

Strengthening adolescent agency for optimal health outcomes

Janani Vijayaraghavan and colleagues argue that agency and health are intimately connected; achieving best health outcomes for adolescents will require strengthening their agency

Adolescence is a unique opportunity for positive development when young people go through profound biological, cognitive, psychosocial, and emotional changes.¹ Adolescents, however, particularly in low and middle income countries, face a variety of challenges that might harm their health and wellbeing, affecting their ability to reach their full potential.¹ Adolescent girls face various gender based vulnerabilities and barriers that increase risks of early marriage and childbirth, unintended pregnancy, violence, and contraction of HIV.² Risky sexual behaviour, low levels of testing for sexually transmitted infections, and taboos about seeking health-care are common among adolescent boys.³ As global investments in adolescent health have increased in recent years, importance is being placed on seeing adolescents as active agents in their own development and on viewing adolescent agency as a crucial aspect of wellbeing.⁴ We argue that building adolescents' agency within health programmes is fundamental to achieving best health outcomes. We highlight promising approaches to build and strengthen such

agency and reflect on areas that require additional research.

What is agency and what factors affect adolescent agency?

Agency is a multidimensional concept, which has been defined as the "personal ability to act and make free and informed choices to pursue a specific goal"⁵; however, its interpretations and definitions vary across contexts.⁶ An adolescent who has agency can conceptualise a goal, develop a plan to pursue it, have the confidence in their ability to achieve it, and then act towards their goal.^{5,6} Terms such as self-efficacy, self-esteem, self-worth, positive identity, perseverance, positive beliefs about the future, assertiveness, confidence, control over resources, voice, bodily autonomy, gender equitable attitudes, freedom of movement, decision making, and empowerment are often associated with agency.

Adolescents' agency can be shaped by a range of aspects, including adolescents' belief in their capacities, self-worth (feeling important), right to control one's body, and feelings of connectedness (at home, in schools, with peers, communities, and online).⁷ These aspects are influenced by age, sex, socioeconomic status, education level, race, religion, ethnicity, sexual orientation, gender identity, disability, and where they live—all of which overlap and intersect with one another to either constrain or strengthen agency.⁸

They are also affected by individual, interpersonal, community, and macro level factors such as policies, laws, sociocultural norms, and economic forces.⁹ For example, enriching peer groups and supportive family relationships can foster positive interpersonal relations and strengthen self-esteem and confidence.^{7,9} Similarly, governance systems that facilitate adolescents' use of information and services, increase their critical awareness, problem solving, communication skills, and self-efficacy, leading to their engagement in problems that affect them, and the wider world.⁵ Conversely,

unequal interpersonal power relations and structural discrimination can perpetuate inequality, limiting access to resources and reducing decision making ability.^{8,10}

Applying agency in health programming

Perspectives on development interventions for adolescents have changed from only emphasising external risks and deficits, which regarded adolescents as "problems," to positive approaches seeing adolescents as full of possibilities.¹¹ For instance, programmes that focus solely on improving knowledge about prevention of sexually transmitted infections and pregnancy among adolescents have little effect unless they concurrently involve adolescents in programme design and have unrestricted access to contraception.

Increasingly, health programmes are applying approaches to youth development¹² that build on an individual's strengths (competencies, assets, agency) and centre around adolescents' voices.^{11,12} These approaches recognise that adolescents are participants in their own development and when provided with timely and critical support can thrive, even in adverse situations, and drive change and innovation for their own health and wellbeing.¹³

Does strengthening agency improve health outcomes?

We evaluated studies identified through searches of key terms in PubMed and Google Scholar and systematic reviews, focusing on adolescent sexual and reproductive health and HIV/AIDS programmes in low and middle income countries with specific interventions to strengthen adolescents' agency.

We primarily looked at a systematic review of positive youth development that included 55 studies on sexual and reproductive health and HIV/AIDS programmes in 60 countries.^{14,15} Only 18 of the 55 studies (33%) had experimental designs. Forty nine per cent were evaluations based on non-experimental designs, and 18% did not

KEY MESSAGES

- Agency is a complex concept to define, understand, and measure
- It is influenced by several overlapping and intersecting aspects that either constrain or strengthen adolescents' agency
- Effective adolescent health programmes tend to intervene at many levels (individual, family, peer, community, macro level)
- Such programmes work across many sectors, provide information and skills, deal with harmful social and gender norms, and support meaningful adolescent engagement
- Further work is needed to enable adolescent health programmes to build and strengthen agency, to achieve optimal health outcomes

provide information about the evaluation of the programme. Seventy eight per cent of the studies in the systematic review dealt with agency (defined as positive identity, self-efficacy, ability to plan ahead/goal setting, perseverance, and positive beliefs about the future).^{14 15} The experimental evaluations from the systematic review showed statistically significant results, such as increased self-efficacy among boys and girls to use contraceptives, including condoms, increased use of sexual and reproductive health services among youth, reduced sexual risk behaviours, fewer incidents of unwanted sex among adolescent girls, and reductions in adolescent pregnancy and HIV related stigma.¹⁴

Further insight was gleaned from a systematic review of 12 studies on women's agency and contraceptive use,¹⁶ and a literature review of 60 studies on women's empowerment and fertility.¹⁷

Cross sectional data suggested positive associations between women's agency (defined as gender equitable attitudes, freedom of movement, and household decision making) and contraceptive use,¹⁶ as well as lower fertility, longer intervals between births, and lower rates of unintended pregnancy.¹⁷

Limitations should be acknowledged. Most studies reported only short term outcomes.¹⁵ Some of the evaluations reviewed produced mixed results, with some evidence supporting a positive impact and some reporting non-significant findings.^{15 17} Notably, no evaluation showed negative outcomes, or any warning against agency programming. The studies on contraceptive use¹⁶ and fertility¹⁷ included samples of women aged 15–49 and did not exclusively focus on adolescents. More rigorous evaluation, including those using longitudinal designs, might bolster this evidence, to provide a better understanding

of causal pathways and direction of causality.^{16 17}

Approaches to build and strengthen agency in adolescent health programmes

For the adolescent health programmes that strengthened agency, we noted some common strategies.

Several programmes engaged with many stakeholders—targeting individuals, partners, households, and community members through generation of awareness and confidence building activities (box 1).¹⁴ Programmes also worked across sectors, recognising the dependency of health outcomes on gender equality outcomes and those related to financial inclusion and education. Typical interventions included peer or mentor led provision of sexual and reproductive health and HIV information, increasing school enrolment and attendance, and strengthening financial capital. Finally, programmes focused on

Box 1: Example of health programmes using multilevel and multisectoral approaches

Adolescent Girls Initiative-Kenya (AGI-K)

This programme targeted 11-14 year old girls, the community, and household, to study the impact of four different combinations of activities on delayed childbearing.¹⁸ The intervention was in the Kibera informal settlement in Nairobi and rural Wajir County in the northeastern region. This example focuses on Kibera.

The activities were

- Prevention of violence through community discussions with religious and community leaders, parents, teachers, and young men and women on enhancing the value of girls, together with funded community projects
- Educational activities using conditional cash transfers to households to increase school enrolment and attendance
- Mentor led sessions in safe space groups (agency component) on health, nutrition, and life skills training
- Wealth creation through financial literacy education

At the end of the intervention, improved knowledge of sexual and reproductive health and condom self-efficacy were noted. No effect on the acceptability of intimate partner violence or gender norms^{18 19} was observed, but participants in health and wealth creation activities showed improved confidence, voice, and sense of choice over their decisions. Two years after the intervention, the cash transfers resulted in a delay of sexual debut and pregnancy, and participants in the safe space groups maintained a sense of confidence, assertiveness, and voice.^{18 19}

HIV prevention programme—Stepping Stones in South Africa

The prevention programme targeted adolescent girls and boys aged 16-23, couples, households, and communities to improve adolescent sexual health by building stronger, more gender equitable, relations.

Facilitators delivered sessions to separate groups of male and female participants on 13 core topics, including assertiveness building (agency component), communication skills, sex and love, sexual and reproductive health, menstruation, HIV, sexually transmitted infections, gender based violence, and dealing with grief and loss. Economic empowerment interventions were also provided.²⁰

Results showed reductions in participants' risk of acquiring herpes simplex virus 2 and reduced intimate partner violence by male participants but had no statistically significant effects on the incidence of HIV.²⁰ Higher scores for attitudes towards gender equality among adolescents were seen, and male participants reported considerably reducing controlling practices in their relationships. Participants reported feeling more able to take control of various aspects of their lives, positively influence their peers, and apply their cognitive skills.^{14 20}

Empowerment and Livelihood for Adolescents in Uganda

The programme used mentor led community clubs to provide life skills to girls aged 14-20 to help improve their knowledge to make informed choices about sex, reproduction, and marriage. Topics included bodily autonomy (agency component), management skills, negotiation, conflict resolution, leadership, legal information on harmful social and gender norms, sexual and reproductive health, menstrual health, and HIV/AIDS awareness. Vocational training was provided to start income generating activities and improve financial literacy, together with recreational activities and peer support.

Although the programme for adolescents did not include multilevel stakeholders, the results showed significant improvements in bodily autonomy, with reduced reports of having sex unwillingly in the past year, reduced pregnancy, delayed marriage, and consistent condom use. The life skills sessions were credited with reinforcing girls' bodily autonomy through improved knowledge of reproductive health, economic empowerment, and availability of safe spaces (community clubs).²¹

Box 2: Zvandiri: an example of adolescent driven programming

Zvandiri is a peer led, community and clinic based HIV and mental health intervention in Zimbabwe for children, adolescents, and young people with HIV. The intervention is designed to improve their physical, social, and mental wellbeing.²⁵

Young people with HIV, aged 18-24 years, known as community adolescent treatment supporters, are trained to deliver information, counselling, peer support, life skills training, and recreational activities to adolescents with HIV to improve HIV treatment, retention in care, and prevention outcomes. These treatment supporters inform programme planning and implementation, with special attention to involving adolescents marginalised by poverty, stigma, disability, and food insecurity.²⁵ They lead monthly group sessions (agency component), which include structured activities to build resilience, confidence, self-esteem, knowledge, and skills related to HIV, promote adherence, and improve sexual and reproductive health. Community adolescent treatment supporters work closely with health facilities to strengthen institutional responsiveness, and with caregivers of adolescents with HIV to create a compassionate household environment.²⁵

The Zvandiri cluster randomised trial results showed improved uptake of HIV testing services, and retention in care²⁶ as well as increased psychosocial wellbeing, self-esteem, self-worth, and confidence among adolescent girls and boys.²⁷ Process evaluation data indicated improvements in HIV and treatment literacy among adolescents and their caregivers, thereby enabling adolescents to better manage adherence and build their self-esteem. The visits by adolescent treatment supporters and their support group intervention provided a focus on shared experiences, role modelling, and supportive friendship, which was seen to improve the quality of adolescents' lives.²⁶

Through integration with the government health system, and partnership with public services, social welfare, and education departments, Zvandiri has achieved regional and national scale-up. Evidence based advocacy by Zvandiri adolescents, and policy and guideline development have contributed substantially to its success²⁵

dealing with harmful social and gender norms and power structures, by working with male partners and communities to create environments in which adolescents could exercise agency.²² Such strategies were found to be effective in sexual and reproductive health decisions and outcomes,^{10 22 23} but interventions that had an effect in one context did not necessarily translate results to other settings.

Programming that intentionally includes adolescents' voices, perspectives, and aspirations can build agency, but these programmes are rare.¹⁵ In recent years, it has been recognised that adolescent leadership in decision making can improve quality of care, programme effectiveness, and outcomes.^{15 24} Among the programmes reviewed, those that prioritised adolescent engagement, invested in building their knowledge and skills, such as technical, vocational, academic, and problem solving skills.¹⁴ They also created opportunities for adolescents to participate and advocate in decision making bodies.²⁴ Programmes such as these are critical for adolescents who are marginalised and excluded owing to age, sex, identity, poverty, diverse abilities, religious affiliation, ethnicity, sociocultural norms, and political factors or chronic illnesses. Box 2 describes the Zvandiri programme in Zimbabwe; this programme had an adolescent driven approach, relying on communication with adolescents with HIV, to achieve outcomes most suited to their diverse needs.

Five ways to strengthen adolescent agency within programming

We argue that adolescent agency has an important role in improving health

outcomes, and we propose five aspects of agency related programming as ways to optimise adolescent health.

First, programmes that work to strengthen adolescent agency intervene at many levels (individual, family, peer, community, macro level). These programmes often work across many sectors, deal with harmful social and gender norms, provide information and skills, and support adolescent engagement, to varying degrees.^{14 15} Agency components that are strengthened include increased self-efficacy to use condoms, greater bodily autonomy, less unwanted sex, reduced controlling practices among men in their relationships, more control of different aspects of life, and gender equitable attitudes, which are, on their own, incredibly powerful for adolescents' wellbeing. When they support improvements in health outcomes, these components can have an even greater effect. As noted above, however, some programmes showed positive results on certain agency components but not on all health outcomes, such as the Stepping Stones programme that had no significant effects on the incidence of HIV (box 1).²⁰ Additionally, social and cultural contexts matter when employing programmes to support adolescent agency. For instance, the Empowerment and Livelihood for Adolescents programme in Uganda was unsuccessfully replicated in Tanzania.²⁸ Similarly, the Adult Girls Initiative-Kenya noted that at the end of the intervention, there was no effect on sexual and reproductive health knowledge in Wajir County, albeit some modest improvements in gender norms, compared with the

stronger health knowledge results in Kibera.^{19 29}

Second, wider measurements of adolescent agency are required. The complex nature of agency, lack of a universal definition, and varying interpretations of agency make it difficult to measure.⁶ An adolescent's understanding and experience of agency in Mozambique might be completely different from that of an adolescent in Bangladesh. Although frameworks and research relating to agency for women and girls do exist,^{6 16} they tend to use single dimension measures, such as autonomy, voice, self-efficacy, or decision making in late adolescence or adulthood, as a substitute for a multidimensional concept.³⁰ Current frameworks, tools, and indicators need continued refinement, testing, consistent validation, and contextual adaptation. Approaches to measurement require particular attention to be paid to capturing the various factors influencing agency and which component of agency is improved by which intervention.³⁰

Thirdly, additional adolescent subgroups have received little attention in relation to health and agency research and programming. For example, less is known about the measurement of agency in early adolescence when young people have less independence to make informed choices.³⁰ Similarly, evidence focuses largely on adolescent girls and young women, with limited understanding of the definition and measurement of male empowerment and its association with female empowerment.³ Further research is needed on effective strategies to improve adolescents' voices in programming and more intersecting

analysis to fully understand and deal with barriers to exercising agency, particularly among youth from non-dominant social groups.¹⁵

Fourthly, dealing with harmful social and gender norms requires time and commitment over generations to effect change. The Adult Girls Initiative-Kenya used community discussions to champion gender equality to promote girls' agency, but changes in gender equitable outcomes and intimate partner violence were not immediately apparent.¹⁸ Nonetheless, programmes still need to commit to longer term investments to deal with systemic inequalities. Further research is also needed to establish concrete links between specific programme activities and changes in gender focused outcomes.^{10 14}

Fifthly, the importance of hierarchies of power cannot be overstated. Unequal power relations between adolescents and adults create immense roadblocks to exercising adolescent agency.¹⁰ Programmes need to engage with adolescents to tackle unequal power structures, systems, and relationships.²⁴ Community adolescent treatment supporters leading the intervention in the Zvandiri programme showed how adults can work with adolescents as equals to share power, demonstrate trust in their abilities, and provide them with the opportunity for independent decision making.²⁵ This type of programming needs more attention and expansion.

Conclusion

This analysis suggests that a positive relationship exists between adolescent agency and health outcomes. Some compelling aspects of programming that warrant further attention include adopting approaches that engage various stakeholders at many levels and across sectors. Promoting adolescent driven and led approaches, grounded in a deeper understanding of social and gender norms, is an important consideration. Continued investment is critical in expanding the range of evidence to include longitudinal studies, sustained work to refine measurement of agency across contexts, and paying greater attention to additional adolescent subgroups. Despite the complexities in understanding, defining, and measuring agency, the strategies described above, to strengthen aspects of agency, suggest promising mechanisms to improve adolescents' health and wellbeing.

We acknowledge the work of the coauthors of the initial working paper prepared for the United Nations H6+Adolescent Agency and Resilience Writing Group:

Aaliya Bibi, Jumana Haj-Ahmad, Arushi Singh, Lucy Fagan, Quirine Lengkeek, Fabio Friscia, Giovanna Lauro, Deboleena Rakshit, and Bekky Ashmore. We thank *The BMJ* peer reviewers, Paula Fomby and Anjalee Kohli, who provided helpful feedback, and *The BMJ* editors Paul Simpson, Emma Veitch, and Jennifer Rasanathan, whose guidance was invaluable.

Contributors and sources: JV supports the implementation of large scale global sexual and reproductive health and rights programmes for adolescent girls and young women. AV specialises in gender transformative health and education programming. AL is a senior gender equality and inclusion advisor with Plan International Canada supporting the design and implementation of gender transformative projects. LG is a research affiliate with the University of Cape Town in South Africa with a background in adolescent health. ML is the adolescent development manager with Unicef, adolescent development and participation section, New York, with a focus on adolescent mental health, parenting, adolescent pregnancy, and youth led advocacy. AT is a researcher in Nepal on sexual and reproductive health and rights, child, and adolescent issues and a member of the evidence and knowledge working group, World Health Organization Partnership for Maternal, Newborn and Child Health (PMNCH). DM is the president of the guild of students for the academic year 2021-22 at the University of the West Indies, Mona Campus, Jamaica, where she is soon to complete a BSc in software engineering and works with Transform Health as the partnerships and campaign officer. CA is the director of health at Plan International Canada, overseeing a large global portfolio of adolescent health programming and a member of the PMNCH adolescent wellbeing steering group. JV and AL wrote the first draft of the paper, and JV and AV wrote the second draft, with contributions from coauthors. All authors reviewed and provided inputs and approved the final version for submission. JV is the guarantor.

Competing interests: We have read and understood *BMJ* policy on declaration of interests and have no relevant interests to declare.

Provenance and peer review: Commissioned; externally peer reviewed.

This article is part of collection proposed by the Partnership for Maternal, Newborn, and Child Health. Open access fees were funded by the Bill and Melinda Gates Foundation. *The BMJ* commissioned, peer reviewed, edited, and made the decision to publish these articles. Emma Veitch was the lead editor for *The BMJ*.

- Janani Vijayaraghavan, health adviser¹
 - Ajita Vidyarthi, gender equality and inclusion adviser¹
 - Alana Livesey, senior gender equality and inclusion adviser¹
 - Lesley Gittings, postdoctoral fellow^{2,3}
 - Marcy Levy, adolescent development manager⁴
 - Amit Timilsina, public health⁵
 - Danielle Mullings, president of the guild of students⁶
 - Christopher Armstrong, director of health¹ on behalf of the UN H6+ Adolescent Agency and Resilience Writing Group
- ¹Plan International Canada, Toronto, Canada
²Centre for Social Science Research, University of Cape Town, Cape Town, South Africa
³School of Health Studies, Faculty of Health Sciences, Western University, London, Ontario, Canada
⁴Unicef, Adolescent Development and Participation Section, New York
⁵University of Southern Denmark, Esbjerg, Denmark
⁶University of the West Indies, Mona Campus, Jamaica

Correspondence to: J Vijayaraghavan
 jvijayaraghavan@plancanada.ca



OPEN ACCESS

This is an Open Access article distributed under the terms of the Creative Commons Attribution IGO License (<https://creativecommons.org/licenses/by-nc/3.0/igo/>), which permits use, distribution, and reproduction for non-commercial purposes in any medium, provided the original work is properly cited.



- 1 Patton GC, Sawyer SM, Santelli JS, et al. Our future: a Lancet commission on adolescent health and wellbeing. *Lancet* 2016;387:2423-78. doi:10.1016/S0140-6736(16)00579-1.
- 2 World Health Organization. *Adolescent and young adult health*. 2021. <https://www.who.int/news-room/fact-sheets/detail/adolescents-health-risks-and-solutions>
- 3 Kato-Wallace J, Barker G, Sharafi L, Mora L, Lauro G. *Adolescent boys and young men: engaging them as supporters of gender equality and health and understanding their vulnerabilities*. 2016. https://www.unfpa.org/sites/default/files/pub-pdf/Adolescent-Boys-and-Young-Men-final-web_0.pdf
- 4 Ross DA, Hinton R, Melles-Brewer M, et al. Adolescent well-being: a definition and conceptual framework. *J Adolesc Health* 2020;67:472-6. doi:10.1016/j.jadohealth.2020.06.042.
- 5 Unicef. Adolescent empowerment technical note. 2021. <https://www.unicef.org/adolescent-empowerment-technical-note>
- 6 Donald A, Koolwal G, Annan J, Falb K, Goldstein M. Measuring women's agency. *Fem Econ* 2020;26:200-26. doi:10.1080/13545701.2019.1683757.
- 7 Blum R, Lai J, Martinez M, Jessee C. Adolescent connectedness in a hyper-connected world. *BMJ* 2022;378:e069213.
- 8 World Bank Group. Voice and agency: empowering women and girls for shared prosperity. 2014. https://www.worldbank.org/content/dam/Worldbank/document/Gender/Voice_and_agency_LOWRES.pdf
- 9 Blum RW, Astone NM, Decker MR, Mouli VC. A conceptual framework for early adolescence: a platform for research. *Int J Adolesc Med Health* 2014;26:321-31. doi:10.1515/ijamh-2013-0327.
- 10 Chandra-Mouli V, Plesons M, Adebayo E, et al. Implications of the global early adolescent study's formative research findings for action and for research. *J Adolesc Health* 2017;61(Suppl):S5-9. doi:10.1016/j.jadohealth.2017.07.012.
- 11 Shek DT, Dou D, Zhu X, Chai W. Positive youth development: current perspectives. *Adolescent Health Med Ther* 2019;10:131-41. doi:10.2147/AHMT.S179946.
- 12 Banati P, Rumble L, Jones N, Hendriks S. Agency and empowerment for adolescent girls: an intentional approach to policy and programming. *Journal of Youth Development* 2021;16:239-54. doi:10.5195/jyd.2021.1071
- 13 Lee TY, Cheung CK, Kwong WM. Resilience as a positive youth development construct: a conceptual review. *ScientificWorldJournal* 2012;2012:390450. doi:10.1100/2012/390450.
- 14 Alvarado G, Skinner M, Plaut D, Moss C, Kapungu C, Reavley N. A systematic review of positive youth development programs in low-and middle-income countries. 2017. https://pdf.usaid.gov/pdf_docs/PA00MR58.pdf
- 15 Catalano RF, Skinner ML, Alvarado G, et al. Positive youth development programs in low-and middle-income countries: a conceptual framework and systematic review of efficacy. *J Adolesc Health* 2019;65:15-31. doi:10.1016/j.jadohealth.2019.01.024.

- 16 James-Hawkins L, Peters C, VanderEnde K, Bardin L, Yount KM. Women's agency and its relationship to current contraceptive use in lower- and middle-income countries: a systematic review of the literature. *Glob Public Health* 2018;13:843-58. doi:10.1080/17441692.2016.1239270.
- 17 Upadhyay UD, Gipson JD, Withers M, et al. Women's empowerment and fertility: a review of the literature. *Soc Sci Med* 2014;115:111-20. doi:10.1016/j.socscimed.2014.06.014.
- 18 Austrian K, Soler-Hampejsek E, Kangwana B, Wado YD, Abuya B, Maluccio JA. Impacts of two-year multisectoral cash plus programs on young adolescent girls' education, health and economic outcomes: Adolescent Girls Initiative-Kenya (AGI-K) randomized trial. *BMC Public Health* 2021;21:2159. doi:10.1186/s12889-021-12224-3.
- 19 Austrian K, Soler-Hampejsek E, Kangwana B, et al. *Adolescent Girls Initiative-Kenya: endline evaluation report*. Population Council, 2020, https://www.popcouncil.org/uploads/pdfs/2020PGY_AGI-K_EndlineEvalReport.pdf. doi:10.31899/pgy14.1027.
- 20 Jewkes R, Nduna M, Levin J, et al. Impact of Stepping Stones on incidence of HIV and HSV-2 and sexual behaviour in rural South Africa: cluster randomised controlled trial. *BMJ* 2008;337:a506.
- 21 Bandiera O, Buehren N, Burgess R, et al. *Women's empowerment in action: evidence from a randomized control trial in Africa*. World Bank, 2015, <https://openknowledge.worldbank.org/handle/10986/28282>
- 22 Kågesten A, Chandra-Mouli V. Gender-transformative programmes: implications for research and action. *Lancet Glob Health* 2020;8:e159-60.
- 23 Jennings L, Na M, Cherewick M, Hindin M, Mullany B, Ahmed S. Women's empowerment and male involvement in antenatal care: analyses of demographic and health surveys (DHS) in selected African countries. *BMC Pregnancy Childbirth* 2014;14:297. doi:10.1186/1471-2393-14-297.
- 24 World Health Organization. Adolescent empowerment and engagement for health and well-being: strengthening capacities, opportunities and rights. 2020. <https://apps.who.int/iris/handle/10665/333759>
- 25 Willis N, Napei T, Armstrong A, et al. Zvandiri-bringing a differentiated service delivery program to scale for children, adolescents, and young people in Zimbabwe. *J Acquir Immune Defic Syndr* 2018;78(Suppl 2):S115-23. doi:10.1097/QAI.0000000000001737
- 26 Mavhu W, Willis N, Mufuka J, et al. Effect of a differentiated service delivery model on virological failure in adolescents with HIV in Zimbabwe (Zvandiri): a cluster-randomised controlled trial. *Lancet Glob Health* 2020;8:e264-75. doi:10.1016/S2214-109X(19)30526-1
- 27 Willis N, Milanzi A, Mawodzeke M, et al. Effectiveness of community adolescent treatment supporters (CATS) interventions in improving linkage and retention in care, adherence to ART and psychosocial well-being: a randomised trial among adolescents living with HIV in rural Zimbabwe. *BMC Public Health* 2019;19:117. doi:10.1186/s12889-019-6447-4.
- 28 Buehren N, Goldstein M, Gulesci S, Sulaiman M, Yam V. Evaluation of an adolescent development program for girls in Tanzania. In: Policy Research Working Paper. World Bank Group, 2017.
- 29 Kangwana B, Austrian K, Soler-Hampejsek E, et al. Impacts of multisectoral cash plus programs after four years in an urban informal settlement: Adolescent Girls Initiative-Kenya (AGI-K) randomized trial. *PLoS One* 2022;17:e0262858. doi:10.1371/journal.pone.0262858.
- 30 Zimmerman LA, Li M, Moreau C, Wilopo S, Blum R. Measuring agency as a dimension of empowerment among young adolescents globally: findings from the Global Early Adolescent Study. *SSM Popul Health* 2019;8:100454. doi:10.1016/j.ssmph.2019.100454.

Cite this as: *BMJ* 2022;379:e069484
<http://dx.doi.org/10.1136/bmj-2021-069484>