Reproductive Health

COMMENT

Open Access

Is a search for game changers preventing us from focusing on the necessary tasks of systems strengthening and norm change to facilitate adolescent contraceptive use?

C. Lane[1*], B.J. Ferguson[2] and V. Chandra-Mouli[3]

Abstract

With a keen awareness of the size and health needs of the global adolescent population, governments, nongovernment organizations and the technical and funding agencies that support them continue to seek innovative answers to persistent programming challenges to increasing contraceptive use among sexually active adolescents. Adolescents 360 (A360) is a project implemented by Population Services International (PSI) and partners with funding from the Bill and Melinda Gates Foundation (BMGF) and the Children's Investment Fund Foundation (CIFF). The first phase of the project was implemented from 2016 – 2020 in Ethiopia, Nigeria, and Tanzania. A360 hypothesized that human centered design (HCD) could catalyze new insights into identifying and solving problems that limit adolescents' use of contraception. Despite initial promising results, A360 demonstrated very limited impact on modern contraceptive uptake among adolescents. The authors of this commentary were members of a technical advisory group to A360 and are uniquely positioned to provide insights on this project to complement those of A360's staff and evaluators, which are already in the public arena. Our analysis suggests that all stakeholders should take steps to rebalance their programs and investments to not only seek new solutions (i.e. game changers), but to also invest in the institutionalization of the solutions that have been generated over the past 40 years, prioritizing those that have shown evidence of effectiveness (i.e. adolescent responsive health service delivery) and those that demonstrate significant promise (i.e. social norm change).

Keywords Adolescent sexual reproductive health, Adolescent responsive health systems, Human centered design, Contraceptive use, Social norms

Introduction

This commentary discusses a set of lessons learned from the work of the A360 Project – a well-resourced, multi-country and multi-year initiative working to improve adolescent sexual and reproductive health (ASRH)—that organizations and agencies that provide technical and financial support to implement ASRH programs could use to inform their work. It responds to the growing consensus that it is important to draw out and share not only what has worked, but also what has not, in ASRH programs, so that others can build on this

*Correspondence:
C. Lane
lanecate@gmail.com
[1] Independent Consultant, Potomac, MD, USA
[2] Formerly, London School of Hygiene and Tropical Medicine, World Health Organization, Tannay, Switzerland
[3] Formerly, World Health Organization, Geneva, Switzerland

© The Author(s) 2024. **Open Access** This article is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License, which permits any non-commercial use, sharing, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if you modified the licensed material. You do not have permission under this licence to share adapted material derived from this article or parts of it. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit http://creativecommons.org/licenses/by-nc-nd/4.0/.

learning. In other words, it responds to an imperative for learning and sharing [1, 2].

Independent interim and final evaluations of the A360 Project included process, outcome and costing analyses, and are available in the public arena [3, 4]. These reports describe how A360 performed in relation to its objectives, provide plausible explanations for where it performed well and where it did not, identified gaps between proposed and actual performance, and suggested possible ways of addressing them. A360 staff who oversaw the execution of the Project, and the outcome evaluation team have published their findings in peer-reviewed journals [5, 6]. A360 reported on the achievements of the Project, the opportunities it used, and the challenges it faced, while the evaluation team pointed out precisely where the Project's performance did or did not achieve its targets and discussed the reasons for the same.

This commentary does not seek to reiterate the findings of the evaluation reports and the peer-reviewed journal publications. Instead, its intended audience is the wider ASRH community – researchers, programmers, and technical and financial supporters – and the opportunity to use the learnings generated by this well-resourced, multi-country, multi-year Project. The commentary cites specific evaluation findings and proposes "dos" and "don'ts" for future programming backed by research evidence, and practical experience.

All three authors of this commentary were members of a technical advisory group (TAG) established by A360 to provide support and guidance to the design and implementation of the Project. Each of us have over 25 years of ASRH work experience in low- and middle-income countries (LMICs). All three of us have reviewed A360's plans and reports (prioritizing the findings of the mid-term and final evaluations) and have met with A360 staff on numerous occasions. We believe that we have a sound understanding of the Project's efforts.

We have prepared this commentary with great appreciation for the significant investment in ASRH made by the donors and the implementers. We have empathy for all who contributed to the Project goal of improving the SRH of adolescent girls by increasing their contraceptive use. Our aim is not to criticize any individual or organization; rather, we believe that A360's efforts are relevant to many other ASRH programs and projects that are grappling with many of the same questions and challenges tackled by the Project, namely, to translate innovative ideas into action, while being responsive to differing social, cultural, and economic contexts. We hope that our suggested dos and don'ts will help those working in—and supporting – ASRH work in LMICs design and execute better projects and programs.

We begin with some information on the context in which A360 was conceived and operationalized, and about the Project itself. We then present comments and observations that were provided to A360 in our role as the Technical Advisory Group. We wrap up by discussing our three main reflections on future directions for ASRH programming.

The context in which A360 was conceived

There has been keen awareness of the need to address adolescent pregnancy and childbearing around the world for over 50 years [7]. The consequences of adolescent pregnancy and childbearing and their effect on the ability of countries to achieve key health, social and development outcomes were acknowledged as a global priority at the 1994 International Conference on Population and Development (ICPD). This public attention enabled international organizations and local champions to press governments to pay attention to ASRH and to mobilize resources to implement programs and policies. Six years later, the Millennium Development Goals (MDG) were announced, and Goal 5 (to reduce maternal mortality) and Goal 6 (to prevent HIV infection and HIV-related mortality) provided new impetus for ASRH programs and policies. However, the MDGs initially paid little attention to adolescents despite advocacy from United Nations agencies and international organizations that noted more robust programmatic and policy attention to adolescents and young people was needed to achieve these two goals [8].

By the start of the second decade of the 2000s, clear evidence had accrued of the nature and scale of SRH risks and problems faced by adolescents, as well as an improved understanding of the determinants of those problems. These included their lack of access to evidence-based information and education as well as counseling and health services, yet there was still limited global and country level investment in ASRH. ASRH champions from the global to the local levels worked together to raise the alarm that make the case of omitting adolescents from programs designed to achieve MDG Goals 5 and 6 had significant implications not only for the health and wellbeing of adolescents, but also for efforts to reduce maternal and child morbidity and mortality [8].

UN agencies and partners began to formulate responses; for example, UNAIDS called for a global effort to address HIV in adolescents, and the Global Fund for AIDS, Tuberculosis and Malaria dedicated resources to enable countries to develop programs to prevent HIV infection in adolescent girls in sub-Saharan Africa; *Girls Not Brides* advocated for child marriage to be prioritized on the global agenda; and UNESCO and UNAIDS jointly

supported regional commitments to provide adolescents with SRH information and services in Latin American and Eastern and Southern Africa [9]. Nevertheless, ASRH advocates and program implementers remained frustrated, impatient, and even outraged that adolescents still were not adequately benefiting from the significant investments in and actions to achieve the MDGs. It was in this climate of urgency that A360 was conceived [8, 9].

Technical and funding agencies began to look for new – and disruptive—ways to analyze problems in context, yield new insights, and pursue innovation while centering on the real-life experiences of clients and end-users [10]. One such methodology believed to show significant promise to improve ASRH, and specifically adolescent contraceptive use, was human centered design (HCD). A number of agencies have endorsed – and even required—the use of HCD methodologies in their awards, and A360 was one such investment, supported by the Bill and Melinda Gates Foundation (BMGF) and the Children's Investment Fund Foundation (CIFF).

About A 360

A360 was designed by Population Services International (PSI), the Center for the Developing Adolescent, IDEO, and Society for Family Health Nigeria with the goal of increasing voluntary uptake of modern contraception among unmarried and married adolescent girls in Ethiopia, Northern Nigeria, Southern Nigeria, and Tanzania, "…reimagining and redefining the way sexual and reproductive health (SRH) programs are designed and delivered for adolescent girls and young women" [11]. The first phase of A360 was implemented from 2016–2020.

A360 eschewed standard programming design efforts, instead adopting an approach driven by principles of HCD, with adolescents, young people and adults from a range of disciplines collaborating to envision, design, and implement what were anticipated to be more responsive, sustainable, and scalable SRH programs that successfully increased adolescent contraceptive use. A360's designers hypothesized that "a fusion of disciplines, prioritizing meaningful engagement of young people…would catalyze novel and successful approaches…" leading to population level changes in modern contraceptive prevalence rates (mCPR) among adolescents in the four project geographies. HCD was central to A360's design aspirations, championed as an innovative methodology generating new insights to improve adolescent contraceptive use, as perhaps not previously revealed by traditional methods of inquiry and design [3].

A360's donors were careful to dedicate significant resources for evaluation to examine implementation efforts and measure the effect of HCD-generated solutions on adolescent contraceptive use. ITAD coordinated the evaluation and conducted process evaluations at midline and endline, while the London School of Tropical Medicine and Hygiene (LSTMH) conducted the outcome evaluation. Avenir Health undertook a cost-effectiveness analysis.

The 2018 midline reported impressive increases in the numbers of contraceptive adopters[1] and adolescent girls, their families, and communities expressed satisfaction with A360's activities. With what appeared to be highly persuasive findings in hand, A360 began disseminating their experiences, although it was still too soon to know if there was any outcome level evidence that could be attributed to A360 (e.g., increases in adolescent mCPR or decreases in adolescent childbearing). Given persistently high rates of unmet need for contraception among adolescents, A360 was likely optimistic about these preliminary results. Some urged caution, however, citing significant weaknesses in health systems, as well as provider biases against providing adolescents with contraception, which would likely pose challenges to A360's ability to sustain and advance what appeared to be promising approaches [3].

The midline evaluation suggested that A360 should also develop strategies to address the "harmful community myths, misconceptions and stigma around contraception for adolescent girls." In response, A360 implemented "light touch" community engagement approaches and activities which included aspirational messaging, life skills education, and vocational skills development provided by community mobilizers and educators. These activities were proposed as a way to encourage adolescent girls to visit health facilities where they could also then learn about contraception. A360 considered that such activities could "circumnavigate…stigma," by avoiding direct reference to contraception, and could mitigate negative attitudes among community members and providers that could limit adolescent contraceptive uptake and sustained use. Less emphasis on contraception was also thought to encourage adolescent attendance at A360 organized events, especially those that highlighted entrepreneurship and employment [3]. The final evaluation observed, however, that these activities only appeared to "attract more than empower" adolescent girls [4].

> *"(A)lthough A360 succeeded in reaching…girls with modern contraception in often innovative ways, the evaluation cannot definitively conclude that A360 revolutionized ASRH programming in the way it was initially designed to do" [4].*

[1] It is unclear why A360 chose to monitor and report on contraceptive adopters rather than on contraceptive users. The rationale for this terminology is not defined in the midline report or other documents.

The endline findings did not reflect the midline's optimistic tone, with results described as a "mixed bag." The process evaluation reported that there had been more adolescent contraceptive adopters than initially projected, and that adolescent girls and communities liked the activities implemented by A360. In contrast, the outcome evaluation revealed that the changes in adolescent mCPR were limited and inconsistent across the project sites. An increase in mCPR was detected only in Oromia, Ethiopia, which reported a five percent increase among married adolescents, but in Nasarawa and Ogun States in Nigeria there was no change in adolescent mCPR, and in Ilemela, Tanzania (where A360 had added a vocational and life skills interventions) there was a nine percent decrease, even though girls cited approval of the skills development activities [4]. It is also important to note that in Ethiopia, A360 was implemented on the heels of a national program which had already achieved population level increases in adolescent contraceptive use [4].

Insights from A 360's evaluations that have wider relevance

The TAG originally identified 10 insights culled from A 360's evaluation reports that appear to have limited the ability of the Project to achieve more significant contraceptive use results among adolescents. Although the evaluations were specific to A360, it is our collective opinion that the findings mirrored the decisions and actions of many other projects. This includes the tendency to implement interventions that while popular, have been shown to be ineffective, and to deliver proven interventions in ways that compromise their effectiveness [12, 13].

In Table 1 (below) we share our observations on nine of the 10 insights that we gleaned from the evaluation reports (the tenth was related to cost, which this commentary does not address). Against each insight, we describe what we believe to be specific limitations of A360's approach and categorize these actions as "do not." We then suggest alternative responses to the insight that are based on evidence and research as well as the TAG members' collective expertise in ASRH and categorize these as "do." We believe these observations have relevance for the entire ASRH community as it continues to develop and implement programs to improve contraceptive use among sexually active adolescents, as well as other priority adolescent health initiatives.

Discussion

The world has made progress in increasing the uptake of contraception by adolescents and in reducing unmet need, although this progress has been slow and uneven [26]. Looking ahead towards the 2030 target date of the Sustainable Development Goals (SDGs), we have three reflections on future ASRH programming and policies.

First, this commentary is about phase one of A360, which was implemented from 2016–2020. The Project has moved on to a subsequent phase, building on the lessons it learned in the first phase [5]. Although the Project did not achieve what it initially intended, it makes a valuable contribution to the field in highlighting the significant challenges in integrating new programmatic approaches into weak health and other systems, and in overcoming powerful social and cultural attitudes and norms which contribute to poor ASRH. The Project has also shown that even with the injection of substantial resources and the promotion of new design methodologies, significant improvements in contraceptive uptake and continuation cannot be achieved without strengthening faltering delivery systems and shifting restrictive—and sometimes harmful – norms.

Second, a small but growing number of countries have moved ASRH services from projects to sustained programs by integrating adolescent friendly health service elements into national health systems [27, 28]. USAID's High Impact Policy brief, *Adolescent responsive contraceptive systems: Institutionalizing adolescent-responsive elements to expand access and choice* [29] discusses how countries did this by working incrementally to pass supportive laws and policies; making health facilities more welcoming of adolescent clients; improving the skills of the health workforce; ensuring that age-and sex-disaggregated data is gathered, analyzed and used; and providing dedicated financing for the provision of these services. They also worked to build social acceptance for adolescent contraceptive use through coordinated communication efforts and campaigns from the national to the local levels. Chile, Ethiopia, and Thailand are three examples of what can be achieved when good science is combined with strong leadership and management. They challenge and inspire other countries to do what is feasible and urgently needs to be done – now.

Third, several countries, including the countries in which phase one of A360 was implemented, have set out national policy, program and budgetary commitments to improve adolescent outcomes; for example, improving access to and uptake of contraception by adolescents through making commitments to FP2030 [30, 31]. or to end child marriage as part of the Global Programme to Accelerate an End to Child Marriage [32]. Supporting countries develop and achieve sound commitments to adolescents and SRH may be better use of available resources than aspirational projects that

Table 1 TAG recommendations to A360

Insight	Do not:	Do:
1. A comprehensive theory of change (ToC) must guide project development and implementation "(T)he A360 ToC was a high-level model…not actively used by A360 to guide strategy or implementation."	Implement projects without a defining intended goal(s) and processes as part of a ToC that guides project implementation	Construct and use a robust ToC that clearly sets out goals, outlines the strategies to achieve the goals, describes how these strategies are to be implemented, acknowledges challenges to implementation, and includes appropriate metrics for assessing inputs, processes, outputs, and outcomes
	Focus on contraceptive adoption as the only measure of success	Include the measurement of attitudes and behaviors associated with contraceptive uptake, method switching, discontinuation, and sustained use
	Center contraceptive programming around the relationship between a health worker and an adolescent client	Address family/community/social norms and beliefs that limit adolescents' ability to seek health information and services, while working to ensure that health workers are encouraged, supported, and enabled to provide services to adolescents [15]
	Neglect to situate a short-term project within a longer-term vision of success that includes sustainability and scale	Incorporate/resource a deliberate focus on scale from project outset, prioritizing understanding what conditions are needed to facilitate the scale and sustainability of intervention(s) [16]
	Assume adolescent sexual activity is consensual and wanted or that it is irresponsible	Acknowledge that adolescent sexual activity, prioritizing sexual initiation, or sex in marriage, may be coerced, or forced, and that transactional sex is common [17, 18] Ensure adolescent girls who experience coerced or forced sex or sexual abuse are provided with a package of health and social services that include access to emergency contraception and post-exposure HIV prophylaxis [19]
2. Develop interventions within the existing opportunities and constraints of health, education, social welfare and other systems "Integration of A360… required working closely with multiple layers of government to coordinate and implement the program… (and) required substantial efforts to navigate persistent health system constraints…"	Implement interventions that appear appealing without carefully considering their social and cultural acceptability and the feasibility of existing systems to integrate, scale up, and sustain them	Acknowledge that HCD is just one of many tools available to support quality program design Critically examine solutions developed through consultative processes, prioritizing HCD, as to their feasibility, acceptability, and sustainability within existing systems Build local capacity to implement programs, and to take research evidence to practice ensuring programs are grounded in local realities and are culturally/socially acceptable [20]
3. Use adaptive implementation appropriately "When applying…adaptive implementation…be clear on the priorities from the outset. Failure to do so causes inefficiencies in program delivery if implementation teams need to shift their focus to… respond to shifting priorities"	Make significant adaptations to an intervention before it has had adequate time to effect change	Ensure that interventions are developed and implemented against a ToC with clear monitoring and evaluation parameters Establish a process to guide whether, how, and when to revise implementation, to include the use of monitoring and review data to ensure activities are implemented as planned If it becomes clear that planned activities cannot be feasibly implemented and that they are not having the desired effects, then make carefully considered changes

Table 1 (continued)

Insight	Do not:	Do:
4. Address adolescent specific concerns about contraception which may affect their ability to sustain the use of a method "(S)ervice providers do not always talk about side effects… eroding trust, contributing to discontinuation, and reinforcing common myths and misconceptions…"	Only focus on measuring contraceptive uptake or adoption as the primary metric of success, and fail to program for the significant potential of contraceptive discontinuation	Make certain that providers counsel adolescents on all methods and facilitate voluntary choice, while being aware of the social and cultural pressures girls/young women may face to contraceptive use, prioritizing the personal biases of providers and facility staff [13] Provide support for contraceptive continuation prioritizing method switching, and ensure adolescents have access to emergency contraception in the event of user error or sexual violence [21] Disaggregate health management information systems (HMIS) reporting by adolescent age bands (e.g., 10–14, 15–19) to facilitate better understanding and monitoring of adolescent contraceptive use
5. Include health system strengthening as part of implementation "There was a tension between the 'desirability' of solutions to girls and their feasibility and scalability in the face of constrained public health systems…"	Expect and attempt to measure population level when project activities have been confined to specific – and limited – geographies	Define project catchment areas, maximize intervention exposure among beneficiaries and conduct evaluations within the catchment areas [12] Include a control or comparison group to validate findings As noted above, include the use indicators that measure key intermediate behaviors that facilitate contraceptive use, as well as contraceptive uptake [22]
6. Support efforts to develop more supportive social and cultural norms for improved ASRH "The process evaluation identified…gaps and challenges (in)addressing social norms and the enabling environment for girls… (and recommended) engaging with key community influencers; addressing girls' misconceptions and…provider bias about contraception; and (a) focus on supporting girls to adopt a method as compared to continued use."	Conduct "one-off" informational meetings with stakeholders with the anticipation that this will be sufficient to build support/reduce resistance to project implementation [12] Implement "light touch" activities that are intended to shift social attitudes and beliefs, but are not well- conceptualized, weakly resourced and implemented, do little to build support for project activities, and have little or no effect on individual attitudes or social norms	Ensure program activities are informed by an understanding of the norms and cultural beliefs that influence adolescents' adoption of and sustained use of contraception Articulate strategies and propose indicators to measure social and normative shifts [23] Engage with extended families, education systems, traditional leaders, and those who influence adolescent choices and behaviors Ensure efforts to sustain and scale up include ongoing activities and resources to ensure supportive social norms
7. Support multi-sectoral programming "The process evaluation demonstrated multiple advantages of life skills, vocational sessions, and aspirational messaging to AYSRH programs … this… needs to be a core focus of future programming (which) requires…bringing in (the) expertise of economic empowerment initiatives…partnering with organizations who specialize in this or a combination of both"	Implement multi-sectoral activities that "attract" young people to health facilities but that fail to "empower" them to navigate the pervasive gender and social norms that drive harmful adolescent health outcomes Implement activities which give the mistaken impression to adolescents and their parents/guardians that they are meant to build desirable skills, such as employability or income generation	Prioritize multi-sectoral interventions in future programming Be realistic in considering how feasible it is to implement and sustain a complementary activity such as economic empowerment as part of an intervention to increase contraceptive use Articulate the intent of the additional activity/ies, incorporate evidence-informed strategies to implement the activity, propose indicators that measure the success of the activity, regularly track progress, and periodically review and adapt the activity's implementation as needed [24]. Strengthen and leverage partnerships with youth-serving sectors (e.g., economic strengthening, education, violence prevention, harmful practices) Document and assess the implementation of complementary activity/ies while considering the gender and social norms that may limit adolescent girls' participation or that result in unintended consequences [22]

Table 1 (continued)

Insight	Do not:	Do:
8. Commit to effectively engaging with young people. "Lack of budget, measurement and a clear strategy also constrained youth engagement and frustrated country teams"	Overlook the importance of planning, resourcing, implementing, and evaluating well thought-out strategies and activities that meaningfully engage adolescents as partners	Clearly describe the purpose of youth engagement in the ToC and how it will be resourced, implemented, and measured Consider operationalizing recommendations from the Global Consensus Statement on Meaningful Adolescent and Youth Engagement as part of implementation and standard organizational practice [25]
9. Ensure evaluation and implementation methodologies are appropriately aligned "Intervention evaluation is an essential component of public health research and programming…However, the iterative and flexible nature of HCD potentially poses some unique challenges for evaluation"	Employ evaluation methods that are more appropriate for impact evaluations than to evaluate the feasibility, acceptability, and effectiveness of pilots/models	HCD-based initiatives should implement phased evaluations, initially focusing on refining a ToC. Once intervention implementation details are clear, process, outcome evaluations and cost-effectiveness analyses can be conducted [14]

Any statements in quotations are taken from the 2020 endline evaluation report, except for Insight 9, which is drawn from a 2019 commentary by the evaluation team [14]

are not always fully aligned with wider national efforts. From research and programmatic experience, we know that there are a multiplicity of determinants (prioritizing both protective and risk factors) at the individual, interpersonal, family, community, organizational and social levels that influence adolescent health and wellbeing. The same determinants may operate at multiple levels and often in combination with each other, amplifying their effects. This reinforces our understanding that ASRH interventions should work at all levels of the socio-ecological framework, and that interventions should be delivered with quality – and importantly at scale –- while leaving no one behind. Collaboration and collective action across sectors to deliver multisectoral and/or integrated programming is crucial [22].

Conclusion

The thirty years since ICPD has shown us how challenging it is to implement and sustain ASRH programs and policies, particularly in terms of creating adolescent responsive systems and facilitating family, community and societal support for ASRH. Bolstering weak systems and encouraging sectors to work together is slow and painstaking, with limited evidence of what works to guide efforts. Building community support for the sensitive topic of ASRH through dialogues with skeptical family and community leaders is also demanding, time consuming, and non-linear. It is tempting to bypass these two challenges altogether, use token approaches, or search for catalytic solutions. Our experience has taught us, however, that there is no alternative to the slow and tedious tasks of system strengthening and norm changing. Nevertheless, available evidence suggests that these efforts are doable and worth doing, even in resource constrained and conservative contexts.

Acknowledgements
Laura Ghiron and Clea Finkle of ExpandNet.

Authors' contributions
CL, VCM and BJF all contributed equally to the development and review of this manuscript.

Funding
Cate Lane was formerly with FP2030, while Jane Ferguson and Venkatraman Chandra-Mouli were formerly employed by WHO, and Jane Ferguson by LSHTM. None of the authors received payment from the organizations they were employed by or from any other sources in the preparation of this paper.

Availability of data and materials
No datasets were generated or analysed during the current study.

Declarations

Ethics approval and consent to participate
Not applicable.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

Received: 15 January 2024 Accepted: 8 July 2024
Published online: 30 August 2024

References

1. Soman D, editor. What works, what doesn't (and when): Case Studies in Applied Behavioral Science. Toronto: University of Toronto Press; 2024.
2. Liwanag HJ, James O, Frahsa A. A review and analysis of accountability in global health funding, research collaborations and training: towards conceptual clarity and better practice. BMJ Glob Health. 2023;8(12):e012906. https://doi.org/10.1136/bmjgh-2023-012906.PMID:38084477;PMCID:PMC10711908.
3. ITAD. *Midterm Review of the Adolescents 360 Program.* ITAD June 2019. Accessed February 2023. https://www.itad.com/wp-content/uploads/2020/02/A360-MTR-Report_FINAL-1.pdf.
4. ITAD, London School of Hygiene and Tropical Medicine, Avenir Health. *Final Report A360 Summative Report.* ITAD June 2022. Accessed February 2023. https://www.itad.com/wp-content/uploads/2022/11/A360_SummativeReport.pdf.
5. Wilson M, Cutherell M, Musau A, et al. Implementing adaptive youth-centered adolescent sexual reproductive health programming: learning from the Adolescents 360 project in Tanzania, Ethiopia, and Nigeria (2016–2020) [version 1; peer review: 2 approved]. Gates Open Res. 2022;6:14. https://doi.org/10.12688/gatesopenres.13589.1.
6. Krug C, Neuman M, Rosen JE, et al. Effect and cost-effectiveness of human-centred design-based approaches to increase adolescent uptake of modern contraceptives in Nigeria, Ethiopia and Tanzania: population-based, quasi-experimental studies. Plos Glob Public Health. 2023;3(10):e0002347. https://doi.org/10.1371/journal.pgph.0002347.
7. WHO. The health of young people: A challenge and a promise. Geneva: WHO; 1993.
8. Chandra-Mouli V, Svanemyr J, Amin A, *et al.* Twenty years after International Conference on Population and Development: where are we with adolescent sexual and reproductive health and rights? *Journal of Adolescent Health.* 2015 56 (1 Suppl):S1–6. https://doi.org/10.1016/j.jadohealth.2014.09.015. PMID: 25528975.
9. Chandra-Mouli V, Ferguson J, Plesons M, et al. The political, research, programmatic, and social responses to adolescent sexual and reproductive health and rights in the 25 years since the international conference on population and development. J Adolesc Health. 2019;65:16–40.
10. The Next Step for Human-Centered Design in Global Public Health (SSIR). ssir.org. Available from: https://ssir.org/articles/entry/the_next_step_for_human_centered_design_in_global_public_health#. Cited 2024 Jan 8.
11. Adolescents 360 Our vision. Population Services International. Accessed January 2023. https://media.psi.org/wp-content/uploads/2020/02/31011325/A360_Brochure_Apr2017.pdf?_ga=2.3075378.384682367.1681415132-2058159391.1681415132.
12. 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 Sci Pract. 2015;3(3):333–40. https://doi.org/10.9745/GHSP-D-15-00126.PMID:26374795;PMCID:PMC4570008.
13. UNFPA. My body, my life, my world. Operational Guidance – Module 1, adolescent sexual and reproductive health and rights. New York: UNFPA; 2022.
14. Doyle AM, Mulhern E, Rosen J, et al. Challenges and opportunities in evaluating programmes incorporating human-centred design: lessons learnt from the evaluation of Adolescents 360 [version 2; peer review: 3 approved]. Gates Open Res. 2019;3:1472. https://doi.org/10.12688/gatesopenres.12998.2.
15. International Center for Research on Women. *Understanding the Adolescent Family Planning Evidence Base.* ICRW 2014. Accessed February 2023.

https://www.icrw.org/wp-content/uploads/2016/10/FINAL-Understanding-the-Adolescent-Family-Planning-Evidence-Base-7.30.pdf.
16. WHO. *Nine steps for developing a scaling-up strategy.* WHO, Geneva, 2010. Available from: https://www.who.int/publications/i/item/9789241500319.
17. Yakubu I, Salisu WJ. Determinants of adolescent pregnancy in sub-Saharan Africa: a systematic review. BMC Reprod Health. 2018;15(15):15.
18. Odimegwu C, Mkwananzi S. Factors associated with teen pregnancy in sub-Saharan Africa: a multi-country cross-sectional study. Afr J Reprod Health. 2016;20(3):94–107.
19. *Responding to children and adolescents who have been sexually abused*. www.who.int. Available from: https://www.who.int/publications/i/item/9789241550147.
20. Jain N, Bahl D, Mehta R. Progress and challenges in implementing adolescent and school health programmes in India: a rapid review. BMJ Open. 2022;12:1–8.
21. Population Reference Bureau (PRB). *Best Practices for Sustaining Youth Contraceptive Use.* PRB 2020. Accessed February 2023. https://assets.prb.org/pdf21/best-practices-for-sustaining-youth-contraceptive-policy-brief.pdf.
22. Global Accelerated Action for the Health of Adolescents (AA-HA!): guidance to support country implementation, second edition. Geneva: World Health Organization; 2023. Licence: CC BY-NC-SA 3.0 IGO
23. Malhotra A, Amin A, Nanda P. Catalyzing gender norm change for adolescent sexual and reproductive health: investing in interventions for structural change. J Adolesc Health. 2019;64(4):S13–5.
24. United Nations Population Fund (UNFPA) and United Nations Children's Fund (UNICEF). Technical Note on Convergent Programming. UNFPA and UNICEF 2020. Accessed March 2023. https://www.unfpa.org/resources/technical-note-convergent-programming.
25. PMNCH. Global consensus statement on adolescent and youth engagement. Geneva: PMNCH; 2020.
26. Akwara E, Chandra-Mouli V. Good progress in a number of areas of ASRH, but there is much more that needs to be done. Sex Reprod Health Matters. 2023;31:1. https://doi.org/10.1080/26410397.2023.2266657.
27. Chandra-Mouli V, Plesons M, Hadley A, et al. Lessons learned from national government- led efforts to reduce adolescent pregnancy in Chile, England and Ethiopia. Early Childhood Matters, 2019 128;50–56. https://earlychildhoodmatters.online/2019/lessons-learned-from-national-government-led-efforts-to-reduce-adolescent-pregnancy-in-chile-england-and-ethiopia/.
28. WHO Regional Office for South East Asia. *Success Stories in Reproductive, Maternal, Newborn, Child and Adolescent Health from WHO South-East Asia Region*. SEARO, New Delhi, 2021, chapter 4. ISBN 978–92–9022–894–3 https://iris.who.int/handle/10665/344887.
29. High Impact Practices in Family Planning (HIPs). Adolescent-Responsive Contraceptive Services: Institutionalizing adolescent-responsive elements to expand access and choice. Washington, DC: HIPs Partnership; 2021 March. Available from:http://www.fphighimpactpractices.org/briefs/adolescent-responsive-contraceptive-services.
30. FP2030 Commitment Resource Kit. *Developing bold and transformative commitments to adolescents and* youth. 2021. https://www.fp2030.org/resources/developing-bold-and-transformative-commitments-to-adolescents-and-youth/.
31. FP2030. Commitment makers 2030 and 2020. Available from: https://www.fp2030.org/commitment-makers/.
32. United Nations, Economic and Social Council. Evaluation of Phase II of the UNFPA-UNICEF Global Programme to End Child Marriage. United Nations, New York, 2024 https://assets.prb.org/pdf21/best-practices-for-sustaining-youth-contraceptive-policy-brief.pdf.

Publisher's Note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.