Exploration of Young People’s Sexual and Reproductive Health Assessment Practices

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Executive Summary

Overview:

The goal of this project was to identify effective interventions to improve young people’s sexual and reproductive health. We systematically reviewed interventions found in the peer-reviewed and gray literature on young people’s sexual and reproductive health based on four outcomes: prevention of early marriage, early pregnancy, limiting the number of children and preventing STIs. We focused our reviews on young people, ages 10-24, in lower- and middle-income countries. French, Spanish Portuguese and English reports or publications were included.

Our reviews focus on both the content and quality of the interventions as well as the evaluations. Selected studies were abstracted and scored in each outcome area. This report summarizes the overall findings, by outcome area, providing two to three case studies of effective interventions for each outcome.

Results:

Table 1 below shows a summary of our search results and ratings for each outcome.

Table 1: Summary across outcomes

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Titles Screened (Published Only)</th>
<th>Abstracted</th>
<th>Intervention</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Titles Screened (Published Only)</td>
<td>Abstracted</td>
<td>Positive Impact</td>
<td>No or Mixed Impact</td>
</tr>
<tr>
<td>Early Marriage</td>
<td>3,652</td>
<td>59</td>
<td>37</td>
<td>9</td>
</tr>
<tr>
<td>Early Pregnancy</td>
<td>27,376</td>
<td>97</td>
<td>62</td>
<td>23</td>
</tr>
<tr>
<td>Number of Children</td>
<td>1,592</td>
<td>11</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>STIs/HIV</td>
<td>22,076</td>
<td>120</td>
<td>39</td>
<td>51</td>
</tr>
<tr>
<td>Total</td>
<td>54,696</td>
<td>287</td>
<td>146</td>
<td>85</td>
</tr>
</tbody>
</table>
Early marriage: We abstracted 59 out of over 3600 titles screened that related to interventions designed to change early marriage or age at first marriage (49 grey literature articles and 10 published peer-reviewed articles). The majority of the studies (n=37) found a positive impact of the intervention on some component of early marriage—practices, knowledge or attitudes. Few studies had mixed or contradictory results (n=9) or negative results (n=4). A final group of interventions had no results reported on early marriage or had no data from which to draw conclusions (n=9). Among 37 studies with positive results, fewer than half (n=16) had high quality interventions and evaluations.

Early Pregnancy: We abstracted 97 out of over 27,000 titles screened that related to interventions designed to prevent early pregnancy (56 grey literature articles and 42 published peer-reviewed articles). The majority of the studies (n=62) found a positive impact of the intervention on some component of early pregnancy—knowledge, attitudes or behavior. A substantial number of studies had mixed or contradictory results (n=23), and just a handful (n=9) had negative results. A final group of interventions had no results reported on early pregnancy or had no data from which to draw conclusions (n=3). Among the studies 62 studies with positive results, few (n=14) had high quality interventions and evaluations.

Number of children: We abstracted 11 articles out of over 1600 titles screened that related to interventions designed to prevent repeat pregnancies and births (5 grey literature and 6 published peer-reviewed articles). The majority of the studies (n=8) found a positive impact of the intervention on some component of preventing repeat pregnancies including uptake of contraception, and avoiding repeat pregnancies. Few studies had mixed or contradictory results (n=2) or negative results (n=1). Among the studies with positive results (n=8), only two had high quality interventions and evaluations.

STIs: We abstracted 120 articles out of over 22,000 titles screened that related to behavior change for STI prevention (64 grey literature and 56 published peer-reviewed articles). Of all the interventions, nearly the same number showed uniformly positive results (n=39) as negative or no results (n=38). The majority of the interventions had mixed outcomes (n=51) and one had no outcomes related to STI prevention behaviors. Nearly the same number of studies had positive (n=38), as had negative results (n=39). Among the studies with positive results (n=38), only nine had high quality interventions and evaluations.
The report is divided into chapters, based on the four outcomes. The concluding chapter outlines our recommendations for the field as well as some specific recommendations related to each of the four outcomes. We have included more detail on the methodology in the Appendix. Each chapter contains a list of cited references, as well as a full bibliography all of the articles reviewed.

Acknowledgements:

We would like to thank those that contributed to the work in this report: Bruce Dick, Bob Blum and Jane Ferguson who composed our group of senior advisors. Angela Bayer, Akin Omisore, Jaya, Susan Lee-Rife, Terri-Ann Thompson, and Ushma Upadhyay who identified and abstracted the studies featured in this report. Virginia Bowen and Carie Muntifering Cox who were instrumental in the coordination and oversight of the work. Amanda Kalamar and Hannah Lantos, JHSPH graduate students, who filled in everywhere to help us meet our deadlines.

Submitted by:

Michelle J. Hindin and Adesegun Fatusi
EARLY MARRIAGE

Search Strategy

We undertook a systematic search of published literature to identify interventions that address ‘early marriage’ in low- and middle-income countries (LMIC). We used six databases—PubMed (MEDLINE), Embase, PsycInfo, Cinahl Plus, Popline, and the Cochrane Database—in conducting this search. In building the search, we combined a list of terms that describe young people with a list of terms that describe marriage or marriage-like arrangements. We then combined this search with a list of lower- or middle-income country (LMIC) and regional search terms developed and used in the 2012 WHO Systematic Review on the same topic. We limited hits to those materials published in 2009 or later so as not to replicate the efforts already undertaken by the WHO Review. Detailed search terms for each database are available in the Appendix.

This initial search produced 3,652 hits about early marriage, which were stored using EndNote reference manager software. We then reviewed all 3,652 titles. This title screening reduced the original list of 3,652 hits down to 51 articles that seemed relevant. We read each of the 51 abstracts and pulled all articles that appeared to pertain to early marriage interventions for further review. This narrowed the list from 51 hits to 10 published articles that were included for abstraction.

We searched the ‘early marriage’ grey literature by first targeting organizations involved in early marriage eradication—namely ICRW, Population Council, CEDPA, and Save the Children—as well as the Google search engine were initially explored in the search for publications about early marriage interventions. A total of 13 documents synthesizing early marriage interventions were identified through the initial search process and reference tracing (snowballing) was employed to find as many referenced interventions as possible. Five organizations—Population Council, CEDPA, CARE, ChildFund International (formerly Christian Children’s Fund), and WorldVision—were emailed to inquire about the possibility of mid-term or end-line evaluations for promising programs that had no easily identifiable intervention. In total, we ended up with 49 grey literature articles.

Results

We abstracted 59 articles that related to interventions designed to change early marriage or age at first marriage (49 grey literature articles and 10 published peer-reviewed articles). The articles
contained interventions that focused primarily in Asia (n=32), Africa (n=25), and just two from Latin America.

**Intervention Characteristics**

The articles represented primarily rural interventions (n=37), although some were both rural and urban (n=16) and a minority of the interventions were urban only (n=6). The majority of interventions were community based (n=41), followed by school based (n=13), a mix of community and school based (n=4), and varied (multiple interventions reviewed n=1).

In terms of how early marriage was operationalized, the definitions were not consistent across interventions. This is a major limitation in making comparisons across interventions. The majority of studies had no clear definition of early marriage (n=26), while seventeen used “before age 18” as the definition, with reference to legal age of marriage, a number gave different specific age ranges (e.g. 13-16 years; 14-21 years) (n=7) or milestones such as by secondary school (n=1), during adolescence or childhood (n=6). The remaining interventions focused on being able to negotiate marriage age with parents (n=1) or age at first marriage (n=1). Eleven (19%) of the interventions include some type of randomization (e.g. schools, communities, or individuals).

The quality of the interventions ranged from 1 (worst) to 5 (best). Interventions that scores in the low range (n=11) often had limited information about the intervention and the activities, had broad goals rather than specifically targeting early marriage, or had no comparison group (or an inappropriate comparison group). Many of interventions fell in the moderate quality group (n=19), based on receiving a score of 3. The limitations of these interventions were similar to the lower scoring interventions, but less severe. In addition, limitations also included concern about the impact of the interventions on the targeted groups. Interventions receiving a score of 4 (n=21) had significant positive aspects that outweighed the limitations. Among noted positive aspects were basing the intervention on a theory of change, being well-planned and organized, or targeting a population rather than selected individuals. Limitations focused on ability of the intervention to create the desired change, high participant burden, or omitting what was thought to be a key component for changing early marriage, which was often girls’ education. Of the 59 early marriage intervention articles, eight scored a 5. These five had no major deficiencies and often benefitted from being rigorously designed and theoretically grounded.
Evaluation Characteristics

Of the 59 articles, 27 focused on quantitative assessments, 22 involved mixed methods (combination of qualitative and quantitative assessments) and 10 were purely qualitative. Most of the evaluations were a pre/post design (n=34), three were post-only, and the remaining (n=22) were other designs. The qualitative evaluations often included multiple evaluation methodologies within a single intervention study including focus groups (n=16), in-depth interviews (n=12), semi-structured interviews (n=6), key informant interviews (n=4) desk review of documents (n=4), case studies (n=3), and others including photovoice and sketching (n=3). Nearly all quantitative evaluations included some sort of survey data, and were analyzed with a range of techniques from simple percentages (n=23), multivariable regression analysis (n=13) and other more advanced techniques including difference –in-difference models and propensity score matching (n=6).

Like the intervention scoring, the evaluation scoring ranged from 1 (worst) to 5 (best). The lowest scoring evaluations (n=22) had few to no strengths, and serious flaws including no statistical analysis for quantitative studies, select samples (e.g., only those exposed to the intervention), no true measure of impact of the intervention, or no comparison group. Thirteen of the evaluations scored in the moderate range (score=3), based on have some strengths but significant limitations. Strengths often included clarity of the evaluation, appropriate sampling strategy and comparison group, and in-depth analyses. Limitations echoed those in the low scoring evaluation group. Nineteen of the evaluations scored in the high quality group, with strengths including strong design that allowed for measuring intervention impact, randomization, and pre-post comparisons. Weaknesses included lack of sufficient detail, lack of randomization, limited depth in the analysis, or inability to follow the same participants from baseline to follow up. Few studies (n=5) scored at the highest level for their evaluation. These studies had strong evaluation designs that could determine intervention impact, and few to no limitations. Several of the top-ranking studies (based on the intervention and evaluation scores) were conditional cash transfer programs.

Table 2 summarizes the high scoring interventions with a positive impact on early marriage.

Overall Assessment

The majority of the studies (n=37) found a positive impact of the intervention on some component of early marriage—practices, knowledge or attitudes. Few studies had mixed or contradictory results (n=9) or negative results (n=4). A final group of interventions had no results reported on early
marriage or had no data from which to draw conclusions (n=9). Among the studies with positive results, fewer than half (n=17) had interventions and evaluations that scored a four or above on both the quality of the intervention and the quality of the evaluation.

**Table 2: High Scoring Effective Interventions for Early Marriage Prevention**

<table>
<thead>
<tr>
<th>County</th>
<th>Age Range</th>
<th>Evaluation Methodology</th>
<th>Grey/Published</th>
<th>Key Intervention Components</th>
<th>Citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexico</td>
<td>13-19 at baseline</td>
<td>Quantitative</td>
<td>Grey</td>
<td>Mothers of enrolled girls and enrolled girls received cash transfers; health component with education and service provision for SRH services</td>
<td>Evaluating the impact of conditional cash transfer programs on adolescent decisions and marriage and fertility: The case of Opportunidades (Gulemetova-Swan, 2009)</td>
</tr>
<tr>
<td>India</td>
<td>14-24</td>
<td>Quantitative &amp; Qualitative</td>
<td>Grey</td>
<td>Youth groups were formed to provide youth with safe spaces; peer education; training in income-generating skills; reproductive health services and other health services were revised to be youth friendly; and youth contraceptive depot holders were trained and stocked.</td>
<td>Improving Youth Sexual and Reproductive Health through DISHA, an Integrated Program in India. (Kanesathasan et al., 2008)</td>
</tr>
<tr>
<td>Malawi</td>
<td>13-22 at baseline</td>
<td>Quantitative &amp; Qualitative</td>
<td>Published</td>
<td>Young women received school fees and conditional cash transfers to remain in school or to reenroll in school.</td>
<td>Cash or Condition? Evidence from a Cash Transfer Experiment (Baird et al., 2011)</td>
</tr>
<tr>
<td>Colombia</td>
<td>Secondary School</td>
<td>Quantitative</td>
<td>Published</td>
<td>Provide vouchers for low-income students to pay for (most of) private secondary school.</td>
<td>Vouchers for Private Schooling in Colombia: Evidence from a Randomized Natural Experiment (Angrist et al., 2002)</td>
</tr>
<tr>
<td>Kenya</td>
<td>Median 13.5 at baseline; 20.5 at</td>
<td>Quantitative</td>
<td>Grey</td>
<td>Free school uniforms and training teachers on how to deliver the national</td>
<td>Education, HIV and Early Fertility: Experimental Evidence</td>
</tr>
<tr>
<td>Country</td>
<td>Timeframe</td>
<td>Study Design</td>
<td>Study Type</td>
<td>Description</td>
<td>Reference</td>
</tr>
<tr>
<td>------------</td>
<td>-----------</td>
<td>--------------</td>
<td>------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>10-19</td>
<td>Quantitative</td>
<td>Grey</td>
<td>Intervention included social mobilization, non-formal education and livelihood training for out-of-school girls, or support to remain in school.</td>
<td>Evaluation Of Berhane Hewan: A Pilot Program To Promote Education &amp; Delay Marriage in Rural Ethiopia (Erulkar &amp; Muthengi, 2007)</td>
</tr>
<tr>
<td>Malawi</td>
<td>13-22</td>
<td>Quantitative</td>
<td>Grey</td>
<td>Young women received school fees and conditional cash transfers to remain in school or to reenroll in school.</td>
<td>The Short-Term Impact of a Schooling Conditional Cash Transfer Program on the Sexual Behavior of Young Women (Baird et al., 2010)</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>6-19</td>
<td>Quantitative</td>
<td>Grey</td>
<td>Parents received 15 kg of wheat if their primary-school-aged girls and boys attend school; monthly stipends deposited in a girl’s bank account if she attends secondary school.</td>
<td>The Effects of Schooling Incentive Programs on Household Resource Allocation in Bangladesh (Arends-Kuenning &amp; Amin, 2000)</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>12 at baseline</td>
<td>Quantitative</td>
<td>Published</td>
<td>Treatment group (orphan girls) received school support (in the form of fees, exercise books, uniforms, and other school supplies). Teachers were trained to monitor attendance and assist with attendance problems and were provided a modest cash incentive.</td>
<td>Supporting Adolescent Orphan Girls to Stay in School as HIV Risk Prevention (Hallfors et al., 2011)</td>
</tr>
<tr>
<td>Egypt</td>
<td>13-15</td>
<td>Quantitative &amp; Qualitative</td>
<td>Grey</td>
<td>Safe public spaces for girls; improve girls’ functional literacy; and improve local and national policymakers’ support for girl-friendly measures and policies.</td>
<td>Providing new opportunities to adolescent girls in socially conservative settings: The Ishraq program in rural Upper Egypt (Brady et al., 2007)</td>
</tr>
<tr>
<td>Country</td>
<td>Age Group</td>
<td>Research Method</td>
<td>Type</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>-----------</td>
<td>----------------</td>
<td>------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>11-15</td>
<td>Quantitative &amp; Qualitative</td>
<td>Grey</td>
<td>Life skills course; community service; and Parents attended monthly information meetings</td>
<td></td>
</tr>
<tr>
<td>Bangladesh</td>
<td>13-21</td>
<td>Quantitative &amp; Qualitative</td>
<td>Grey</td>
<td>Self-esteem and leadership skills; teach girls about gender and gender discrimination, health and nutrition; help girls acquire livelihood skills.</td>
<td></td>
</tr>
<tr>
<td>Bangladesh</td>
<td>Primary and Secondary school</td>
<td>Qualitative</td>
<td>Grey</td>
<td>Parents received 15 kg of wheat if their primary-school-aged girls and boys attend school; monthly stipends deposited in a girl’s bank account if she attends secondary school.</td>
<td></td>
</tr>
<tr>
<td>Kenya</td>
<td>Grades 5-8</td>
<td>Quantitative &amp; Qualitative</td>
<td>Grey</td>
<td>Teacher training on HIV/AIDS curriculum; debate &amp; essay competition on condoms and HIV prevention; and free school uniforms.</td>
<td></td>
</tr>
<tr>
<td>Ethiopia</td>
<td>10-19</td>
<td>Quantitative</td>
<td>Published</td>
<td>Social mobilization, non-formal education and livelihood training for out-of-school girls, or support to remain in school.</td>
<td></td>
</tr>
</tbody>
</table>
Case Studies

These case studies were selected to highlight a range of intervention types (school-based conditional cash transfer, a multi-component community-based intervention for out-of-school girls, and a school-based multi-component intervention). The evaluation techniques included a randomized control trial, and comparisons between baseline and endline surveys. All had a comparison (not intervention group).

The aim of this intervention (Hallfors et al., 2011) was test whether comprehensive support to keep orphan girls in school can reduce HIV risk. This was a conditional cash transfer program for rural Zimbabwean 12 year olds who had lost one or both parents (orphans). Using a randomized control trial design, orphan girls in the intervention arm received school support in the form of fees, exercise books, uniforms, and other school supplies. Teachers were trained to monitor attendance and assist with attendance problems among treatment girls, but not to provide other training or help. These teachers were provided a modest cash incentive. Girls in the intervention boarding schools received informal boarding arrangements. Both intervention and control schools received universal feeding program. Control girls (also orphans, in control schools) received no other support/intervention. Based on the results of multivariable logistic regression, girls in the intervention were almost 3 times less likely to be married. Participants were also less likely to drop out of school and to be absent from school, and more likely to wait for sex because of the consequences.
The aim of this multi-component intervention in rural Egypt (Brady et al., 2007) was to help out-of-school girls, ages 13-15, create community, continue to learn, and engage outside of their homes. The intervention, which was conducted in selected villages, included meeting four times a week for 30 months in youth centers or schools, in groups of around 25 girls each. Locally selected and trained female secondary school graduates, served as teachers, role models, and girls’ advocates. The evaluation included a qualitative component and baseline and endline surveys of the same girls. The longer the exposure to the intervention, the greater the decline between baseline and endline in the proportion preferring marriage before age 18. Full-term participants had the greatest decline, from 26 percent to 1 percent. Both groups experienced changes in attitudes about ideal age at marriage that were significantly different from the changes recorded among either the control group or the nonparticipants in program villages.
The goals of the DISHA (Development Initiative Supporting Healthy Adolescents), a community-based intervention for 14-24 year olds, and implemented in two poor states in India (Kanesathasan et al., 2008), were as follows:

- Increase access to modern family planning and sexual and reproductive health services for married and unmarried male and female youth aged 14-24 years;
- Delay marriage and childbearing among youth and strengthen their ability to make informed decisions about reproductive health matters, especially among females;
- Provide youth with alternatives to early marriage through livelihoods skills and options; and
- Build informed leadership and capacity for promoting youth sexual and reproductive health by addressing the interconnected health, economic, social and cultural issues that are central in their lives.

Implemented starting in June 2005, DISHA had several activities. Youth groups were formed to provide youth with safe spaces and the opportunity to learn health information, to learn communication, negotiation, and leadership skills, and to improve self-confidence. Peer education was conducted in groups and with individuals. Youth were provided with training in income-generating skills. Implementers attempted to develop income-generating opportunities for youth. Implementers built community support for youth SRH needs through individual and group meetings, mass communication, plays, information fares, mobile health clinics, sports events. Adult groups and youth-adult partnerships were formed. Reproductive health services and other health services were revised to be youth friendly. Youth contraceptive depot holders were trained and stocked. NGO capacity building activities and training were conducted throughout. Based on a comparison between baseline and endline surveys, girls and boys in intervention sites were more likely to know the correct legal age of marriage for girls, to believe that girls should wait until age 18 to marry, to believe that the ideal age of marriage is 18 or older. The proportion of girls married during the intervention that were below 18 at marriage declined from baseline to endline in intervention sites but not in control sites. The mean age of marriage increased by almost 2 years in the intervention sites between baseline and endline.
References (Cited)


Pande, Rohini, Kurz, Kathleen, Walia, Sunayana, MacQuarrie, Kerry, & Jain, Saranga. (2006). Improving Reproductive Health of Married and Unmarried Youth in India. ICRW.

* Indicates effective, high quality and abstracted for multiple outcomes

References (Full List)


Amin, Sajeda, & Sedgh, Gilda. (1998). Incentive Schemes for School Attendance in Rural Bangladesh (pp. 39).


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Wilder, Jennifer, Masilamani, Rekha, & Mathew, Annie. (2006). Reproductive Health of Young Adults in India: The Road to Public Health Pathfinder International.


World Bank. (2008). Implementation Completion and Results Report on a Credit in the Amount of SDR 96.4 Million (US 120.9 Million Equivalent) to the People’s Republic of Bangladesh for Female Secondary School Assistance Project II.
EARLY PREGNANCY

Search Strategy

We undertook a systematic search of published literature to identify interventions that address ‘early pregnancy’ in low- and middle-income countries (LMIC). We used six databases—PubMed (MEDLINE), Embase, PsycInfo, Cinahl Plus, Popline, and the Cochrane Database—in conducting this search. In building the search, we combined a list of terms that describe young people with a list of terms that describe pregnancy. We then combined this search with a list of lower- or middle-income country (LMIC) and regional search terms developed and used in the 2012 WHO Systematic Review on the same topic. We limited hits to those materials published in 2005 or later so as not to replicate the efforts already undertaken by the WHO Review. Detailed search terms for each database are available in the Appendix.

This initial search produced 27,376 hits about early pregnancy, which were stored using EndNote reference manager software. We then reviewed all 27,376 titles. After abstract review, and screening for interventions related to early pregnancy, we had 42 articles for abstraction.

We searched the ‘early pregnancy’ grey literature by first targeting organizations involved in prevention of early pregnancy—namely CARE, Population Council, Pathfinder International, and PSI—as well as the Google search engine were initially explored in the search for publications about early pregnancy interventions. In total, we ended up with 55 grey literature articles.

Results

We abstracted 97 articles that related to interventions designed to prevent early pregnancy (55 grey literature articles and 42 published peer-reviewed articles). The articles were somewhat evenly distributed between Africa (𝑛=44), Asia (𝑛=32), Africa (𝑛=31), and Latin America and the Caribbean (𝑛=22).

Intervention Characteristics

The articles represented primarily urban (𝑛=37) and rural (𝑛=30) interventions, although some were both rural and urban (𝑛=13), four were peri-urban/suburban, and a significant number were not
specified (n=13). The majority of interventions were community based (n=60), followed by school based (n=22), a mix of community and school based (n=13), and varied/other (n=2).

The age range of participants varied substantially across studies. While all selected studies included youth, ages 10-24, the age ranges were not consistent. The most common age ranges were 10-19 years, 15-24 years, and 10-24 years. Other interventions targeted young people based on school grade. Like for early marriage, with no consistent age for “early pregnancy”, interventions are difficult to compare. Thirty-eight (39%) of the interventions include some type of randomization (e.g. schools, communities, or individuals). There was no standard definition of “early pregnancy”.

We used a broad definition of early pregnancy interventions. We included interventions that targeted knowledge (n=42), attitudes (n=9) as well as behavior (n=114) (Note that some studies are double counted depending on outcomes). The most common goals of these interventions were to promote contraceptive use, including condoms (n=47), prevent pregnancy including unplanned pregnancies (n=27) and decrease sexual activity, increase age of sexual debut, and promote abstinence (n=23).

The quality of the interventions ranged from 1 (worst) to 5 (best). Interventions that scores in the low range (n=23) often had limited information about the intervention and the activities, the intervention was too short or limited, the intervention had too many components or concurrent activities to sort out what the intervention was actually impacting, unclear implementation strategy, or there was simply not enough intervention detail to draw conclusions on its strengths and weaknesses. Many of interventions fell in the moderate quality group (n=31), based on receiving a score of 3. The limitations of these interventions were similar to the lower scoring interventions, but less severe. In addition, limitations also included concern about the impact of the interventions on the targeted groups, missing key populations (e.g. out of school youth), implementation problems, and missing detail on training of those implementing the interventions. Interventions receiving a score of 4 (n=37) had significant positive aspects that outweighed the limitations. Among noted positive aspects were including relevant stakeholders in the design and implementation of the intervention, including a pilot phase or formative work, basing the intervention on a theory of change, and being well-planned and organized. Limitations focused on the difficulties of implementing a complex set of components simultaneously, difficulty sorting out the impact of multiple component interventions, concerns about duration of intervention to affect behavior change, and spill-over/contamination effects of the intervention to control groups or populations. Of the 98 early marriage pregnancy
articles, five scored a 5. These five had no major deficiencies and often benefitted from being rigorously designed and theoretically grounded.

Evaluation Characteristics

Of the 98 articles, the vast majority (n=74) were quantitative evaluations, 22 used both quantitative and qualitative assessments, and two involved only qualitative evaluations. The most common type of evaluation was a pre/post design (n=56), followed by post-only (n=20), pre, mid, and post (n=14), other designs (n=2). Three had an unclear design. Nearly all the quantitative evaluations included some sort of survey data, and were analyzed with a range of techniques from simple percentages (n=41), multivariable regression analysis (n=44) and other more advanced techniques including difference –in-difference models, life tables, and others (n=7).

Like the intervention scoring, the evaluation scoring ranged from 1 (worst) to 5 (best). The lowest scoring evaluations (n=44) had few to no strengths, and serious flaws including no to very limited data, no statistical analysis for quantitative studies, limited statistical power to make inferences, no measure of exposure to the intervention, no baseline measure (before intervention), no true measure of impact of the intervention, the evaluation did not match the intervention in terms of measured outcomes, or no comparison group. Thirty of the evaluations scored in the moderate range (score=3), based on having some strength, but significant limitations. Strengths often included pre-post design, a measure of exposure to the intervention, evaluation of the same participants, clarity of the evaluation, appropriate sampling strategy and comparison group, and longitudinal data. Limitations included concerns of spill-over/contamination, self-reported outcome data, limitations in the analyses, no baseline (post-test only), and lack of randomization. Twenty of the evaluations scored in the high quality group, with strengths including strong designs, accounting for exposure levels, sophisticated analyses, randomization, and appropriate control groups. Weaknesses included needing more data to allow for stronger conclusions, loss-to-follow up in longitudinal studies, inability to control for contamination in the analysis, and insufficient detail on sampling and randomization. Few studies (n=4) scored at the highest level for their evaluation. These studies had strong evaluation designs that could determine intervention impact, and few to no limitations.

Overall Assessment

The majority of the studies (n=62) found a positive impact of the intervention on some component of early pregnancy—knowledge, attitudes or behavior. A substantial number of studies had mixed or
contradictory results (n=23), and just a handful (n=9) had negative results (n=4). A final group of interventions had no results reported on early pregnancy or had no data from which to draw conclusions (n=3). Among the studies with positive results, few (n=14) had interventions and evaluations that scored a four or above on both the quality of the intervention and the quality of the evaluation.

Table 3 summarizes the high scoring interventions with a positive impact on early pregnancy prevention.

**Table 3: High Scoring Effective Interventions for Early Pregnancy Prevention**

<table>
<thead>
<tr>
<th>County</th>
<th>Age Range</th>
<th>Evaluation Methodology</th>
<th>Grey/Published</th>
<th>Key Intervention Components</th>
<th>Citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethiopia</td>
<td>10-19</td>
<td>Quantitative</td>
<td>Grey</td>
<td>Social mobilization, non-formal education and livelihood training for out-of-school girls, or support to remain in school.</td>
<td>Evaluation Of Berhane Hewan: A Pilot Program To Promote Education &amp; Delay Marriage in Rural Ethiopia (Erulkar &amp; Muthengi, 2007)</td>
</tr>
<tr>
<td>Malawi</td>
<td>13-22</td>
<td>Quantitative</td>
<td>Published</td>
<td>Cash transferred to households monthly on the condition that the selected girl in the household attends school</td>
<td>The Short-Term Impact of a Schooling Conditional Cash Transfer Program on the Sexual Behavior of Young Women (Baird et al, 2010)</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>10-19</td>
<td>Quantitative</td>
<td>Published</td>
<td>Social mobilization, non-formal education and livelihood training for out-of-school girls, or support to remain in school.</td>
<td>Evaluation of Berhane Hewan: A Program To Delay Child Marriage in Rural Ethiopia Ethiopia (Erulkar 2009)</td>
</tr>
<tr>
<td>Kenya</td>
<td>10-24</td>
<td>Quantitative</td>
<td>Published</td>
<td>Health education program; youth-friendly reproductive health information and service environment</td>
<td>Behavior Change Evaluation of a Culturally Consistent Reproductive Health Program for Young Kenyans (Erulkar, 2004)</td>
</tr>
<tr>
<td>Uganda</td>
<td>14-20</td>
<td>Quantitative</td>
<td>Grey</td>
<td>Life skills curriculum and vocational training in teen community centers.</td>
<td>Empowering Adolescent Girls: Evidence from a Randomized Control Trial in Uganda (Bandiera et al., 2011)</td>
</tr>
<tr>
<td>Kenya</td>
<td>18-24</td>
<td>Quantitative</td>
<td>Published</td>
<td>Participants who came to the health center looking for oral contraceptives or injectables</td>
<td>Preventing unintended pregnancy among young women in Kenya: prospective</td>
</tr>
<tr>
<td>Country</td>
<td>Age Range</td>
<td>Study Type</td>
<td>Year</td>
<td>Summary</td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>-----------</td>
<td>------------</td>
<td>------</td>
<td>---------</td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>15-24</td>
<td>Quantitative</td>
<td>Published</td>
<td>Community-based to build awareness and to offer counseling and services related to sexuality and reproduction. were offered a choice between their initially desired method or a subdermal implant. Cohort study to offer contraceptive implants (Hubacher et al, 2012).</td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>14-24</td>
<td>Quantitative and Qualitative</td>
<td>Grey</td>
<td>Youth groups were formed to provide youth with safe spaces; peer education; training in income-generating skills; reproductive health services and other health services were revised to be youth friendly; and youth contraceptive depot holders were trained and stocked. Improving Youth Sexual and Reproductive Health through DISHA, an Integrated Program in India. (Kanesathasan et al, 2008)</td>
<td></td>
</tr>
<tr>
<td>Senegal</td>
<td>15-22</td>
<td>Quantitative</td>
<td>Grey</td>
<td>Adult sensitization, peer educators; IEC activities; training of trainers; youth-friendly services; and a school-based RH curriculum. Improving the Reproductive Health of Adolescents in Senegal (Diop et al., 2004)</td>
<td></td>
</tr>
<tr>
<td>Bangladesh</td>
<td>13-19</td>
<td>Quantitative</td>
<td>Grey</td>
<td>Reproductive health curriculum (in-school and out of school with peer educators); youth friendly services. Improving Adolescent Reproductive Health in Bangladesh (Bhuiya, 2004)</td>
<td></td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>10-24</td>
<td>Quantitative</td>
<td>Published</td>
<td>6-month mass media campaign. Promoting Sexual Responsibility Among Young People in Zimbabwe (Kim et al., 2001)</td>
<td></td>
</tr>
<tr>
<td>Kenya</td>
<td>15 on average</td>
<td>Quantitative</td>
<td>Grey</td>
<td>Education program on risk reduction. Do teenagers respond to HIV risk information? Evidence from a field experiment in Kenya (Dupas, 2009)</td>
<td></td>
</tr>
<tr>
<td>Kenya</td>
<td>12-14</td>
<td>Quantitative</td>
<td>Published</td>
<td>Local adult female “community visitor” was assigned and was required to visit their households at least monthly and schools weekly to monitor their school attendance. Could use Keeping Adolescent Orphans in School to Prevent Human Immunodeficiency Virus Infection: Evidence From a Randomized Controlled Trial in Kenya (Cho et al, 2011)</td>
<td></td>
</tr>
</tbody>
</table>
Of the 14 high quality interventions and evaluations, six were from the peer-reviewed literature and the remaining 8 were from the gray literature. Key organizations involved in the conduct of the intervention and evaluation of the gray literature interventions were CEDPA, ICRW, and Population Council.
Case Studies

Below we describe the intervention, evaluation and results from three studies that represent high quality interventions and evaluations and had a positive impact on early pregnancy. We chose a range of designs including a multicomponent community based intervention focused on youth-friendly services, a school and community based multicomponent intervention, and a conditional cash transfer intervention. Evaluation designs were baseline/endline assessments in all three studies. The analytic techniques included multivariable logistic regression and difference-in-difference

The aim of this study (Lou et al, 2004) was to evaluate the effectiveness of a youth-friendly intervention in promoting safe sex behavior — contraception and condom use among unmarried young people aged 15–24 years in Shanghai, China. A youth-friendly intervention comprised of three key activities intended to build awareness and to offer counseling and services related to sexuality and reproduction among unmarried youth. The first activity focused on building awareness, including disseminating educational materials, playing instructional videos, giving lectures, and conducting small group activities to improve reproductive health knowledge and awareness of services. The second activity focused on the provision of counseling. The final activity was designed to improve contraceptive services. Using an intervention and control group design, the proportions reporting regular contraceptive use and condom use in the intervention group were much higher than that in the control group (p < .001). After adjusting for demographic factors, the subjects from the intervention group were 14.58 (OR) times as likely to use contraceptives at onset of intercourse as those from the control group (95%CI: 8.55– 24.87, p < .0001). Similar results were found for both females and males.
The overall objective of this study (Bhuiya, 2004) was to determine the feasibility and effectiveness of a systematic intervention to foster a supportive environment to address the problems faced by adolescents aged 13-19 years by making existing health services more accessible to them and providing them with reproductive health education that will enable them to manage their reproductive health in urban Bangladesh. There were multiple components to the intervention: 1) a 17-session reproductive health curriculum was designed and delivered by 24 teachers in 8 schools, after a 5 day training; 2) youth between 21 and 28 years with 14 years of schooling were recruited as “facilitators” to educate out-of-school adolescents aged 13-19 years on reproductive health issues; 3) peer educators, known as health ambassadors, were also engaged in the community as well as in the schools during the later part of the project period; 4) clinical service providers were trained in April 2000 on being welcoming, maintaining non-judgmental attitudes, and offering minimal waiting time, privacy, confidentiality and affordable services. At the same time non-clinical service providers of the clinics were oriented on adolescent reproductive health service needs and friendly services. Using baseline and endline comparisons, contraceptive awareness was found to be significantly higher in the endline compared to the baseline. Knowledge of at least three risks of early pregnancy were significantly higher in the endline for the two intervention sites (AOR=3.91 for site A, AOR=1.97 for site B). Among those exposed to the intervention, in school and out of school youth were significantly more likely to agree that unmarried and married adolescents can use contraception (AOR=1.67 and AOR=1.41 respectively).
The aim of this intervention (Baird 2010) was to examine the effects of a conditional cash program (with only school attendance used as a condition to receive the transfers) on self-reported sexual behavior among 13-22 year olds in Malawi. The intervention transferred cash to households monthly based on whether the selected girl in the household attended school at least 75% of the time during the month. Both the intervention and control groups had two sub-groups—school-going girls and dropouts. In the intervention arm, $10/a month for 10 months was transferred to the household (split between the girl herself and the girl’s guardian) conditioned on the girl attending school for 75% of the time during the month; secondary school fees were paid directly to the school upon confirmation of enrollment. The control group had no intervention. For girls in the intervention arm, who were out of school at baseline, the probability of becoming pregnant declined by more than 30%. In addition, the incidence of the onset of sexual activity was 38% lower among all program beneficiaries than the control group. Baseline dropouts among the treatment group are 5.1 percentage points less likely to have become pregnant over the past year, a reduction in more than 30% that is statistically significant at the 5% level.
References (Cited)


* Indicates effective, high quality and abstracted for multiple outcomes
References (Full List)


Institut de Recherche et des Etudes des Comportements (IRESCO). (2002). Peer education as a strategy to increase contraceptive prevalence and reduce the rate of STIs/HIV among adolescents in Cameroon.


Pande, Rohini, Kurz, Kathleen, Walia, Sunayana, MacQuarrie, Kerry, & Jain, Saranga. (2006). Improving Reproductive Health of Married and Unmarried Youth in India.


Exploration of Young People’s Sexual and Reproductive Health Assessment Practices


Wilder, Jennifer, Masilamani, Rekha, & Mathew, Annie. (2006). Reproductive Health of Young Adults in India: The Road to Public Health.

NUMBER OF CHILDREN

Search Strategy

We undertook a systematic search of published literature to identify interventions that address ‘number of children’ in low- and middle-income countries (LMIC). We used six databases—PubMed (MEDLINE), Embase, PsycInfo, Cinahl Plus, Popline, and the Cochrane Database—in conducting this search. In building the search, we combined a list of terms that describe young people with a list of terms that describe the number of children during young adulthood including parity, and repeat pregnancy. We then combined this search with a list of lower- or middle-income country (LMIC) and regional search terms. Detailed search terms for each database are available in the Appendix.

This initial search produced 1,595 hits about limiting the number of children, which were stored using EndNote reference manager software. We then reviewed all 1,592 titles. This title screening reduced the original list of 1,592 hits down to 32 articles that seemed relevant. Of the 32, 6 published articles included interventions to decrease the number of children during young adulthood, and were included for abstraction.

We searched the ‘number of children’ grey literature by searching organizations that are involved in preventing repeat pregnancies or births. ICRW, CARE, Population Council, Pathfinder—as well as the Google search engine. A total of 5 documents in the grey literature were identified as eligible.

Results

We abstracted 11 articles that related to interventions designed to prevent repeat pregnancies and births (5 grey literature and 6 published peer-reviewed articles). The articles contained interventions that focused primarily in Asia (n=7), Latin America (n=3) and just one from Africa.

Intervention Characteristics

The articles represented a relatively even mix between rural interventions (n=4), urban interventions (n=3), or both rural and urban (n=3). The majority of interventions were community based (n=7) and the remaining (n=4) were based in facilities—clinics or hospitals.
The interventions included in this section represent several different ways to conceptualize limiting the number of children. Some interventions targeted preventing repeat pregnancies and/or abortions \((n=2)\), most considered contraceptive uptake or use following a birth or abortion \((n=5)\), contraceptive uptake for those with a child \((n=2)\) and contraceptive uptake in couples \((n=2)\). Age ranges varied considerably across studies. Five of the eleven of the interventions include some type of randomization (e.g. communities, facilities or individuals).

The quality of the interventions ranged from 1 (worst) to 5 (best). Interventions that scores in the low range \((n=2)\) failed to explain how intervention was better than the standard of care or provided very limited detail on the intervention. A majority of the interventions fell in the moderate quality group \((n=5)\), based on receiving a score of 3. The limitations of these interventions included potential contamination in the control group, poor monitoring of the intervention implementation, and too many components to sort out “effective”. Interventions receiving a score of 4 \((n=3)\) had significant positive aspects that outweighed the limitations. Among noted positive aspects were community engagement in the intervention design, thorough training of providers, and a good control group. Limitations included not accounting for or describing existing services in the intervention area, being resource intensive, and sorting out the impact of multicomponent interventions. Of the 11 number of children intervention articles, one scored a 5. This intervention had no major deficiencies and benefitted from being rigorously designed.

Evaluation Characteristics

All 11 articles were quantitative assessments. Most of the evaluations were a pre/post design \((n=6)\), three were post-only, and the remaining \((n=2)\) were evaluations that included pre, mid and post. Nearly all quantitative evaluations included some sort of survey data, and were analyzed with a range of techniques from simple percentages (with and without significance testing) \((n=7)\), multivariable regression analysis \((n=3)\) and other more advanced techniques including difference –in-difference models \((n=1)\).

Like the intervention scoring, the evaluation scoring ranged from 1 (worst) to 5 (best). The lowest scoring evaluations \((n=5)\) had few to no strengths, and serious flaws including poorly done statistical analyses, no clear measure of exposure to the intervention, and serious limitations with the control group. Two of the evaluations scored in the moderate range (score=3), based on have some strengths but significant limitations. Strengths often included a good design, and randomization, while
limitations echoed those in the low scoring evaluation group. Two scored in the high quality group, with strengths including strong design (prospect cohort data), large sample size, and multiple data points. Weaknesses included lack of sufficient detail and concerns about blinding of the interviews to the assignment of participants. Two studies scored at the highest level for their evaluation. These studies had strong evaluation designs that were able that followed the same individuals over time and used rigorous statistical methods.

**Overall Assessment**

The majority of the studies (n=8) found a positive impact of the intervention on some component of preventing repeat pregnancies including uptake of contraception, and avoiding repeat pregnancies. Few studies had mixed or contradictory results (n=2) or negative results (n=1). A final group of interventions had no results reported on avoiding having multiple children during adolescence from which to draw conclusions (n=1). Among the studies with positive results, only two had interventions and evaluations that scored a four or above on both the quality of the intervention and the quality of the evaluation. Below we describe the intervention, evaluation and results from these two studies that represent high quality interventions and evaluations and had a positive impact on limiting the number of children.

Table 4 summarizes the high scoring interventions with a positive impact on limiting the number of children.

**Table 4: High Scoring Effective Interventions for Limiting the Number of Children**

<table>
<thead>
<tr>
<th>County</th>
<th>Age Range</th>
<th>Evaluation Methodology</th>
<th>Grey/Published</th>
<th>Key Intervention Components</th>
<th>Citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jamaica</td>
<td>15-20</td>
<td>Quantitative</td>
<td>Published</td>
<td>Classroom instruction and support for adolescent mothers; skills training and job placement assistance. Acceptance and use of a family planning method is a requirement for program participation.</td>
<td>The Impact of the Women’s Centre of Jamaica Foundation Programme for Adolescent Mothers on Repeat Pregnancies (Drayton et al, 2000)</td>
</tr>
<tr>
<td>India</td>
<td>15-19</td>
<td>Quantitative</td>
<td>Published</td>
<td>An educational campaign led by community workers (of different types: auxiliary</td>
<td>Increasing postpartum contraception in rural India: Evaluation of a community-based behavior change</td>
</tr>
</tbody>
</table>
The two high quality interventions and evaluations for prevent repeat pregnancy or multiple children during young adulthood were located in the peer-reviewed literature.

Case Studies

As we only located two high quality studies with an impact on repeat pregnancy, we featured both in our case studies. One was a multicomponent program based out of a clinic and the other was a community-based intervention. Both had an intervention group and a comparison or control group—one used a post-only design while the other had a baseline/endline design. Multivariable logistic regression and ANOVA were used to analyze the impact of the interventions.
The overall aim of this study (Drayton et al, 2000) was to assess the effectiveness of the programs of the Women’s Centre of Jamaica Foundation (WCJF) on adolescent mothers, ages 15-20. The study was a retrospective cohort study following women who had a first pregnancy in 1994 and then sought to determine the risk of another pregnancy by program participation. Program participation was contingent on women accepting a family planning method. The program included classroom instruction and support along with job skills training and placement. The evaluation compared participants to non-participants at the end of the intervention. The relative risk of one or more repeat pregnancies was 45% (CI 0.22-0.91) lower for program participants compared to non-participants.

Following young women, ages 15-19, this study (Sebastian et al, 2012) sought to assess whether an intervention to raise awareness about the advantages of birth spacing for the health of mother and child would promote postpartum contraception in rural India. The intervention groups were exposed to the educational campaign, described below and the comparison groups received only the government run health program. The intervention consisted primarily of an educational campaign, led by community health workers. Women in the intervention groups were significantly more likely to know the healthy spacing messages four months postpartum than were those in the comparison group (Odds Ratio=2.1). The results also suggest that compared with women in the comparison group, women exposed to the educational campaign were significantly more likely to know of at least two healthy spacing messages (Odds Ratio=1.5). After multivariable adjustment, women in the intervention group were significantly more likely to be using a contraceptive method postpartum (Odds Ratio=3.5).
References (Cited)


References (Full List)


Wilder, Jennifer. (2006). Reproductive Health of Young Adults in India: The Road to Public Health *Pathfinder.*

Sexually Transmitted Infections (STIs) including HIV

Search Strategy

We undertook a systematic search of published literature to identify interventions that address ‘STIs including HIV’ in low- and middle-income countries (LMIC). We used six databases—PubMed (MEDLINE), Embase, PsycInfo, Cinahl Plus, Popline, and the Cochrane Database—in conducting this search. In building the search, we combined a list of terms that describe young people with a list of terms that describe sexually transmitted infections (STI) including human immunodeficiency virus (HIV). We then combined this search with a list of lower- or middle-income country (LMIC) and regional search terms. We further limited the search to only include those studies that included terms for evaluation, assessment and impact. Detailed search terms for each database are available in the Appendix.

This initial search produced 22,076 hits about preventing STIs, which were stored using EndNote reference manager software. Given the large numbers, we decided to focus solely on interventions that targeted a behavior change, rather than including all interventions that only targeting changing knowledge and attitudes as outcomes. We then reviewed all 22,076 titles. This title screening reduced the original list of down to 622 articles that seemed relevant and provided evidence of the impact of the intervention. Of these 56, published articles met our criteria.

We searched the ‘STIs’ grey literature by searching organizations that are involved in preventing STIs and HIV including PSI, PATH, Pathfinder and Population Council—as well as the Google search engine. A total of 64 documents in the grey literature were identified as eligible.

Results

We abstracted 120 articles that related to behavior change for STI prevention (64 grey literature and 56 published peer-reviewed articles). The articles contained interventions that focused primarily in Africa (n=56), Latin America (n=32) and Asia (n=32). We had two interventions that were conducted in multiple geographic regions.
Intervention Characteristics

There interventions were carried out in primarily urban areas (n=53), or a mix between rural and urban areas (n=39). Some were just conducted in rural areas (n=19), while nine did not clearly state whether the areas were rural or urban. The articles represented primarily community-based interventions (n=62), followed by school-based interventions (n=39), both community and school-based (n=16) and 4 that took place in other or unknown venues.

The interventions included in this primarily focus on HIV prevention, although some of the interventions included a broader range of STIs including human papilloma virus (HPV). We focused on interventions that targeted behaviors—condom use (n=88), abstinence or delaying initiation of sex (n=36), limiting number of sexual partners (n=33), limiting risky sexual behavior (n=13), and HIV/STI testing (n=19). Forty-one of interventions included some type of randomization (e.g. communities, facilities or individuals).

The quality of the interventions ranged from 1 (worst) to 5 (best). Interventions that scores in the low range (n=26) failed to explain provide adequate detail of the intervention itself, omitted a key population (e.g. out of school youth), or was too broad to provide evidence of “what worked”. Many of the interventions fell in the moderate quality group (n=37), based on receiving a score of 3. The limitations of these interventions included unclear match between intervention activities and potential outcomes, issues of attributing any observed changes to the intervention, limited data to track whether the intervention was implemented well, concern about spillover or contamination, poor measures of exposure, and too many components to sort out what is “effective”. Interventions receiving a score of 4 (n=49) had significant positive aspects that outweighed the limitations. Among noted positive aspects were involvement of peer educators, having a theoretical basis, engaged relevant stakeholders, relied on a significant formative component, employed a multitude of strategies to change behavior, community engagement in the intervention design, and included both in-school and out-of-school youth. Limitations included not including a control group, concerns about contamination of the control group, difficulty sorting out the impact of multicomponent interventions, and limited duration of the intervention. Of the 123, eight had interventions that scored a 5. These interventions had no major deficiencies and benefitted from factors such as being rigorously designed, theoretically driven, and comprehensive in terms of providing a full complement of services.
Evaluation Characteristics

The vast majority (n=95) were quantitative assessments, followed by mixed methods (n=24) and then only one was qualitative. Most of the evaluations were a pre/post design (n=81), followed by post-only (n=19), pre-mid/during and post (n=15), and the remaining (n=5) were a variety of different combinations such as mid-post, pre only, and mid-post designs. Nearly all the quantitative evaluations included some sort of survey data, and were analyzed with a range of techniques from simple percentages (with and without significance testing) (n=35), multivariable regression analysis (n=79) and other more advanced techniques including difference –in-difference models and propensity score matching (n=4). Two used unclear analytic techniques.

Like the intervention scoring, the evaluation scoring ranged from 1 (worst) to 5 (best). The lowest scoring evaluations (n=28) had few to no strengths, and serious flaws including not enough detail on the evaluation, poor or no statistical analyses, no clear measure of exposure to the intervention, high loss-to-follow up rates without accounting for them in the analyses, no baseline data, no control or comparison group. The majority of the interventions scored a three (n=50), in the moderate range (score=3), based on having some strengths, but significant limitations. Strengths often included having a good set of comparisons (pre-post, exposed-unexposed), longitudinal data, large sample size, good sampling strategy, and randomization. Limitations echoed those in the low scoring evaluation group but also included limited exposure measures (no accounting for how much exposure participants got), concerns about contamination in the control group, failure to account for selection into the intervention group, and difficulty showing attribution of change to the intervention. Thirty-four scored in the high quality group, with strengths including strong design (prospect cohort data), large sample size, appropriate and sometimes innovative statistical methods, and multiple data points, and accounting for “dose” of exposure to the intervention. Weaknesses included insufficient data or populations to show attribution, few sexually active participants, limited power to detect statistically significant differences, and some detail missing about sampling, exposure, and comparison groups. Eight scored at the highest level for their evaluation. These studies had strong evaluation designs, often including randomization, that were able to show the impact of the intervention.
Overall Assessment

Of all the interventions, nearly the same number showed uniformly positive results (n=39) as negative or no results (n=38). The majority of the interventions had mixed outcomes (n=51) and one had no outcomes related to STI prevention. Among the studies with positive results, only nine had interventions and evaluations that scored a four or above on both the quality of the intervention and the quality of the evaluation. It is important to note that for behaviors related to STIs, many focus on change that is based purely on self-reported data—for example, condom use. Given that many programs emphasize the importance of consistent condom use, it is difficult to know how much of condom use is influenced by social desirability bias.

Below we describe the intervention, evaluation and results from three studies that represent high quality interventions and evaluations and had a positive impact on preventing STIs.

Table 5 summarizes the high scoring interventions with a positive impact on preventing STIs.

Table 5: High Scoring Effective Interventions for Preventing STIs

<table>
<thead>
<tr>
<th>County</th>
<th>Age Range</th>
<th>Evaluation Methodology</th>
<th>Grey/Published</th>
<th>Key Intervention Components</th>
<th>Citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senegal</td>
<td>10-19</td>
<td>Quantitative</td>
<td>Grey</td>
<td>Adult sensitization, peer educators; IEC activities; training of trainers; youth-friendly services; and a school-based RH curriculum</td>
<td>Improving the Reproductive Health of Adolescents in Senegal (Diop et al., 2004)</td>
</tr>
<tr>
<td>Uganda</td>
<td>10-19</td>
<td>Quantitative</td>
<td>Grey</td>
<td>A mass multimedia program</td>
<td>Helping youth prevent HIV: An evaluation of the straight talk program in Uganda (Adamchak, 2007)</td>
</tr>
<tr>
<td>South Africa</td>
<td>16-24</td>
<td>Quantitative</td>
<td>Grey</td>
<td>Entertainment-education television drama</td>
<td>Tsha Tsha: Key findings of the evaluation of episodes 1-26 (Kelly, 2005)</td>
</tr>
<tr>
<td>Zambia</td>
<td>13-19</td>
<td>Quantitative</td>
<td>Published</td>
<td>A mass multimedia program</td>
<td>Reducing the risk of HIV transmission among adolescents in Zambia: Psychosocial and behavioral correlates of viewing a risk-reduction media campaign</td>
</tr>
</tbody>
</table>
Of the nine high quality interventions and evaluations that had a positive impact on behavior change related to STIs/HIV, four were from the peer-reviewed literature and the remaining five were from the gray literature. The organizations involved in the conduct of these interventions and evaluations included the Center for Communication Programs, Population Council and PSI.

Case Studies

The selected case studies for behavior change related to STIs including HIV included a multimedia campaign, a multicomponent community- and school-based intervention, and a community-based intervention. The evaluation designs included matching exposed and unexposed individuals, three different communities with varying levels of intervention (community, community+ school and control), and a community-level randomized design. Analytic techniques included multivariable regression, propensity score matching, and adjusted means.
“Tsha-Tsha” (Kelly, 2005) was a South African entertainment-education television drama series of 26 episodes focusing on young people and dealing with love, sexuality and relationships in a world affected by HIV/AIDS. The impact of this drama series was evaluated using both quantitative and qualitative methodologies. The quantitative approach was to use propensity score matching between exposed and unexposed 16-24 year olds. In addition, focus group discussions were conducted. Compared with controls, there was a 16% statistically significant difference in number of respondents who decided to be faithful to partner, and a 12% difference in those who remained abstinence for a month or more. There was also a 4% difference in those who decided to have sex less often, and a 6% difference was observed in those who had VCT to find out HIV status.

The overall aim of this multipronged intervention, in urban Senegal (Diop, 2004) was to determine the feasibility, cost, and impact of multiple interventions to improve reproductive health outcomes among 10-19 year old Senegalese adolescents. The intervention was into two sites and the sites had different interventions. In one, the intervention included adult sensitization, peer educators organized classes covering the 17 sessions of the life skills curriculum, IEC activities including radio programs, training of trainers, and making facilities adolescent-friendly at the community level. The second intervention site included the interventions described above and a school-based reproductive health curriculum. The evaluation, based on a quasi-experimental design (randomization at the community level) focused on sexual debut, sexual activity (secondary abstinence), protected first sex, and condom use among 10-19 year olds. Adolescents in school and exposed to the intervention were less likely to report sex in the prior six months than those either in school and not exposed to the intervention or those not in school. When compared with adolescents in the control site, adolescents in the intervention sites were more likely to adopt secondary abstinence (limiting sexual activity following sexual initiation) and had fewer sexual partners.
MEMA kwa Vijana (Larke, 2010), a community-based health intervention, was conducted in rural Tanzania between 1998-2001. Communities were assigned to intervention or control based on cluster randomization. Health workers from the intervention arm were trained in the provision of youth-friendly health services, as part of a package of interventions. The intervention had four major components: (i) reproductive health education in primary school; (ii) the provision of youth-friendly sexual and reproductive health services; (iii) community-based condom promotion and distribution; and (iv) community-wide activities. The evaluation was designed to assess the impact of the health services component of the intervention using several process and impact indicators on young people. By the end of the study period (2001) significantly more males, and marginally more girls, attended clinics for STI symptoms in intervention communities than comparison communities. Few condoms were distributed, although significantly more were distributed in intervention facilities. Intervention health workers tended to be less judgmental and provided more comprehensive information than health workers in the non-intervention communities.

References (Cited)


* Indicates effective, high quality and abstracted for multiple outcomes
References (Full List)


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PSI. (2011b). Estudio TRaC de VIH/SIDA: Evaluando comportamientos saludables en Jovens de lost departamentos de Chinandega, Leon y Managua, Nicaragua. 3a Ronda.


RECOMMENDATIONS FOR FUNDERS

• **Insist on High Quality Evaluation:** We strongly recommend that funders and implementers focus on developing high quality evaluation and monitoring activities as part of the study design—before implementation. If this is not feasible, evaluations can be implemented during the intervention but limits inferences about effectiveness. It is essential to match the evaluation to the intervention. This focus will prevent the field from replicating ineffective interventions repeatedly. In addition it will allow for funders to show “what works” and replicate successful interventions in different settings. Ideally evaluations will include measures of cost (a significant gap in the interventions found for this project), fidelity (was the intervention implemented effectively), measures of exposure to the intervention when control groups are unavailable, costs for dissemination of results (meeting costs, publication), and attention to the feasibility of scale up. In the current review, none of the effective high quality interventions and evaluations included cost data.

• **Create a Youth Sexual and Reproductive Health e-Inventory:** Our searches for literature were relatively easy for the published literature, but for the gray literature the searches required “snowball” approaches or reference tracing. We were familiar with some of the NGOs in the field so we could use connections to facilitate the location of the gray literature. But even as we complete this report, more literature is emerging. It is worthwhile developing a virtual library of resources on interventions, by outcome, for the field to use as the basis for deciding on effective interventions. This e-inventory would require updates and maintenance, but once in place, researchers and organizations would be interested in making sure their projects are reviewed and added to the inventory.

• **Consider multiple outcomes or proxy indicators:** For many sexual and reproductive health outcomes, there are “proximate” measures of impact. This is particularly important for interventions where the “outcome” of interest is several years away from the intervention. While the push (and rightfully so) is to change the targeted behaviors, decrease early marriage, early pregnancy, repeat pregnancy or STIs, the behavior change is often an important precursor to these outcomes. Interventions need to consider increasing age at first sex, improving contraceptive use, and condom use. These overlooked outcomes are seen more broadly as less appealing and less marketable—but this may be changing. For example, given
the global interest and investment in FP2020, evidence about increasing contraceptive use (both uptake and continuation) will be an important area for young people. In addition, it is important to look at the potential gap between the intervention and the intended outcome. For example, if a sexuality education curriculum is presented to 11 year olds and the goal is to prevent STIs, the gap between the “exposure” to the intervention and when the young person may engage in the behavior may be significant especially in settings where sexual debut is later. Theories of behavior change and logic models can be helpful in this process. Below is a list of proxy outcomes that can be considered in future interventions:

- Age at first sex; ever had sex; sexual frequency
- Number of sexual partners (lifetime history; concurrent or multiple sexual partners; age difference with sexual partner)
- Contraceptive use; condom use (ever, at first sex, current use and consistent use; method type)
- Pregnancy (ever pregnant; ever had an abortion (spontaneous and/or induced)
- Pregnancy intentions (particularly important for number of children or repeat pregnancy

• Intervention Fidelity—the ‘Missing Link’? One of the limitations in nearly every evaluation in the field is that we have little to no evidence on whether the designed intervention was implemented as designed. Process measures such as exposure to the intervention, or the degree of exposure (e.g. how many messages were heard on the radio) are often missing from the evaluations. Process measures as well as measures of exposure may help elucidate why what may have been a well-designed, theoretically driven and even piloted intervention, fails to show impact. It is also import to assess whether the impact can be credibly ascribed to the intervention.

• Sustainability and Scale Up—Easy does it?: Questions of whether effective interventions are sustainable and scalable require a range of data from political will, community buy-in, evidence of effectiveness as well as cost and others. By sustainable we mean whether the intervention could continue without the resources of the donors. For example, we found that conditional cash transfer programs, which provide economic incentives have been effective for
several YPSRH outcomes; however, most communities and governments cannot afford to maintain these programs without external support. Evaluations that include cost data will help determine what is needed for sustainability.

Scalability, or the ability to expand beyond the target group for the intervention, can often be accomplished with additional resources (financial and human capital) but attention to the quality (and fidelity) of the intervention requires careful attention and continued monitoring and evaluation. We did not find evidence in this review that programs are looking at the possibility of scale up. Another way to think about scale up is moving from a pilot to a full-fledged intervention (e.g. Berhane Hewan is a good example). This may be common, but there was limited evidence of pilot studies in our searches. For interventions to be adopted more broadly than the original intervention sites with external funding, it is often necessary to have local (or national) champions as well as the capacity to carry out the intervention independently.

- **Cost—The Final Frontier?:** A very small minority of interventions and evaluations included cost data. Most of the interventions and evaluations that included cost data were conditional cash transfers—primarily because this is an economic intervention model. Calculating cost per participant is usually part of the conditional cash transfer intervention and evaluation designs. In order assess whether the intervention provides “enough bang for the buck” it is essential to consider all costs involved in the intervention from training costs to participant incentives. There are often intervention inputs that have hidden costs—for example, an after school intervention can be cost-neutral for meeting space, may have “hidden costs” that include costs for staff to work a longer day or the cost to provide electricity to the building. As discussed under scale up, the cost for the same intervention may vary from setting to setting. Cost data is often easier to calculate when commodities (e.g. contraceptives or condoms) are the focus of the intervention. In addition, collecting detailed cost data can often been burdensome for project staff and needs to be included as part of the evaluation from the beginning of the project.
• **Don’t Hide Failure!**: This report focuses on interventions that were well conducted, well evaluated, and had a positive impact on the outcome of interest. It is important to really understand well-designed interventions and evaluations where the intervention did not succeed and why they failed to change the outcomes of interest. In addition, there is significant value in learning more about which interventions were unsuccessful (especially if well-implemented) so the field doesn’t continue to replicate them. In addition, there are many interventions that were well implemented and either poorly evaluated (lacked a control group, poor measures of intervention impact) or not evaluated at all. Without evidence of impact, the group that supported the intervention cannot determine the impact of the intervention.

Lessons Learned from the Four Outcomes

• **Define the outcome**: It is essential to develop clear definitions of the outcome under study. For example, “early” pregnancy or “early” marriage is subjective and highly contextually based. If we do have a standard definition, consensus is needed in the field as to whether definitions should be based on legal standards, health concerns/risks or simply an age cut-off. While this issue is controversial, in considering the broader area of YSRH we cannot gain consensus on what works without a clear set of indicators and outcomes.

• **Missed Opportunities**: Young people, are often relatively healthy, and have few connections with health facilities. When they do interact with health facilities (for delivery or abortion) we have an opportunity for improving their health outcomes. Post-partum (and post-abortion) visits are missed opportunities for intervention, particularly contraception interventions, especially for this age range. We would recommend interventions focusing efforts on contraceptive provision in these populations.

• **Aim for Behavior Change**: The gold standard for interventions should be to improve young people’s sexual and reproductive health behaviors. It is relative easy to impact knowledge and even attitudes, but effective interventions should show change in behavior (or differences in behavior from a similar comparison group). For three of our four outcomes, we allowed for
impact to be measured by knowledge, attitudes and behaviors, but given the large number of STI interventions, we limited our abstraction to behavior change interventions only. Despite beginning with over 22,00 titles in STIs, our analysis shows that only nine high quality interventions and evaluations positively impacted behavior. Interestingly it was only for this outcome that we saw the use of mass media approaches. Mass media approaches have been abandoned because they don’t target individuals well by nature and because it difficult to show impact without good measures of exposure to mass media. That said, it is an approach worth visiting—especially to improve knowledge about incorrect norms such as fear of contraceptive side effects. While improved knowledge may not cause behavior to change, it may be a necessary before people change their behaviors. In general, behavior change interventions tend to be more time intensive, more expensive and depending on the behavior, may be harder to achieve success.

- Don’t Omit the Gray Literature!: The majority of interventions that were effective based on high quality evaluations were located in the grey literature for three of four outcomes. Future reviews and further updates to our work should be sure to include these studies that often don’t make it into the “evidence-base” as they are not easily searchable.
Appendix

Methodology

The goal of this project was to review and assess interventions in low- and middle-income countries for young people for four outcomes: early marriage, early pregnancy, number of children and STIs including HIV.

Developing and Piloting Abstraction Form

We sought several sources from other systematic literature reviews to develop an appropriate abstraction form for this project. While most systematic reviews focus on the intervention and outcome (how effective the intervention was), we wanted to include an additional set of components that focused on the evaluation itself and the quality of both the evaluation and intervention. We asked our advisory group (Bruce Dick, Jane Ferguson, and Robert Blum) for feedback on the form and modified it accordingly. This group also reviewed our search terms and were asked about additional studies we may have missed in our searches.

We initially developed an on-line abstraction form using Google docs, but the online form was problematic for those members of our team with limited Internet connectivity as well as abstractors who wanted to stop and return to the abstraction form before submitting it. Based on this feedback, we opted for an Excel spreadsheet for abstraction. The final abstraction form itself is available from the authors.

Search Strategy

We undertook a systematic search of published literature to identify interventions that address each of the outcomes. We used six databases—PubMed (MEDLINE), Embase, PsycInfo, Cinahl Plus, Popline, and the Cochrane Database—in conducting these searches. In building the search, we combined a list of terms that describe young people with a list of terms that describe the outcome of interest. We then combined this search with a list of lower- or middle-income country (LMIC) and regional search terms.

We also searched the grey literature for each outcome of interest. Depending on the outcome, we searched websites of non-governmental organizations (e.g. ICRW, Population Council, CEDPA, and Save the Children) and Google. In addition to formally searching, we also used a snowball technique to track references mentioned in identified documents.

Abstracted studies are those that met the age range (10-24), were interventions, and included information on evaluation. We included studies in English, French, Spanish and Portuguese.

Abstraction Process

For each study located, we assigned an abstractor from our team to pull information from that intervention. We abstracted details about both the intervention design and the evaluation design (form available from first author upon request). For each study we ranked the quality of the intervention and the quality of the evaluation. For intervention quality, we asked about study design (including study population, location of intervention, duration, gender), intervention objectives, intervention description, and subjective measures about how well thought out (strengths and
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weaknesses) the intervention was. For evaluation, we asked the type of evaluation (quantitative, qualitative, or mixed methods), sampling, randomization (where relevant), key independent variables, control group composition, analytic techniques, key findings, and a subjective measure of overall quality of the evaluation, with higher quality reflecting having a comparison group, measures of exposure to the intervention, and limited weaknesses. It should be noted that some studies had multiple outcomes, and were therefore abstracted in multiple chapters of this report. We ranked studies on a scale from one to five, with five being the best and one being the worst. These are clearly subjective measures but after doing practices abstractions, we felt that although subjective, similar criteria were used by the abstractors. Based on a combined score, we determined some of the best examples of each outcome. In each chapter we feature two to three of these top-ranking studies that represent different methodologies and broad regional scope as case studies.

Search Terms

Early Marriage

**PubMed: 2 searches run: 1 and 2 and 4, not 5; 3 and 4, not 5**

1. (Adolescent[mesh] OR Minors[mesh] OR teen[all fields] OR teens[all fields] OR teenager[all fields] OR teenagers[all fields] OR teenaged[all fields] OR juvenile* OR preteen* OR pre-teen* OR minor OR minors OR adolescent OR youth[text] OR youths[text] OR girl[all fields] OR girls[all fields] OR "young people"[all fields] OR "young person"[all fields] OR "young adult"[all fields])

2. (Marriage[mesh] OR spouses[mesh] OR conjugal relationship OR marriage* OR marital OR nuptial OR spouse OR spouses OR wedlock OR wedding OR weddings OR "consensual union" OR cohabit*)

3. “early marriage” OR “child marriage”

4. Argentina or Bolivia or Brazil or Chile or Colombia or Ecuador or “French Guiana” or Guyana or Paraguay or Peru or Suriname or Uruguay or Venezuela or Mexico or Belize or “Costa Rica” or “El Salvador” or Guatemala or Honduras or Nicaragua or Panama or “West Indies” or Antigua or Bahamas or Barbados or Cuba or Dominica or “Dominican Republic” or Grenada or Guadeloupe or Haiti or Jamaica or Martinique or Antilles or “Saint Kitts and Nevis” or “Saint Lucia” or “Saint Vincent and the Grenadines” or Trinidad or Tobago or “Virgin Islands” or Kazakhstan or Kyrgyzstan or Tajikistan or Turkmenistan or Uzbekistan or Borneo or Brunei or Cambodia or “East Timor” or Indonesia or Laos or Malaysia or “Mekong Valley” or Myanmar or Burma or Philippines or Singapore or Thailand or Vietnam or Bangladesh or Bhutan or India or Nepal or Pakistan or “Sri Lanka” or China or Korea or Macao or Mongolia or Taiwan or Afghanistan or Bahrain or Iran or Iraq or Israel or Jordan or Kuwait or Lebanon or Oman or Qatar or “Saudi Arabia” or Syria or Turkey or “United Arab Emirates” or Yemen or Fiji or “New Caledonia” or “Papua New Guinea” or Vanuatu or Micronesia or Melanesia or Guam or Palau or Polynesia or Samoa or Tonga or Armenia or Azerbaijan or (Georgia NOT Georgia[MeSH]) or Albania or Estonia or Latvia or Lithuania or Bosnia or Herzegovina or Bulgaria or Belarus or Croatia or “Czech Republic” or Hungary or Macedonia or Moldova or Montenegro or Poland or Romania or Russia or Bashkirtia or Dagestan or Slovakia or Slovenia or Ukraine or Cameroon or “Central African Republic” or Chad or Congo or “Democratic Republic of the Congo” or “Equatorial Guinea” or Gabon or Burundi or Djibouti or Eritrea or Ethiopia or
Exploration of Young People’s Sexual and Reproductive Health Assessment Practices

Kenya or Rwanda or Somalia or Sudan or Tanzania or Uganda or Angolan or Botswana or Lesotho or Malawi or Mozambique or Namibia or “South Africa” or Swaziland or Zambia or Zimbabwe or Benin or “Burkina Faso” or “Cote d’Ivoire” or Gambia or Ghana or Guinea or “Guinea-Bissau” or Liberia or Mali or Mauritania or Niger or Nigeria or Senegal or “Sierra Leone” or Togo or Algeria or Egypt or Libya or Morocco or Tunisia or Comoros or Madagascar or Mauritius or Reunion or Seychelles or “developing country” or “third-world country” or “third world country” or “less developed” or “sub-Saharan” or “Caribbean Region”[Mesh] OR “Pacific Islands”[Mesh] OR “Mexico”[Mesh] OR “Latin America”[Mesh] OR “Indian Ocean Islands”[Mesh] OR “Central America”[Mesh] OR “Asia”[Mesh] OR “Africa”[Mesh] OR “Europe, Eastern”[Mesh] OR “South America”[Mesh] OR “African, Northern”[Mesh] OR “Africa South of the Sahara”[Mesh] OR “Asia, Central”[Mesh] OR “Asia, Southeastern”[Mesh] OR “Asia, Western”[Mesh] OR “Far East”[Mesh] or “Developing Countries”[MeSH]

Exploration of Young People’s Sexual and Reproductive Health Assessment Practices

Dagestan or Slovakia or Slovenia or Ukraine OR Cameroon or “Central African Republic” or Chad or Congo or “Democratic Republic of the Congo” or “Equatorial Guinea” or Gabon or Burundi or Djibouti or Eritrea or Ethiopia or Kenya or Rwanda or Somalia or Sudan or Tanzania or Uganda or Angola or Botswana or Lesotho or Malawi or Mozambique or Namibia or “South Africa” or Swaziland or Zambia or Zimbabwe or Benin or “Burkina Faso” or Cote* OR Gambia or Ghana or Guinea or “Guinea-Bissau” or Liberia or Mali or Mauritania or Niger or Nigeria or Senegal or “Sierra Leone” or Togo or Algeria or Egypt or Libya or Morocco or Tunisia or Comoros or Madagascar or Mauritius or Reunion or Seychelles OR “developing country” or ‘developing country’/exp or “third-world country” or “third world country” or “less developed” or “sub-Saharan” or ‘Central America’/exp OR ‘Caribbean Islands’/exp OR ‘Pacific islands’/exp OR ‘Mexico’/exp OR ‘South and Central America’/exp OR ‘Indian Ocean’/exp OR ‘Central America’/exp OR ‘Asia’/exp OR ‘Eastern Europe’/exp OR ‘South America’/exp or ‘Africa south of the Sahara’/exp or ‘Far East’/exp or ‘Southeast Asia’/exp or ‘South Asia’/exp or ‘Central Africa’/exp or ‘Africa’/exp or ‘North Africa’/exp

5. ’article’/it OR ‘article in press’/it OR ‘conference abstract’/it OR ‘conference paper’/it OR ‘conference review’/it OR ‘review’/it OR ‘short survey’/it

Cinahl Plus and PsycInfo: 2 searches run: 1 and 2 and 4; 3 and 4

1. (teen OR teens OR teenager OR teenagers OR teenaged* OR preteen* OR pre-teen* OR minor OR minors OR adolescent OR girl OR girls OR “young people” OR “young person” OR “young adult”) OR (MH Adolescence OR MH Young adults OR MH Minors) OR (TX youth OR TX youths)

2. (conjugal relationship OR marriage* OR marital OR nuptial OR spouse OR spouses OR wedlock OR wedding OR weddings OR “consensual union” OR cohabit*) OR (MH Spouses OR MH Marriage)

3. “early marriage” OR “child marriage”

4. Argentina or Bolivia or Brazil or Chile or Colombia or Ecuador or “French Guiana” or Guyana or Paraguay or Peru or Suriname or Uruguay or Venezuela or Mexico or Belize or “Costa Rica” or “El Salvador” or Guatemala or Honduras or Nicaragua or Panama or “West Indies” or Antigua or Bahamas or Barbados or Cuba or Dominica or “Dominican Republic” or Grenada or Guadeloupe or Haiti or Jamaica or Martinique or Antilles or “Saint Kitts and Nevis” or “Saint Lucia” or “Saint Vincent and the Grenadines” or Trinidad or Tobago or “Virgin Islands” or Kazakhstan or Kyrgyzstan or Tajikistan or Turkmenistan or Uzbekistan or Borneo or Brunei or Cambodia or “East Timor” or Indonesia or Laos or Malaysia or “Mekong Valley” or Myanmar or Burma or Philippines or Singapore or Thailand or Vietnam or Bangladesh or Bhutan or India or Nepal or Pakistan or “Sri Lanka” or China or Korea or Macao or Mongolia or Taiwan or Afghanistan or Bahrain or Iran or Iraq or Israel or Jordan or Kuwait or Lebanon or Oman or Qatar or “Saudi Arabia” or Syria or Turkey or “United Arab Emirates” or Yemen or Fiji or “New Caledonia” or “Papua New Guinea” or Vanuatu or Micronesia or Melanesia or Guam or Palau or Polynesia or Samoa or Tonga or Armenia or Azerbaijan or Georgia or Albania or Estonia or Latvia or Lithuania or Bosnia or Herzegovina or Bulgaria or Belarus or Croatia or “Czech Republic” or Hungary or Macedonia or Moldova or Montenegro or Poland or Romania or Russia or Bashkirtia or Dagestan or Slovakia or Slovenia or Ukraine OR Cameroon or “Central African Republic” or Chad or Congo or “Democratic Republic...
of the Congo” or “Equatorial Guinea” or Gabon or Burundi or Djibouti or Eritrea or Ethiopia or Kenya or Rwanda or Somalia or Sudan or Tanzania or Uganda or Angola or Botswana or Lesotho or Malawi or Mozambique or Namibia or “South Africa” or Swaziland or Zambia or Zimbabwe or Benin or “Burkina Faso” or “Cote” OR Gambia or Ghana or Guinea or “Guinea-Bissau” or Liberia or Mali or Mauritania or Niger or Nigeria or Senegal or “Sierra Leone” or Togo or Algeria or Egypt or Libya or Morocco or Tunisia or Comoros or Madagascar or Mauritius or Reunion or Seychelles OR “developing country” or “third-world country” or “third world country” or “less developed” or “sub-Saharan” or “Central America” OR Caribbean OR “Pacific Islands” OR “South and Central America” OR “Indian Ocean” OR “Central America” OR Asia OR “Eastern Europe” OR “South America” or “Africa south of the Sahara” or “Far East” or “Southeast Asia” or “South Asia” or “Central Africa” or Africa or “North Africa”

**Popline:** adolescents; youth; minors; marriage; marriage age; marriage postponement; spouse; consensual union

**Cochrane:** 2 searches run: 1 and 2 and 4; 3 and 4

1. teen OR teens OR teenager OR teenagers OR teenaged OR juvenile* OR preteen* OR pre-teen* OR minor OR minors OR adolescent OR girl OR girls OR "young people" OR "young person" OR "young adult"

2. conjugal relationship OR marriage OR marital OR nuptial OR spouse OR spouses OR wedlock OR wedding OR weddings OR “consensual union” OR cohabit OR cohabitate OR cohabitated OR cohabitation

3. “early marriage” OR “child marriage”

4. Argentina or Bolivia or Brazil or Chile or Colombia or Ecuador or “French Guiana” or Guyana or Paraguay or Peru or Suriname or Uruguay or Venezuela or Mexico or Belize or “Costa Rica” or “El Salvador” or Guatemala or Honduras or Nicaragua or Panama or “West Indies” or Antigua or Bahamas or Barbados or Cuba or Dominica or “Dominican Republic” or Grenada or Guadeloupe or Haiti or Jamaica or Martinique or Antilles or “Saint Kitts and Nevis” or “Saint Lucia” or “Saint Vincent and the Grenadines” or Trinidad or Tobago or “Virgin Islands” or Kazakhstan or Kyrgyzstan or Tajikistan or Turkmenistan or Uzbekistan or Borneo or Brunei or Cambodia or “East Timor” or Indonesia or Laos or Malaysia or “Mekong Valley” or Myanmar or Burma or Philippines or Singapore or Thailand or Vietnam or Bangladesh or Bhutan or India or Nepal or Pakistan or “Sri Lanka” or China or Korea or Macao or Mongolia or Taiwan or Afghanistan or Bahrain or Iran or Iraq or Israel or Jordan or Kuwait or Lebanon or Oman or Qatar or “Saudi Arabia” or Syria or Turkey or “United Arab Emirates” or Yemen or Fiji or “New Caledonia” or “Papua New Guinea” or Vanuatu or Micronesia or Melanesia or Guam or Palau or Polynesia or Samoa or Tonga or Armenia or Azerbaijan or Georgia or Albania or Estonia or Latvia or Lithuania or Bosnia or Herzegovina or Bulgaria or Belarus or Croatia or “Czech Republic” or Hungary or Macedonia or Moldova or Montenegro or Poland or Romania or Russia or Bashkiria or Dagestan or Slovakia or Slovenia or Ukraine OR Cameroon or “Central African Republic” or Chad or Congo or “Democratic Republic of the Congo” or “Equatorial Guinea” or Gabon or Burundi or Djibouti or Eritrea or Ethiopia or Kenya or Rwanda or Somalia or Sudan or Tanzania or Uganda or Angola or Botswana or Lesotho or Malawi or Mozambique or Namibia or “South Africa” or Swaziland or Zambia or Zimbabwe or Benin or “Burkina Faso” or “Cote” OR Gambia or Ghana or Guinea or “Guinea-Bissau” or Liberia or Mali or Mauritania or Niger or Nigeria or Senegal or “Sierra Leone” or Togo or
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Early Marriage

**PubMed:** Adolescent[mesh] OR Minors[mesh] OR teen[all fields] OR teens[all fields] OR teenager[all fields] OR teenagers[all fields] OR teenaged[all fields] OR juvenile* OR preteen* OR pre-teen* OR minor OR minors OR adolescent OR youth[tr subset] OR youths[tr subset] OR girl[all fields] OR girls[all fields] OR “young people”[all fields] OR “young person”[all fields] OR “young adult”[all fields]

AND

Pregnancy[mesh] or “pregnant women” or parturition[mesh] or mothers[mesh] or “maternal health services”[mesh] or pregnancy or pregnant or parturition or mother* or gestation or gestational or childbirth or childbirths or maternal or maternity

AND

Argentina or Bolivia or Brazil or Chile or Colombia or Ecuador or “French Guiana” or Guyana or Paraguay or Peru or Suriname or Uruguay or Venezuela or Mexico or Belize or “Costa Rica” or “El Salvador” or Guatemala or Honduras or Nicaragua or Panama or “West Indies” or Antigua or Bahamas or Barbados or Cuba or Dominica or “Dominican Republic” or Grenada or Guadeloupe or Haiti or Jamaica or Martinique or Antilles or “Saint Kitts and Nevis” or “Saint Lucia” or “Saint Vincent and the Grenadines” or Trinidad or Tobago or “Virgin Islands” or Kazakhstan or Kyrgyzstan or Tajikistan or Turkmenistan or Uzbekistan or Borneo or Brunei or Cambodia or “East Timor” or Indonesia or Laos or Malaysia or “Mekong Valley” or Myanmar or Burma or Philippines or Singapore or Thailand or Vietnam or Bangladesh or Bhutan or India or Nepal or Pakistan or “Sri Lanka” or China or Korea or Macao or Mongolia or Taiwan or Afghanistan or Bahrain or Iran or Iraq or Israel or Jordan or Kuwait or Lebanon or Oman or Qatar or “Saudi Arabia” or Syria or Turkey or “United Arab Emirates” or Yemen or Fiji or “New Caledonia” or “Papua New Guinea” or Vanuatu or Micronesia or Melanesia or Guam or Palau or Polynesia or Samoa or Tonga or Armenia or Azerbaijan or (Georgia NOT Georgia[MeSH]) or Albania or Estonia or Latvia or Lithuania or Bosnia or Herzegovina or Bulgaria or Belarus or Croatia or “Czech Republic” or Hungary or Macedonia or Moldova or Montenegro or Poland or Romania or Russia or Bashkortostan or Dagestan or Slovakia or Slovenia or Ukraine or Cameroon or “Central African Republic” or Chad or Congo or Democratic Republic of the Congo or “Equatorial Guinea” or Gabon or Burundi or Djibouti or Eritrea or Ethiopia or Kenya or Rwanda or Somalia or Sudan or Tanzania or Uganda or Angola or Botswana or Lesotho or Malawi or Mozambique or Namibia or “South Africa” or Swaziland or Zambia or Zimbabwe or Benin or “Burkina Faso” or “Cote d’Ivoire” or Gambia or Ghana or Guinea or “Guinea-Bissau” or Liberia or Mali or Mauritania or Niger or Nigeria or Senegal or “Sierra Leone” or Togo or Algeria or Egypt or Libya or Morocco or Tunisia or Comoros or Madagascar or

NOT


Embase:juvenile/exp OR ‘adolescent’/exp OR ’girl’/exp OR teen OR teens OR teenager* OR teenaged OR juvenile* OR adolescent OR preteen OR ’pre teen’ OR preteens OR ’pre teens’ OR minor OR minors OR youth:ab,ti OR OR girl OR girls OR ‘young people’ OR ‘young person’ OR ‘young adult’

AND

‘pregnancy’/exp OR ‘pregnant woman’/exp OR ‘birth’/exp OR ‘maternal care’/exp OR ‘mother’/exp OR pregnancy or pregnant or parturition or mother* or gestation* or childbirth* or maternal or maternity or ‘adolescent pregnancy’/exp OR ‘adolescent mother’/exp

AND

Argentina or Bolivia or Brazil or Chile or Colombia or Ecuador or “French Guiana” or Guyana or Paraguay or Peru or Suriname or Uruguay or Venezuela or Mexico or Belize or “Costa Rica” or “El Salvador” or Guatemala or Honduras or Nicaragua or Panama or “West Indies” or Antigua or Bahamas or Barbados or Cuba or Dominica or “Dominican Republic” or Grenada or Guadeloupe or Haiti or Jamaica or Martinique or Antilles or “Saint Kitts and Nevis” or “Saint Lucia” or “Saint Vincent and the Grenadines” or Trinidad or Tobago or “Virgin Islands” or Kazakhstan or Kyrgyzstan or Tajikistan or Turkmenistan or Uzbekistan or Borneo or Brunei or Cambodia or “East Timor” or Indonesia or Laos or Malaysia or “Mekong Valley” or Myanmar or Burma or Philippines or Singapore or Thailand or Vietnam or Bangladesh or Bhutan or India or Nepal or Pakistan or “Sri Lanka” or China or Korea or Macao or Mongolia or Taiwan or Afghanistan or Bahrain or Iran or Iraq or Israel or Jordan or Kuwait or Lebanon or Oman or Qatar or “Saudi Arabia” or Syria or Turkey or “United Arab Emirates” or Yemen or Fiji or “New Caledonia” or “Papua New Guinea” or Vanuatu or Micronesia or Melanesia or Guam or Palau or Polynesia or Samoa or Tonga or Armenia or Azerbaijan or ‘Georgia (republic)’/exp OR Albania or Estonia or Latvia or Lithuania or Bosnia or Herzegovina or Bulgaria or Belarus or Croatia or “Czech Republic” or Hungary or Macedonia or Moldova or Montenegro or Poland or Romania or Russia or Bashkiria or Dagestan or Slovakia or Slovenia or Ukraine OR Cameroon or “Central African Republic” or Chad or Congo or “Democratic Republic of the Congo” or “Equatorial Guinea” or Gabon or Burundi or Djibouti or Eritrea or Ethiopia or Kenya or Rwanda or Somalia or Sudan or Tanzania or Uganda or Angola or Botswana or Lesotho or Malawi or
Mozambique or Namibia or “South Africa” or Swaziland or Zambia or Zimbabwe or Benin or “Burkina Faso” or Cote OR Gambia or Ghana or Guinea or “Guinea-Bissau” or Liberia or Mali or Mauritania or Niger or Nigeria or Senegal or “Sierra Leone” or Togo or Algeria or Egypt or Libya or Morocco or Tunisia or Comoros or Madagascar or Mauritius or Reunion or Seychelles OR “developing country” or ‘developing country’/exp or “third-world country” or “third world country” or “less developed” or “sub-Saharan” or ‘Central America’/exp OR ‘Caribbean Islands’/exp OR ‘Pacific islands’/exp OR ‘Mexico’/exp OR ‘South and Central America’/exp OR ‘Indian Ocean’/exp OR ‘Central America’/exp OR ‘Asia’/exp OR ‘Eastern Europe’/exp OR ‘South America’/exp or ‘Africa south of the Sahara’/exp or ‘Far East’/exp or ‘Southeast Asia’/exp or ‘South Asia’/exp or ‘Central Africa’/exp or ‘Africa’/exp or ‘North Africa’/exp

AND

’article’/it OR ‘article in press’/it OR ’conference abstract’/it OR ’conference paper’/it OR ’conference review’/it OR ’review’/it OR ’short survey’/it

Cinahl Plus and PsycInfo: (teen OR teens OR teenager OR teenagers OR teenaged OR juvenile* OR preteen* OR pre-teen* OR minor OR minors OR adolescent OR girl OR girls OR ”young people” OR ”young person” OR ”young adult”) OR (MH Adolescence OR MH Young adults OR MH Minors) OR (TX youth OR TX youths)

AND

(MH adolescent pregnancy or MH teen pregnancy or MH parturition or MH births or MH birthing or MH maternal or MH maternal health services or MH maternity or MH pregnancy and teens or MH pregnancy or MH pregnant or MH pregnant teenage girl or MH childbirth) OR (”pregnant women” or pregnancy or pregnant or parturition or mother* or gestation or gestational or childbirth* or maternal or maternity)

AND

Argentina or Bolivia or Brazil or Chile or Colombia or Ecuador or “French Guiana” or Guyana or Paraguay or Peru or Suriname or Uruguay or Venezuela or Mexico or Belize or “Costa Rica” or “El Salvador” or Guatemala or Honduras or Nicaragua or Panama or “West Indies” or Antigua or Bahamas or Barbados or Cuba or Dominica or “Dominican Republic” or Grenada or Guadeloupe or Haiti or Jamaica or Martinique or Antilles or “Saint Kitts and Nevis” or “Saint Lucia” or “Saint Vincent and the Grenadines” or Trinidad or Tobago or “Virgin Islands” or Kazakhstan or Kyrgyzstan or Tajikistan or Turkmenistan or Uzbekistan or Borneo or Brunei or Cambodia or “East Timor” or Indonesia or Laos or Malaysia or “Mekong Valley” or Myanmar or Burma or Philippines or Singapore or Thailand or Vietnam or Bangladesh or Bhutan or India or Nepal or Pakistan or “Sri Lanka” or China or Korea or Macao or Mongolia or Taiwan or Afghanistan or Bahrain or Iran or Iraq or Israel or Jordan or Kuwait or Lebanon or Oman or Qatar or “Saudi Arabia” or Syria or Turkey or “United Arab Emirates” or Yemen or Fiji or “New Caledonia” or “Papua New Guinea” or Vanuatu or Micronesia or Melanesia or Guam or Palau or Polynesia or Samoa or Tonga or Armenia or Azerbaijan or Georgia or Albania or Estonia or Latvia or Lithuania or Bosnia or Herzegovina or Bulgaria or Belarus or Croatia or “Czech Republic” or Hungary or Macedonia or Moldova or Montenegro or Poland or Romania or Russia or Bashkiria or Dagestan or
Slovakia or Slovenia or Ukraine OR Cameroon or “Central African Republic” or Chad or Congo or “Democratic Republic of the Congo” or “Equatorial Guinea” or Gabon or Burundi or Djibouti or Eritrea or Ethiopia or Kenya or Rwanda or Somalia or Sudan or Tanzania or Uganda or Angola or Botswana or Lesotho or Malawi or Mozambique or Namibia or “South Africa” or Swaziland or Zambia or Zimbabwe or Benin or “Burkina Faso” or “Cote*” OR Gambia or Ghana or Guinea or “Guinea-Bissau” or Liberia or Mali or Mauritania or Niger or Nigeria or Senegal or “Sierra Leone” or Togo or Algeria or Egypt or Libya or Morocco or Tunisia or Comoros or Madagascar or Mauritius or Reunion or Seychelles OR “developing country” or “third-world country” or “third world country” or “less developed” or “sub-Saharan” or “Central America” OR Caribbean OR “Pacific Islands” OR “South and Central America” OR “Indian Ocean” OR “Central America” OR Asia OR “Eastern Europe” OR “South America” or “Africa south of the Sahara” or “Far East” or “Southeast Asia” or “South Asia” or “Central Africa” or Africa or “North Africa”

Popline: adolescents; youth; minors; adolescent pregnancy; childbirth; pregnancy; pregnant women; pregnancy, unplanned; pregnancy, unwanted premarital pregnancy; maternal health services; mothers

Cochrane: “pregnant women” or pregnancy or pregnancies or pregnant or parturition or mother* or gestation or gestational or childbirth* or maternal or maternity or births or birthing

AND

teen OR teens OR teenager OR teenagers OR teenaged OR juvenile* OR preteen* OR pre-teen* OR minor OR minors OR adolescent OR girl OR girls OR "young people" OR "young person" OR "young adult"

AND

Argentina or Bolivia or Brazil or Chile or Colombia or Ecuador or “French Guiana” or Guyana or Paraguay or Peru or Suriname or Uruguay or Venezuela or Mexico or Belize or “Costa Rica” or “El Salvador” or Guatemala or Honduras or Nicaragua or Panama or “West Indies” or Antigua or Bahamas or Barbados or Cuba or Dominica or “Dominican Republic” or Grenada or Guadeloupe or Haiti or Jamaica or Martinique or Antilles or “Saint Kitts and Nevis” or “Saint Lucia” or “Saint Vincent and the Grenadines” or Trinidad or Tobago or “Virgin Islands” or Kazakhstan or Kyrgyzstan or Tajikistan or Turkmenistan or Uzbekistan or Borneo or Brunei or Cambodia or “East Timor” or Indonesia or Laos or Malaysia or “Mekong Valley” or Myanmar or Burma or Philippines or Singapore or Thailand or Vietnam or Bangladesh or Bhutan or India or Nepal or Pakistan or “Sri Lanka” or China or Korea or Macao or Mongolia or Taiwan or Afghanistan or Bahrain or Iran or Iraq or Israel or Jordan or Kuwait or Lebanon or Oman or Qatar or “Saudi Arabia” or Syria or Turkey or “United Arab Emirates” or Yemen or Fiji or “New Caledonia” or “Papua New Guinea” or Vanuatu or Micronesia or Melanesia or Guam or Palau or Polynesia or Samoa or Tonga or Armenia or Azerbaijan or Georgia or Albania or Estonia or Latvia or Lithuania or Bosnia or Herzegovina or Bulgaria or Belarus or Croatia or “Czech Republic” or Hungary or Macedonia or Moldova or Montenegro or Poland or Romania or Russia or Bashkiria or Dagestan or Slovakia or Slovenia or Ukraine OR Cameroon or “Central African Republic” or Chad or Congo or “Democratic Republic of the Congo” or “Equatorial Guinea” or Gabon or Burundi or Djibouti or Eritrea or Ethiopia or Kenya or Rwanda or Somalia or Sudan or Tanzania or Uganda or Angola or Botswana or Lesotho or Malawi or Mozambique or Namibia or
“South Africa” or Swaziland or Zambia or Zimbabwe or Benin or “Burkina Faso” or “Cote*” OR Gambia or Ghana or Guinea or “Guinea-Bissau” or Liberia or Mali or Mauritania or Niger or Nigeria or Senegal or “Sierra Leone” or Togo or Algeria or Egypt or Libya or Morocco or Tunisia or Comoros or Madagascar or Mauritius or Reunion or Seychelles OR “developing country” or “third-world country” or “third world country” or “less developed” or “sub-Saharan” or “Central America” OR Caribbean OR “Pacific Islands” OR “South and Central America” OR “Indian Ocean” OR “Central America” OR Asia OR “Eastern Europe” OR “South America” or “Africa south of the Sahara” or “Far East” or “Southeast Asia” or “South Asia” or “Central Africa” or Africa or “North Africa”

Number of Children

PubMed (filtered dates: 1990-Sept 2012)

Adolescent[mesh] OR Minors[mesh] OR teen[all fields] OR teens[all fields] OR teenager[all fields] OR teenagers[all fields] OR teenaged[all fields] OR juvenile* OR preteen* OR pre-teen* OR minor OR minors OR adolescent OR youth[text] OR youths[text] OR girl[all fields] OR girls[all fields] OR "young people"[all fields] OR "young person"[all fields] OR "young adult"[all fields]

AND

tempo OR "postpartum contraception" OR "postpartum contraceptives" OR "multiple births" OR "multiple pregnancies" OR "postpone second birth" OR "postponing second birth" OR "postponed second birth" OR "delay second birth" OR "delaying second birth" OR "delayed second birth" OR "repeat childbearing" OR "repeat abortion" OR "repeat abortions" OR "repeat pregnancy" OR "repeat pregnancies" OR "repeat birth" OR "repeat births" OR "birth spacing" OR "birth-spacing" OR childbearing, delayed[MeSH Terms] OR abortion seeker, repeated[MeSH Terms]

AND

Argentina OR Bolivia OR Brazil OR Chile OR Colombia OR Ecuador OR "French Guiana" OR Guyana OR Paraguay OR Peru OR Suriname OR Uruguay OR Venezuela OR Mexico OR Belize OR "Costa Rica" OR "El Salvador" OR Guatemala OR Honduras OR Nicaragua OR Panama OR "West Indies" OR Antigua OR Bahamas OR Barbados OR Cuba OR Dominica OR "Dominican Republic" OR Grenada OR Guadeloupe OR Haiti OR Jamaica OR Martinique OR Antilles OR "Saint Kitts and Nevis" OR "Saint Lucia" OR "Saint Vincent and the Grenadines" OR Trinidad OR Tobago OR "Virgin Islands" OR Kazakhstan OR Kyrgyzstan OR Tajikistan OR Turkmenistan OR Uzbekistan OR Borneo OR Brunei OR Cambodia OR "East Timor" OR Indonesia OR Laos OR Malaysia OR "Mekong Valley" OR Myanmar OR Burma OR Philippines OR Singapore OR Thailand OR Vietnam OR Bangladesh OR Bhutan OR India OR Nepal OR Pakistan OR "Sri Lanka" OR China OR Korea OR Macao OR Mongolia OR Taiwan OR Afghanistan OR Bahrain OR Iran OR Iraq OR Israel OR Jordan OR Kuwait OR Lebanon OR Oman OR Qatar OR "Saudi Arabia" OR Syria OR Turkey OR "United Arab Emirates" OR Yemen OR Fiji OR "New Caledonia" OR "Papua New Guinea" OR Vanuatu OR Micronesia OR Melanesia OR Guam OR Palau OR Polynesia OR Samoa OR Tonga OR Armenia OR Azerbaijan OR (Georgia NOT Georgia[MeSH]) OR Albania OR Estonia OR Latvia OR Lithuania OR Bosnia OR Herzegovina OR Bulgaria OR Belarus OR Croatia OR "Czech Republic" OR Hungary OR Macedonia OR Moldova OR Montenegro OR Poland OR Romania OR Russia OR

Embase 'juvenile'/exp OR 'adolescent'/exp OR 'girl'/exp OR teen OR teens OR teenager* OR teenaged OR juvenile* OR adolescent OR preteen OR 'pre teen' OR preteens OR 'pre teens' OR minor OR minors OR youth:ab,ti OR youths:ab,ti OR girl OR girls OR 'young people' OR 'young person' OR 'young adult'

AND

Argentina or Bolivia or Brazil or Chile or Colombia or Ecuador or “French Guiana” or Guyana or Paraguay or Peru or Suriname or Uruguay or Venezuela or Mexico or Belize or “Costa Rica” or “El Salvador” or Guatemala or Honduras or Nicaragua or Panama or “West Indies” or Antigua or Bahamas or Barbados or Cuba or Dominica or “Dominican Republic” or Grenada or Guadeloupe or Haiti or Jamaica or Martinique or Antilles or “Saint Kitts and Nevis” or “Saint Lucia” or “Saint Vincent and the Grenadines” or Trinidad or Tobago or “Virgin Islands” or Kazakhstan or Kyrgyzstan or Tajikistan or Turkmenistan or Uzbekistan or Borneo or Brunei or Cambodia or “East Timor” or Indonesia or Laos or Malaysia or “Mekong Valley” or Myanmar or Burma or Philippines or Singapore or Thailand or Vietnam or Bangladesh or Bhutan or India or Nepal or Pakistan or “Sri Lanka” or China or Korea or Macao or Mongolia or Taiwan or Afghanistan or Bahrain or Iran or Iraq or Israel or Jordan or Kuwait or Lebanon or Oman or Qatar or “Saudi Arabia” or Syria or Turkey or “United Arab Emirates” or Yemen or Fiji or “New Caledonia” or “Papua New Guinea” or Vanuatu or Micronesia or Melanesia or Guam or Palau or Polynesia or Samoa or Tonga or Armenia or Azerbaijan or ‘Georgia (republic)’/exp or Albania or Estonia or Latvia or Lithuania or Bosnia or Herzegovina or Bulgaria or Belarus or Croatia or “Czech Republic” or Hungary or Macedonia or Moldova or Montenegro or Poland or Romania or Russia or Bashkiria or
Dagestan or Slovakia or Slovenia or Ukraine OR Cameroon or “Central African Republic” or Chad or Congo or “Democratic Republic of the Congo” or “Equatorial Guinea” or Gabon or Burundi or Djibouti or Eritrea or Ethiopia or Kenya or Rwanda or Somalia or Sudan or Tanzania or Uganda or Angola or Botswana or Lesotho or Malawi or Mozambique or Namibia or “South Africa” or Swaziland or Zambia or Zimbabwe or Benin or “Burkina Faso” or Cote* OR Gambia or Ghana or Guinea or “Guinea-Bissau” or Liberia or Mali or Mauritania or Niger or Nigeria or Senegal or “Sierra Leone” or Togo or Algeria or Egypt or Libya or Morocco or Tunisia or Comoros or Madagascar or Mauritius or Reunion or Seychelles OR “developing country” or ‘developing country’/exp or “third-world country” or “third world country” or “less developed” or “sub-Saharan” or ‘Central America’/exp OR ‘Caribbean Islands’/exp OR ‘Pacific islands’/exp OR ‘Mexico’/exp OR ‘South and Central America’/exp OR ‘Indian Ocean’/exp OR ‘Central America’/exp OR ‘Asia’/exp OR ‘Eastern Europe’/exp OR ‘South America’/exp OR ‘Africa south of the Sahara’/exp OR ‘Far East’/exp OR ‘Southeast Asia’/exp OR ‘South Asia’/exp OR ‘Central Africa’/exp OR ‘Africa’/exp OR ‘North Africa’/exp

AND

‘article’/it OR ‘article in press’/it OR ‘conference abstract’/it OR ‘conference paper’/it OR ‘conference review’/it OR ‘review’/it OR ‘short survey’/it

PsycInfo and Cinahl Plus (teen OR teens OR teenager OR teenagers OR teenaged OR juvenile* OR preteen* OR pre-teen* OR minor OR minors OR adolescent OR girl OR girls OR "young people" OR "young person" OR "young adult") OR (MH Adolescence OR MH Young adults OR MH Minors) OR (TX youth OR TX youths)

AND

(MH abortion, habitual OR MH birth interval) OR (tempo OR "postpartum contraceptives" OR "postpartum contraception" OR "multiple births" OR "multiple pregnancies" OR "postpone second birth" OR ‘postponing second birth” OR ‘postponed second birth’ OR “delay second birth” OR delaying second birth” OR "delayed second birth” OR “repeat childbearing” OR “repeat abortion” OR “repeat abortions” OR “repeat pregnancy” OR “repeat pregnancies” OR “repeat birth” OR “repeat births” OR “birth spacing” OR “birth-spacing”)

AND

Argentina or Bolivia or Brazil or Chile or Colombia or Ecuador or “French Guiana” or Guyana or Paraguay or Peru or Suriname or Uruguay or Venezuela or Mexico or Belize or “Costa Rica” or “El Salvador” or Guatemala or Honduras or Nicaragua or Panama or “West Indies” or Antigua or Bahamas or Barbados or Cuba or Dominica or “Dominican Republic” or Grenada or Guadeloupe or Haiti or Jamaica or Martinique or Antilles or “Saint Kitts and Nevis” or “Saint Lucia” or “Saint Vincent and the Grenadines” or Trinidad or Tobago or “Virgin Islands” or Kazakhstan or Kyrgyzstan or Tajikistan or Turkmenistan or Uzbekistan or Borneo or Brunei or Cambodia or “East Timor” or Indonesia or Laos or Malaysia or “Mekong Valley” or Myanmar or Burma or Philippines or Singapore or Thailand or Vietnam or Bangladesh or Bhutan or India or Nepal or Pakistan or “Sri Lanka” or China or Korea or Macao or Mongolia or Taiwan or
Exploration of Young People’s Sexual and Reproductive Health Assessment Practices

Cochrane “family planning” OR contraception OR contraceptives

AND

"repeat pregnancy” OR “repeat abortion” OR “second birth”

Popline adolescent OR adolescents OR girl OR girls OR teen OR teens OR teenager OR teenagers OR teenaged OR juvenile OR pre-teen OR preteen OR minor OR minors OR "young people" OR "young person" OR "young adult" OR youth OR youths OR newlywed

AND

"postpartum contraception" OR "postpartum contraceptive" OR "multiple births" OR "postpartum contraceptives" OR "multiple pregnancies" OR "postponing second birth" OR "postpone second birth" OR "postponed second birth" OR "delaying second birth" OR "delay second birth" OR "delayed second birth" OR "repeat childbearing" OR "repeat abortion” OR "birth spacing" OR "birth-spacing" OR "repeat pregnancy” OR "repeat pregnancies" OR "repeat abortions”

STIs


AND
Exploration of Young People’s Sexual and Reproductive Health Assessment Practices

(sexually transmitted diseases OR sexually transmitted diseases, bacterial OR sexually transmitted diseases, viral OR chlamydia infection OR gonorrhea OR syphilis OR trichomonas infection OR scabies OR crab lice OR molluscum contagiosum OR granuloma inguinale OR chancroid OR candidiasis OR hepatitis b OR genital herpes OR human immunodeficiency virus OR human papillomavirus 6 OR human papillomavirus 11 OR human papillomavirus 16 OR human papillomavirus 18(MeSH Terms)) OR "sexually transmitted disease" OR "sexually transmitted infection" OR "venereal disease" OR STD OR STI OR HPV OR "human papillomavirus" OR "human immunodeficiency virus" OR HIV OR AIDS OR "pelvic inflammatory disease" OR PID OR "yeast infection" OR candidiasis OR gonorrhea OR chlamydia OR "pubic lice" OR "crab louse" OR trichomoniasis OR scabies OR "molluscum contagiosum" OR "granuloma inguinale" OR chancroid OR syphilis OR chancrure OR (genital AND herpes) OR HSV-2 OR "hepatitis b"

AND

Argentina or Bolivia or Brazil or Chile or Colombia or Ecuador or “French Guiana” or Guyana or Paraguay or Peru or Suriname or Uruguay or Venezuela or Mexico or Belize or “Costa Rica” or “El Salvador” or Guatemala or Honduras or Nicaragua or Panama or “West Indies” or Antigua or Bahamas or Barbados or Cuba or Dominica or “Dominican Republic” or Grenada or Guadeloupe or Haiti or Jamaica or Martinique or Antilles or “Saint Kitts and Nevis” or “Saint Lucia” or “Saint Vincent and the Grenadines” or Trinidad or Tobago or “Virgin Islands” or Kazakhstan or Kyrgyzstan or Tajikistan or Turkmenistan or Uzbekistan or “United Arab Emirates” or Yemen or Fiji or “New Caledonia” or “Papua New Guinea” or Vanuatu or Micronesia or Melanesia or Guam or Palau or Polynesia or Samoa or Tonga or Armenia or Azerbaijan or (Georgia NOT Georgia[MeSH]) or Albania or Armenia or Latvia or Lithuania or Bosnia or Herzegovina or Bulgaria or Belarus or Croatia or “Czech Republic” or Hungary or Macedonia or Moldova or Montenegro or Poland or Romania or Russia or Bashkirtia or Dagestan or Slovakia or Slovenia or Ukraine or Cameroon or “Central African Republic” or Chad or Congo or “Democratic Republic of the Congo” or “Equatorial Guinea” or Gabon or Burundi or Djibouti or Eritrea or Ethiopia or Kenya or Rwanda or Somalia or Sudan or Tanzania or Uganda or Angola or Botswana or Lesotho or Malawi or Mozambique or Namibia or “South Africa” or Swaziland or Zambia or Zimbabwe or Benin or “Burkina Faso” or “Cote d’Ivoire” or Gambia or Ghana or Guinea or “Guinea-Bissau” or Liberia or Mali or Mauritania or Niger or Nigeria or Senegal or “Sierra Leone” or Togo or Algeria or Egypt or Libya or Morocco or Tunisia or Comoros or Madagascar or Mauritius or Reunion or Seychelles or “developing country” or “third-world country” or “third world country” or “less developed” or “sub-Saharan” or “Caribbean Region”[Mesh] OR “Pacific Islands”[Mesh] OR “Mexico”[Mesh] OR “Latin America”[Mesh] OR “Indian Ocean Islands”[Mesh] OR “Central America”[Mesh] OR “Asia”[Mesh] OR “Africa”[Mesh] OR “Europe, Eastern”[Mesh] OR “South America”[Mesh] OR “Africa, Northern”[Mesh] OR “Africa South of the Sahara” [Mesh] or “Asia, Central”[Mesh] or “Asia, Southeastern”[Mesh] or “Asia, Western”[Mesh] or “Far East”[Mesh] or “Developing Countries”[MeSH]

AND
programs OR program OR programme OR programmes OR effect OR effects OR effective OR effectiveness OR efficiency OR efficacy OR efficacious OR evaluation OR evaluate OR evaluated OR impact OR assessment OR assessments OR campaign OR campaigns OR prevent OR prevention OR outcome OR outcomes OR feasibility OR intervention OR interventions

NOT

genetic OR gene OR genes OR protein OR proteins OR antigen OR antigens OR "T cell" OR "T cells" OR lymphocyte OR lymphocytes OR genotyping OR protease OR cytological

NOT


**Embase** 'sexually transmitted disease'/exp OR 'chlamydiiasis'/exp OR 'gonorrhea'/exp OR 'syphilis'/exp OR 'trichomoniasis'/exp OR 'scabies'/exp OR 'phthirus'/exp OR 'molluscum contagiosum'/exp OR 'granuloma inguinale'/exp OR 'ulcus molle'/exp OR 'papillomavirus infection'/exp OR 'wart virus vaccine'/exp OR 'vagina candidiasis'/exp OR 'genital herpes'/exp OR 'hepatitis B'/exp OR 'Human immunodeficiency virus'/exp OR 'pelvic inflammatory disease'/exp OR "sexually transmitted disease" OR "sexually transmitted infection" OR "venereal disease" OR STD OR STI OR HPV OR "human papillomavirus" OR "human immunodeficiency virus" OR HIV OR AIDS OR "pelvic inflammatory disease" OR PID OR "yeast infection" OR candidiasis OR gonorrhea OR chlamydia OR "pubic lice" OR "crab louse" OR trichomonas OR trichomoniasis OR scabies OR "molluscum contagiosum" OR "granuloma inguinale" OR chancroid OR syphilis OR chancre OR (genital AND herpes) OR HSV-2 OR "hepatitis b"

**CinahlPlus and PsycInfo** (teen OR teens OR teenager OR teenagers OR teenaged OR juvenile* OR preteen* OR pre-teen* OR minor OR minors OR adolescent OR girl OR girls OR "young people" OR "young person" OR "young adult") OR (MH Adolescence OR MH Young adults OR MH Minors) OR (TX youth OR TX youths)

(MH "Sexually Transmitted Diseases") OR (MH "Sexually Transmitted Diseases, Bacterial") OR (MH "Sexually Transmitted Diseases, Fungal") OR (MH "Sexually Transmitted Diseases, Protozoal") OR (MH "Sexually Transmitted Diseases, Viral") OR (MH "Chlamydia") OR (MH “Chlamydia Infections”) OR (MH “Gonorrhea”) OR (MH “Syphilis”) OR (MH “Trichomonas Infections”) OR (MH “Trichomonas Vaginitis”) OR (MH “Scabies”) OR (MH “Life Infestations”) OR (MH “Granuloma Inguinale”) OR (MH “Chancroid”) OR (MH “Papillomaviruses”) OR (MH “Papillomavirus Infections”) OR (MH “Papillomavirus Vaccine”) OR (MH “Candidiasis, Vulvovaginal”) OR (MH “Herpes Genitalis”) OR (MH “Hepatitis B”) OR (MH “Human Immunodeficiency Virus”) OR (MH “Pelvic Inflammatory Disease”) OR "sexually transmitted disease" OR "sexually transmitted infection" OR "venereal disease" OR STD OR STI OR HPV OR "human papillomavirus" OR "human immunodeficiency virus" OR HIV OR AIDS OR "pelvic inflammatory disease" OR PID OR "yeast infection" OR candidiasis OR gonorrhea OR chlamydia OR "pubic lice" OR "crab louse" OR trichomonas OR
trichomoniasis OR scabies OR "molluscum contagiosum" OR "granuloma inguinale" OR chancroid OR syphilis OR chancre OR (genital AND herpes) OR HSV-2 OR "hepatitis b"
Abstraction Form
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<th>GRAY LIT</th>
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<td>Age range of adolescent participants</td>
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<td>Are there other important details about the intervention?</td>
<td>Please describe in your opinion what the strengths of the intervention (Did it seem well thought out, organized, impactful etc?)</td>
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<td>EVALUATION</td>
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<td>Please rank the overall quality of the intervention? (on a scale from 1-5 with 1 being worse and 5 being best)</td>
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<td>What was the purpose of the evaluation?</td>
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<td>What type of evaluation was it? Quant, qual, mixed, other?</td>
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<td>If the evaluation was quantitative or mixed methods please answer the following questions. If it was qualitative ONLY please skip to column: AP</td>
<td>Was the intervention randomly allocated? (To individuals, to groups, no, other)</td>
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<td>How many groups were there? (eg: intervention, control, more than one of each)</td>
<td>Please describe each arm and what kind of intervention (or none) they received.</td>
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<td>How was exposure to the intervention measured? Please indicate whether it was well-operationalized or not.</td>
<td>When was data collected? (eg: pre, post, both, during?)</td>
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<td>What type of data comparisons were REPORTED in the study? (baseline-endline, exposure etc)</td>
<td>If sampling occurred to determine SURVEY participation (not necessarily intervention participation), how would you describe it?</td>
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<td>Are there other important details about the study design?</td>
<td>What methods of qualitative data collection were used?</td>
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Please describe the qualitative research design.

What analytic techniques were used?

Please describe the key findings.

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<td>Statistical measure of impact and significance for primary SRH outcome (e.g. ORs and p-values)</td>
<td>What are the strengths of the evaluation (study design, variable selection, comparison group, etc.)?</td>
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<td>What are the weaknesses of the evaluation (study design, variable selection, comparison group, power, etc.)?</td>
<td>What is your opinion of the overall quality of the evaluation?</td>
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