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Original article

The Project Connect Health Systems Intervention: Linking Sexually Experienced Youth to Sexual and Reproductive Health Care

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A B S T R A C T

Purpose: To evaluate a health systems intervention to increase adolescents' receipt of high-quality sexual and reproductive health care services.
Methods: Quasi experimental design. Twelve high schools in a large public school district were matched into pairs. Within each pair, schools were assigned to condition so that no control school shared a geographic border with an intervention school. Five yearly surveys (T1, T2, …, T5) were administered from 2005 to 2009 (N = 29,823) to students in randomly selected classes in grades 9–12. Community-based providers of high-quality sexual and reproductive health care services were listed on a referral guide for use by school nurses to connect adolescents to care.
Results: Statistically significant effects were found for intervention school females on three outcomes, relative to controls. Relative to T1, receipt of birth control in the past year was greater at T4 (adjusted odds ratio [AOR] = 1.85; 95% confidence interval [CI], 1.09–3.15) and T5 (AOR = 2.22; 95% CI, 1.32–3.74). Increases in sexually transmitted disease testing and/or treatment in the past year were greater in T1–T3 (AOR = 1.78; 95% CI, 1.05–3.02), T1–T4 (AOR = 1.73; 95% CI, 1.01–2.97), T1–T5 (AOR = 1.97; 95% CI, 1.17–3.31), and T2–T5 (AOR = 1.76; 95% CI, 1.06–2.91). Increases in ever receiving an HIV test were greater in T1–T4 (AOR = 2.14; 95% CI, 1.08–4.26). Among males, no intervention effects were found.
Conclusions: A school-based structural intervention can improve female adolescents' receipt of services.

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IMPLICATIONS AND CONTRIBUTION

Project Connect offers an effective means of connecting female high school students to sexual and reproductive health care services and may be implemented in schools unable to offer such services.

Most adolescents initiate sexual behavior during the high school years; by the end of 12th grade, 63% have had sexual intercourse [1]. Young people aged 15–24 years account for nearly half of all newly diagnosed sexually transmitted infections [2], with the highest reported rates of chlamydia and gonorrhea infection of any age group [3]. In addition, approximately 750,000 students aged 15–19 years become pregnant each year [4]. To prevent these outcomes, sexually experienced adolescents require sexual and reproductive health care (SRH) that includes preventive counseling, risk assessment, provision of contraceptives, and sexually transmitted disease (STD) testing and treatment. Current STD treatment guidelines recommend yearly

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chlamydia and gonorrhea screening for all sexually active females aged ≤25 years [5]. Data from the National Survey of Family Growth indicate that 73% of sexually active females aged 16–25 years reported visiting a medical provider for reproductive health services in the past year; however, only 42% reported they had been tested for an STD [6].

Connecting sexually experienced adolescents to high-quality SRH can be challenging. High-quality health care is health care that follows accepted guidelines [7] for providing comprehensive health care to adolescents, including assessing risk behavior, such as sexual activity; screening sexually active adolescent females for STDs; and offering preventive counseling. A recent review of barriers to care seeking among adolescents indicated that confidentiality concerns, stigma, insufficient knowledge about available services, poor accessibility, and adolescents' perceptions about providers' attitudes were significant in preventing them from seeking care [8]. Chacko et al. [9] found that young women cite systemic factors related to clinic visits (e.g., having to wait for test results) and logistics (e.g., work and/or school schedules, transportation) as primary barriers to seeking screening for chlamydia and gonorrhea. Currently, few evidence-based interventions exist to improve adolescent utilization of SRH. Although a number of studies have demonstrated the effectiveness of strategies to improve care within clinical settings [10–12], connecting adolescents to these services presents a significant challenge.

Environmental, policy, or systems interventions seek to change the physical, social, or regulatory context to improve health behavior. Changing the context to make healthy choices easier represents one of the more effective approaches to achieving population-level health change [13]. Examples of contextual interventions include designing communities to promote physical activity, enacting policies that encourage people not to drive, and passing smoke-free air laws. Such changes are often more cost effective and sustainable than traditional behavioral interventions, which seek to change individual behavior.

Contextual changes implemented in places where adolescents gather and where there is a reasonable likelihood of reaching most adolescents are best situated to improve adolescent utilization of SRH services. Schools, therefore, provide an advantageous setting for health change interventions targeting adolescents. School-based STD screening programs have been implemented in a number of localities with some success [14,15], and there is evidence that access to confidential health care has been improved through school-based health centers (SBHCs) [16]. Although these programs have positively impacted sexual and reproductive health among adolescents at a population level in schools, they may not present viable options for many jurisdictions [17], because of resource constraints or lack of community support.

Our goal was to explore an alternative means to increase adolescents' receipt of SRH at a population level and to develop and evaluate a low-cost sustainable intervention that would connect adolescents to existing sources of high-quality care in their communities through systems changes within their schools. Specifically, we identified community-based providers of developmentally appropriate adolescent SRH and created referral systems within high schools to connect adolescents to those services using existing school personnel (e.g., school nurses). We anticipated that receipt of contraception and STD and HIV testing would increase among sexually experienced students in intervention schools over time, relative to students in control schools.

Methods

Overview of the study

Project Connect was an adolescent pregnancy and STD prevention study conducted in a public school district in Los Angeles County, California. To identify areas with the greatest pregnancy and STD prevention needs, rates of chlamydia among 15–19 year olds and births among females were mapped by high school attendance areas.[1] Twelve high schools in areas with chlamydia rates among males and females, and birth rates among females, exceeding Healthy People 2010 [18] goals participated. Schools were matched into six pairs on criteria including local adolescent chlamydia and birth rates, school size and demographics, availability of a SBHC, and geographic distance between schools. To reduce the likelihood of contamination, schools from each pair were purposively assigned to either the intervention or control condition, so that no control school shared a geographic border with an intervention school. Study materials and protocols were approved by the school district and collaborators' institutional review boards.

The intervention

Our goal was to develop and evaluate a low-cost sustainable intervention with sufficient reach to increase receipt of SRH services among sexually experienced adolescents. Because our population was school based, our first objective was to design an intervention that would impact the entire sexually experienced population in the intervention schools. Second, we opted for an approach that would connect students to existing community-based sources of SRH rather than delivering those services in schools. Third, we designed the intervention to support environmental and systems changes within the school without trying to modify provider behavior. Fourth, although we documented the criteria that have come to define the "teen friendliness" of services in the literature (e.g., confidential services, low or no cost services, walk-in appointments), we included a wide variety of clinics in the guide in case other factors (e.g., location) were more important. Furthermore, because formative interviews with school staff suggested that school nurses interacted frequently with the sexually experienced students, and so would be a primary link between students and outside sources of care, we chose to focus on nurses as our primary touchpoints for making referrals. The resulting multicomponent, synergistic, health systems intervention included a referral guide (in both large poster-size format and tear-off sheets that could be given to students) of community-based health care settings, identified because they demonstrated provision of high-quality SRH; in-service education on state laws and district policy for school personnel; linkage meetings between school and district nursing personnel and health care providers in the community; and mobile testing events arranged at schools without an SBHC. There was no direct intervention with adolescents. Table 1 provides a snapshot of intervention activities and the timing of their implementation in schools across study years.

To pinpoint sources of high-quality SRH in communities surrounding our intervention schools, we used Los Angeles County Department of Public Health chlamydia surveillance data to

[1] The geographic boundaries that define which high school a student attends, according to his or her home address.