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Improving access to and use of contraception by adolescents: What progress has been made, what lessons have been learnt, and what are the implications for action?

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A B S T R A C T

This article sets out the progress that has been made in reducing levels of adolescent childbearing and in meeting adolescent contraceptive needs, over the last 25 years, and also makes the public health, economic, and human rights rationale for continued attention to and investment in these areas. Using an analytic framework that covers the perspectives of both the use and the provision of contraception, it examines the factors that make it difficult for adolescents to obtain and use contraceptives to avoid unintended pregnancies, and outlines what could be done to address these factors, drawing from research evidence and programmatic experience. In doing this, the article provides concrete examples from low- and middle-countries that have made tangible progress in these areas.

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Introduction

Substantial – albeit uneven – progress has been made in reducing levels of adolescent child bearing and in meeting adolescent contraceptive needs over the last 25 years. However, there is still much work

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to be done in both these areas. This article reviews the progress made and provides the rationale for continued investment and action in this area. It then examines why adolescents, both girls/young women and boys/young men continue to have difficulties in obtaining and using contraception, and what could be done building on research evidence and programmatic experience.

Levels and trends in adolescent childbearing

Over the past 25 years, based on data from 1995 to 2000 and from 2015 to 2020, the adolescent birth rate has declined from 60 to 43 births per 1000 girls aged 15–19 years [1,2]. South Asia has made the most progress. North America, sub-Saharan Africa and Latin America have made progress as well. The global rate, however, masks enormous differences across regions, within regions and within countries in each region. For example, the rate in South Asia in 2015–2020 is 26 per 1000 girls aged 15–19 years, whereas the corresponding rate in sub-Saharan Africa is 104 per 1000 girls aged 15–19 years [1,2] (See Fig. 1).

Levels and trends in modern contraceptive use in adolescents

Adolescent pregnancies are a global problem –they occur in high-, middle-, and low-income countries. However, they are more likely to occur in marginalized families and communities. Several factors contribute to adolescent pregnancies and births. One key factor is lack of access to and use of modern contraceptive methods. The proportion of adolescent girls whose needs for family planning were satisfied by modern methods increased from 36% to 60% between 1995 and 2020 [3]. Yet one in four adolescent girls aged 15–19 who want to avoid pregnancy are currently not using a modern method [3]. While South Asia, sub-Saharan Africa, and the Middle East and North Africa have all observed steady increases in adolescent girls' demand for family planning satisfied by modern methods over the last 25 years, fewer than one in two girls in these regions have their demand satisfied compared to three in four in Latin America and the Caribbean, and Europe and Central Asia, and nearly nine in ten in North America [3].

Effects of unintended pregnancies among adolescents

One report suggests that in developing regions, 38 million adolescent girls need contraceptives to avoid an unintended pregnancy, but more than half are not using an effective method [4]. It notes that:

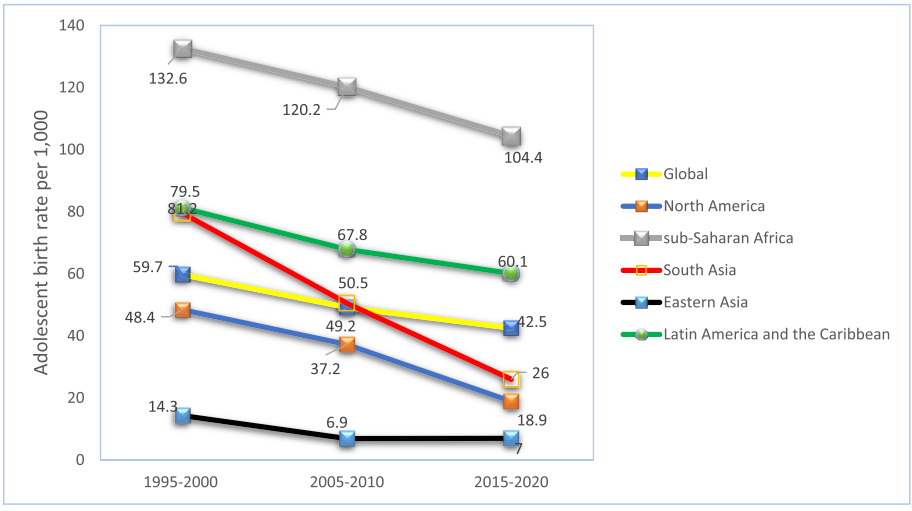

Fig. 1. Global and regional trends of adolescent birth rates, 1990–2000 to 2015–2020.

"Meeting the unmet need for modern contraception of women aged 15–19 would reduce unintended pregnancies among this group by 6 million annually. That would mean averting 2.1 million unplanned births, 3.2 million abortions and 5600 maternal deaths. The dramatic reduction in unintended pregnancies would spare women and their families the adverse consequences of early child-bearing, reap savings in maternal and child health care, and boost women's education and economic prospects." [4].

Understanding and addressing barriers to access and use of contraception by adolescents

A web of inter-related factors contributes to poor access and use of contraception by adolescents.

A useful International Center for Research on Women (ICRW) framework lists three demand-side and two supply-side factors [5]. Demand-side factors include the lack of desire to avoid, delay, space, or limit childbearing; the lack of desire to use contraception; and the lack of confidence and ability to seek/negotiate contraception use. Supply-side factors include poor access to contraceptive services and to quality – including respectful – service provision. Each of these factors is discussed below as is research evidence and programmatic experience on addressing these factors effectively.

A foundational principle of this framework is that adolescents are a diverse group with differing needs. Girls/young women in the 10–19 years age group include those who are married/in union and those who are not, first-time parents, those living with HIV and those living with disabilities. For example, data from Kenya point to enormous differences in the levels of use of contraception, in the methods used, in the main sources of contraceptive methods, and in the reasons for non-use between those in union and those who are not [6]. These differences reinforce the need to understand the realities of key subgroups in adolescents and to tailor our approaches to their needs and preferences (Table 1).

Addressing the lack of desire to avoid, delay, space and limit childbearing

One reason for some adolescents' lack of willingness to obtain and use contraception is because they have ***no desire to avoid, delay, space, or limit childbearing***. In contexts in which early childbearing within or outside marriage/union is socially accepted or even encouraged, early pregnancy is likely to be intended and wanted. Thus, efforts to increase contraceptive awareness and access are likely to have little effect on their uptake. Rather, initiatives that address poverty and social disadvantage, including lack of access to education and employment opportunities, are required. These efforts should be combined with complementary efforts to reduce child/early marriage, a major contributor to adolescent childbearing [7–9].

Table 1
Differences between contraceptive use between adolescents in and not in union in Kenya, 2014 [6,35].

	Adolescents in union	Adolescents not in union
Current levels of contraceptive use in 15–19 year olds	40.2%	6%
Three main contraceptive methods used	Injectables 70%, Pills 5%, Condoms 5%	Condoms 40%, Injectables 32.5%, Periodic abstinence 7.5%
Main sources of contraceptives	Government facilities 70%, Private facilities 28%, Drug shops 2%	Government facilities 42% Private facilities 30%, Drug shops 28%
Main reasons for not using contraceptives	Breast feeding 15.4%, Post-partum amenorrhoea 12.7%, Fear of side effects 12.4%, Partner opposed to contraceptive use 11.6%, Belief that it interferes with the body's processes 7.6%, Others 40%	Not having sex 50.5%, Not married 18.6%, Infrequent sex 7.2%, Fear of side effects 4.1%, Others 18.4%

Addressing the lack of desire to use contraception

A second reason for some adolescents' lack of willing to obtain and use contraception is because they have ***no desire to use it*** stemming from fear of side effects and that it could prevent them from getting pregnant in the future, or as a result of beliefs that its use conflicts with their traditions and religious directives [10]. In this context, information and education on contraception, including efforts to understand and address myths and misconceptions, are required. The updated International Technical Guidance on Sexuality Education sets out key concepts and learning objectives for use in school- and community-based sexuality education – grounded in human rights and gender equality – that is scientifically accurate, incremental, comprehensive, and age and developmentally appropriate [11] (Table 2).

Addressing the lack of self-assurance and independence to use contraception

Even if adolescents want to avoid, delay, space, or limit pregnancy and childbearing *and* want to obtain and use contraception, ***they may not have the self-assurance or the independence*** to do so. They may be reluctant to admit that they are sexually active or embarrassed to seek contraception. They may also face opposition from their partners or other influential family members such as mothers-in-law, who, in some settings, can overrule decisions they make [8,9]. (Emotional and/or physical violence or the threat of violence often is an important aspect of this opposition). In such contexts, efforts to build adolescent girls' abilities to make decisions and negotiate decisions about childbearing and contraceptive use are required, as are efforts to engage and support their male partners in shared decision-making. Depending on the social context, young men too may not lack the confidence and independence to seek contraception. That is why, alongside efforts to reach young people, complementary efforts are needed to build support for contraceptive use from family and community members [12].

Overcoming barriers to access to contraceptive services

Even when adolescents want to avoid, delay, space, or limit childbearing; want to use contraception to do this; and have both the confidence and the support of their partners and other influential others, ***they are not always able to obtain the contraceptives/contraceptive services they need***. In some

Table 2
Key concepts and selected learning objectives from the updated International Technical Guidance on Sexuality Education (ITGSE) [11].

Key concepts addressed in the updated ITGSE	Learning objectives in relation to key concept 8 on Sexual and Reproductive Health
1. Relationships 2. Values, rights, culture and sexuality 3. Understanding gender 4. Violence and staying safe 5. Skills for health and wellbeing 6. The human body and development 7. Sexuality and sexual behaviour 8. Sexual and reproductive health	• *Pregnancy prevention For 5–8 year olds*: Pregnancy is a natural biological process and can be planned Learners will be able to: • *For 9–12 year olds*: It is important to understand the key features of pregnancy; Modern contraception can help people prevent or plan pregnancy; Gender roles and peer norms may influence decisions about contraceptive use. • *For 12–15 year olds:* Different forms of contraception have different effectiveness rates, efficacy, benefits and side effects; Young people who are sexually active and could benefit from contraception should be able to access it without significant barriers, regardless of ability, marital status, gender, gender identity or sexual orientation; There are health risks associated with too early child-bearing and closely spaced births • *For 15–18 year olds + :* Contraceptive use can help people who are sexually active to prevent pregnancy, or plan if and when to have children, with important related benefits for individuals and societies; Unintended pregnancies occur, and all young people should be able to access the services and protections necessary for their health and well-being; Adoption is an option when someone is not ready or able to become a parent; There are practices that can contribute to or threaten a healthy pregnancy

places, laws and policies prevent the provision of contraception based on age or marital status [13]. Further, adolescents may often be unaware about where (or when) contraceptives are available, unable to reach a contraceptive service-delivery point, or unable to afford them [13]. Barriers such as inaccessible service locations and cost negatively affect adolescents as well as adults. However, they disproportionally affect adolescents, as they often have limited ability to move around and financial autonomy to pay for service fees and transport [13]. In this context, efforts to enable adolescents to access contraceptives/contraceptive services are required.

There is considerable research evidence and practical experience in what works and what does not in improving the access of adolescents to contraceptive services. In many places, both nongovernment organizations and governments have set up youth centres, youth corners in health facilities or separate health services for adolescents. Studies have shown that while youth centres may serve the useful purpose of providing a venue to bring young people together and to conduct small-group learning and sharing activities, they do not lead to increases in contraceptive uptake [14]. Further, separate services are difficult to scale up and sustain in resource-constrained settings. Given this, there is growing recognition of the need to move away from separate/dedicated services for adolescents, and instead make existing health services that already serve adolescents to a greater or lesser extent, more adolescent friendly, e.g. antenatal clinics, postnatal clinics, and STI/HIV clinics. Using programming principles and practices learnt from research studies and projects – e.g. removing policy restrictions to access, ensuring confidentiality and privacy, and providing free or subsidised services – existing services could be made more responsive to adolescents' needs and preferences. [15,16] Further, focussing on strengthening existing services is a pragmatic approach to reach large numbers of adolescents. Such an approach led to increasing the uptake of adolescent contraception and the reduction of adolescent pregnancy in Chile [16]. Further, combining service provision in static health facilities with community outreach can further extend the access and uptake of contraception by young women in the rural areas, as shown in Ethiopia [16].

Going beyond public-sector health facilities and systems, many adolescents seek contraceptives from pharmacies and shops. In Nigeria for instance, 35% of adolescents who are married/in union obtain contraceptives from government-run facilities; the rest do so from private sources. However, less than 5% of adolescents who are unmarried/not in union obtain contraceptives from government-run facilities [18] in Kenya, however (data shown above in Table 1), both adolescents who are married/in union and those who are not obtain contraceptives from the private sector. Pharmacies offer adolescents accessible locations, longer operating hours and – more importantly – anonymity in obtaining contraceptive methods. The preference for pharmacies is especially evident in contexts where obtaining contraceptives from government health facilities may be difficult due to restrictive laws, health worker bias, or privacy concerns. For example, studies in Nepal and Ethiopia show that pharmacies are the first choice for adolescents for emergency contraceptive pills [19,20]. The implication of this is that working actively and creatively with pharmacies and shops to expand contraceptive access and uptake, is important to do.

The bottom-line message is that one size does not fit all; a range of approaches are required to respond to the differing needs and preferences of different groups of adolescents. To respond to this, the E2A Project has developed a planning tool which lists different models of service provision that could be employed - a stand-alone clinic for adolescents, a separate space for adolescents within a clinic for all segments of the population, a clinic in which adolescent responsive elements are fully mainstreamed, mobile outreach services, community-based services, drug shops and pharmacies, and the provision of health services in a non-health setting (in Section 1) [35]. Social marketing, social franchising and voucher schemes could be put in place in combination with these models. Recognizing that these approaches are very different in what they can achieve and in what it will take to operationalize them, the tool sets out considerations for the choice of the approach (es) - including defining the health/behavioural outcomes to be achieved, the sub-population (s) of adolescents to be reached, the package of health services to be offered, and the resources available (in Section 2) [35]

Developing and maintaining a workforce of competent, caring and committed health service providers

Even if adolescents can reach contraceptive delivery points, ***they may not be able to get contraceptive information or services they need/want*** because health service providers have knowledge gaps and misconceptions about contraceptive service provision, do not have the knowledge and skills to respond to the specific needs of adolescents, or are judgemental and disrespectful with them [21]. First, many health service providers have knowledge gaps and misconceptions, e.g. that contraceptive methods, and especially long-acting ones, should not be used in adolescents who have not yet had a child, they may not be aware that when adolescents use contraceptives, they are more likely to use them for shorter periods than adults; and are more likely than them to discontinue use because they are particularly sensitive to side effects. They may also not be aware that adolescents are at higher risk of rapid repeat pregnancies because of lack of awareness and misconceptions about return to fertility [21]. Second, lacking expertise in working with adolescents, they may not have the knowledge or skills to assess the cognitive, psychological and social situation of their adolescent clients, and to offer contraception as a means of achieving their life goals, using approaches such as motivational interviewing and aspirational counselling. Finally, in many places health service providers believe that it is wrong for adolescents to be sexually active before marriage; these attitudes translate into judgemental and disrespectful behaviour [21].

Competent, empathetic and committed health service providers are the heart and soul of an adolescent responsive health service. They should also be knowledgeable about all methods of contraception, including emergency contraception. There is a growing body of research evidence and practical experience in what works and what does not in improving and sustaining improvements in the competencies, attitudes, and motivation and hence the performance of health service providers.

Many factors at the individual, the immediate environment, and the wider environment levels can potentially influence health worker performance [22]. Regardless of the cause of poor health worker performance, the response has been – and continues to be – training. Training health workers is a widely used approach to improve their abilities and attitudes, to respond effectively and with sensitivity to their adolescent patients. *In many places, it is the only approach used.* There is growing recognition that training is often poorly done, and that training *alone* does not lead to sustained improvements in health worker performance. First, training programmes which involve large groups, are not focussed and use didactic learning methods have poor results. Better results can be achieved with smaller groups, focussed topics, and multi-method training [22]. Second, training works best when it is combined with supportive supervision and group problem-solving [22].

There are three implications of this. First, off-site, one-off in-service training programmes should be replaced with a combination of pre-service training and ongoing, off- and on-site low dose, high frequency training. Second, training initiatives should have limited and clearly defined objectives, involve small groups, and use multiple methods, with an emphasis on participatory and interactive elements. Third, high-quality training programmes should be combined with other proven approaches – job descriptions grounded in quality standards, pocket and desk reference tools, and supportive supervision. Job descriptions and standards can provide clarity to health workers about what is expected of them and what they are accountable for in their scope of work. Handy, clear, and credible pocket and desk reference tools can also help to remind health workers what they need to do in practice. Supervision that is consistent, specific, and supportive – building competence and confidence, on the one hand, and ensuing accountability, on the other – can have a large positive impact on performance and satisfaction [23].

Building health service providers' abilities to provide contraceptive information and services effectively should be combined with efforts work with them as a community to build empathy and commitment. To overcome service provider bias in contraceptive provision in general, Solo and Festin recommend not blaming service providers, promoting sharing and learning from positive deviants, being explicit about what not being discriminative means in practice and using

comprehensive approach to change behaviour [24]. This is illustrated in a study from Moldova which showed that fostering peer-sharing and learning in a safe environment can stimulate bottom-up problem definition and problem-solving and foster the development of norms and practices that are respectful and equitable in a group setting (even when they are not in the wider community in the group operates) [25]. Another study in India showed that health workers can be motivated, and their performance improved by supporting them to work as teams to achieve collective goals and rewarding them with public recognition and non-financial incentives [26]. Having said that, it is important to note that even if health workers have the necessary competencies and positive attitudes, poor infrastructure, missing and/or broken equipment, and stock outs of medicines and other supplies will impede their ability to perform as required. Furthermore, regardless of the quality of capacity building and support strategies used, overwhelming workloads, inadequate and untimely salary payments, and managerial arrogance and unfairness can rapidly lead to frustration and demotivation.

Efforts to build individual competence, and shared norms of sensitivity and enthusiasm, should be combined with approaches to hold service providers accountable to consumers through enhancing the quality of information that consumers have on their rights, creating mechanisms for the participation of communities in oversight mechanisms, and establishing community groups to advocate for their rights [27]. Adolescents are often asked for their opinions (voice). That is important to do but in addition, involving them in such mechanisms would give them the 'teeth' they need to make health service providers and services more accountable [28].

Outstanding country examples

Adolescent pregnancy has clearly known causes, and serious health, social, and economic consequences. Correct and consistent use of contraception can contribute to reducing adolescent pregnancy, as part of a wider strategy (as discussed earlier). In 2011, the World Health Organization (WHO) and the United Nations Population Fund (UNFPA) published guidelines on preventing adolescent pregnancy and poor reproductive outcomes in developing countries, which set out clear recommendations, on increasing access to and uptake of contraception, based on the studies of the effectiveness of research studies and projects from around to work [29]. These recommendations have been endorsed by a more recent review [30]. Five years into the Sustainable Development Goals era, a small but growing number of countries are demonstrating that the learning from these studies and projects can be applied at scale in the context of national programmes.

The case of Chile

Recognizing its high adolescent fertility rate of 55.8 births per 1000 women aged 15–19 years in 2005, Chile adopted the regional 2007–2013 Andean Plan for the Prevention of Adolescent Pregnancy. The government targeted a 10% reduction in the adolescent fertility rate in the 2011–2020 National Health Strategy and strengthened the National Comprehensive Health Programme for Adolescents/Youth and the corresponding Strategic Action Plan [17].

A five-pronged approach to improve the health system's responsiveness to adolescents was developed for the ten-year strategy: training health workers, creating adolescent-friendly spaces in primary health centres, promoting a range of contraceptive methods, improving outreach and referrals, and improving school retention and re-entry for pregnant adolescents and adolescent mothers. New government circulars were issued on parental consent requirements, adolescents' autonomy, and protecting young people from sexual abuse. Further, several laws were consolidated into one framework which defined and mandated different stakeholders' roles and responsibilities. To respond to the need for better data, a monthly statistical register was created to gather data on adolescents disaggregated by age, sex, and risk factors. Finally, intensive advocacy with scientific associations, NGOs, women's advocates, and young people helped to overcome resistance to contraceptive provision. The Ministry of Health's media department made data on

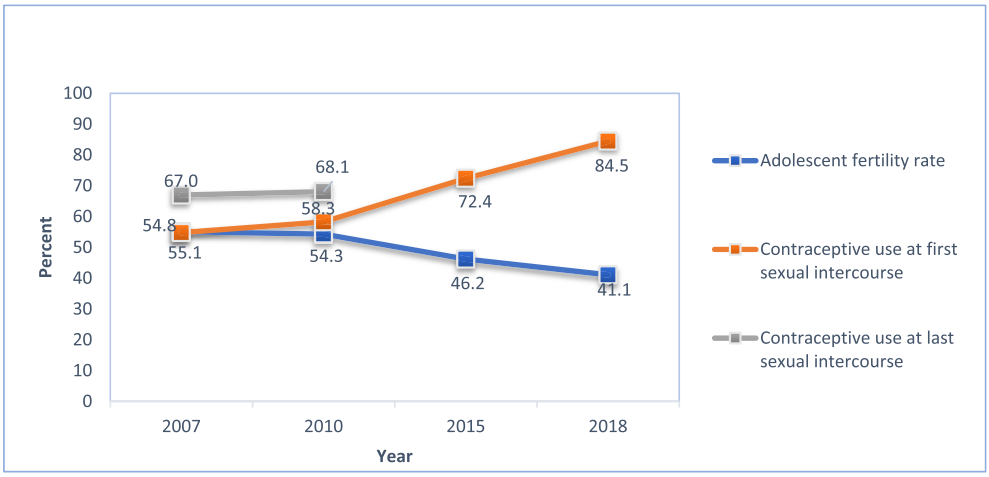

Fig. 2. Modern contraceptive use among all adolescents aged 15–19 in Chile, 2007–2018.

progress available to journalists to publicise the positive results. The ten-year strategy ensured sustained human and financial resources through three governments of left- and right-leaning political parties.

The results highlighted positive trends in adolescent fertility rate, a decrease from 55.1 births per 1000 women aged 15–19 in 2007 to 41.1 births per 1000 women aged 15–19 in 2018; a 51% reduction in the proportion of births to mothers aged under 19 between 2000 and 2017; and a marked increase of 30% in contraceptive use at first sexual intercourse between 2007 and 2018 among adolescents [17,31,32] (See Fig. 2).

The case of Ethiopia

At the turn of the century, the Ministry of Health (MOH), Ethiopia, decided to prioritize maternal and childhood mortality reduction, within the context of its efforts to achieve the Millennium Development Goals. Family Planning was identified as a key part of a strategy to reduce maternal mortality.

It launched an ambitious Health Extension Programme (HEP) to deliver health education and basic health services – including a basket of contraceptive methods – in the community, and to strengthen linkages to health facilities. The HEP programme focussed on the rural areas where over 80% of the population reside. Adolescent girls/young women were not targeted specifically; however, because many of them are married/in union, they were reached by the programme.

Over five years, nearly 35,000 individuals selected by communities were recruited and trained as a new cadre of salaried Health Extension Workers (HEW). In addition to health service provision on the 'doorstep' and referral when needed, the HEWs were trained and supported to engage in community dialogue to challenge norms such as those contributing to the low utilization of contraception. They were backed up by mid-level health workers who were recruited and trained to provide contraceptive, midwifery, neonatal and emergency care services in newly constructed or rehabilitated health centres. The national effort was led by the MOH but fully involved other players including associations of professional associations of health professionals, academic institutions and NGOs. Finally, a core team, including technical experts and chaired by the State Minister of Health, reviewed progress, set priorities and developed plans; they also identified and addressed problems as they arose.

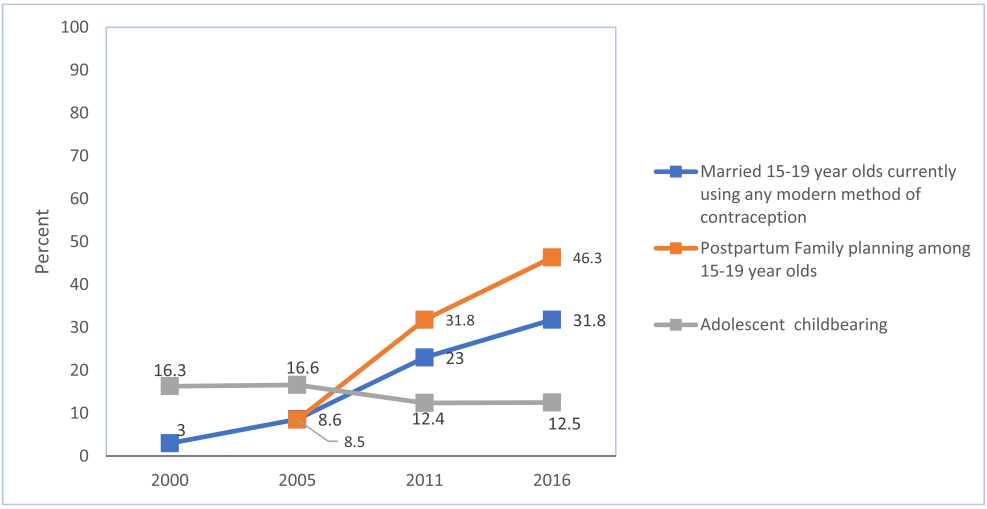

Fig. 3. Teenage pregnancy and Modern Contraceptive Prevalence among adolescent girls, 15–19 in Ethiopia.

The results were impressive. In relation to contraceptive uptake by adolescents, there was a 29% increase in contraceptive use by married adolescent girls aged 15–19 (2000–2016), a 38% increase in postpartum contraceptive use in the same group (2005–2016), and 3.8% decrease in teenagers who have begun childbearing between 2000 and 2016 [17] (See Fig. 3).

Details of the wider lessons learnt from the programmes in Chile and Ethiopia are summarized elsewhere [17]. In relation to the subject of this article, the five points to note are that the governments of both countries legitimized the provision of contraception to adolescents through national policies and strategies; they built adolescent demand for contraceptive services and community support for their provision; they overcame barriers to access by expanding the provision of contraceptive services by strengthening (and in the case of Ethiopia, expanding) the delivery system; they trained and supported different cadres of health workers to provide contraceptive services effectively and with sensitivity; and they used data to track progress and to identify and solve problems when they arose. The achievements of Chile and Ethiopia challenge us all to do what is doable and urgently needs to be done – now.

Conclusion

While progress has been made reducing adolescent child bearing and meeting adolescent contraceptive needs, there is much more that needs to be done for public health, economic and human rights reasons. In order to make progress, one needs to understand the differing needs of different groups of adolescents, and the different challenges they face in making reproductive decisions and acting on them. Over 25 years, considerable know-how has been gained on addressing these different challenges. There is also a growing body of country-level experience in applying this know-how at scale and in a sustained manner. This augurs well for the future.

Declaration of Competing Interest

None.

Practice points

- Addressing the lack of desire to avoid, delay, limit, and space: In contexts in which early childbearing within or outside marriage/union is socially accepted or even encouraged, early pregnancy is likely to be intended and wanted. Thus, efforts to increase contraceptive awareness and access must be closely linked to efforts to address poverty and social disadvantage, including lack of access to education and employment opportunities.
- Addressing the lack of desire to use contraception: Many adolescents have misconceptions about contraception or do not know where & how to obtain contraceptive information and services. Comprehensive Sexuality Education (CSE) is an effective way to reach and inform adolescents about contraception. It should be complemented by reaching out to parents, teachers and other gatekeepers.
- Addressing the lack of self-assurance and independence to obtain and use contraception: Adolescents may not have the confidence to seek contraception; they may be constrained in making independent decisions on contraceptive use. Efforts to build adolescent girls' abilities to make decisions and negotiate decisions about childbearing and contraceptive use are required, as are efforts to engage their partners and others in the family who could influence their decision-making.
- Overcoming barriers to accessing contraception: Laws and policies prevent the provision of contraception based on age or marital status, in many countries. Critical to sound adolescent-friendly service provision are laws and policies that support their access to contraception regardless of age or marital status, and without third-party authorization/notification.
- Developing and maintaining a workforce of competent, caring, and committed health service providers: The way in which health services and the service providers who deliver contraceptive services are often not adolescent friendly. There is a need to overcome health service provider biases and misconceptions regarding contraceptive use by adolescents. The contraceptive needs of adolescents are diverse and evolving; complementary strategies must be used to respond to the differing needs and preferences of adolescents. Additionally, programmes must address the needs of special population of adolescents (e.g. those with disabilities, migrants, and refugees).

Note: An annotated list of WHO's guidelines on contraception as well as a list of complementary publications from WHO and other organizations are available in WHO's synthesis of recommendations on adolescent sexual and reproductive health [33[33]].

Research agenda

From research studies and projects, there is evidence on:

- Building desire to use contraception among adolescents.
- Building confidence and abilities to make and act on reproductive and contraceptive use decisions.
- Building partner/family/community support for contraceptive provision to adolescents
- Making existing health services responsive.
- Building competent, caring, and committed health service providers.
- Need for data of very young adolescents and marginalized groups at the disaggregated levels, capturing their heterogeneity and evolving capacity.

The challenge today is on generating evidence from retrospective and prospective implementation research on applying these evidence-based interventions at scale with quality and equity [34].

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References

[1] United Nations Department of Economic and Social Affairs, Population Division. World population prospects: fertility data- 2020-2025. 2020. Available from: https://population.un.org/wpp/Download/Standard/Fertility/. [Accessed 4 April 2020].
[2] Liang M, Simelane S, Fortuny Fillo G, Chalasani S, Weny K, Canelos PS, et al. The state of adolescent sexual and reproductive health. J Adolesc Health 2019;65:S3–15. https://www.jahonline.org/article/S1054-139X(19)30473-2/fulltext.
[3] UNICEF, UNWomen. Plan International. A new era for girls: taking stock of 25 years of progress. New York: UNICEF; 2020. Available from: https://www.unicef.org/reports/new-era-for-girls-2020.
[4] Darroch J, Woog V, Bankole A, Ashford LS. Adding it up: costs and benefits of meeting the contraceptive needs of adolescents. New York: Guttmacher Institute; 2016. Available from: https://www.guttmacher.org/report/adding-it-meeting-contraceptive-needs-of-adolescents.
[5] McCleary-Sills A, Sexton M, Petroni S, etal. Understanding the adolescent family planning evidence base. Washington DC: ICRW; 2014. Available from: https://www.icrw.org/wp-content/uploads/2016/10/FINAL-Understanding-the-Adolescent-Family-Planning-Evidence-Base-7.30.pdf.
[6] National Bureau of Statistics. Ministry of health, Kenya. *Kenya Demographic and health survey*. Nairobi, Kenya: Ministry of Health; 2014.
[7] Glassman A, Silverman R, McQueston K. Adolescent fertility in low- and middle-income countries: effects and solutions. Work. Pap. No. 295. Centre for Global Development. Washington DC: Centre for Global Development; 2012. Available from: https://www.cgdev.org/publication/adolescent-fertility-low-and-middle-income-countries-effects-and-solutions-working-paper.
[8] Kassa GM, Arowojolu AO, Odukogbe AA, Alemayeku WY. Prevalence and determinants of adolescent pregnancy in Africa: a systematic review and Meta-analysis. Reprod Health 2018;15:195. https://doi.org/10.1186/s12978-018-0640-2.
[9] Acharya DR, Bhattarai R, Poobalan A, van Teijlinger ER, Chapman R. Factors associated with teenage pregnancy in south Asia: a systematic review. Health Sci J 2010;4(1). Available from: https://www.hsj.gr/medicine/factors-associated-with-teenage-pregnancy-in-south-asia-a-systematic-review.pdf.
[10] Parks J. Myths, misconceptions still discourage use of family planning. Population Reference Bureau; 2019. Available from: https://www.prb.org/myths-misconceptions-still-discourage-use-of-family-planning/.
[11] UNESCO, UNFPA, UNICEF, WHO, UNESCO. UNFPA, UNICEF, WHO, UN Women. International Technical Guidance on sexuality education: An evidence informed approach. Paris: UNESCO; 2018. Available from: https://unesdoc.unesco.org/ark:/48223/pf0000260770.
[12] Sarkar A, Chandra-Mouli V, Jain K, Behera J, Mishra SK, Mehra S. Community based reproductive health interventions for young married couples in resource-constrained settings: a systematic review. BMC Publ Health 2015;15:1037. https://doi.org/10.1186/s12889-015-2352-7. Available from: https://bmcpublichealth.biomedcentral.com/track/pdf/10.1186/s12889-015-2352-7.
[13] Chandra-Mouli V, Parameshwar P, Parry M, Lane C, Hainsworth G, Wong S. A never-before opportunity to strengthen investment and action on adolescent contraception, and what we must do to make full use of it. Reprod Health 2017;14:85. https://doi.org/10.1186/s12978-017-0347-9. Available from: https://reproductive-health-journal.biomedcentral.com/articles/10.1186/s12978-017-0347-9.
[14] Chandra-Mouli V, Lane C, Wong S. What does not work in adolescent sexual and reproductive health: a review of evidence on interventions commonly accepted as best practices. Glob Health: Science and Practice 2015;3(2):333–40. https://www.ghspjournal.org/content/3/3/333.
[15] USAID. HIP briefs. *Adolescent-friendly contraceptive services: mainstreaming adolescent-Friendly elements into existing contraceptive services*. Washington DC: USAID; 2015. Available from: https://www.fphighimpactpractices.org/briefs/adolescent-friendly-contraceptive-services/.
[16] Denno DM, Hoopes AJ, Chandra-Mouli V. Effective strategies to provide adolescent sexual and reproductive health services and to increase demand and community support. J Adolesc Health 2015;56:S22–41. https://www.sciencedirect.com/science/article/pii/S1054139X14004248.
[17] Chandra-Mouli V, Plesons M, Hadley A, Maddaleno M, Oljira L, Tibebu S. Learned from national government- led efforts to reduce adolescent pregnancy in Chile, England and Ethiopia. Early Childhood Matters 2019:50–6. https://earlychildhoodmatters.online/2019/lessons-learned-from-national-government-led-efforts-to-reduce-adolescent-pregnancy-in-chile-england-and-ethiopia/.
[18] National Population Commission - NPC/Nigeria and ICF. *Nigeria Demographic and health survey 2018*/NGIR7AFL.DTA. Abuja, Nigeria, and rockville. Maryland, USA: NPC and ICF; 2019.
[19] Thapa S. A new wave in the quiet revolution in contraceptive use in Nepal: the rise of emergency contraception. Reprod Health 2016;13:49. Available from: https://reproductive-health-journal.biomedcentral.com/articles/10.1186/s12978-016-0155-7.
[20] Both R. Emergency contraceptive use in Addis Ababa, Ethiopia: challenging common assumptions about young people's contraceptive practices. *Reprod Health Matter*s 2015 May;23(45):58–67. https://doi.org/10.1016/j.rhm.2015.06.005. Epub 2015 Jul 29.Available from: https://www.ncbi.nlm.nih.gov/pubmed/26278833.
[21] Engel D, Paul M, Chalasani S, Gonsalves L, Ross DA, Chandra-Mouli V. A package of sexual and reproductive health and rights interventions—what does it mean for adolescents? J Adolesc Health 2019;65:S41050. https://www.sciencedirect.com/science/article/pii/S1054139X19304720.

[22] Rowe AK, Savigny D de, Lanata C, Victora CG. How can we achieve & maintain high-quality performance of health workers in low-resource settings ? Lancet 2005. 1016/SO140-6736(05)67028-6.
[23] Dieleman M, Gerretsen B, van der Wilt GJ. Human resource management interventions to improve health workers' performance in low and middle income countries: a realist review. Health Res Pol Syst 2009;7:7. Available from:https://health-policy-systems.biomedcentral.com/articles/10.1186/1478-4505-7-7.
[24] Solo J, Festin M. Provider bias in family planning services: a review of its meaning and manifestations. Global Health Science and Practice 2019;7(3):371. https://www.ghspjournal.org/content/early/2019/09/12/GHSP-D-19-00130.
[25] Lesco G, Squires F, Babii V, Bordian N, Cernetchi O, Martin Hilber A. The feasibility and acceptability of collaborative learning in improving health worker performance on adolescent health: findings from implementation research in Moldova. BMC Health Serv Res 2019;19(1):339. https://doi.org/10.1186/s12913-019-4158-2. Available from: https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-019-4158-2.
[26] Grant C, Nawal D, Guntur SM, Kumar M, Chaudhuri I, Galavotti C. 'We pledge to improve the health of our entire community': improving health worker motivation and performance in Bihar, India through teamwork, recognition, and non-financial incentives. PloS One 2018;13(8):e0203265. https://doi.org/10.1371/journal.pone.0203265.
[27] Berlan D, Schiffman J. Holding health providers in developing countries accountable to consumers: a synthesis of recent scholarship. Health Pol Plann 2012;27:271–80. Available from: https://www.ncbi.nlm.nih.gov/pubmed/21551121.
[28] Catino J, Battistini E, Babchec A. Young people advancing sexual and reproductive health: toward a new normal. Washington DC: The YIELD Project; 2019. Available from: https://www.summitfdn.org/wp-content/uploads/2019/05/Yield_full-report_June-2019_final.pdf.
[29] WHO. WHO guidelines on preventing early pregnancy and poor reproductive outcomes in adolescents in developing countries. Geneva: WHO; 2011. Available from: https://www.who.int/maternal_child_adolescent/documents/preventing_early_pregnancy/en/.
[30] Hindin M, Kalamar A, Thompson T-A, Upadhayay UD. Interventions to prevent unintended and repeat pregnancy among young people in low and middle-income countries: a systematic review of the published and gray literature. J Adolesc Health 2016;(59):S8–15. Available from: https://www.jahonline.org/article/S1054-139X(16)30061-1/fulltext.
[31] INJUV. Quinta Encuesta Nacional de Juventud. Santiago, Chile: Instituto Nacional de la Juventud; 2007.
[32] INJUV. Novena Encuesta Nacional de Juventud. Santiago, Chile: Instituto Nacional de la Juventud; 2019.
[33] WHO. WHO recommendations on adolescent sexual and reproductive health. Geneva: WHO; 2019. Available from: https://www.who.int/reproductivehealth/publications/adolescent-srhr-who-recommendations/en/.
[34] Plesons M, Cole C, Hainsworth, et al. Forward, together: a collaborative path to comprehensive adolescent sexual and reproductive health and rights in our time. J Adolesc Health 2019:S51–62. Available from: https://www.jahonline.org/article/S1054-139X(19)30467-7/abstract.
[35] Simon C, Benevides R, Hainsworth G, Morgan G, Chau K. Thinking outside the separate space: A decision-making tool for designing youth-friendly services. Washington DC: Evidence to Action Project/Pathfinder International; 2015. https://www.e2aproject.org/wp-content/uploads/thinking-outside-the-separate-space-yfs-tool.pdf.