

The impact of school health programmes

Catherine Grant
Institute of Development Studies
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Question

What evidence is there on the impact of school health programmes/initiatives on: enrolment, retention/dropout of students, learning outcomes; health and nutritional benefits of students, families and communities by type of institution?

If possible, break down results by type of institution (primary, secondary, and tertiary) as objectives may vary by age group.

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The K4D helpdesk service provides brief summaries of current research, evidence, and lessons learned. Helpdesk reports are intended to provide an introduction to the most important evidence related to a research question. They draw on a rapid desk-based review of published literature and consultation with subject specialists.

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1. Overview

This report focuses on the impact of school health programmes. School health programmes can cover both the prevention and treatment of disease and malnutrition in a school setting (Snilstveit et al 2016). These services are designed to promote students' physical, cognitive, and social development. Effective school health programmes are broadly considered to be cost-effective. They build on existing health infrastructure and community partnerships, as well as a skilled workforce in schools (UNICEF 2000).

This report focuses on four main areas of impact: enrolment (section 2); retention/dropout of students (section 3); learning outcomes (section 4), and health and nutritional benefits of students, families and communities (section 5). The report is divided into impacts at the primary, secondary and tertiary levels where this information was available, but a lot of the literature focused on schools in general. There was more evidence on school health programmes in primary schools than in secondary schools and very little literature found on the impact of health programmes in tertiary education.

The literature showed that education is a strong predictor of lifelong health and quality of life. Education, health, and social outcomes are very closely interdependent. Success in school and years of schooling are major factors in determining social and occupational status in adulthood and health status throughout life. Poor school performance predicts health-compromising behaviours and physical, mental, and emotional problems. Poor nutrition, substance abuse, sedentary behaviour, violence, depression, and suicidality compromise school performance. This negative cycle, established during the school years, has profound consequences for the success and productivity of our communities. Schools and the health and nutrition programmes within them are a key part of the solution to this (IDS 2016).

Good nutrition and health is essential for success at school, for example in terms of cognitive development, attention span and better attendance. Likewise, a good education is crucial for the social, political and economic empowerment of girls and boys, thereby breaking the cycle of chronic malnutrition (IDS 2016). Poor health and nutrition prevent children from attending school and from learning to their best ability whilst there. School health and nutrition programmes are amongst the most cost effective interventions that exist to improve both children's education and health. They can add four to six points to IQ levels, 10% to school participation, and an additional one to two years of education (World Bank 2017). SHN programmes, which have over the past two decades shifted significantly in focus from a medical approach to one which could reach the most disadvantaged and vulnerable, contribute to health outcomes and are a cost-effective intervention for improving school access and completion (IDS 2016).

There are gender differences in the impact of school health programmes, particularly in relation to the impact of WASH programmes and the lifelong impact of health and education in terms of the health of future children. These have been highlighted when relevant throughout the report.

An internal paper produced by IDS for the EC reviewed the link between school health programmes and education and nutrition outcomes (IDS 2016). The paper produced this table summarising the main findings on the impact of school-based health and nutrition interventions on nutritional and educational outcomes:

Intervention	Evidence on impact on nutrition		Evidence on impact on education	
	Knowledge	Nutritional status	Enrolment/ attendance	Educational outcomes
School-based nutrition-specific interventions				
School feeding	No evidence	+/-	+++	+/-
Early Child Development programmes	++ (mothers)	+++	No evidence	+++
Micronutrients	No evidence	+++ (iron only)	+++	+++
Deworming	No evidence	+ (weight only)	+/-	+/-
School-based nutrition- sensitive interventions				
Nutrition Education (NE)	+	0	+	+
School gardens	+	+	0	+ (related to sciences)
Water, sanitation and hygiene interventions	No evidence	0	+++ (especially girls)	0
Cash transfer programmes	+ (if combined with NE)	+/-	++	+

Key: Strength of evidence: +++, strong positive impact; ++ medium positive impact; +, weak positive impact; 0, no impact; +/-, mixed impact; no evidence identified. (Note: the availability and relevance of evidence varied between the different school-based interventions, and for some interventions only evidence from middle- and high-income country settings could be retrieved (IDS 2016)).

Another useful table is below:

	Enrolment	Attendance	Drop out	Completion	Cognitive	Maths	Language arts	Composite
Child level								
School-feeding	0.14, 95% CI [-0.05, 0.33] 7 studies	0.09, 95% CI [0.03, 0.16] 6 studies	0.06, 95% CI [-0.15, 0.03] 3 studies	0.01, 95% CI [-0.03, 0.01] 2 studies	0.11, 95% CI [0.00, 0.22] 7 studies	0.10, 95% CI [0.00, 0.19] 10 studies	0.09, 95% CI [0.01, 0.17] 8 studies	0.14, 95% CI [-0.04, 0.33] 3 studies
School-based health: malaria	No studies	No meta-analysis	No studies	No studies	0.03, 95% CI [-0.05, 0.12] 3 studies	0.16, 95% CI [-0.08, 0.25] 3 studies	0.03, 95% CI [-0.49, 0.55] 3 studies	No studies
School-based health: micronutrients	No studies	No meta-analysis	No studies	No studies	0.01, 95% CI [-0.03, 0.05] 2 studies	0.06, 95% CI [0.02, 0.10] 4 studies	No meta-analysis	No studies
School-based health: deworming	No studies	0.04, 95% CI [-0.13, 0.21] 4 studies	No studies	No studies	0.01, 95% CI [-0.03, 0.05] 3 studies	0.05, 95% CI [-0.02, 0.13] 2 studies	-0.04, 95% CI [-0.11, 0.02] 3 studies	No studies

Source: Snilstveit et al 2016

2. Enrolment

Current evidence indicates that integrating nutrition-related activities into education-sector support has a positive impact on school enrolment (IDS 2016). **School-feeding programmes and WASH interventions** can reduce school absenteeism and improve enrolment (IDS 2016).

Primary

School feeding programmes: Robust but mixed evidence (including some randomised control trials (RCTs)) from low-income countries suggests SFPs may improve enrolment and attendance (Burde et al 2015, Jomaa et al 2011, Omwami et al 2011). However, some studies have found little impact (Buttenheim et al 2011, Afroze et al 2014). Research suggests SFPs have a bigger impact on girls than on boys (Gelli 2015, Kazianga et al 2009, Gelli et al 2007). No rigorous research exists on the effects of SFPs on education access in crisis-affected countries (Kazinga et al 2009). One risk highlighted by IDS 2016 is that food supplies diminish as enrolment increases leading to smaller portions or not enough food to cope with larger numbers.

One study showed that school feeding programme in Osun State, Nigeria resulted in an increase in pupils' enrolment (78.4%), retention (44.8%), as well as regularity (58.6%) and punctuality (69%) in school attendance. The major challenges were found to be insufficient funding (62.2%), insufficient classrooms and furniture to cope with increase in enrolment (60.86%), heavy workload for teachers (60.86%) and lack of effective monitoring and evaluation system (60.86%). The study concluded that the School Feeding Programme in Osun State has increased the enrolment and improved the performance of elementary school pupils in the state (Taylor and Ogbogu 2016).

Take-home rations: used to target individual students and encourage attendance, this modality can be expensive to implement, though it can serve as an excellent incentive for increasing enrolment and continued attendance, particularly for girls (IDS 2016).

Early childhood development programmes have not been shown to have an impact on primary enrolment levels (IDS 2016).

WASH programmes: School-based WASH interventions can include: increasing access to and quality of school water sources, hygiene education, provision of soap and improved access to and cleanliness of latrines. In addition, gender-specific school WASH interventions may promote sex-segregated toilets, in addition to other WASH activities such as sanitation and soap, to reduce barriers to girls attending school while menstruating (IDS 2016). A trial conducted in Kenya comparing a combination of hygiene promotion (HP) and water treatment (WT) to a combination of HP, WT and sanitation in primary schools found that their intervention packages did not have a significant impact on enrolment (Freeman et al 2012).

Secondary

School feeding programmes: Limited evidence is available on adolescents and SFPs, as the focus of SFPs is usually primary school settings (Hoyland et al 2009).

WASH: Studies have shown that school WASH interventions are key to decreasing absenteeism for all school-age children, and to reducing barriers to enrolment and participation for adolescent girls (O'Reilly et al 2008, Koppman 1978, Jaspter et al 2012,

WHO 2002). A systematic review looking at the impact of sex segregated toilets on enrolment in primary and secondary schools did not find evidence either for or against the impact of separate toilets for girls (Birdthistle et al 2011).

Cash transfers: Both conditional cash transfers (CCTs) and unconditional cash transfers (UCTs) improve the odds of being enrolled in and attending school (compared with no CTs). While the effect sizes for enrolment and attendance are larger for CCTs than for UCTs, the difference is not significant (Baird et al 2013).

Tertiary

The brief literature review conducted for this report found no studies focusing on the link between school health programmes and enrolment levels at the tertiary level.

3. Retention/dropout of students

School feeding programmes: Children who were fed at school attended school more frequently than those in control groups; this finding translated to an average increase of four to six days a year per child. School feeding was found to increase average attendance between 4 to 6 days per year (Kristjansson et al. 2007).

School gardens: A study showed a rise in exam scores in schools with gardens, possibly due to increased retention (Acker and Gasperini 2009).

Primary

WASH programmes: School-based provision of safe drinking water, hand washing facilities, and hygiene education in primary schools in Kenya was found to reduce school absenteeism in one quarter of the school year by 35% (compared to an increase in absenteeism in surrounding non target schools by 5% in the same time period) (O'Reilly et al 2008). Similarly, a trial comparing standard hand washing promotion to an expanded hand washing intervention in primary schools in China significantly reduced absenteeism in children (Bowen et al 2007). A trial comparing a combination of HP and WT to a combination of HP, WT and sanitation found that the HP and WT intervention reduced absenteeism in girls by 6.1 days and the HP, WT and sanitation intervention by 6.8 days, compared to no interventions at all (Freeman et al 2012).

A **deworming** programme reduced school absenteeism in treatment schools by one-quarter, and was far cheaper than alternative ways of boosting school participation. This study found measuring drop-out rates difficult as it was hard to distinguish between long term absences and drop out so this was why they recorded attendance as an indicator (Miguel and Kremer 2004). Watkins, Cruz, and Pollitt (1996a, 1996b) found no effect of treatment of roundworm and whipworm on primary school attendance.

Secondary

Interventions that have the potential to reduce school dropout rates by improving the health of students are of particular interest to health professionals. These school-based interventions include coordinated school health programmes; health clinics; mental health programmes; substance abuse prevention and treatment programmes; comprehensive sex education, human immunodeficiency virus infection prevention, and pregnancy prevention programmes; special services for pregnant and parenting teens; violence prevention programmes; and interventions to change the schools' social climate (Brindis et al 1998,

Haynes et al 2002, CDC 2006, Morone 2001, Elliott 2005, Silva 2002, Card 1999, Mytton et al 2002, Cohen, 2006). Table 1 in the appendix lists the approaches that have the potential to reduce dropout rates, based on a study particularly looking at the United States (Fredenburg and Ruglis 2007 which considered several articles including Brindis et al 1998, Haynes et al 2002, CDC 2006, Morone 2001, Elliott 2005, Silva 2002, Card 1999, Mytton et al 2002, Cohen, 2006). Although the focus here is on adolescents, these approaches are also used in elementary and middle schools.

Many schools offer several different types of health programmes shown in Table 1 in the appendix (Fredenburg and Ruglis 2007). However, these activities are seldom coordinated, and they do not target reducing school dropout rates as an outcome. Few innovative or effective programmes have gone beyond pilot studies or have been provided funding that assured sustainability. Evaluation studies that assess the impact of health programmes on school dropout rates are rare, a disturbing gap given the importance of school dropout as a health, social justice, and economic issue. As a result, a comprehensive framework explaining the mechanisms by which various types of health programmes reduce dropout rates is not available, making it difficult for school or health officials to select the most effective interventions for their setting.

WASH: Lack of adequate, private and secure toilets and hand-washing facilities may inhibit girls from attending school, particularly during menstruation, leading to unequal learning opportunities. These barriers can also lead to girls dropping out of school altogether following puberty. One of the major predictors of nutritional status in young children is maternal educational attainment. Therefore, reducing barriers to female attendance and enrolment is critical to ensuring girls will stay in school (Adams et al 2009).

CCTs: Research from Malawi, evaluating a programme targeting adolescent girls, found that both CCTs and UCTs resulted in a decline in dropout rates, but the decline was over twice as great in the CCT group (Baird et al 2011).

School based health centres (SBHCs): An American quasi-experimental longitudinal analysis of a retrospective student cohort found low to moderate SBHC use (0.125-2.5 visits per semester) was associated with a 33% reduction in dropout compared with non-SBHC users. The high-use group (2.5 visits per semester) did not have dropout rates that differed from nonusers. For SBHC users who did drop out, dropout occurred approximately 1 semester later than nonusers. Exploratory analyses revealed that the association between SBHC use and prevention of dropout was greatest for higher-risk students (Kerns et al 2011).

Tertiary

The brief literature review conducted for this report found no studies focusing on the link between school health programmes and drop out levels at the tertiary level.

4. Learning outcomes

Micronutrient supplementation: This can have a strong positive impact on school attendance and educational achievement (IDS 2016). However it seems that it had beneficial effects on nutrition and learning in some contexts and negative or no effects in others. Two **primary** school micronutrient supplementation trials in China – one providing multi-vitamins to grade 4 students (Luo et al. 2012) and one providing iron supplements to grade 4 students (Wong et al. 2014) – had larger impacts on nutrition and maths tests scores than

other similar programmes. Aside from reported high rates of compliance, it is not clear why these programmes were more successful in improving education outcomes.

Deworming: Regular school-based deworming is a cost-efficient strategy to treat common parasitic worm infection in school-age children. While worm infections have no acute health consequences for children, long-term intestinal worms can result in anaemia and undernutrition, both of which can (irreversibly) impair physical, mental and cognitive development.

Impact on educational outcomes has been debated and a recent systematic review found only negligible effects of deworming on cognition, exam performance and school attendance (IDS 2016). Whilst the evidence on the impact of deworming on education outcomes is weak and there is no strong supportive evidence on the impact of deworming, there is convincing evidence on the negative impact of parasitic worm infections on children's health and development. Consequently, WHO continues to recommend periodic deworming of all school-aged children in areas endemic to worm infestations (IDS 2016). Other studies have found that deworming programmes have been marketed as the 'best buy for development' as they are inexpensive and considered beneficial for improving health and school attendance (J-PAL 2012). Despite their popularity, evaluations of deworming programmes suggest only small, if any, observable educational benefits for children receiving such programmes. There is an improvement in attendance for children participating in deworming programmes in Sri Lanka (Ebenezer et al. 2013) and Kenya (Miguel and Kremer 2004), but not in Guatemala (Watkins, Cruz and Pollitt 1996) and Jamaica (Simeon et al. 1995). A deworming programme in Sri Lanka found that no impact was found on haemoglobin (Hb) levels, nor any significant impact on concentration levels or on educational test scores. Decline in STH prevalence alone, in the absence of improved Hb status, produced no evidence of impact on concentration levels or educational test scores (Ebenezer et al 2013)

School feeding programmes: For educational and 32 cognitive outcomes, children who were fed at school gained more than controls on maths achievement, and on some short-term cognitive tasks. Results from higher-income countries were mixed, but generally positive. Providing free breakfasts to school pupils in some of England's poorest areas could boost their progress in maths and writing by the equivalent of two months of extra schooling a year, according to a new study, although this does vary by age (see Table 2 in the appendix) (EEF 2016). Maths gains were consistently higher for children who were fed and in short-term studies, small improvements in some cognitive tasks were found (Kristjansson et al. 2007).

Evidence on **nutrition education** as part of the school curriculum is very limited and mainly generated in high-income settings. Nevertheless, the available evidence suggests positive impacts of nutrition education on nutrition knowledge, and school attendance and achievement. Further research on the impact of nutrition education as part of the curriculum in low-income countries is needed (IDS 2016). Multisensory nutrition education has small but positive effects on educational outcomes and school attendance (IDS 2016).

School-based micronutrient supplementation aims to alleviate common micronutrient deficiencies, especially iron-, iodine-, Vitamin A- and zinc-deficiencies, in school-aged children. Micronutrient deficiencies can result in permanent physical and cognitive damage and (irreversible) developmental delays. Micronutrient supplements are provided as pills, liquids or fortified food. There is strong evidence regarding iodine and iron supplementation for the benefits on cognitive functioning and achievement (IDS 2016).

School based health centres (SBHC) in secondary schools in America was associated with academic improvements over time for a high-risk group of users. The moderating effect of type of use (medical and mental health) reinforces the importance of looking at subgroups when determining the impact of SBHC use on outcomes (Walker et al 2009). Another American study on **school based health centres** found they did improve educational outcomes (Van Cura 2010).

Cash transfer programmes can have a positive impact on school attendance and achievements (IDS 2016).

School gardens: Scientific evidence base for impact on educational benefits remains weak and problematic due to the variation of approach, quality and context. Limited evidence on positive impacts on learning outcomes and experiences (mainly related to science learning) and healthy food choices and behaviours. They may help children in agriculture-dependent economies to develop horticultural and entrepreneurial skills (IDS 2016).

School feeding programmes: There is mixed evidence showing less positive results to do with improved cognitive performance and limited research on the ideal nutritional composition of school feeding programmes to enhance cognitive function (3ie 2009). Research suggests morning meal consumption has more benefits for cognitive performance than skipping breakfast, and the effect appears to be stronger in children with compromised nutritional status (Hoyland et al 2009). It is unclear if SFPs improve performance primarily by improving nutritional status and cognitive development, by encouraging increased school attendance, or by a combination of both (Hoyland et al 2009).

Malaria prevention and control programmes have beneficial effects on education outcomes for participating children in some contexts. A malaria prevention and control pilot project in Sri Lanka had substantial positive effects on learning outcomes (Fernando et al. 2006), but the Health and Literacy Intervention had a negative effect on learning in Kenya, as measured by spelling and maths (Brooker & Halliday 2015).

A **school nurse** can help reduce the achievement gap that students with chronic health conditions face (Healthy Schools Campaign).

5. Health and nutritional benefits of students, families and communities

This section includes information on the health and nutritional benefits of school health programmes for students, families and communities.

Students

Early childhood development programmes: The evidence base for the effectiveness of **early childhood development (ECD)** programmes on both child education and nutrition is currently the strongest. ECD programmes are the only interventions with a proven and significant positive impact on child anthropometry. Most beneficial are ECD programmes that combine health and/or nutrition interventions with stimulating childcare (IDS 2016).

School feeding programmes: There is a growing body of evidence linking children's health and education; and the impact of school health and nutrition. Evidence indicates that school

feeding programmes have small effects on school-age children's anthropometry, particularly in low-income settings (Ruel & Alderman, 2013). Food for education programmes can provide iron and other key micronutrients, but these programmes are not designed to address the most critical nutritional constraints in low-income settings, simply because they are not targeted at the most vulnerable period in child development, which is between conception and 2 years of age (Alderman & Bundy, 2011).

Relatively consistent evidence from 1990-2010 of the positive effects of SFPs on energy intake and micronutrient status (Jomaa et al 2011). Some recent research suggests SFPs have a conclusive impact on micronutrient levels of target populations (Lawson 2012). School feeding programmes are designed to improve attendance, achievement, growth, and other health outcomes. A systematic review found that in the highest quality studies (randomised controlled trials (RCTs) from low income countries, children who were fed at school gained an average of 0.39 kg more than controls over 19 months; in lower quality studies (controlled before and after trials – CBAs), the difference in gain was 0.71 kg over 11.3 months. For height, school feeding resulted in the greatest height gain for younger children (Kristjansson et al. 2007). For height, results from lower income countries were mixed; in RCTs, differences in gains were important only for younger children, but results from the CBAs were large and significant overall. Results for height from high income countries were mixed, but generally positive. It can be concluded that school meals may have some small physical and psychosocial benefits for disadvantaged children, but further research is needed (Kristjansson et al. 2007).

Micronutrient supplementation can have a strong positive impact on micronutrient deficiencies (e.g. iron deficiency). However, no evidence was identified regarding other dimensions of malnutrition (such as stunting and wasting) (IDS 2016). There is strong evidence that school-based micronutrient supplementation reduces iron-deficiency anaemia (IDS 2016).

The evidence on the impact of **deworming** on nutrition outcomes is weak. However, while there is no strong supportive evidence on the impact of deworming, there is convincing evidence on the negative impact of parasitic worm infections on children's health and development. Consequently, WHO continues to recommend periodic deworming of all school-aged children in areas endemic to worm infestations (IDS 2016).

There is some evidence for small effects of **school gardens** on nutrition knowledge and status, but further research is needed to strengthen the evidence base (especially from low-income countries) (IDS 2016).

WASH programmes: There is limited evidence on the impact of school-based WASH interventions on nutrition outcomes e.g. weight, height or anaemia (Makoka 2013). There is no strong evidence regarding the nutritional impact of school-based WASH interventions (IDS 2016).

There is a lack of literature on the impact of providing sex segregated toilets on health and education outcomes, it has been suggested that improved WASH at schools, particularly soap and facilities, may improve the attendance of girls (Pearson and Mcphedran 2008). A review of four studies on the provision of WASH interventions for menstruation management found that female students experienced discomfort in the school environment during menses as a result of lack of privacy, difficulty in disposing of sanitation materials, and lack of access to soap and water (Jasper et al 2012).

Cash transfer programmes: the evidence on nutritional impacts is mixed due to the large range of policies and programme designs, variations in quality of implementation, and the lack of investment in robust evaluation (IDS 2016).

Nutrition Education appears to positively influence nutrition knowledge and attitudes, whereas the effects on nutrition behaviours and nutritional outcomes are weak. There is limited and mixed evidence of a small impact of NE on anthropometry and micronutrient status (IDS 2016).

Peer education: Peer education interventions in schools are an acceptable model of health education and health promotion that has been documented previously (Frantz 2015; Al-Iryan, Basaleem, Al-Sakkaf, Kok & Van den Borne, 2013; Warwick & Aggleton, 2004). There is a belief that theoretically based peer education interventions may help improve knowledge and ultimately assist in changing adolescent risk behaviour (Mahat, Scoloveno, Ruales & Scoloveno, 2006). The impact of school-based peer education interventions has been shown to have a positive effect on the recipients (Al-Iryan, Basaleem, Al-Sakkaf, Crutzen, Kok & Van den Borne, 2011).

Brooks (2013:12) found that the evidence base relating to the impact of **school nurses** on the health of the school-age population is small and relatively weak. Models for the assessment of the impact of school nursing on health outcomes and determinants of health require development. However, a study on **school nurse** services in England found that young people's access to and engagement with school nurse services was good and led to beneficial outcomes in relation to emotional health and a variety of lifestyle issues (Turner and Mackay 2015).

A study on **school based health centres (SBHCs)** in middle and high schools America found that students who used SBHCs were more satisfied with their health and engaged in a greater number of health-promoting behaviours than did students who did not use SBHCs. These findings indicate that SBHCs are achieving their goal of promoting children's health (McNall et al 2010).

Families

School feeding programmes: Some evidence suggests that school feeding programmes may be an effective method of both improving nutritional status and reducing poverty. School feeding can use value chains to link agriculture and nutrition, with potential livelihood and income benefits for farmers and nutrition benefits for young children and their families. School feeding may also assist with iron intake, which is particularly important for teenage girls (Ruel & Alderman, 2013).

Alderman and Bundy (2011) analyses the recent evidence from in-depth studies on school feeding programmes. It finds that while school feeding programmes can influence the education of school children and, to a lesser degree, augment nutrition for families of beneficiaries, they are best viewed as transfer programmes that can provide a social safety net and help promote human capital investments.

Some research suggests **take-home rations** are more likely to benefit the nutrition status of all children in a family (Kazianga et al 2009).

Communities

School health programmes which focus on adolescent girls could have a big impact on future generations as it has been shown that there is strong evidence showing a positive link between attendance and school performance for adolescent girls and the subsequent health of their children (Makoka 2013). Figure 1 in the appendix also shows the link between well-nourished girls and women's empowerment (UNICEF 2014).

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7. Appendix

Table 1

Health Interventions That May Contribute to Improved School Completion Rates

Type of Intervention (Selected References)	Program Activities	How the Intervention Reduces Dropout Rates
Coordinated school health program (43,50)	Health education; physical education; health services; nutrition services; counseling, psychological, and social services; healthy school environment; health promotion for the staff, family, and community; partnerships	Teaches decision-making skills for better life choices; reduces absenteeism; offers early intervention and referrals for learning, psychological, substance abuse, and mental health problems; makes school more engaging; connects students to caring adults; engages families and communities in lives of young people
School-based health clinic (51,52)	Primary and preventive health care, referrals, assistance in finding health insurance and health care for family, reproductive health services, mental health counseling	Reduces family health problems; offers early intervention and treatment for psychological and physical health problems that can interrupt schooling; reduces teen pregnancy
Mental health programs (31,53)	Assessment and early intervention for young people with psychological, learning, or behavioral problems; referrals for children and families; counseling; staff training	Prevents problems that can interfere with school from becoming more serious; connects young people to caring adults; makes school more engaging; provides counseling or referrals for family mental health problems
Substance abuse prevention and treatment programs (45,54)	Alcohol, tobacco, and drug use prevention education; peer education; early intervention for drug users; support for young people with substance-abusing parents; referrals for drug treatment or counseling	Reduces or delays onset of heavy alcohol or marijuana use; offers young people with a drug-using parent a source of support; makes school more engaging
Sex, HIV infection, and pregnancy prevention programs (46,47,55)	Sex education; HIV infection prevention services; referrals for reproductive and sex health services; birth control; peer education; sexually transmitted infection prevention	Reduces or delays teen pregnancy; connects young people to caring adults or peers who encourage healthy behavior
Services for pregnant and parenting teens (29,56)	Child care; parenting education; reproductive health services; continued participation in high school academics/courses	Encourages and supports teen mothers to continue schooling; delays second pregnancy
Violence prevention programs (47,57)	Peer education/mediation; anger management; conflict resolution; violence prevention education; psychosocial services; individual and group counseling	Makes young people feel safer in school; makes school more engaging; connects young people to caring adults or peers who encourage healthy behavior
School climate (49,58)	Policy changes to reduce stigmatization, bullying, aggressive policing, or punitive disciplinary measures; peer education; increased opportunities for close adult-student interactions	Improves student engagement in school activities; connects young people to caring adults; reduces bullying, stigmatization, and distrust of authority

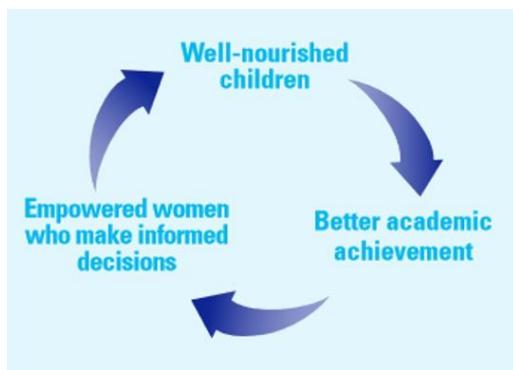
Source: Freudenberg and Ruglis (2007)

Table 2

GROUP AND OUTCOME	NO. OF SCHOOLS	EFFECT SIZE (95% CONFIDENCE INTERVAL)	ESTIMATED MONTHS' PROGRESS	SECURITY RATING	EEF COST RATING
Year 2: KS1 maths	102	0.149 (0.051;0.248)	+ 2	🔒🔒🔒🔒🔒	££££££
Year 2: KS1 reading	102	0.104 (0.012;0.196)	+ 2	🔒🔒🔒🔒🔒	££££££
Year 2: KS1 writing	102	0.136 (0.038;0.239)	+ 2	🔒🔒🔒🔒🔒	££££££
Year 6: KS2 reading	98	0.103 (-0.056;0.262)	+ 2	🔒🔒🔒🔒🔒	££££££
Year 6: KS2 maths	98	0.075 (-0.060;0.210)	+ 1	🔒🔒🔒🔒🔒	££££££
KS1 score: FSM	101	0.153 (0.068;0.237)	+ 2	N/A	££££££
KS1 score: non-FSM	102	0.246 (0.152;0.341)	+ 3	N/A	££££££
KS2 score: FSM	98	0.037 (-0.048;0.122)	+ 1	N/A	££££££
KS2 score: non-FSM	98	0.269 (0.150;0.387)	+ 4	N/A	££££££

Source: EEF 2016

Figure 1



Source: UNICEF 2014

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About this report

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