



Review article

Boys Mentoring, Gender Norms, and Reproductive Health—Potential for Transformation

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 A B S T R A C T

Purpose: Understanding and addressing the unique health and development needs of adolescent boys and young men (ABYM) is critical to achieving positive development outcomes for all genders. While major investments have been historically allocated toward adolescent girls and young women, a handful of approaches designed explicitly to reach ABYM have been successful. This review aims to understand the potential impact of mentoring interventions for ABYM on reproductive health (RH) knowledge and practices; social assets and soft skills; levels of gender-based and interpersonal violence; attitudes around gender equality; and substance use and financial vulnerability.

Methods: An electronic search of peer-reviewed and gray literature produced a review of 1,178 articles which yielded a total of 29 articles evaluating the 27 interventions included in the final review.

Results: Mentoring approaches demonstrate promise for improving soft skills and social assets among ABYM—two factors that are thought to contribute to positive youth development outcomes—and for reducing violence perpetration. While these findings demonstrate the importance of this approach for ABYM in their own right, evidence regarding impact on gender norm transformation, RH, and substance use is mixed.

Conclusions: Mentoring programs appear to be a promising practice for ABYM; they have demonstrated the potential to improve soft skills and social assets, as well as to impact rates of violence perpetration. More research is needed to better understand why the evidence for impact on gender norm transformation, RH, and substance use is mixed, and how to build upon those programs that demonstrated positive results.

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IMPLICATIONS AND CONTRIBUTION

Evidence drawn from the evaluation of 27 mentoring interventions for adolescent boys and young men and youth generally, identified via a systematic review, can inform the design of future programs and research to improve adolescent boys and young men's soft skills, social assets, reproductive health, and gender transformative outcomes.

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In recent years, the field of public health has seen increasing levels of investment focused on reducing the social, health, and economic inequities of adolescent girls and young women (AGYW). While a critical need, this does not address the similar needs of adolescent boys and young men (ABYM). ABYM require more support to fully succeed as they grow to be partners, influencers, and advocates of AGYWs. ABYM also face their own unique challenges. For example, young men have some of the highest rates of death by traffic accidents, suicide, and violence;

experience higher rates of alcohol and other substance use; and are less likely to seek health services than their female peers [1]. Studies show that young men and boys may be less likely than their female peers to discuss reproductive health (RH) issues with influential adults (including their parents) and are susceptible to misinformation about RH issues [2–4]. In addition, evidence suggests that young men may be more likely than female peers to hold inequitable gender attitudes [3]. Gender inequality contributes to negative health and development outcomes for all genders—perpetuation of gender inequitable norms among young men and boys is associated with engagement in risky health behaviors and partner violence [3,5]. Transforming gender norms has the potential to be a pathway for young men to address their own health needs as well as support young women to attain theirs [6]. Based on the evidence, soft skills (including positive self-concept, self-control, higher order thinking, social skills, communication, goal orientation, empathy, negotiation, self-efficacy, and decision-making), gender norm transformation, violence reduction, substance use reduction, social assets (such as social networks, peer relationships, and social support), increased RH knowledge and behavior change, and financial security are all potential factors in improving RH outcomes for ABYM [7–15].

Research has shown that boys who have positive male role models are more likely to question harmful gender stereotypes and inequalities and also reduce risky sexual behavior [1,15]. Positive and sustained mentorship is also associated with higher levels of positive youth development (PYD) and lowers risky or harmful behaviors, such as substance use or violence [16]. Moreover, research demonstrates the importance of positive role models and social support systems, offered by mentoring programs, for improved RH knowledge and outcomes among AGYW [17]. Less is known, however, about the impact of mentoring approaches for ABYM specifically. Thus, to answer the question “What types of mentoring programs for adolescent boys and young men have demonstrated effectiveness in improving RH and contraceptive-related knowledge, attitudes, and practices; strengthening social assets and soft skills; reducing levels of gender-based violence or interpersonal violence among ABYM;

or decreasing substance use and financial vulnerability?” We conducted a systematic review of the published and selected gray literature. This review complements a previously published review describing the potential impact of mentoring for adolescent girls and young women [18]. For the purposes of this review we have used the same definition of mentoring as was used in the 2017 review: “mentoring is defined as formal relationships in which the mentor models positive behaviors to the benefit of the mentee and provides guidance, support, and skills through regular meetings to overcome health, social, and economic challenges. A mentoring relationship can take place between two individuals (1:1) or among smaller groups of people, led by a peer mentor, or by an older adult” [17].

Review of the Relevant Literature

Methods

Relevant literature was identified through an electronic search of PubMed and Web of Science databases for peer-reviewed literature, and through Popline and the U.S. Agency for International Development Development Experience Clearinghouse for gray literature. The search included any article published between January 10, 2008 and January 10, 2019. Search terms were grouped under nine domains: mentors, male adolescents, soft skills, improved RH (including HIV and pregnancy prevention/family planning), gender norm transformation, violence-related outcomes, drug and alcohol use, financial literacy, social assets, and excluded literature types (Table 1).

Documents and peer-reviewed study publications (both quantitative and qualitative research) that explored the effect of a mentoring intervention or an intervention which included a mentoring component on adolescent males aged 10–24 years; were published between 2008 and 2019; and were written in English, were eligible for inclusion in the review. Articles that measured the following outcomes—soft skills (including positive self-concept, self-control, higher order thinking, social skills, communication, goal orientation, empathy, negotiation, self-efficacy, and decision-making) needed to circumvent poor RH

Table 1
Search terms

Domain	Terms
Mentor	(mentors OR mentor OR mentoring OR Safe Space) AND
Male adolescent	(male AND adolescent OR child OR young adult) AND
Soft skills	(Achievement OR Adaptation, Psychological OR Adolescent Behavior OR Adolescent Development OR Child Development OR self-concept OR Resilience, Psychological OR social values OR empathy OR communication OR decision making OR self-control OR social skills OR “higher order thinking” OR “goal orientation” OR “goal orientated” OR risk taking OR “self-reliance”)
Improved RH (including HIV and pregnancy prevention/family planning)	OR (HIV Infections OR Health Knowledge, Attitudes, Practice OR Self Efficacy OR Sexual Behavior/psychology OR Pregnancy in Adolescence/prevention and control OR parent-child relations OR male involvement)
Gender norm transformation	OR (gender identity OR gender role OR “gender norm” OR social norms OR “fatherhood” OR masculinity)
Violence-related outcomes	OR (violence/prevention OR “violence perpetration” OR violence prevention OR rape/prevention and control OR domestic violence/prevention and control OR intimate partner violence/prevention and control OR aggression)
Drug and alcohol use	OR (substance-related disorders OR “substance use” OR “substance abuse” OR alcohol drinking OR drinking OR “alcohol abuse”)
Financial literacy	OR (Economic Empowerment)
Social assets	OR (Social Support OR social network)
Excluded literature types	NOT (Nursing).

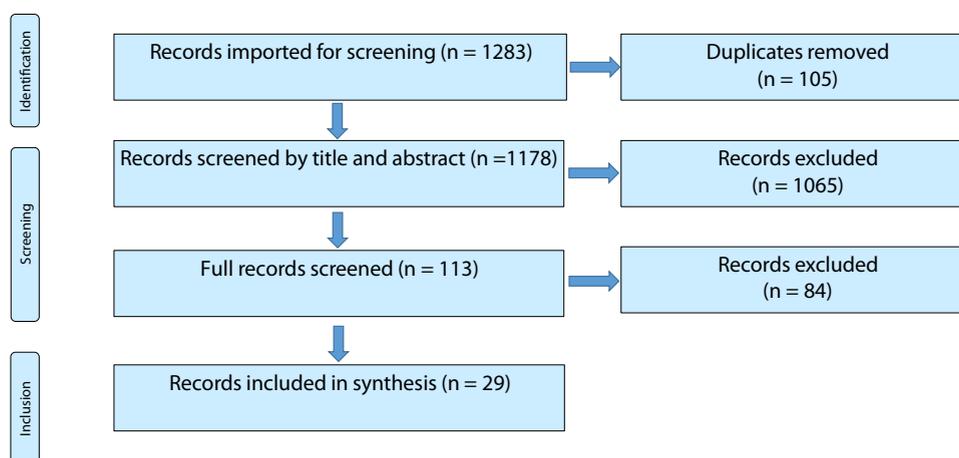


Figure 1. Flow diagram.

outcomes; social assets (including social networks, peer relationships, and social support); violence, including sexual and gender-based violence, self-harm, and interpersonal; substance abuse; gender norm transformation; and/or RH knowledge, intentions, behaviors, or outcomes—were included [8]. Commentaries, editorials, case studies, economic analyses, trip reports, program tools, audits, and mathematical modelling studies were excluded as primary sources. Exploratory or descriptive studies that did not describe the impact of an intervention; formative studies on intervention development which do not include evaluation of the intervention; or research on developing measurement tools or theory of change models were excluded. Finally, documents and articles describing the assessment of impact on females only, impact on mentors rather than mentees, naturally occurring mentors, a population group outside of target age range (<10 years old defined as target population under 10 years old or target population of fifth grade or lower), the quality of mentor relationship (including duration of mentorship, without regard to impact of the relationship on outcomes of interest), and comparison of two variations of mentoring interventions, were excluded. If the study included children and very young adolescents (any adolescents over age 10 or in grade five or higher) or youth greater than age 24, it was not excluded.

All identified literature was imported into Covidence, an online software program designed to support systematic review, and independently reviewed by two analysts. Covidence is the standard platform for Cochrane Reviews. The initial search returned 1,283 records that were imported for screening, of those 105 duplicate records were identified and eliminated. Thus, 1,178 unique documents were screened; 1,065 were eliminated during title and abstract screening. A total of 113 documents remained for full-text review; 84 records were removed at this stage, leaving a final database of 29 records (see Figure 1).

Results

Program qualities

The literature review identified four distinct mentor models used for ABYM and youth generally: (1) one-on-one; (2) group-based; (3) combined group-based and one-on-one; and (4) digital approaches. One-on-one is defined as one mentor to one

mentee; group-based includes at least one mentor for more than one mentee, and also one case of two mentors for one mentee [18]; combined includes a program with both group-based sessions and one-on-one sessions; and digital approaches include text messages or Facebook groups that are either standalone interventions or combined with in-person, group-based mentor models. As seen in Table 1, most interventions implemented a one-on-one model. Across all intervention types, a wide range of mentee populations were targeted. The most common mentee population was youth with minority backgrounds in the US; this was the priority population for nine of the 27 interventions identified. High-school students and adolescents from low socioeconomic backgrounds were also common, with five programs targeting each of these groups. An additional three programs aimed to reach high-school students with low academic achievement or social self-efficacy, defined as the belief one can succeed in social aspects of life [19]. Other mentee populations included: adolescents exhibiting self-harm, adolescents orphaned by HIV/AIDS, conscripts for the Royal Thai Army, individuals with alcohol use disorders, and young fathers with toddler-aged children (1–3 years) who were married or cohabitating with their wife or partner, among others (see Table 1). Many of the programs reached both very young (ages 10–14) and older (ages of 15–19) adolescents. A few included children under age 10, or adults (over age 20).

Mentors included community volunteers (either assigned by the program or selected by mentees), graduate or college students, peer mentors, professionals with a history of working with children (social workers, counselors, paraprofessionals), adults with shared life experiences (such as adults with a history of alcohol abuse and mixed heritage adults), coaches, teachers, and army squad leaders. Most programs took place in the US and other well-resourced countries. A few programs in low- and middle-resource countries were identified; these took place in India, Peru, Thailand, and Uganda. No studies in the Middle East and North Africa, Central Asia, or the Caribbean were identified. Most programs ranged in duration from nine weeks to one year in length, with one program running three years. The majority of programs, across all mentor models, met weekly; a few met biweekly, twice a month, or monthly. Key program characteristics appear in Table 2, and detailed descriptions of the interventions appear in Table 3.

Table 2
Key characteristics of included programs

Characteristics	Total number of programs with characteristic/total number of programs included in review ^a
Intervention type	
One-on-one	12/27
Group based	9/27
Combination (one-on-one and group)	4/27
Digital (Facebook, SMS)	2/27
Mentee population ^a	
Adolescents exhibiting self-harm	1/27
Adolescents from low socioeconomic backgrounds	5/27
Adolescents in foster care	1/27
Adolescents orphaned by HIV/AIDS	1/27
Boys who play cricket	1/27
Children at risk of social exclusion	1/27
Children with parents who are incarcerated	1/27
Conscripts for the Royal Thai Army	1/27
First Nations Youth in Canada	1/27
High School Students	5/27
High school students with low academic achievement and social self-efficacy	3/27
High-risk youth (delinquency and substance use)	1/27
Homeless adolescents (receiving substance abuse treatment)	1/27
Individuals with alcohol use disorders	1/27
Mental health consumer (adolescent)	2/27
Middle school students	2/27
Multiple heritage adolescents	1/27
Peruvian MSM from Greater Lima	1/27
Primarily minority backgrounds (U.S. minority)	9/27
Young fathers with toddler-aged children (1–3 years) and are married or cohabitating with their wife or partner	1/27
Youth in urban areas of Canada	1/27
Youth injured by assault	1/27
Youth who dropped out or have been expelled from school	1/27
Participant age group ^a	
Under 10	4/27
10–14	18/27
15–19	18/27
20–29	3/27
Included adults over age 29	3/27
No range given ^b	4/27
Participant sex	
All participants (100%) were male	5/27
Mixed sex program (targeting males and females)	22/27
Mentor characteristics ^a	
Adult mentor/volunteer (18+ years)	7/27
College professor	1/27
College students (undergraduate)	3/27
Cricket coaches	1/27
Experienced squad leaders (of Thai army)	1/27
Graduate students	2/27

Table 2
Continued

Characteristics	Total number of programs with characteristic/total number of programs included in review ^a
Adults with shared life experience (i.e., mixed-heritage adults; people with history of alcohol abuse or dependence; people living with a mental illness)	3/27
Mostly females	2/27
Peer mentors	6/27
Professionals (e.g., social workers, counselors, paraprofessionals, people with history of working with children)	5/27
Community volunteers (including those assigned by the program, those chosen by mentees, and community role models)	7/27
Country	
Canada	1/27
England	2/27
Hong Kong Special Administrative Region for the People's Republic of China	2/27
India	1/27
New Zealand	1/27
Peru	1/27
Thailand	2/27
Uganda	2/27
USA	16/27

^a Numbers presented demonstrate the total number of programs with a given characteristic of interest. Categories listed are not mutually exclusive. Several programs comprised multiple characteristics of interest; for example, a program may have reached 10–14 yearolds, as well as 15–19 year olds. This program would be counted once for each category. Another example, a program may be intended for mentees who are either in middle school or high school.

^b Mean participant age, rather than age range, was provided for four programs. These were 15.59, 18.17, 21.4, and 28.9.

Outcomes of interest, for the purposes of this review, included: soft skills, social assets, improved RH, gender norms transformation, violence-related outcomes, drug and alcohol use, as well as financial literacy. Table 4 provides an overview of illustrative indicators measured by included studies per outcomes of interest.

Outcome: soft skills

Soft skills, which include positive self-concept, self-control, higher order thinking, social skills, communication, goal orientation, empathy, negotiation, self-efficacy, and decision-making, was the most commonly evaluated outcome of interest. Soft skill development is considered essential as youth transition into adulthood by navigating various social and health behavioral environments and work on achieving their goals [8]. If the study measured at least one of the aforementioned soft skills, then it was counted as a program which included a soft skills outcome. Seven studies of the one-on-one mentor model measured impact on soft skills; three demonstrated a statistically significant impact, three demonstrated positive qualitative outcomes, and

Table 3
Description of included interventions

Program title and location	Intervention type	Intervention description (group size, intensity, duration of intervention implementation)	Summary of key results
Big Brothers Big Sisters of Canada (DeWit et al. 2016 [19]) Program location: Canada	One-on-one	<ul style="list-style-type: none"> •Adult mentors spent at least 2–4 hours a week developing a close relationship with their mentee over the course of at least one year. •Mentors engaged mentees, ages 6–17 years old, through recreational, leisure, or skill-based activities. 	Increased social support and self-esteem.
Big Brothers Big Sisters of America (Herrera et al. 2011 [20]) Program location: USA	One-on-one	<ul style="list-style-type: none"> •High school or college age mentors were matched with 9- to 16-year-old students for a school-based adaptation of the Big Brothers Big Sisters program with semistructured activities. •Meetings lasted between 45 and 60 minutes for at least 5 months with many continuing into the second academic year. 	Improved self-esteem in the first year, but no difference between mentored and nonmentored students in the second year in self-esteem or peer relationships. Increased likelihood of substance use among subpopulation of intervention participants
BRAVE (Building Resiliency and Vocational Excellence Program) (Griffin et al. 2009 [21]) Program location: USA	One-on-one	<ul style="list-style-type: none"> •The goal of the program was to address economic disadvantage for African American middle school students, while also preventing alcohol, marijuana, and other drug use, as well as violence. •Mentoring was one part of the larger program including curriculum-based exercises, development of career goals, vocational field trips, vocational speakers, and case referrals. •Mentors met with youth once a week for six months. 	Reduced alcohol use and marijuana use. No change in violence perpetration
Campus Corps Program (Weiler et al. 2015 [22]) Program location: USA	Combined: one-on-one and group	<ul style="list-style-type: none"> •Campus Corps created a multilevel mentoring community with both individual and group mentorship. •Youth ages 11–18, who have been involved with, or are considered at risk of entering, the juvenile justice system, were mentored by undergraduate mentors who worked with them on social skills, future orientation, physical activity, educational/career activities, and prosocial activities for self-confidence and other life skills. •Meetings were 4 hours a week for 12 weeks. 	Reduced marijuana use; no change in alcohol use.
Child Development Fund (Chan et al. 2018 [23]) Program location: Hong Kong	One-on-one	<ul style="list-style-type: none"> •The Child Development Fund intervention consisted of a mentoring program, a targeted savings account, and a Personal Development Plan. •Mentors assisted youth, aged 10–16 years from low-income families in building their nonfinancial assets for up to 3 years. Frequency and length of meetings was not reported. 	Increased social support

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Table 3
Continued

Program title and location	Intervention type	Intervention description (group size, intensity, duration of intervention implementation)	Summary of key results
Children of Incarcerated Parents Program (CHIPP) and Big Brothers Big Sisters (Laakso et al. 2012 [24]) Program location: USA	One-on-One	<ul style="list-style-type: none"> • Similar structure to BBBS (described above) with the difference that all mentee's parents were incarcerated. • Mentors met with youth ages 10–16, at least once a week for at least 9 months. 	Increased positive self-concept
Cognitive Behavioral Principles within Group Mentoring (Jent et al. 2009 [25]) Program location: USA	Group	<ul style="list-style-type: none"> • This intervention provided group mentoring combined with cognitive behavioral principles for adolescents ages 8–12. • Discussion and didactics related to problem-solving and social interaction skills were emphasized. Sessions ran for four hours once a week for 12 weeks. 	Improved social problem-solving skills and self-efficacy.
Communities in Schools of San Antonio (Karcher 2008 [26]) Program location: USA	One-on-One	<ul style="list-style-type: none"> • The program provided supportive services (educational enhancement activities, supportive guidance, enrichment activities, and/or tutoring) to students, ages 10–18 years old, through a case manager in each school and an individual mentor. • Mentors met with students one hour a week for 6 months to work on academic outcomes (math and reading grades) along with social skills, self-esteem, connectedness, social support, and self-confidence. 	Increased perceived social support (all ages and both sexes); increased social skills (elementary school boys and high school boys)
Community Reinforcement Approach (Bartle-Haring et al. 2012 [27]) Program location: USA	One-on-one	<ul style="list-style-type: none"> • Program mentors encouraged and assisted homeless adolescents ages 14–20 receiving substance abuse treatment. • With one session a week for 12 weeks, mentors discussed strategies around adolescent's living situation, finances, substance use, employment, banking, and making new friends. 	Reduced problem behaviors around substance abuse
Expect Respect (Ball et al. 2009 [28]) Program location: USA	Group	<ul style="list-style-type: none"> • The Expect Respect program had three components: schoolwide prevention strategies, SafeTeens Youth Leadership training, and support groups. • The support group model was facilitated by professionals for youth in middle and high school who have experienced domestic violence or sexual abuse. Groups focused on skill building, positive messages, and positive relationship development. • Groups were separated by gender and met once a week for 24 weeks. 	Improved social skills, knowledge on healthy and abusive relationships, motivation to intervene in a potential GBV situation, communication, nonviolent responses, gender-norm transformation.

Table 3
Continued

Program title and location	Intervention type	Intervention description (group size, intensity, duration of intervention implementation)	Summary of key results
Harnessing Online Peer Education (HOPE) (Young et al. 2015 [29]) Program location: Peru	Digital	<ul style="list-style-type: none"> •HOPE was a Facebook-based peer mentoring intervention for men who have sex with men. Peer leaders shared HIV testing information through Facebook groups. •Multiple online interactions occurred over a period of 12 weeks. The study was open to participants aged 18 years and older, the average age of study participants was 28.9. 	Increased HIV testing and request for HIV tests. No change in receptive anal sex behavior.
Mentor-Implemented, Violence Prevention for Assault-Injured Youths in Emergency Departments (Cheng et al. 2008 [30]) Program location: USA	One-on-one	<ul style="list-style-type: none"> •Home- and community-based mentoring program for youth between the ages of 10–15 in urban areas. Youth who visited the emergency room as a result of peer assault injury were matched with an adult mentor. •The mentor implemented a six-session curriculum focused on conflict management, problem-solving, weapon safety, decision-making and goal setting. •Meetings occurred at least six times over two to six months. The youth mentoring component was accompanied by health educator home visits for parents. 	Decreased physical aggression and self-efficacy against aggression. No impact on fighting and weapons carrying in last 30 days or attitudes about retaliation.
Mentors in Violence Prevention (MVP) (Katz et al. 2011 [31]) Program location: USA	Group	<ul style="list-style-type: none"> •The MVP program, trains high-school students in grades 9–12 as mentors. •The goal of the student mentor was to promote social norm change related to domestic violence and sexual assault among peers. •Topics include bystander intervention, bullying prevention, and gender-based violence prevention 	Improved likelihood of interfering in GBV-related situation. No impact for situations with lower levels of violence.
Mentorship for Alcohol Problems (Tracy et al. 2012 [32]) Program location: USA	Combined (one-on-one and group)	<ul style="list-style-type: none"> •Mentoring program to reduce drug and alcohol use among treatment patients. •The program consisted of four key components: mentorship training, weekly group-based mentorship, individual (one-on-one) mentoring, and supervision. •Both mentors and mentees were working on abstinence from drug and alcohol use. 	Improved abstinence from both drug and alcohol use.
Multiple Heritage Service (Phillips et al. 2008 [33]) Program location: England	One-on-one	<ul style="list-style-type: none"> •The Multiple Heritage Service was a program for children and youth aged 8–15 years with a multiple heritage background. •The program involved individual, school-based mentoring and was designed to improve understanding of youth cultural heritage and self-esteem. •Mentoring sessions focused on historical achievements by black people globally, self-worth, and strategies to deal with racism. Six sessions lasted between 6 and 12 weeks. 	Improved self-confidence, positive self-concept, and social skills.

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Table 3
Continued

Program title and location	Intervention type	Intervention description (group size, intensity, duration of intervention implementation)	Summary of key results
My Life: Self-Determination Enhancement Model (Powers et al. 2018 [34]) Program location: USA	Combined (one-on-one and group)	<ul style="list-style-type: none"> •Youth-directed individual mentoring and group-based peer mentoring workshops for youth ages 16–18 who have been part of the foster care system. •One-on-one sessions focused on communication, problem-solving, and stress management skills, while mentoring workshops (group-based sessions) focused on topics selected by youth such as employment, postsecondary education, and exiting foster care. Program lasted between 9 and 12 months. 	Improved goal-setting, self-confidence, communication, social support, and self-efficacy.
Parivartan (Miller et al. 2014 [35]) Program location: India	Group	<ul style="list-style-type: none"> •Adaptation of Coaching Men into Boys program for youth cricket players ages 16–18. •Cricket coaches served as mentors and discussed topics of gender equity and nonviolent, positive masculinity with teams for 45–60 minutes a week for 4 months. 	Increased gender equitable attitudes. Reduced negative peer pressure behaviors. No change in attitude disapproving of violence against females. No change in sexual abuse perpetration nor positive bystander intervention behavior.
Peer-to-Peer (Lucksted et al. 2009 [36]) Program location: USA	Group	<ul style="list-style-type: none"> •Relapse prevention program for people living with a mental illness. The group-based model was led by trained peer mentors with a mental illness. •Topics include goal and vision setting, communication and relationship strengthening, confidence building, and stress reduction •The program took place over nine two-hour sessions. 	Increased self-esteem, self-confidence. No significant change in financial literacy.
Project K (Chapman et al. 2017 [18]; Deane et al. 2017 [37]; Furness et al. 2017 [38]) Program location: New Zealand	One-on-one	<ul style="list-style-type: none"> •Project K had three main components including a residential wilderness adventure, a nonresidential 10-day community challenge, and 12 months of mentorship for youth ages 13–15. •The program focused on goal setting, problem-solving, communication, and social skills. Mentorship occurred at least once a month. •Three different study designs were used to assess the program within the three studies listed. 	Three published articles present results from an RCT, pretest and posttest questionnaires, and improved self-efficacy and social support (longitudinal study). Improved self-efficacy (RCT study and qualitative study).
Responsible, Engaged, and Loving (REAL) Fathers (Ashburn et al. 2017 [39]) Program location: Uganda	Combined (one-on-one and group)	<ul style="list-style-type: none"> •Gender-norm transformation program with a mentoring component for fathers ages 16–25 who are married or living with their partner and have children ages 1–3. •The program proposed alternative strategies to violent child discipline and intimate partner violence in favor of positive communication skills and conflict resolution. •Community volunteers were trained as mentors and mentors held sessions twice a month, one individual and one group, for six months. 	Improved social skills and communication. Decreases in IPV perpetration and attitudes around using any form of violence. No change in rejection of traditional gender norms.

Table 3
Continued

Program title and location	Intervention type	Intervention description (group size, intensity, duration of intervention implementation)	Summary of key results
Secondary School Transition (Yadav et al. 2010 [40]) Program location: England	One-on-one	<ul style="list-style-type: none"> • Intervention aimed at improving behavioral and psychosocial outcomes for at-risk children ages 10–11 transitioning from primary to secondary education. • Program tailored to the individual needs of the child • Weekly sessions were held for 10 months; the length of each session was not reported. 	Improved self-esteem, peer relationships, and social functioning.
Sport Hartford Boys Program (Fuller et al. 2013 [41]) Program location: USA	Group	<ul style="list-style-type: none"> • Sports mentoring intervention for adolescent underrepresented boys (African American, Latino, biracial) ages 10–14. • Lessons focused on life skills, physical activity, and nutrition. Sessions were held twice a week lasting two hours each for 24 weeks. 	Improved peer relationships, self-efficacy, self-concept, empathy, identification of their own social strengths and weaknesses, and competence (physical, social, cognitive, and nutritional).
Squad Leader Mentors through Short Message Services on Mobile Phones (Kaoaiem et al. 2012 [42]) Program location: Thailand	Digital	<ul style="list-style-type: none"> • Comprehensive safe sex intervention with Squad leaders in the Thai Army mentored their conscripts through text messages and in-person delivery of safe sex tools (informational packets, condoms). • Messages were sent once a week and on special occasions over a six-month period. 	Increased RH knowledge, decrease in STI acquisition, and increased condom use with high-risk partners.
Suubi& Bridges Mentorship Program (Nabunya et al. 2015 [43]) Program location: Uganda	Group	<ul style="list-style-type: none"> • Peer mentoring intervention for adolescents between the ages of 10–16 years orphaned by HIV/AIDS. • The program focused on goal setting, reproductive health, financial health, and safety. The program ran for nine months with one session per month. 	Increased RH knowledge, beliefs, and attitudes.
The Fourth R: Uniting Our Nations Mentoring Programs (Crooks et al. 2017 [44]) Program location: Canada	Group	<ul style="list-style-type: none"> • Cultural identity-based mentoring program for First Nations, Metis, and Inuit youth ages 11–14 with a focus on healthy relationships and violence prevention. • Program participants met once a week for 18 weeks each academic year. 	Improved mental health reported after two years of program participation rather than one or none. Qualitatively, improved leadership skills and self-confidence.
Volunteer Mentorship for Young Adults with Self-Harm Behaviors (Law et al. 2016 [17]) Program location: Hong Kong	Group	<ul style="list-style-type: none"> • Goal was to reduce repeat suicidal behaviors through mentors providing emotional support and connecting patients to resources or medical referrals • Volunteer mentors contacted patients ages 18–34 who had visited hospital emergency rooms, were classified as self-harm patients and had psychiatrist approval at least twice a month for nine months after hospital discharge for self-harm. • Two mentors were assigned to each patient, and contacts included both in-person meetings and digital communication. 	No change in social support or positive self-concept. No impact on suicidal ideation or repetition of self-harm.

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Table 3
Continued

Program title and location	Intervention type	Intervention description (group size, intensity, duration of intervention implementation)	Summary of key results
Youth-Initiated Mentoring through the National Guard Youth ChalleNGe Program (Schwartz et al. 2013 [45]) Program location: USA	One-on-one	<ul style="list-style-type: none"> •Mentoring was one component of a larger U.S. National Guard residential life skills program for at-risk youth ages 16–18 years. •A mentor, selected by the youth participant, provided support through a post-program activity (GED program, college, vocational training, a job, or military service) for one year with contact weekly. 	Improved self-concept and relationships and increased social support. No impact on drug and alcohol use.

one demonstrated no effect. For example, Project K in New Zealand was a one-on-one based program that found significant improvements in social self-efficacy, measured by social self-efficacy scales, from baseline to one-year postintervention [19,38]. Three studies of group-based programs demonstrated statistically significant impacts on soft skills, two demonstrated positive qualitative outcomes, and the two mentors to one mentee intervention had no effect on soft skills. Evaluations of two programs implementing other models (digital and combined group/one-on-one) also showed statistically significant improvements in soft skills.

Outcome: social assets

Outcomes related to social assets, which include social networks, peer relationships, and social support, were measured for nine out of 29 studies. The ability to build and strengthen social assets is important to sustained empowerment and connection for youth [46]. Six studies demonstrated a positive statistically significant impact on all social assets measured with five of the studies involving one-on-one programs; two studies demonstrated positive qualitative outcomes, and one study had no significant impact. Big Brothers Big Sisters of Canada demonstrated mixed results; boys who participated in this program were more likely than never-mentored boys to report stronger perceptions of emotional support from peers and parents, but boys re-matched during the program or who experienced a premature end to the mentoring relationship resulted in negative mental health and peer relationships [20]. The Volunteer Mentorship for Young Adults with Self-Harm Behaviors program resulted in no impact on social support [18].

Outcome: reproductive health

Only three studies measured the effect on RH outcomes, including one group-based intervention and two digital interventions. All three of the examined interventions took place in low- and middle-resource countries. The one group-based intervention, Suubi and Bridges Mentorship program, demonstrated a statistically significant impact on HIV-related knowledge among participants [44]. The two digital programs included the Squad Leader Mentors through Short Message Services on Mobile program in Thailand and the HOPE (Harnessing Online Peer Education) program in Peru [30,43]. Evaluations of these interventions showed statistically significant improvements in sexually transmitted infections (STIs) and safe sex knowledge,

rates of STIs among intervention group, STI protection behavior (condom use), and HIV testing [30,43]. No change was seen in STI service seeking for diagnosis or treatment among participants in the Thailand study and no difference in sexual risk behaviors were seen among participants in the Peru intervention [30,43]. Programs evaluated for RH outcomes ranged in duration from three to nine months, suggesting that positive RH outcomes, such as an increase in RH knowledge, condom use, and HIV testing, can be achieved within this time period on some RH outcomes but not all.

Outcome: gender norm transformation

As with RH outcomes, only four studies examined the impact of mentoring interventions on gender norms transformation. These included: The Expect Respect intervention in the US, Parivartan in India, Mentors in Violence Prevention program in the US, and Responsible, Engaged, and Loving (REAL) Fathers in Uganda [29,32,36,40]. The programs attempted to shift norms around sexual consent, couples' communication, unhealthy and unequal relationships, gender-equitable attitudes, and the justification of intimate partner violence use. The evaluation results were mixed; positive qualitative outcomes were seen among Expect Respect participants including self-reported increased knowledge about abusive and healthy relationships, improved relationship skills, and expanded self-awareness [29]. Mixed results were seen among Parivartan participants: the intervention demonstrated a statistically significant increase in gender-equitable attitudes but had no impact on attitudes toward violence against women [36]. Results were also mixed for participants of the Mentors in Violence Prevention program who reported they were more likely than nonparticipants to intervene in aggressive gender-related violent situations, but there were no significant differences between participants in the likelihood to intervene for less aggressive behaviors [32]. REAL Fathers Initiative program participation was not associated with significant increases in rejection of traditional gender norms at end-line, but men who were exposed to the program were less likely to justify intimate partner violence use compared to men not exposed to the program [40]. Programs measuring gender norm transformation ranged in length from four to 10 months, suggesting that some gender norms transformation may be achievable within a relatively short time frame, although program intensity (number of times mentors and mentees meet within the duration of the program) may affect the outcome.

Table 4
Illustrative outcome indicators measured by mentoring intervention evaluations

Soft skills ^a	Improved RH	Gender norm transformation	Violence-related outcomes	Drug and alcohol use	Financial literacy	Social assets
<ul style="list-style-type: none"> • Empathy • Positive self-concept • Social skills • Goal-setting • Leadership skills 	<ul style="list-style-type: none"> • HIV testing • SRH knowledge • STI acquisition • Condom use 	<ul style="list-style-type: none"> • Change in couples' communication • Knowledge related to healthy and abusive relationships 	<ul style="list-style-type: none"> • Interpersonal violence • Perpetration of gender-based violence • Attitudes about violence • Self-harm 	<ul style="list-style-type: none"> • Alcohol use • Marijuana use • Use of other drugs 	<ul style="list-style-type: none"> • Has a plan for saving money 	<ul style="list-style-type: none"> • Increased social support • Expanded social network • Stronger peer relationships

^a Soft skills align with key soft skills for youth RH, and youth violence prevention identified by USAID's YouthPower Project (Gates et al. [8]).

Outcome: violence

Six studies measured program impact on outcomes related to violence, which included interpersonal, gender-based, and intimate partner violence. Two of these were one-on-one mentor models: BRAVE (Building Resiliency and Vocational Excellence Program) and Mentor-Implemented, Violence Prevention for Assault-Injured Youths in Emergency Department [22,31]. The BRAVE study did not demonstrate a statistically significant impact on outcomes related to violence [30]. However, a statistically significant decrease in physical aggression score and in self-efficacy against using aggression was detected among participants in the Mentor-Implemented, Violence Prevention for Assault-Injured Youths in Emergency Department study, although no impact on fighting and weapons carrying in the last 30 days nor attitudes about retaliation was detected [31]. Mixed results were seen across the three group-based mentor interventions that also measured impact on violence-related outcomes. The evaluation of Parivartan, one of the group-based interventions, demonstrated a marginally statistically significant decrease in “negative intervention behaviors” such as laughing at or supporting peers’ violent behaviors, but no impact was seen on bystander intervention, or self-reported abuse perpetration (including sexual abuse perpetration) [36]. No significant impact was seen on participants in Volunteer Mentorship for Young Adults with Self-Harm Behaviors intervention [18]. Only one study examined the impact of the combined group and one-on-one based approach on violence, again demonstrating mixed results. Statistically significant decreases in the perpetration of violence were seen among REAL Fathers Initiative participants; in fact, the perpetration of physical violence decreased from 38% at baseline to 12% at the last end-line [40]. Evidence of impact on violence-related outcomes is seen among programs that were implemented for a period of two to 10 months.

Outcomes: drug and alcohol use and financial literacy

Program impact on alcohol and other drug use was measured by six studies and impact on financial literacy measured by one study. Reduced drug and alcohol use were seen for one combined mentor approach: Mentorship for Alcohol Problems, and two one-on-one based mentor programs: BRAVE and Community Reinforcement Approach [22,28,33]. Two studies did not demonstrate any impact, including one study of a combined mentor model and one study of a one-on-one based model [23,46]. In the one-on-one Big Brothers Big Sisters of America, a statistically significant increase in alcohol and drug use was detected among a subpopulation of participants who did not have a prominent adult in their life at baseline [21]. However, the authors note that the 5-month study period may have been too short to impact longer-term behaviors [21]. No studies of group-based or digital interventions measured impact on this outcome. Only one study measured program impact on financial literacy and no impact was detected [37]. The Suubi and Bridges program includes a savings group component, but that program component was not evaluated in the study in this review [44].

Table 5 describes the research design and key outcomes of included interventions. Qualitative and quantitative outcomes are differentiated in Table 5 by noting if the outcome is qualitatively positive, positively or negatively statistically significant, or nonsignificant. Only three of the evaluations utilized a randomized control design, and 15 of the remaining used a

Table 5
Research design and key outcomes of included interventions

	Evaluation design			Key outcomes ^a						
	RCT	Quasi-experimental design	Other	Soft skills	Improved RH	Gender norm transformation	Violence-related outcomes	Drug and alcohol use	Financial literacy	Social assets
One-on-one approaches										
Big Brothers Big Sisters of Canada (DeWit et al. 2016 [19])		Presurvey and postsurvey (i.e., baseline and 18-month follow-up surveys)								+ and –
Big Brothers Big Sisters of America (Herrera et al. 2011 [20])	X			0				–		
BRAVE (Building Resiliency and Vocational Excellence Program) (Griffin et al. 2009 [21])	X						0	+		
Child Development Fund (Chan et al. 2018 [23])	X									+
Children of Incarcerated Parents Program (CHIPP) and Big Brothers Big Sisters (Laakso et al. 2012 [24])			X	X+						
Communities in Schools of San Antonio (Karcher 2008 [26])	X			+						+
Community Reinforcement Approach (Bartle-Haring et al. 2012 [27])	X							+		
Mentor-Implemented, Violence Prevention for Assault-Injured Youths in Emergency Departments (Cheng et al. 2008 [30])	X						+			
Multiple Heritage Service (Phillips et al. 2008 [33])			X	X+						
Project K (Chapman et al. 2017 [18]; Deane et al. 2017 [37]; Furness et al. 2017 [38])	X	X	X	+						+
Secondary School Transition (Yadav et al. 2010 [40])		X		+						+
Youth-Initiated Mentoring through the National Guard Youth ChalleNGe Program (Schwartz et al. 2013 [45])			X	X+				0		X+
Total one-on-one (n = 12)				6	0	0	1	2	0	6
Group-based interventions										
Cognitive Behavioral Principles within Group Mentoring (Jent et al. 2009 [25])			X	+						
Expect Respect (Ball et al. 2009 [28])			X	X+		X+	X+			
Mentors in Violence Prevention (Katz et al. 2011 [31])	X					+ and 0				
Parivartan (Miller et al. 2014 [35])	X					+ and 0	+			
Peer-to-Peer (Lucksted et al. 2009 [36])	X			+					0	

Table 5
Continued

	Evaluation design			Key outcomes ^a						
	RCT	Quasi-experimental design	Other	Soft skills	Improved RH	Gender norm transformation	Violence-related outcomes	Drug and alcohol use	Financial literacy	Social assets
Sport Hartford Boys Program (Fuller et al. 2013 [41])			X	X+						X+
Suubi and Bridges Mentorship Program (Nabunya et al. 2015 [43])	X		X		+					
The Fourth R: Uniting Our Nations Mentoring Programs (Crooks et al. 2017 [44])			X		+					
Volunteer Mentorship for Young Adults with Self-Harm Behaviors (Law et al. 2016 [17])	X			0			0			0
Total group-based interventions (n = 9)				5	0	3	2	0	0	1
Combined approach (group-based and one-on-one)										
Campus Corps Program (Weiler et al. 2015 [22])	X							+ and 0		
Mentorship for Alcohol Problems (Tracy et al. 2012 [32])			X					+		
My Life: Self-Determination Enhancement Model (Powers et al. 2018 [34])			X		+					+
Responsible, Engaged, and Loving (REAL) Fathers (Ashburn et al. 2017 [39])	X			+		+ and 0	+			
Total combined approach (n = 4)				2	0	1	1	2	0	1
Digital approaches										
Harnessing Online Peer Education (HOPE) (Young et al. 2015 [29])	X				+					
Squad Leader Mentors through Short Message Services on Mobile Phones (Kaoaiem et al. 2012 [42])	X									+ and 0
Total digital (n = 2)				0	2	0	0	0		0
Total all intervention types (n = 27)				13	2	4	4	4	0	8

^a Key Outcomes: 0 = nonsignificant outcome; + = statistically significant positive outcome; – = statistically significant negative outcome; X+ = positive qualitative outcome.

quasi-experimental design; “Other” designs included qualitative, longitudinal preprogram and postprogram assessments, one group preintervention and postintervention surveys, and purposive sampling postintervention surveys.....

Program feature: supportive environment

Creating a supportive environment for youth is an important element of PYD, and a review of mentoring programs for AGYW demonstrated that multicomponent mentoring approaches that sought to address the various levels of the socioecological model were more effective than those focusing on the individual alone [17,47–49]. Few of the programs identified by this review sought

to address the health and development needs of ABYM beyond the individual level of the socioecological model [50]. In other words, few programs integrated components to address other levels of the socioecological model, such as the influence of family and friends, the communities where young people live, or macro level factors, such as access to education and health services, social norms, and the policy environment. There were five exceptions. The Expect Respect program involved students, parents, and teachers and used schoolwide prevention strategies, such as developing a school climate survey, running an awareness campaign around the Centers for Disease Control and Prevention program called Choose Respect, and creating a school policy to define and report interpersonal violence [29]. REAL

Fathers Initiative also led a community-level campaign through posters showcasing positive fatherhood behaviors along with a community celebration open to local leaders and families of the participants [40]. The Mentor-Implemented, Violence Prevention Intervention for Assault-Injured Youths in Emergency Departments study conducted parent home visits by health educators [31]. Mentors in the Secondary School Transition program provided in-home behavioral and relationship support to parents, as well as linked parents to the school [41]. Finally, the cricket coach-mentors in the Parivartan program helped create a safe environment free of violence for their youth cricket teams [36].

Discussion

Based on our review, evidence from all four types of mentor models (one-on-one, group-based, combination, and digital) shows promise for improving soft skills and social assets. While only three studies examined the impact of mentoring on improved RH outcomes, two male-only programs and one with both males and females, the results are mixed. The evidence supporting the impact of mentoring approaches on gender norms transformation, violence, and drug and alcohol use is also mixed. Financial literacy was not a primary component of the mentoring programs evaluated, so more evidence is needed concerning this outcome for ABYM. Our findings suggest that the length and quality of the mentor relationship may be of particular importance for ABYM as the results from one study showed potential negative effects for ABYM with early termination [20]. Further exploration of implementation science concepts, such as dose and intensity, is needed for ABYM mentoring programs.

When results are disaggregated by type of mentor model, we find that group-based approaches demonstrate promise for improving soft skills, as well as outcomes related to violence and RH. The results for impact of the group-based model on gender norms transformation are mixed (one positive result, one mixed result) and no evidence for the impact of this model on drug and alcohol use or financial literacy exists. Social assets were not measured for most of the group-based model programs; therefore, more research is needed to understand its impact on social assets. The combined group and one-on-one approach shows promise. This approach showed a positive impact on violence reduction, but results related to drug and alcohol use were mixed and no other outcomes were measured. Evidence for digital approaches appears promising for improving RH knowledge, although the impact of this intervention type on other outcomes was not measured by the two studies included in this review. While the majority of the evidence that came forward in this review was for one-on-one mentor models (12 one-on-one models were included), effectiveness of the approach appears to be mostly mixed for all outcomes of interest other than soft skills and social assets. Evaluations of one-on-one models demonstrated mixed evidence for drug use and violence and no evidence for gender norms transformation, financial literacy, or RH. Studies of one-on-one intervention models took place in the US, Canada, England, New Zealand, and Hong Kong. Given the limited geographic scope of this evidence, the acceptability and potential impact of this model in other cultural contexts warrants further exploration. In contrast to previous findings about the characteristics of mentors participating in programs that demonstrated positive outcomes among AGYW [17] which suggest mentors should be close in age to mentees, mentors

participating in programs for ABYM that demonstrated an impact on outcomes of interest tended to be older role models such as coaches, army squad leaders, professionals, and community members identified by youth. More evidence is needed to determine if this association is causal or is seen because evaluations of programs for ABYM utilizing older mentors are published more frequently than of those utilizing younger mentors.

Notably, six programs measured mental health outcomes (e.g., depression, social anxiety, well-being) as a primary outcome and one program measured it as a secondary outcome [18,25,28,34,37,39,45]. Although mental health outcomes were outside of the scope of our review, we recognize the pressing need to address mental health for ABYM globally. The measurement of mental health in the programs reviewed warrants further examination of general mental health, depression, and trauma that ABYM may face in various contexts and how trauma-informed mentorship could be a model to thoughtfully approach mental health in global communities [12,51].

Close to half of the studies included in this review utilized an experimental design; however, only three studies implemented a randomized control trial. Thus, the results should be interpreted with the understanding that the strength of the evidence presented varies and that while they show promise, more rigorous evaluations are needed to fully understand potential impact.

Limitations

A number of programs, specifically for ABYM, fell outside of the parameters of this review due to the lack of a standard definition for mentoring. Many programs for ABYM may use facilitators or coaches that might serve the role of a mentor but were not defined as such in the databases. The articles in this review did not measure the impact of the qualities of the mentor on the mentorship relationship or the youth outcomes, so we cannot comment on the ideal mentor for each type of program. Articles evaluating the implementation of mentor programs for ABYM were not included in the scope of this review; thus, we are unable to comment on key process indicators such as fidelity to design. This review is also limited by the few studies which examined the impact of mentoring on ABYM, specifically, compared to those where ABYM were a subpopulation within programs for youth of both sexes or males of all ages (including the age range of interest). The studies reviewed were also geographically limited to primarily the US and other high-resource countries; only five studies took place in low-, middle-, and upper middle-resource countries. These programs did not include the one-on-one mentor models but comprised the other types of mentor models (i.e., group, combined, and digital). The lack of studies in the Middle East, North Africa, Central Asia, and the Caribbean is concerning because of the higher levels of trauma and violence men and women face in the regions listed [52,53].

Recommendations

A growing body of evidence demonstrates the importance of soft skills for youth outcomes across multiple sectors [8]. A review conducted in 2016 by U.S. Agency for International Development's YouthPower project identified key soft skills associated with RH and violence prevention [8]. The evidence among the programs evaluated suggests that mentoring may be an important strategy for soft skills strengthening. However,

some key soft skills necessary for RH and violence prevention were not measured by the studies reviewed, including higher order thinking skills, integrity, and ethics [8]. Future studies might be inclined to measure these outcomes. In addition to these key soft skills, few studies examining the relationship between mentoring and contraceptive knowledge, attitudes, and use were identified. Male engagement in, and support for, family planning is vital [7]. We encourage future studies to include contraceptive related measures so that we can better understand the potential of mentoring programs to influence these outcomes for ABYM [7].

Couples' communication and shared decision-making are important determinants of violence, family planning, and other key health outcomes. Only two studies measured couples' communication; both had positive qualitative and quantitative outcomes—suggesting that mentoring may be a promising approach to building life skills for healthy relationships [29,40]. More research is needed to explore this association, and to understand the impact not only for couples, but for other important relationships, such as parent relationships, as well.

Much of the literature examined the impact of mentoring programs on individual and interpersonal outcomes. However, it is well established that improving health and social outcomes for adolescents and youth requires intervention across the socio-ecological framework. A Positive Youth Development approach moves beyond these levels to create an enabling environment by working with communities and seeking to transform systems. Yet, few of the multicomponent programs focused on creating a supportive environment in the studies reviewed. Only one of the male-only mentoring programs, REAL Fathers Initiative, addressed the supportive environment through a community media campaign. Furthermore, the examination of power relations and gender inequalities among ABYM is key for gender norms transformation, as gender norms and power are intricately tied with one another [10]. This in turn may also reduce harmful and inequitable social and health outcomes for AGYW. More clarity is needed on how programs are addressing both the supportive environment across the socioecological spectrum and power relations and gender inequalities to enable positive RH and gender equality outcomes from ABYM.

Summary and Implications

We found that mentoring programs have the potential to strengthen the soft skills and other health, social, and economic assets necessary for adolescent boys and young men to gain positive RH outcomes. However, given the nascency of evidence, more research is needed to fully understand the promise of this approach. Additional studies are needed in geographical regions outside of North America to understand the impact of such approaches for various age segments and subpopulations of youth, and those examining the association between mentor characteristics and mentee outcomes are warranted.

Further research is also needed to understand what led to the positive outcomes in the studies with mixed results, especially for gender norms transformation and violence. The field of social norm transformation for adolescent health is relatively new, and there is still much to learn about how to best tailor social norm interventions for specific segments of the youth population, including ABYM. Further impact would likely be gained by mentoring programs if such programs influenced the supportive environment around ABYM. Data showed that norms may shift

differently for ABYM than for AGYW, but more research is needed to understand the factors that influence ABYM's normative beliefs [10]. More investigation is also needed around financial literacy as a protective factor for ABYM as they take on more financial responsibility with age. Finally, studies examining the impact of this approach on RH, and particularly support for and use of contraceptives, should be prioritized. As youth programming continues to focus on the health, social, and economic needs of ABYM, we must continue to assess what aspects of mentorship will provide an enabling space for ABYM to thrive as individuals, as partners, and as members of an equitable community.

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