

**Table 4.** Description of economics studies included in the systematic review

Study	Program costs (\$)	Type of intervention Setting	Description of intervention Length of intervention Number of intervention participants	Breakdown of program cost	Considered healthcare costs averted? Considered productivity losses averted?	Health outcome(s) monetized or included in economic summary Summary economic measure
Hahn (1994) <sup>98</sup>	4192 per participant per year	Type—YD Some school-based	Description—Intervention consists of education/academic tutoring; community service; developmental help in sex, drugs, family planning Length—4-year program with about 750 hours' exposure each year Participants—25 each in four intervention and one control sites	About 46% for program and staff; remaining for college fund, stipends, and completion incentives	Health—assumed first-year cost of childbirth in Medicaid family=\$15,808 Productivity—considered income increments from completion of high school, 2-year college, 4-year university	Effects considered for a cohort of 100, with 14 averted childbirths included in summary 4-year program cost=\$1,676,847 and 4-year benefits=\$6,170,895, composed of \$5,949,588 for education benefits and \$221,307 for averted childbirth costs; benefit-cost ratio=3.68
Kennedy (2000) <sup>99</sup>	335,358 annual budget	Type—social marketing Community setting	Description—safe sex and condom use by radio advertisement; posters and small media; skills workshop; peer outreach; telephone information line Length—1 year Participants—extent of mass media coverage unclear	Staff salaries, operating expenses, creative materials development contracts, and purchased advertising time; details not provided.	None	No economic summary measure reported
Philliber (2002) <sup>73</sup>	5169 per participant per year	Type—YD Community setting	Description—family life, sex, health education; career support; academic support; artistic expression; recreation; physical and mental health services. Modeled after Children's Aid Society's Carrera Program Length—3 years Participants—242	Staff salaries, medical and dental services; stipends for "Job Club"; wages for work on entrepreneurial, community service, internship jobs; details not provided.	None	No summary economic measures reported although cost per day is reported to be less than cost of afterschool child care
Pinkerton (2000) <sup>100</sup>	119 per participant for a 5-hour-long 1-day session	Type—CB Setting not clear	Description—1-day HIV education and condom use; dispel misconceptions about HIV through video; games; exercises; role-play in sexual negotiations Length—1 day (5 hours) Participants—85 African-American male adolescents	22% personnel salaries; 29% incentives; 13% facilities; 23% training facilitators	Health—lifetime averted healthcare costs per HIV infection—\$261,832 Productivity—not considered directly but may be captured in QALY	Cost per infection averted—\$1,337,000 ICER reported to be \$76K/QALY HIV infections averted modeled on reduction in risky sex acts

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Rosenthal (2009) <sup>101</sup>	10,024 per participant per year	Type—YD Community setting	Description—family life, sex, health education; career support; academic support; artistic expression; recreation; physical and mental health referral Modeled after Children's Aid Society's Carrera program; comprehensive risk reduction plus parallel family program implying 24/7 contact with staff Length—7 years Participants—50 annually	Compensation for staff, rent/utilities/maintenance, food, fundraising, establish and maintain work experience, and training program; details not provided.	Health—direct health costs of childbearing and pregnancies drawn from 1997 Urban Institute study, <i>Kids Having Kids</i> ; reports \$8741 to \$17,064 per pregnancy Productivity—productivity costs of teen pregnancy drawn from 1997 Urban Institute study; also includes “other benefits” of averted pregnancies; details not provided but reports \$8323 per participating child	Even with “other benefits,” the program is not cost-saving, with net benefit at −\$1708 per student per year. Break-even occurs when horizon is extended to age 20–21 years or number of participants is increased to >60.
Tao (1998) <sup>102</sup>	3219 per participant per year	Type—assessment and counseling Community setting	Description—HIV risk assessment, peer counseling and education, and referrals Length—1 year (modeled over 10 years) Participants—501 gay and bisexual male adolescents	Assess and counsel—21%; Administration—32%; Support staff—18%; Rental—6%; Outreach—7%	Health—averted healthcare costs based on HIV modeling over 10 years—\$141,467 Productivity—human capital gains reported to be \$1,616,153 over 10 years, based on HIV modeling	ICER reported to be \$8978/QALY Efficacy used in calculations is 60% lower probability of having unprotected anal sex with recent partner
Wang (2000) <sup>103</sup>	66 per participant per year	Type—CB Setting—SB	Description—didactic education, peer facilitation, and videos to reduce sex risk Length—2 years Participants—2265	Teacher training—28%; Teaching—16%; Peer facilitators—25%; Coordination—23%; Curriculum packages—4%	Health—lifetime averted healthcare costs based on modeling of HIV, pelvic inflammatory disease, gonorrhea, chlamydia, and pregnancy—\$252,190 Productivity—averted income loss due to HIV and pregnancy at age 18 years rather than 21 years modeled over lifetime—\$202,970	Pregnancy, STIs, and HIV modeled on self-reported condom and contraceptive use Net benefit=\$253,182 Benefit-cost ratio=2.65
Zabin (1988) <sup>104</sup>	173 per participant per year	Type—YD Setting—SB plus off-site clinic	Description—sex education, counseling, discussions. Classroom presentations; small group discussions; individual counseling at school Group education; individual counseling; dental and medical services in clinic Length—3 years Participants—1700	Personnel—75%–88%; Supplies—5%–11% Medical services made up 52% of costs in clinics.	None	No summary measure reported

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**Table 4.** Description of economics studies included in the systematic review (*continued*)

Dissertation and review of programs						
Study	Program costs (\$)	Type of study	Description of evaluation method Length of intervention	Health outcomes considered	Program costs Considered healthcare costs averted? Considered productivity losses averted?	Health outcome(s) monetized or included in economic summary Summary economic measure
Aos (2004) <sup>105</sup>	—	Evaluation for State of Washington legislature	The charge to Aos et al. from the legislature was to evaluate state programs targeting youth with social or health objectives. The current review focuses on seven programs that include the objective of pregnancy prevention. The effectiveness parameter values are drawn from 12 intervention evaluation studies associated with the seven programs. Intervention length for included studies—five were 1-year programs, and one each were 3 and 4 years.	Pregnancies	Costs per person, which is inclusive of program costs, ranged from minimum of \$11 to a maximum of \$13457, with median \$725 The authors performed a comprehensive economic estimation of healthcare, productivity, and public welfare impacts.	Favorable net societal benefit is reported for one program of the seven evaluated, at \$212 per person. The other six programs result in greater societal cost than benefit, ranging from −\$15 to −\$10,640 with a median of −\$518.
Olaiya (2006) <sup>106</sup>	—	PhD dissertation evaluating the effect of comprehensive sex education programs	Parameter values for effect size drawn from six school-based intervention evaluation studies and applied to Census 2000 population Intervention description of included studies—all six studies were school-based behavioral interventions that included small group discussions, experiential learning, and role-playing. Two interventions included peer facilitators as staff in addition to adult professionals. All studies involved contraception education and communication skills, two involved the community, and one involved parents. Intervention length of included studies—duration ranged from 2–3 weeks to over 3 years.	Considered effect of programs on pregnancies and STIs	Program costs included interventions, ranged from \$67.50 to \$805 per person Evaluated healthcare costs averted for three age groups for pregnancies and STIs	Per-person 1-year averted healthcare costs for pregnancies and STIs: Aged 13–14 years—\$7.25 Aged 15–17 years—\$143.55 Aged 18–19 years—\$406

CB, curriculum-based; ICER, incremental cost-effectiveness ratio; QALY, quality-adjusted life-year; SB, school-based; STI, sexually transmitted infection; YD, youth development