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Original article

Beyond Teacher Training: The Critical Role of Professional Development in Maintaining Curriculum Fidelity

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A B S T R A C T

Purpose: To examine how teacher characteristics affected program fidelity in an impact evaluation study of the Positive Prevention PLUS program, and to propose a comprehensive teacher training and professional development structure to increase program fidelity.
Methods: Curriculum fidelity logs, lesson observations, and teacher surveys were used to measure teacher characteristics and implementation fidelity including adherence, adaptation, and lesson quality.
Results: Compared with non–health credentialed teachers, credential health education teachers had greater comfort and self-efficacy regarding sex-related instruction. Teacher self-efficacy and comfort were significant predictors of adherence.
Conclusions: Implementation fidelity may be linked to teacher characteristics that can be enhanced during curriculum training. A 2-day teacher training may not adequately address teacher facilitation skills or the maintenance of institutional supports for implementing a program with fidelity and quality. A new model of comprehensive teacher training and support is offered. This new training infrastructure is intended to contribute to the school district's institutionalization of higher-quality comprehensive sexual health education and increase program fidelity.

IMPLICATIONS AND CONTRIBUTION

This article discusses the importance of both teacher and organizational-level support in promoting implementation fidelity in teen pregnancy prevention programs. A comprehensive model of teacher training and program support is offered.

School-based programs are the primary means by which prevention curricula are delivered to young people and are now required in more than 85% of the schools in the United States [1]. There is a large evidence base indicating that a number of school-based prevention programs are effective in preventing or reducing substance use, unintended pregnancies, and other health risk behaviors among youth [2–6]. Prevention researchers have long asserted that the effectiveness of prevention programs depends on implementation fidelity: the degree to which teachers and other program providers implement programs as intended by the program developers [7]. However, many school-based prevention programs are seldom implemented perfectly, and several studies have revealed the extent to which program fidelity occurs and how various factors of implementation fidelity affect program outcomes [7,8]. What is less known is the type and extent of training needed by teachers to prepare them to implement school-based prevention curricula with fidelity [9].

The success or failure of school-based prevention programs may ultimately rest with its teachers [10]. There is a growing

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awareness that teachers may be freely adapting classroom curricula, either by truncating the number of lessons taught or by modifying or adding to curricular content or instructional strategies [9,11,12]. In a comprehensive review, Dusenbury et al. [7] reported that Tappe et al. [13] found that 84% of teachers omitted at least one module in the Teenage Health Teaching Modules curriculum, and they were less likely to use critical elements of the curriculum such as role-playing and other key curricular components.

Several studies have demonstrated the relationship between teacher training and greater implementation fidelity [10,14]. Factors associated with implementation fidelity include in-depth training for teachers, strong support from administration, the characteristics of the curriculum itself, and the provision of ongoing technical assistance [14]. Teacher workshops are critical for success because they provide the background justification, knowledge, and skills needed to implement the program, foster support and commitment to the program, and communicate the importance of program fidelity [15,16]. Furthermore, it is essential that program staff at all levels of implementation demonstrate strong support for prevention programs [17]. For example, both teacher and organizational-level support for the program are influential in promoting implementation fidelity [8]. At the top level, district officials must champion the program replication from its inception and throughout implementation. School administrators must back the program and agree to adopt the initiative; make needed resources available; garner initial staff buy-in to the purpose, values, and ideals of the program; and exert strong, continuous pressure for implementation.

To support a well-implemented program that uses valuable class time, all program teachers must believe the program is worthwhile, have a sense of ownership for it, encourage implementation by others, and feel supported by school administrators. For example, implementation fidelity of the Towards No Tobacco Use program was positively associated with teachers' beliefs about the value of the program and these beliefs were positively associated with the district and school site support for the program [8]. Furthermore, comprehensive teacher training significantly increased teachers' self-efficacy, which resulted in an increase in implementation fidelity [8]. However, some research suggests that certain types of teacher training for school-based prevention programs can affect both fidelity and program impacts. For instance, Rohrbach et al. [9] examined the effects of three types of teacher training approaches of the Towards No Drug Abuse program: comprehensive implementation support (1-day teacher training workshop, onsite coaching, Web-based support, and technical assistance), 1-day workshop training only, and a control. Higher implementation fidelity was found for the comprehensive implementation support group and resulted in greater program impacts on intention to use drugs and knowledge regarding drug abuse compared with the 1-day training group. As a result, ongoing comprehensive training and support for teachers of school-based prevention programs may help ensure continued program involvement, rekindle commitment where needed, and ensure that teachers are continuing to deliver high-quality prevention education programs [18].

Other factors, including teacher preparation, may also affect implementation fidelity. In most states, health teachers have completed undergraduate training in health education or health promotion as well as courses in education and pedagogy. If no health education course is offered, this instruction is usually assigned to a physical education or life science teacher with little or no professional preparation in health education. Past research suggests that credentialed health education teachers are more supportive of school-based sex education programs and more comfortable teaching sex-related topics, and deliver a greater proportion of evidence-based health education program components than non-credentialed health education teachers [9,19]. Hence by depending on non-credentialed health education teachers to present the teen pregnancy prevention lessons, curriculum developers face challenges in terms of the teachers' familiarity, comfort, and skills in sex-related instruction. The purposes of this article were to examine how teacher characteristics affected program fidelity in an impact evaluation study of the Positive Prevention PLUS program and to propose a comprehensive teacher training and support model to increase program fidelity and reach program outcomes.

Background

The Positive Prevention PLUS Sexual Health Education curriculum [20] is a comprehensive teen pregnancy and sexually transmitted disease (STD)/human immunodeficiency virus (HIV) prevention program aimed at students in grades 9–12. The 11-lesson curriculum was developed after a review of the literature of effective teen pregnancy prevention programs, and uses social learning and cognitive behavior theories to increase a student's ability to use refusal skills, use condoms, and resist peer pressure. The curriculum is delivered in the classroom by classroom teachers. The curriculum includes lectures, discussions, demonstrations, and role-plays regarding healthy relationships, reasons to remain sexually abstinent, contraceptive methods, a condom demonstration, steps in condom use, negotiating condom use with a partner, refusal skills, reproductive health services, and future planning.

The current data come from a clustered randomized control trial funded by the United States Department of Health and Human Services, Office of Adolescent Health involving students in grade 9 and their teachers in 22 public high schools in five school districts in Southern California. Of these participating school districts, two have no required health education course, which resulted in life science teachers being assigned to implement the curriculum. As with other school districts adopting our curriculum in prior years, a 2-day teacher training was conducted for program teachers. This training included warm-up activities, a review of the state education code and history of curriculum development, an overview of the research on effective sexual health education, the logic model informing the curriculum and its learning activities, instruction on how to answer difficult questions, and actual practice implementing the lesson activities. Research protocols were also reviewed, including the importance of implementation fidelity.

After parental consent was obtained, school sites were randomly assigned to either a treatment group or control group. The treatment group included 11 school sites that either offered a health course ($n = 7$) or a ninth-grade life science course ($n = 4$); the control group included 11 school sites that had either a health course ($n = 4$) or a ninth-grade life science course ($n = 7$). The treatment group sites agreed to implement the Positive Prevention Curriculum and withhold any other school-based teen pregnancy prevention or STD/HIV prevention education. Schools randomly assigned to the control group were asked not to provide any teen pregnancy prevention/STD/HIV instruction