes simplex 2 virus (HSV-2) cases in sub-Saharan Africa (Looker et al., 2015). Meanwhile, the peak time for acquiring HSV-2 for both males and females is shortly after a person first becomes sexually active, which typically happens during adolescence (World Health Organization, 2017C).

For older adolescent girls between the ages of 15 and 19 years, complications related to pregnancy and childbirth are the leading cause of death globally, with the adolescent maternal mortality rate highest among African LMICs (World Health Organization, 2018). Estimates from 2016 indicate that each year approximately 21 million girls and young women aged 15-19 years will become pregnant in LMICs (Darroch et al., 2016). Pregnant adolescents face maternal health challenges that are specific to their physical and psychological immaturity and limited autonomy (World Health Organization, 2017B). They are also more likely to have a repeat pregnancy within a year of giving birth, which can place them and their children at risk (Lopez, Grey, Hiller, & Chen, 2015; World Health Organization, 2017B). About half of pregnancies among adolescent women aged 15-19 years living in LMICs are unintended, and every year, approximately 3.9 million girls in this age group undergo abortions in unsafe conditions (Darroch, Woog, Bankole, & Ashford, 2016).

Though these data are alarming and signal the need for immediate action, they do not paint the full picture. Although adolescence is a time of increased SRH risk, it is also a time when young people find their voice and agency. Adolescents around the world are using this voice to champion access to high-quality, comprehensive SRH information and services. The early 21st century has been characterized as a time when adolescents have demanded that their fundamental rights be recognized and when the world seemed—more than ever before—poised to act.

This article highlights the status of adolescents’ SRH in LMICs, providing information on the following: the unmet need for SRH services (see “ADOLESCENT SEXUAL AND REPRODUCTIVE HEALTH AND RIGHTS”), key social determinants of SRH (see “SOCIAL DETERMINANTS OF ASRH”), challenges and opportunities for sexuality education (see “SEXUALITY EDUCATION”), existing implementation strategies for preventing poor reproductive health outcomes (see “PREVENTION OF POOR REPRODUCTIVE HEALTH OUTCOMES DURING ADOLESCENCE”), and the need for modern contraception (see “CONTRACEPTION”). In each section, a description of key challenges, opportunities, and research gaps is revealed, as are examples of what has worked in the past in terms of policies and programs.
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Sexual and reproductive health and rights (SRHR) comprise efforts to eliminate preventable maternal and neonatal mortality and morbidity; to ensure quality SRH services, including contraceptive services; and to address STIs and cervical cancer, violence against women and girls, and the SRH needs of adolescents (Temmerman, Khosla, & Say, 2014). Reproductive health and autonomy was first established as a fundamental human right at the 1994 International Conference on Population and Development (ICPD). Reproductive health was defined as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes” (Chandra-Mouli et al., 2015; United Nations, 1995, p. 40). Adolescent SRHR were included in the ICPD Program of Action, which called for international and national efforts to be aimed at “meeting the educational and [health] service needs of adolescents to enable them to deal in a positive and responsible way with their sexuality” (United Nations, 1995, p. 41). In 2012, the global commitment to adolescents’ SRHR was reaffirmed at both the 45th Session of the United Nations Commission on Population and Development and the Declaration of the United Nations Population Fund (UNFPA) Bali Global Youth Forum (Santhya & Jejeebhoy, 2015; United Nations Population Fund, 2012; World Health Organization, 2012). Governments were urged to ensure adolescents’ access to quality SRH services and comprehensive sexuality education (CSE) in and out of schools; to eliminate early and forced marriage; to design and implement policies and programs for eliminating violence against women and girls; to engage gatekeepers, including parents and communities; and to give adolescents themselves a voice in decision-making.

Although global commitments to adolescent SRHR are important, the actions that follow in each country are even more important. However, though governments have committed to prioritizing adolescents, policy development and program implementation have not always supported these commitments in LMICs. The unique SRH needs of adolescents often remain unmet because of a lack of knowledge, social stigma, laws, policies preventing the provision of contraception and abortion, and judgmental attitudes among service providers (Salam et al., 2016). Findings from a 2015 review of SRHR of adolescent girls in LMICs indicate that many countries have yet to make significant progress in delaying marriage and childbearing, reducing unintended childbearing, narrowing gender disparities that put girls at risk of poor SRH outcomes, and expanding health awareness or enabling access to SRH services (Santhya & Jejeebhoy, 2015). In developing regions of the world, researchers estimated that 28% of girls marry before the age of 18 years and that 7% marry before the age of 15 years in 2016, despite efforts to end child marriage (Darragh, Woog, Bankole, & Ashford, 2016). For the same year, they also estimated that adolescent girls and women aged 15–19 in developing regions would have an estimated 21 million pregnancies, of which about 12 million would result in a birth.
In addition to filling knowledge and service delivery gaps in ASRH, underlying determinants must be addressed for adolescents to realize their SRH and human rights. Social, cultural, political, and economic factors and inequalities increase adolescents’ vulnerability to SRH risks and pose barriers to their access to SRH information and services. For adolescents to lead healthy sexual and reproductive lives, an enabling environment that spans individual agency to societal-level norms must be created (Svanemyr, Amin, Robles, & Greene, 2015).

Additionally, SRHR programs need to extend their reach to early adolescents (10–14 years of age). Currently, most programs target young people aged 15–24 years, yet there is growing global recognition that early adolescents should not be neglected in these efforts. The likelihood of first sex being coerced is higher when it occurs at very young ages (e.g., 28%–62% of girls who had first intercourse before age 12 years in three sub-Saharan African countries) than in ages of 12–14 years (21%–28%) (Moore, Awusabo-Asare, Madise, John-Langba, & Kumi-Kyereme, 2007; Starrs et al., 2018). The transition from early to late adolescence is marked by dramatic social and biological changes and by emerging sexuality. Studies among early adolescents routinely suggest that they possess limited knowledge about fertility or HIV prevention. More research of the SRHR needs of early adolescents is necessary for informing strategies and program responses, including providing comprehensive sexuality education at scale, reducing prevalence of child marriage, addressing sexual violence, promoting equitable gender norms, and providing financial incentives in education (Starrs et al., 2018).

Importance of Adolescent Participation: Voice and Agency

To achieve SRHR for all adolescents, increased political will must be matched with meaningful engagement of young people in the development and implementation of policies and program (Santhya & Jejeebhoy, 2015). As established in the 1989 United National Convention of the Rights of the Child (UNCRC), children and youth, including young people with disabilities, should be able to express themselves regardless of their religion or culture, and strategies need to be in place to ensure that information is accessible to them. Article 13 of the UNCRC states the following:

1. The child shall have the right to freedom of expression; this right shall include freedom to seek, receive and impart information and ideas of all kinds, regardless of frontiers, either orally, in writing or in print, in the form of art, or through any other media of the child’s choice.
2. The exercise of this right may be subject to certain restrictions, but these shall only be such as are provided by law and are necessary:(a) For respect of the rights or reputations of others; or (b) For the protection of national security or of public order (ordre public), or of public health or morals. (United Nations Human Rights Office of the High Commissioner, 1990)
However, adolescent participation has been the subject of an ongoing debate, including discussions on the definition of meaningful participation as well as how to measure it. In 2001, UNICEF published a working-paper series on strategic approaches to the participation rights of adolescents (Rakesh, 2001). The series contributed to a stimulating discussion and can serve as a resource in the promotion of meaningful participation.

In the first two decades of the early 21st century, adolescent participation in schools, community, media, and governance were documented, especially in research, analysis, planning, implementation, and evaluation of programs, including reproductive health (Upadhyay, 2006). In their 2016 report, the Lancet Commission on Adolescent Health and Wellbeing provided an overview and barriers of youth engagement (Patton et al., 2016). Since that 2016 report, Ozer, Afifi, Gibbs, and Mathur (2018) have found that youth engagement, participation, and voice terminology have been used interchangeably. In addition, the field has primarily framed youth engagement and participation on rights, thereby providing basic and empirical rationales and thus calling both for greater precision in understanding the terminology and for best practices. Although the importance of meaningful adolescent participation in SRHR policies and programs has been widely recognized, much more effort is needed to identify the best practices using participatory methodologies that can move youth from being subjects of SRHR interventions to being active partners in programming and policy-making. Such methodologies include community-based participatory research, community youth mapping, photo-voice, and youth participatory evaluation.

Social Determinants of ASRH

The relationship between poverty and poor reproductive health is well established. In many LMICs, issues of economic instability and violence as well as political, legal, and economic barriers to comprehensive, quality healthcare and education exist. As a result, in these countries, ASRH may be particularly vulnerable to external factors. Increased risk of STIs, including HIV, and unintended pregnancy is determined in part by social, economic, and behavioral factors (Blum & Gates, 2015; Svanemyr, Amin, Robles, & Greene, 2015). These factors include access to healthcare services and sexual education, social and cultural norms, educational attainment and health literacy, economic status, sex, gender identity, and sexual orientation and behavior (Svanemyr, Amin, Robles, & Greene, 2015).

In the past, ASRH programs have focused on changing individual risky behavior to improve outcomes (Plourde, Fischer, Cunningham, Brady, & McCarraher, 2016). However, these approaches that omit the larger contextual factors that influence adolescents’ behavior are shortsighted. For example, gender norms can emphasize marriage and motherhood for adolescent girls, or cultural and religious attitudes may limit access to ASRH services and education (Challa et al., 2018). At the same time, adolescent pregnancies are more likely to occur in marginalized communities and are commonly driven by poverty and lack of education and employment opportunities (Blum & Gates, 2015). Addressing
the social and economic determinants of health is necessary for reducing health disparities and improving the health of adolescents globally.

**Gender Norms**

The significant influence of gender norms on adolescent health is increasingly recognized. It is in early adolescence that children begin to adopt new gender roles associated with femininity and masculinity, often reinforcing socially and culturally conventional gender norms related with being women or men. Gender norms and beliefs have health implications for both girls and boys, but the repercussions are more significant for girls in terms of SRH. The consequences for girls in many parts of the world include child marriage, pregnancy, unsafe abortion, HIV and STI risk, and sexual-violence exposure (Blum, Mmari, & Moreau, 2017; Chandra-Mouli et al., 2017). However, gender norms also influence SRH of adolescent boys by shaping appropriate behavior, including initiating early and unprotected sex, leading to increased HIV risk (Chandra-Mouli et al., 2017; Dixon-Mueller, 2008).

The Global Early Adolescent Study led by a multicountry international research consortium has gathered extensive evidence on gender norms in early adolescence and how they influence sexual and reproductive health and risks. The study found similarities and differences in the expression of gender attitudes and norms depending on geographic and sociocultural contexts. The findings also highlighted how gender norms manifest differently within subpopulations of the same geographic area based on factors such as race, ethnicity, and class and immigrant status. However, puberty was universally associated with the expansion of boys’ worlds and a shrinking of girls’ worlds. The study also found that although boys do not often recognize their privilege, when they do challenge norms, they are punished. Yet girls often do recognize their own disadvantage and are more willing to challenge norms but need support to exercise their agency (Chandra-Mouli et al., 2017; World Health Organization, 2017A). Enhancing girls’ agency and their ability to define goals and act on them is critical for adolescent girls’ ability to cope with the various inequalities that undermine their self-worth (Kabeer, 2005). However, changing gender norms and empowering adolescent girls and boys requires a holistic approach. Peers and parents are influential in shaping gender norms and attitudes, and there is growing evidence to suggest that schools, teachers, and the media also shape norms and attitudes (Chandra-Mouli et al., 2017).

**Social Influences**

Social environments that are safe and supportive are critical to the healthy development of adolescents, offering protection against negative reproductive health behaviors and outcomes. The social environment encompasses positive relationships with parents and other adults, peers, intimate partners, as well as broader institutions (Bond, 2003; Plourde, Fischer, Cunningham, Brady, & McCarraher, 2016). Parents and peers influence gender norms and attitudes, which then affect ASRH. Positive relationships enable adolescents to further develop their identity, self-esteem, and sense of belonging, which en-
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ables them to lead healthy sexual and reproductive lives. Similarly, negative relationships with peers, partners, and family members are detrimental to ASRH. Peer norms can increase the likelihood of adoption of risky health behaviors, and partners may negatively influence decision-making related to SRH (Blum et al., 2012; Marston & King, 2006). Additionally, social isolation, more often experienced by adolescent girls than by boys because of dropping out of school and early marriage, increases the risk of sexual violence, HIV, and unplanned pregnancy (Bruce, 2007; Plourde, Fischer, Cunningham, Brady, & McCarraher, 2016). Although it is recognized that adolescents’ social environments influence their access to SRH information and services, further examination is needed in order to understand the extent of that influence fully, particularly in light of the growing presence of social media.

Violence and Harmful Practices

Progress in SRH is often undermined by continued violence and harmful practices, including sexual violence, child marriage, and female genital mutilation. Adolescent girls are more likely to be exposed to certain harmful practices, but boys can also be victims. Additionally, there is growing evidence and recognition of the importance of engaging men and boys to improve gender equality and end the cycle of violence against girls (Lundgren & Amin, 2015; World Health Organization, 2017B).

Sexual Violence

Sexual violence is any sexual act, attempt to obtain a sexual act, or other act directed against a person’s sexuality using coercion by any person, regardless of his or her relationship to the victim. It is most often perpetrated by family members, intimate partners, teachers, peers, or acquaintances. Sexual violence is widespread among adolescents and places them on a lifelong trajectory of violence, either as victims or perpetrators (Lundgren & Amin, 2015).

It is estimated that 19% of girls and 8% of boys worldwide have experienced sexual abuse prior to the age of 18 (Pereda, Guilera, Forns, & Gómez-Benito, 2009). The highest prevalence rate of child sexual abuse geographically was found in Africa (34%), followed by Asia (24%). Violence against girls takes many forms, including that perpetrated by intimate partners, nonpartners, strangers, or through trafficking (Bruce, 2011). The WHO estimates that 29% of all ever-partnered adolescent girls and women aged 15–19 years had experienced physical or sexual violence perpetrated by an intimate partner (García-Moreno et al., 2013). The rates for sexual violence against males are often less reported and generally lower than the rates for females are; however, it is has been hypothesized that young men are less likely to report because of shame, fear of being labeled as homosexual if the perpetrator was a male, or fear of being considered weak if the perpetrator was female.
Sexual violence is a major public-health problem and violation of human rights, affecting adolescent boys and girls (World Health Organization, 2017D). In response to the alarming evidence on prevalent sexual abuse against adolescents, the WHO developed guidelines for providers, recognizing the important role they play in identifying abuse, disclosure of abuse, and connecting survivors to resources. Offering care centered on the adolescents’ needs is also especially critical for sexual abuse victims (World Health Organization, 2017D). A review of interventions for preventing sexual violence against adolescents identified two promising approaches for LMIC (Lundgren & Amin, 2015). First, community-based interventions to form gender equitable attitudes among boys and girls were successful in preventing sexual violence and interpersonal violence. Common community-based interventions included group education, community mobilization, social-norm marketing, media campaigns, mentorship, and identification of safe spaces. However, few of the well-documented community-based programs reviewed focused on younger adolescents, and none of those were found to have sufficient evidence to be classified as effective. The second approach encompassed parenting interventions and interventions with adolescents subjected to maltreatment. The aim of such programs was to prevent future perpetration of partner violence by creating safe homes free of violent conflicts in which parents utilize healthy parenting strategies. These interventions were more common in higher-income countries but were also implemented in a growing number of lower-income countries, with an emphasis on fatherhood. The third promising approach includes school-based interventions that address factors such as tolerance of sexual violence, healthy relationships, nonviolent conflict resolution, communication skills, and help with seeking out younger adolescents, as well as programs to reduce dating violence and sexual assault among high school and university participants. Though the evidence from these programs is promising, they were only tested in high-income countries and should be adapted to and evaluated in LMICs (Lundgren & Amin, 2015).

Child Marriage

Child marriage is defined as a marriage of a girl or boy before the age of 18 and refers to both formal marriages and informal unions in which children under the age of 18 live with a partner as if married. Although the definition of child marriage includes boys, most children married at less than 18 years of age are girls (Wodon et al., 2017). Child marriage violates adolescents’ rights and places them at high risk of violence, exploitation, and abuse. Adolescent married girls are at increased risk of STIs, cervical cancer, malaria, death during childbirth, and obstetric fistulas (Nour, 2006). Meanwhile, their offspring are at increased risk for premature birth and death as neonates, infants, or children.

Although most nations have made a commitment to eliminate early marriage, the practice continues in many regions of the world. It is most prevalent in South Asia and sub-Saharan Africa, where 44% (based on six countries) and 39% (based on 30 countries) of women aged 20–24, respectively, were married before age 18, and 8% each of adolescent girls and women aged 15–19 were married before age 15. Trends in early marriage,
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based on data from 33 LMICs show very little change since the ICPD in 1994 (Santhya & Jejeebhoy, 2015).

Economic and social forces underpin child marriage, and the practice is maintained by social norms and attitudes that undervalue the human rights of girls. Girls who marry young tend to be from poor families and have low levels of education. At the same time, low education levels are maintained by child marriage, since girls often leave school early to get married. Thus, strategies to eliminate child marriage must take into account pervasive sociocultural and structural forces in the societies in which it is most common (United Nations Children’s Fund, N.D.). United Nations Children’s Fund (UNICEF) has identified five entry points for reducing child marriage: (a) to increase agency and resources for adolescents—especially girls—at risk of and affected by child marriage; (b) to enhance legal and development policy frameworks for an enabling environment that protects the rights of adolescent girls and boys; (c) to increase the generation and use of a robust evidence base for advocacy, programming, learning, and tracking progress; (d) to enhance systems and services that respond to the needs of adolescents at risk of or affected by child marriage; and (e) to increase social action, acceptance, and visibility around investing in and supporting girls and shifting social expectations relating to girls, including by engaging boys and men (United Nations Children’s Fund, N.D.).

Female Genital Mutilation

Female genital mutilation (FGM) comprises all procedures that involve partial or total removal of the external female genitalia or other injury to the female genital organs for non-medical reasons. FGM is globally recognized internationally as a violation of the human rights of girls and women, threatening the health and well-being of millions of girls, women, and their children. Similar to child marriage, there are strong social underpinnings to FGM in societies that believe cutting is necessary for group identity and marriageability (Gage & Van Rossem, 2006; Koski & Heymann, 2017).

FGM is concentrated in Africa and the Middle East, and though it has become less common over time, it remains a pervasive practice in some countries. In an analysis of trends in FGM over 30 years in 22 countries (20 in sub-Saharan Africa and two in the Middle East), prevalence fell in 17 countries but increased in Chad, Mali, and Sierra Leone. Additionally, even with decreasing prevalence, over 50% of women in seven countries (Burkina Faso, Egypt, Ethiopia, Gambia, Guinea, Mali, and Sierra Leone) still experienced FGM, with the majority experiencing substantial injury to the genital area (Koski & Heymann, 2017).

Despite decades of interventions to reduce the practice of FGM, there is little high-quality evidence on which ones are most effective. At the same time, given the continued prevalence of FGM in several countries because of high levels of social support, harm reduction approaches for at least minimizing health consequences have been adopted. However, there is limited indication that harm-reduction efforts have resulted in substantial declines in the severity of the procedures performed on a national scale (Koski & Heymann,
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2017). Perhaps support needs to start with adolescent girls themselves. Increasing media coverage and education and reducing poverty have been identified as important factors for shifting adolescent girls’ attitudes in favor of discontinuation of FGM (Dalal et al., 2018).

Although some social determinants of ASRH are well studied and understood, others, including health and economic consequences, are poorly understood. Research gaps exist in understanding the experiences of adolescents younger than 15 years; adolescents in vulnerable situations, such as refugees or those who are homeless; adolescents with non-heterosexual sexual orientation; and the relationship between gender and ASRH. In addition, the long-term economic effects of adolescent childbearing, pregnancy and childbearing intentions, as well as reasons for unmet need for contraception among adolescents have also been underexplored areas.

Sexuality Education: Evidence, Guidance, and Challenges for Implementation

In a world in which STIs and unintended pregnancies threaten adolescent health and well-being, comprehensive sexuality education is key in preparing young people for their reproductive life. However, despite clear and compelling evidence of the benefits of high-quality, curriculum-based sexuality education, the United Nations Educational Scientific and Cultural Organization (2018) reports that few young people receive the support and preparation necessary to take control of their lives and make informed decisions about their sexuality and relationships freely and responsibly (United Nations Educational Scientific and Cultural Organization, 2018).

The Role of Schools, Communities, and Social Networks

As teaching and learning hotspots, schools can play a key role in sexuality education. Teachers are likely trusted by adolescents to provide accurate information, and the classroom setting can allow for age-appropriate learning experiences. In addition, for most adolescents, sexual developmental milestones occur while in school, from puberty to menarche to the first relationship and possibly first sexual encounter. Additionally, school-based programs have been shown to be a very cost-effective way to contribute to HIV prevention and to ensure the rights of young people to access SRH education and services (Kivela, Ketting, & Baltussen, 2013; Montgomery & Knerr, 2016). Evidence about the effectiveness of school-based sexuality education has led to a paradigm shift to “empowerment sexuality education.” Such programs place gender norms and human rights at their core, with the intention of improving gender inequality in addition to teaching adolescents about violence. This empowerment approach to sexuality education is found to be more effective in achieving the desired sexual outcomes among adolescents than standard, gender-blind sexuality education curricula are (Haberland & Rogow, 2015; Rogow et al., 2013). However, teacher preparedness has been identified as a factor in empowerment sexuality education programs. Teachers are often assigned to teach sexuality educa-
tion without the necessary knowledge and attitudes; thus, investments in teacher training could benefit both pedagogy and gender equality.

Schools are also environments that can provide both parents and students with linkages to other sectors, such as health services. Advocates for youth recommend the use of school-based health centers as well as linking health centers to schools and fostering partnerships with community-based organizations in order to address the sexuality and reproductive-health needs of adolescents (Gautam, 2012). Although the role of schools in sexuality education has been well established, informal and community-based settings can also be important entry points for providing curriculum-based sexuality education to adolescents, especially those out of school. It is estimated that 263 million children and young people ages 6–15 years are not attending or have dropped out of school (Montgomery & Knerr, 2016). Settings such as community centers, sports clubs, youth clubs or centers, safe spaces, vocational facilities, health institutions, and online platforms, among others, play an essential role in providing SRH education (International Planned Parenthood Federation, 2010).

Haberland and Rogow (2015) identified a number of gaps in research related to sexuality education, including measuring the effect of sexuality education either alone or as part of a multiple-component intervention; understanding the role of power in sexual relations, the context in which sexual activity takes place, harassment and other sexual risks, as well as their implications for sexuality education interventions; and identifying the key characteristics of effective programs.

The Digital Era: Internet as a Means of Providing SRH Education; Opportunities and Challenges

In a fast-paced growing digital era, many people turn to the internet for information, including adolescents in their quest for information about ASRH (United Nations Educational Scientific and Cultural Organization, 2018). International Guidance on Sexuality Education considers the internet an effective means of providing sexual and reproductive-health education to adolescents. For some parents, it can be difficult to talk about sex with adolescent children, and many adolescents might not be getting comprehensive sexuality education in schools or are out of school. Depending on the country, sexuality education might not be offered as an option because of the politics surrounding the topic or the inability to decide on age-appropriate curricula. The politics surrounding the subject make it difficult for many schools to address sex education comprehensively, as well. This makes it challenging for young people to access accurate and relevant information necessary for keeping themselves healthy. A study on accessing sexual health information online explored how youth use the internet to look for sexual and other health information (Mitchell, Ybarra, Korchmaros, & Kosciw, 2014). Some of the study’s key findings include the fact that universally, youth searched less often for sexual health information as compared to health and nonhealth information. Additionally, most youth turned to the internet because it was private. Curiosity and not having people to talk to in person were additional reasons prompting internet searches. The study also indicated that heterosexual
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youth are less likely to search for sexual information online as compared to nonheterosexual youth. Furthermore, across all sexual orientations, youth rarely searched for information about HIV/AIDS or other STIs.

Although studies on the use of the internet for sexuality education in LMICs are limited and evaluations of their effectiveness are not available, it is important to note that despite the great promise of privacy that is offered to youth, some shortcomings can also be identified. Very poor youth or those without access to the internet are excluded from such options, which increases inequities in access to sexuality information. The internet can also be a source of misinformation and disinformation, and it is not clear how youth determine the accuracy of information and which sites to use. However, structured sexuality education can be provided using specific internet platforms that can complement or substitute for completely in-person classes on comprehensive sexuality education. Thus, much more research is needed in this area.

Prevention of Poor Reproductive Health Outcomes During Adolescence

The general delivery of healthcare services to adolescents largely determines how ASRH services will be delivered and poor outcomes prevented. The 2016 Lancet Commission on Adolescent Health (Patton et al., 2016) outlined the necessary components of health services for adolescents, which were framed around the following points:

1. Prevention: Immunization is a core public-health intervention that is also highly relevant for adolescents (e.g., HPV). Preventive health services for adolescents also include attention to health literacy in order to promote home-based promotive activities (e.g., healthy nutrition and physical activity), preventive activities (e.g., bed nets for malaria prevention), and future utilization of health services (e.g., for contraception and mental health services).

2. Emerging health needs: Adolescence is a period when many new and sensitive health needs first arise that are often not recognized by adolescents or their parents as necessitating health services. This includes the need for contraception, mental healthcare, and other services to support those who have experienced interpersonal violence. The use of routine screening for wider health needs during any health-service encounter can be used to identify such needs and to provide a context for delivering prevention information.

3. Continuity of care for specific health conditions: Adolescents also experience chronic health conditions (whether from injury-induced disabilities or chronic medical conditions such as asthma or mental-health conditions), most of which require routine health monitoring (e.g., type 1 and 2 diabetes), medication (e.g., HIV), or other actions (e.g., health education regarding nutrition and physical activity for obesity). Particular difficulties for adolescents relate to the challenges around self-management because of lack of personal organization and social support, and around failure to graduate from pediatric to adult healthcare services at an appropriate age.
Globally, ASRH disease burden is concentrated in LMICs, with STIs and complications from pregnancy and childbirth accounting for the majority of the burden. A systematic review of interventions to improve adolescent ASRH revealed that health education, counseling, and provision of modern contraceptive methods all contribute to the increase in sexual knowledge and contraceptive use and a reduction in adolescent pregnancy (Salam et al., 2016). In addition, community mobilization and women’s empowerment strategies have the potential to raise awareness about FGM’s and circumcision’s adverse health consequences and to reduce their prevalence. However, available evidence as of 2014 was inconclusive regarding strategies for decreasing intimate-partner violence.

The effectiveness of ASRH strategies in the prevention of poor outcomes was assessed by Denno, Hoopes, and Chandra-Mouli (2015). The authors examined interventions within and outside of facilities and interventions to reach and to generate demand and community acceptance. Approaches that use a combination of health-worker training, adolescent-friendly facility improvements, and information dissemination via the community, schools, and mass media were considered to have a strong positive effect on some ASRH outcomes. Although with limited evidence, out-of-facility strategies delivered through mixed-youth centers were found by the authors not to be effective, and there was evidence of poor use of those services by youth. Additionally, their findings indicated that evaluation of outcomes among vulnerable and marginalized adolescents were nonexistent.

Youth centers, peer education, and one-off public meetings were also found by Chandra-Mouli et al. (2017) to be ineffective in facilitating young people’s access to SRH, influencing social norms around adolescent SRH, and changing young people’s behavior.

**Adolescent-Friendly SRH Services**

Past efforts to improve the quality of primary healthcare for adolescents such as adolescent-friendly SRH services have focused on the developmental differences between adolescents when compared to younger children and older adults. Best practices for ASRH-friendly services in schools include: (a) maintaining adolescent confidentiality, (b) treating adolescents with respect, (c) providing different services in one location, (d) maintaining a diverse and well-trained staff (e) removing barriers to care, (f) providing free or low-cost services, (g) offering an array of reproductive and sexual-health services, (h) providing services specialized to young men, and (i) promoting parent-child communication (Gautam, 2012). This framework has provided a mechanism for improving primary-care services related to the core competencies that healthcare providers need in order to work effectively with adolescents. However, this approach has been disappointing in that many services have been poorly utilized by adolescents (James et al., 2018; Mazur, Brindis, & Decker, 2018). Although this may reflect poor quality of services, there are many additional explanations for this poor utilization, including the fact that ASRH services are highly stigmatized and that adolescents may be unable to pay the fees for services. Additional explanations also include a lack of a developmental perspective for health services, a lack of attention to generating demand among adolescents, a lack of community sensitization in order to gain parental acceptance, and a lack of laws that support the delivery of
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the full suite of SRH services to adolescents. Furthermore, social barriers and issues of privacy, given that adolescents largely access health services via parents and guardians, can also explain this underutilization.

Although adolescent-friendly SRH approaches are found to be effective when well implemented, these services tend to stumble during scale-up phases, as they have to meet considerable implementation requirements (Chandra-Mouli et al., 2017). For adolescent SRH programs to be effective, there is a substantial need for coordinated and complementary approaches. For example, a review of factors that either facilitated or stalled an adolescent-friendly model of SRH services in Colombia during seven years of implementation revealed that important facilitating factors included clear policies and implementation guidelines with clear attribute descriptions of the user-organization and resource teams, the establishment and implementation of an intersectoral and interagency strategy, the identification of and support for stakeholders and advocates of adolescent-friendly SRH services, and solid monitoring and evaluation. At the same time, an insufficient number of health personnel trained in ASRH, a high turnover of health personnel, a decentralized health-security system, an inadequate supply of financial and human resources, and negative perceptions among community members about providing SRH information and services to young people were all factors that slowed down or limited implementation efforts (Huaynoca, Svanemyr, Chandra-Mouli, & Moreno Lopez, 2015).

Health Systems and the Need for Universal Healthcare for ASRH

Universal health coverage (UHC) has increasingly come into focus within global health. It is defined by the WHO as ensuring that all people have access to needed promotive, preventive, curative and rehabilitative health services, of sufficient quality to be effective, while also ensuring that people do not suffer financial hardship when paying for these services (World Health Organization, 2010). UHC is conceptualized around two specific benefits: first, that everyone be covered by a package of good-quality health services; and second, financial protection from healthcare costs.

Compared to other populations, adolescents have neither high nor equitable coverage of SRH services (Darroch, Woog, Bankole, & Ashford, 2016; Morris & Rushwan, 2015). Thus, although generic approaches to strengthening health systems will improve the availability and quality of many health services provided to adolescents, it is evident that specific attention to ASRH is required if young people are to benefit equally from wider investments in strengthening health systems and in UHC. Intrinsic to UHC is the assurance that consumers have access to quality healthcare and are satisfied with what they receive.

Despite attention to UHC within the Sustainable Development Goal (SDG) framework, there has been less focus on what this means for ASRH. This includes a clear focus on adolescents in healthcare financing, defining the elements of an essential adolescent healthcare package, identifying the platforms that can be used to deliver this package, global efforts to increase the demand for healthcare services by adolescents, and community sensitization efforts to increase community acceptance for ASRH services.
Contraception

Many adolescents in LMICs experience unintended pregnancy, unsafe abortions, and pregnancy-related mortality and morbidity. Improving access to and use of modern contraceptive methods should be part of the strategies for preventing these negative outcomes. However, adolescents’ use of contraception is rarely at the levels of their adult counterparts. Unmarried adolescents experience even greater challenges. A study of needs for, barriers to, and access to contraception by adolescents concluded that effective interventions for improving access to and use of contraception include enacting and implementing laws and policies requiring the provision of comprehensive sexuality education and contraceptive services for adolescents; building community support for the provision of contraception to adolescents; providing sexuality education within and outside of school settings; and increasing access to and use of contraception by making health services adolescent-friendly, integrating contraceptive services with other health services, and providing contraception through a variety of outlets (Chandra-Mouli, McCarraher, Phillips, Williamson, & Hainsworth, 2014). In addition, emerging data also suggest that mobile technology and social media are promising means of increasing contraceptive use among adolescents (Ippoliti & L'Engle, 2017).

A 2019 review estimates that 23 million adolescent girls and women aged 15–19 years in LMICs have an unmet need for contraception (Deitch & Stark, 2019). Meeting this need would significantly affect the reproductive outcomes of young people in LMICs. A report by the Guttmacher Institute estimates that by 2030, 7.1 million unintended pregnancies would be averted among adolescents, if the most likely scenario of reaching a contraceptive level use in a given year were achieved (based on median values of probabilistic projections) (Biddlecom et al., 2018). An additional 300,000 unintended pregnancies could be averted if adolescents shift for more long-acting, reversible contraceptives (LARCs). Thus, planning for future contraception for a growing segment of adolescents is imperative for achieving desirable reproductive-health outcomes. The growing need for and use of modern contraceptives has shifted over time because of fast changes in adolescent sexual behavior, age at marriage, awareness of and demand for particular methods, and ease of access to family planning services. Figure 1 presents projections for adolescents girls’ needs for contraceptives by 2030 under different scenarios.¹
Although unmarried adolescents without children are expected to face challenges in accessing modern contraceptive methods, married adolescents, depending on parity, may also face challenges that can span from limited access to modern methods to social norms linked to fertility expectations when in union. A 2019 study of LMICs that assessed how contraceptive behavior could be affected by adolescent girls having a partner and children revealed that married adolescents without children have the lowest contraceptive use in the world as compared to unmarried or married adolescents with children (de Vargas Nunes Coll, Ewerling, Hellwig, & de Barros, 2019). Married adolescent girls with one or more children tended to have slightly higher rates of contraceptive use with exception of adolescent girls in West and Central Africa, where unmarried adolescents have higher rates of contraceptive use.

Contraceptive services and interventions to improve contraceptive behavior were systematically reviewed by Gottschalk and Ortayli (2014). Findings show that although multiple strategies have been used to increase contraceptive behavior in LMICs using both demand and supply-side interventions, most programs were small in nature, with limited promise for scale-up. Nevertheless, despite the weak evidence of the review, all subregions of LMICs show promise in foundations for programs for improving contraceptive behavior by adolescents.

Figure 2 depicts a flow chart highlighting the contraceptive journeys that adolescents may take depending on whether they are unmarried, married with no children, or married with children. Macrolevel issues affecting adolescents’ contraceptive journey include the wider environment they live in, contraceptive-service availability, and social and gender norms affecting adolescents. The mesolevel issues include influences such as their household environment, social networks, local communities, schools, workplaces, and places they hang out. The microlevel issues, although greatly affected by the meso- and macrolevels, are proximate to adolescents and can vary significantly according to where they are in the three important stages of their sexual and reproductive lives, identified in Figure 2 as unmarried with no children, married (or cohabiting) with no children, and
married (or cohabiting) with children. A progression between the two stages presented is expected; thus, microfactors in earlier stages may also manifest in later stages. For example, the contraceptive journey of unmarried adolescents with no children will greatly depend on their levels of knowledge about sex and reproduction, awareness of contraceptives, motivation to prevent pregnancy and STIs, utilization of services, awareness of reproductive-health rights, and ability to have agency and exercise their voice. However, depending on how powerful the meso- and macroinfluences are, aspects such as child marriage, violence, and other harmful practices linked to reproduction can quickly change their status and or depress the microinfluences. Once married but still without children, aspects such as type of relationships and level of empowerment can greatly influence contraceptive use, in addition to the adolescent’s views and desires for family size. For married adolescents with children, their contraceptive journey will be affected by their ability to achieve their desired family size, which in turn will be greatly influenced by the meso- and macrofactors they are exposed to and their knowledge and experience of SRH gained up to that point.

A successful contraceptive journey for adolescents is one in which most of the macro-, meso-, and microfactors align so that knowledge about, desires for, access to, and utilization of services can meet the needs of adolescents at any stage of their reproductive lives. Figure 2 depicts the interplay and complexity of factors that can affect contraceptive use by adolescents in the various reproductive stages of their lives. Understanding ASRH needs and meeting them will require research efforts that encompass basic data collection, in-depth research to increase understanding of adolescent behaviors, and evaluations of interventions to enable decision-makers to scale up promising programs.

**Conclusion**

The gap between first sex and marriage has increased in the 21st century, requiring renewed attention to the often-unmet SRH needs of adolescents. To ensure comprehensive ASRHR, more research is needed in order to understand the best mechanisms for providing comprehensive sexuality education, reducing child marriage, promoting gender-equitable norms, and engaging families and communities, among other areas identified in this
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Research is also needed in order to understand the unique needs of young adolescents (10–14 years), gender nonconforming and nonheteronormative adolescents, as well as adolescents facing instability from homelessness or refugee status. Yet there is also a wide body of existing evidence informing the implementation of effective strategies for overcoming the political, economic, and sociocultural factors currently restricting the delivery of ASRH information and services, so a call for more research is not an excuse for immediate action. Finally, to achieve SRHR for all adolescents, they must be meaningfully engaged in the development and implementation of all research, programs, and policies related to or developed for them. With 1.25 billion adolescents globally in 2020, they cannot and will not be excluded from conversations about them. In fact, adolescents around the world are telling us what they need, and it is time to listen.

References


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Notes:

(1.) Scenario 1 reflects the same method mix used by adolescents in 2017; scenario 2 assumes 20% of adolescent girls using each type of short-acting method would switch to LARC methods; scenarios 3 and 4 assume an accelerated rate increase in modern contraceptive use.

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