

High School Completion Programs Recommended to Improve Health Equity



Community Preventive Services Task Force

Task Force Finding

The Community Preventive Services Task Force recommends high school completion programs for students at high risk for non-completion, based on strong evidence of effectiveness. The Task Force also recommends high school completion programs for a subset of students who are at risk for non-completion because they are pregnant or have children, based on strong evidence of effectiveness.

For the systematic review on which this finding is based,¹ program effectiveness was measured as the increased rate of high school completion by the intervention group compared with the control group. Using this measure, evidence showed that the following types of high school completion programs are effective (listed in approximate order of effectiveness): vocational training, alternative schools, social-emotional skills training, college-oriented programming, mentoring and counseling, supplemental academic services, school and class restructuring, multiservice packages, attendance monitoring and contingencies, community service, and case management. Evidence from the review showed attendance monitoring and multiservice packages to be effective for students who are pregnant or have children.

Based on economic evidence, interventions to increase high school completion produce substantial economic benefits to government and society. Benefits exceeded costs in most studies from a governmental perspective and in all studies from a societal perspective.

Because academic achievement is linked with long-term health, and because high school completion programs are commonly implemented in racial and ethnic minority or low-income communities, these programs are likely to improve health equity. Equity in health is the widespread, achievable equality in health and in the major social determinants of health in all the principal social divisions of a population.

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Definition

High school completion programs aim to increase the likelihood that students receive either a high school diploma or a General Educational Development (GED) diploma. These programs take many forms and may be delivered in schools or other community settings. They may target at-risk students as individuals or as groups (e.g., students who are pregnant or have children), or they may include all students in schools with low rates of high school completion. Programs may have a single focus, such as mentoring, or they may be multiservice programs that change several features of the school environment to promote high school completion.

Basis of Finding

A meta-analysis published in 2011² (search period, 1985–2010/2011) met Community Guide systematic review standards in terms of intervention definition, search procedures, outcome assessment, study design and execution evaluation, and synthesis of effect estimates. The 167 included studies represented 368 independent study arms, of which 317 assessed programs for students at risk for non-completion and 51 assessed programs for students who were pregnant or had children. Although the search strategy for programs for students who were pregnant or had children did not exclude male students, no such programs were identified, and all included studies were of programs for women. An updated Community Guide search for studies published between 2010 and August 2012 identified ten more studies, which had results consistent with those in the meta-analysis. Evidence for both Task Force recommendations is considered strong based on the numbers of included studies, magnitude of effect estimates, and consistency of effects on the receipt of a high school diploma or GED (Table 1).

Findings for Each Type of High School Completion Intervention

Wilson et al.² categorized programs into 11 mutually exclusive program types and a residual “other.” Programs

Table 1. Overall Effectiveness of High School Completion Programs

Outcome	Measure	Wilson et al. review ² (1985–2010/2011)	Community Guide update review (2010–August 2012)
High school completion rates	Percentage point difference in high school completion (intervention compared with control populations)	High-risk student populations (317 samples) Median difference=8.5 pct pts (Range: 3.6 to 15.9 pct pts)	High-risk student populations (10 studies) 8/10 favorable Median difference=6.5 pct pts (Range: -11.4 to 9.5 pct pts)
		Pregnant or parent students (51 samples) Median difference=11.7 pct pts (Range: 11.0 to 12.4 pct pts)	Pregnant or parent students (0 studies)

pct pts, percentage points.

for high-risk student populations (and others where noted) were (1) vocational training; (2) alternative schools; (3) social-emotional skills training; (4) college-oriented programming; (5) mentoring and counseling; (6) supplemental academic services; (7) school and class restructuring; (8) multiservice packages both for high-risk student populations and for pregnant or parent students; (9) attendance monitoring and contingencies both for high-risk student populations and for pregnant or parent students; (10) community service; and (11) case management. Each study identified during the updated search period was assigned to one of these categories, and effect estimates were calculated (see Table 2 at www.thecommunityguide.org/healthequity/education/RRhighschoolcompletion.html). Many categories shared elements; for example, college-oriented programs may use mentoring and counseling. Estimates are not reported for programs assigned to the “other” category (e.g., recreational, residential services for homeless) because those programs were too heterogeneous to allow meaningful interpretation of results.

The principal outcome assessed in the review of Wilson and colleagues² was high school completion or receipt of a GED diploma, though the review also reported on several other educational outcomes. As Wilson et al. did not assess intervention effects on rates of subsequent pregnancies for students who were pregnant or had children, the Community Guide review team used data from studies included in their analysis to calculate effect estimates for these outcomes.

A search for economic evidence identified 37 cost-effectiveness studies and 22 cost-benefit studies (search period, January 1985–October 2012) that assessed program costs, costs per additional high school graduate, intervention benefits per additional high school graduate from societal and governmental perspectives, and benefit-to-cost ratios. Complete details are available

online.³ The cost-benefit estimate was calculated as the ratio of benefits from a governmental perspective per additional high school graduate to cost per additional high school graduate; economic data were from available studies of diverse programs in California, New York, and nationwide.

Reproductive Outcomes of High School Completion Programs Among Students Who Were Pregnant or Had Children

Data from studies included in Wilson and colleagues’ meta-analysis² were used to calculate the effects of high school completion programs on rates of subsequent pregnancies for students who were pregnant or had children. The effects of the intervention on subsequent pregnancies and births were negligible, even among studies that evaluated programs focused on pregnancy and childbirth prevention. As studies were only included in this review if there was a clear high school completion component, these results may not be representative of interventions specifically designed to prevent pregnancies among students.

Applicability and Generalizability

Wilson et al.² evaluated studies’ applicability to different settings and populations, and assessed differences among interventions. Interventions considered in their review were conducted in the U.S., Canada, and the United Kingdom. In 75% of study samples, most students were from racial or ethnic minorities; similarly, most samples predominantly included students from low-income families. Male and female students were equally represented in programs for high-risk populations; as noted, only female students were included in programs for students who were pregnant or had children.

Among potential methodologic, program, and population effect modifiers for high-risk populations, the only statistically significant modifiers were program setting and lack of implementation problems. Programs offered in schools were more effective than those offered in community settings. Lack of implementation problems was associated with substantially improved intervention effectiveness. Neither participant age nor race/ethnicity was associated with program effectiveness. Program duration and independence of the program evaluator (from the program implementer) similarly were not associated with effectiveness.

Among potential effect modifiers for programs targeting students who were pregnant or had children, participant age, the independence of the program evaluator, and lack of implementation problems were associated with program effectiveness. Programs that reported no implementation problems were substantially more effective than those that reported problems, programs were more effective for older than for younger students, and independent evaluators were associated with smaller effects. Program duration and race/ethnicity of students were not associated with effectiveness.

Additional Benefits and Potential Harms

Non-academic benefits of reported high school completion programs included decreased need for social services; additional work time for parents (with associated income and other benefits); and improved nutrition. Some studies also reported reduced subsequent births to teen parents. However, among the studies in this review, those that evaluated subsequent pregnancy and birth outcomes for students who were pregnant or had children found no effects. These findings may not be representative of all student pregnancy and childbearing prevention programs.

Additional benefits may include the narrowing of skills gaps within the U.S. or between the U.S. and other countries. Potential harms of high school completion programs include loss of free or recreational time and family time. Decreased part-time work opportunities for students may be a benefit, as part-time student work has been associated with increased risk behavior.⁴ On the other hand, part-time work also may provide an opportunity for students to increase self-confidence and responsibility and supplement family income.

Economic Evidence

The economic review identified ten benefit analyses: four from a governmental perspective and six from a societal perspective. Intervention benefits were measured by

lifetime economic benefits to society and the government per additional high school graduate, including averted productivity loss and averted healthcare, crime, and welfare costs.

Lifetime benefits per additional high school graduate from the governmental perspective ranged from \$187,000 to \$240,000, and benefits from a societal perspective ranged from \$347,000 to \$718,000. Not included are the personal benefits to participants, which are difficult to monetize.

It would be useful if more studies included negative benefits of the indirect education cost—specifically the extra costs to families and school systems when students are newly motivated to continue their education and stay in school longer.

Considerations for Implementation

Because many programs are voluntary, attendance is a major implementation challenge. Attendance is often especially low among those most in need. Exceptions to this are programs including attendance and monitoring components that are based on administrative record systems and do not directly involve voluntary student participation.

Noncompliance with program requirements is a common challenge cited in the literature about supplemental academic service programs. For example, despite requirements to do so, schools failing Adequate Yearly Progress (a standard used in No Child Left Behind) commonly do not inform parents about the availability of free tutoring services, resulting in substantial underuse of programs.

There also may be challenges with staff, including inadequate training and high turnover.

Evidence Gaps

More information is needed about effectiveness of these interventions on GED program completion. Although Wilson and colleagues² included GED diplomas as an outcome, they did not identify any studies of programs delivered exclusively to GED candidates.

Other aspects of intervention effectiveness that need more study include contributions of different components to effectiveness of multiservice package programs as well as assessment of effectiveness of high school completion programs for students in confinement (e.g., prison or residential settings for various forms of treatment).

Additional cost-effectiveness studies for some types of programs, such as social-emotional skills training, mentoring and counseling, case management, vocational training, and community service programs, would

help expand the potential evidence base. Further, budget data, a common source of information for economic analyses, would be more useful if it contained details on the nature of specific costs (e.g., salaries, rent, teaching materials), which are critical for program planning.

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References

1. Hahn RA, Knopf JA, Wilson SJ, et al. Programs to increase high school completion: a Community Guide systematic health equity review. *Am J Prev Med*. 2015;48(5):599–608.
2. Wilson SJ, Tanner-Smith EE, Lipsey MW, Steinka-Fry K, Morrison J. Dropout prevention and intervention programs: effects on school completion. campbellcollaboration.org/lib/project/158/. *Campbell Systematic Reviews*. 2011;8.
3. The Community Guide. Promoting health equity through education programs and policies: high school completion programs. www.thecommunityguide.org/healthequity/education/highschoolcompletion.html.
4. Lustig K, Liem J. Quality of employment and delinquency during adolescent to young adult transition. *N Sch Psychol Bull*. 2010;8(1):4–14.