Journal of Adolescent Health 54 (2014) S29–S36

ELSEVIER

JOURNAL OF ADOLESCENT HEALTH

www.jahonline.org

Original article

Using Data to Improve Fidelity When Implementing Evidence-Based Programs

Sarah Kershner, M.P.H., C.H.E.S. [a], Shannon Flynn, M.S.W. [a,*], Mary Prince, Ph.D., M.P.H. [a], Susan C. Potter, M.S. [b], Lesley Craft, M.P.H., C.H.E.S. [a], and Forrest Alton, M.S.P.H., C.H.E.S. [a]

[a] *South Carolina Campaign to Prevent Teen Pregnancy, Columbia, South Carolina*
[b] *ETR Associates, Scotts Valley, California*

Article history: Received August 14, 2013; Accepted November 26, 2013
Keywords: School-based programs; Teen pregnancy prevention; Fidelity monitoring; Implementation science

A B S T R A C T

In fall 2011, the South Carolina Campaign to Prevent Teen Pregnancy (SC Campaign), with funding from Office of Adolescent Health, began replicating an evidence-based curriculum, It's Your Game, Keep It Real in 12 middle schools across South Carolina. Fidelity of the curriculum was monitored by the use of lesson fidelity logs completed by curriculum facilitators and lesson observation logs submitted by independent classroom observers. These data were monitored weekly to identify possible threats to fidelity. The innovative model Fidelity Through Informed Technical Assistance and Training was developed by SC Campaign to react to possible fidelity threats in real time, through a variety of technical assistance modalities. Fidelity Through Informed Technical Assistance and Training guided the 55 hours of technical assistance delivered by the SC Campaign during the first year of It's Your Game, Keep It Real implementation to 18 facilitators across 12 SC middle schools, and achieved 98.4% curriculum adherence and a high quality of implementation scores.

IMPLICATIONS AND CONTRIBUTION

The South Carolina Campaign to Prevent Teen Pregnancy (SC Campaign) created a real-time response strategy to correct threats to fidelity during program implementation. Use of this model resulted in high rates of implementation fidelity, a factor that has been linked to intervention success.

Implementation fidelity is often used synonymously with program integrity and has been described as the degree to which a program is delivered as designed [1–3]. To appropriately determine the internal validity of an intervention, it is essential to carefully study the process of how the intervention was implemented, so that outcomes may be attributed to the intervention and not to extraneous variables [4]. Several studies have noted that the level of implementation fidelity can affect the success of an intervention [1–3,5–11]. When not implemented as intended, interventions may have weakened results or may even result in negative consequences [10,11].

Multiple studies have identified specific elements associated with implementation fidelity, including adherence to an intervention, exposure or dose, quality of delivery, participant responsiveness and program differentiation [1–3,5,9]. Others have described fidelity as the adherence, compliance, integrity, and faithful replication of an intervention; additional elements such as dosage, quality, participant responsiveness, reach, monitoring of control conditions, and program adaptation are described as components of the broader term of implementation [6,10]. The Centers for Disease Control and Prevention defines fidelity as the "faithfulness with which a curriculum or program is implemented; that is, how well the program is implemented without compromising its core components, which are essential for the program's effectiveness" [11]. Under its current funding initiative, the Office of Adolescent Health (OAH) defines "fidelity" as "maintaining the core components of the original program

Conflicts of Interest: The authors declare no conflicts of interest.
Disclaimer: Publication of this article was supported by the Office of Adolescent Health, U.S. Department of Health and Human Services. The opinions or views expressed in this paper are those of the authors and do not necessarily represent the official position of the Office of Adolescent Health, U.S. Department of Health and Human Services.
* Address correspondence to: Shannon Flynn, M.S.W., South Carolina Campaign to Prevent Teen Pregnancy, 1331 Elmwood Avenue, Suite 140, Columbia, SC 29201.
E-mail address: SFlynn@teenpregnancysc.org (S. Flynn).

1054-139X
http://dx.doi.org/10.1016/j.jadohealth.2013.11.027

model." Core components include those characteristics determined to be key ingredients related to achieving outcomes associated with the program, including what is being taught (curriculum adherence) and how well the program is being taught (quality) [12]. The SC Campaign, an OAH grantee, adopted this definition of fidelity (a measurement of both curriculum adherence and quality of implementation) for the current research study.

Designing ways to improve implementation fidelity is important to the entire field of adolescent health. Despite the presence of a growing body of evidence about what works [13], implementing interventions with fidelity comes with myriad challenges [7]. Replication and effectiveness studies are faced with implementing a curriculum under real-world conditions in which fidelity is challenged by everyday circumstances [2,3,8]. Often, fidelity data are collected for the primary purpose of explaining program outcomes [2,3,5,6,8,9]. However, during the initial implementation stage as defined by Metz and Barley [14], "continuous quality improvement and rapid cycle problem solving" is essential to prevent threats to fidelity from "re-emerging and reoccurring."

Background

In 2010, OAH released a funding opportunity to better understand how, why, and under what conditions evidence-based teen pregnancy prevention programs work. The SC Campaign received a 5-year award to replicate It's Your Game, Keep It Real (IYG), a 2-year middle school, comprehensive, evidence-based curriculum shown to delay the initiation of sex and increase positive beliefs about abstinence [15,16]. Replication studies are important to the field of adolescent sexual health because these studies help policy makers, funders, and program developers understand with greater accuracy what works in teen pregnancy prevention.

The IYG curriculum consists of 12 seventh-grade lessons and 12 eighth-grade lessons. Lessons in each grade include facilitator-led sessions, including skills practice through role-plays in addition to individually interactive computer lessons addressing potentially more sensitive topics such as puberty, condoms, and contraceptive methods.

The IYG curriculum developers identified the following core content components, core pedagogical components, and core implementation components as characteristics that must be kept intact when the intervention is being replicated for it to produce program outcomes similar to those demonstrated in the original study [17]. The core content components of the IYG curriculum relate to what is being taught (setting personal limits, skills practice related to refusal skills, knowledge and skills building related to healthy relationships, and risk reduction practices), and the primary message of the program is for students to wait until they are older to have sex and for those students who are sexually active to use risk reduction strategies. The core pedagogical components relate to how the content is taught: create and maintain a positive learning environment by always using the ground rules for every lesson, follow rules for parental consent set forth by school, give clear directions for activities and model activities, and repeat messages to reinforce learning at the beginning and end of each lesson. The core implementation components relate to some of the logistics that are responsible for a conducive learning environment: all 24 lessons should be taught, lessons should be taught in the order outlined in the curriculum, lessons can be delivered according to any schedule that works best for the school (e.g., twice a week, once a week) within a 4-month time period, facilitators must have completed a training of facilitators in the IYG program, activities should not be added to the IYG lessons, and computer lessons should be completed individually and should not be delivered in group format.

The SC Campaign used these core components to measure curriculum adherence and quality of implementation of IYG when replicated in 12 middle schools. When clarity was needed, the SC Campaign staff contacted the curriculum developers to ensure that any adaptations made to the curriculum would not jeopardize the core components of the program. Facilitators were asked to submit for approval any proposed adaptations before implementation. Approved adaptations included separating students in a class by gender and changing names for role-plays. Requests that were not approved included deleting the lesson on condoms and contraception and implementing the curriculum in a 2-week period (vs. up to 4 months). All other adaptations occurred during implementation without requesting the SC Campaign's approval in advance. Most of these adaptations involved skipping activities the facilitator deemed unnecessary, such as a "getting to know each other" activity or a situation in which the facilitator did not have time to complete a lesson, such as recapping the day's lesson before dismissal.

ETR Associates (ETR) was contracted as an independent, outside evaluator to the project and assumed responsibility for the collection of performance measures including process and outcome data. The SC Campaign project staff worked with ETR to develop strategies to measure OAH required performance measures, including fidelity monitoring through program implementation logs and observations. Congruent with OAH's goal, the SC Campaign was interested in using implementation fidelity data to identify possible threats to implementation fidelity and respond with real-time, immediate technical assistance (TA) while implementation of IYG was ongoing, hoping to minimize repeated implementation error and improve overall implementation fidelity.

Literature has shown that training should be supplemented with site-specific, customized TA [18]. However, the authors found little in the literature to illuminate what effective TA looks like. It became apparent that there was a need to describe how implementation data could be used to translate information into actions to minimize threats to fidelity. The purpose of this article is to describe a model that shows how training and TA were operationalized during a replication study to increase adherence and quality implementation. The model design was practice-informed and illustrates how to use real-time implementation data to correct potential threats to implementation fidelity through ongoing monitoring and steady communication with school. Fidelity results from the first year of seventh-grade implementation are presented and discussed as well.

Fidelity Through Informed Technical Assistance and Training model development

The SC Campaign relied on best practices and past experiences to build a multi-method process evaluation strategy to monitor and improve implementation fidelity of a teen pregnancy prevention program in 12 middle schools. Previous and current projects at the