



Original article

## Long-Term Improvements in Knowledge and Psychosocial Factors of a Teen Pregnancy Prevention Intervention Implemented in Group Homes



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### A B S T R A C T

**Purpose:** Youth in out-of-home care have higher rates of sexual risk behaviors and pregnancy than youth nationally. This study aimed to determine if Power Through Choices (PTC), a teen pregnancy prevention program developed for youth in out-of-home care, significantly improves knowledge and psychosocial outcomes regarding HIV and sexually transmitted infections (STIs), sexual activity and contraception methods, long term.

**Methods:** A cluster randomized controlled trial was conducted with 1,036 ethnically diverse youths (aged 13–18 years) recruited from 44 residential group homes in three states. Intervention participants received the 10-session PTC intervention; control participants received usual care. Participants were administered self-report surveys at baseline, after intervention, 6 and 12 months after the intervention. Survey items assessed knowledge, attitudes, self-efficacy, and behavioral intentions regarding HIV and STIs, sexual activity and contraception methods. Random intercept logistic regression analyses were used to assess differences between the intervention and control groups.

**Results:** Compared with youth in the control group, youth in the PTC intervention demonstrated significant improvements in knowledge about anatomy and fertility (adjusted odds ratio [AOR] = 1.07, 95% confidence interval [CI] = 1.03–1.11), HIV and STIs (AOR = 1.03, 95% CI = 1.002–1.07), and methods of protection (AOR = 1.06, 95% CI = 1.03–1.09), as well as self-efficacy regarding self-efficacy to communicate with a partner (AOR = 1.14, 95% CI = 1.04–1.26), plan for protected sex and avoid unprotected sex (AOR = 1.16, 95% CI = 1.04–1.28), and where to get methods of birth control (AOR = 1.13, 95% CI = 1.01–1.26) 12 months after the intervention.

**Conclusions:** Findings suggest that the PTC intervention can have positive long-term knowledge and psychosocial effects regarding contraception methods on youth in out-of-home care.

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### IMPLICATIONS AND CONTRIBUTION

The long-term impact of pregnancy prevention interventions for youth in out-of-home care is not well understood. This large-scale cluster randomized control study found that the Power Through Choices intervention had positive sustained effects on knowledge, attitudes, self-efficacy, and intentions to use birth control in a high-risk population.

**Conflicts of Interest:** The authors have no conflicts of interest to disclose.

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Relative to youth in the general population, youth in out-of-home care are at increased risk for pregnancy due to engagement in risky behaviors including early sexual initiation, current sexual activity, having sex with multiple partners, and lack of

consistent condom and contraception use [1–3]. Thus, it is not surprising that research consistently indicates that pregnancy and birth rates among youth in out-of-home care are higher than rates among youth nationally [4–7]. Youth residing in out-of-home care are 2.5 times more likely to become pregnant by the age of 19 years and more than 1.5 times more likely to experience a repeat pregnancy than their counterparts in the general population [5,6]. Despite an increased risk for pregnancy and sexually transmitted infections (STIs) and unique social, behavioral, and economic challenges, youth in out-of-home care often do not receive adequate sexual health education due to myriad issues such as programming implemented with little fidelity, financial limitations, lack of collaboration between child welfare professionals and practitioners, and difficulties with guardian consent and confidentiality issues [8–11].

There is strong evidence to support the conclusion that teen pregnancy prevention (TPP) interventions can influence sexual and contraceptive behaviors among youth nationally although theoretical constructs that underlie changes in behaviorless are less understood [12,13]. Constructs from behavior change theories, such as the health belief model, theory of planned behavior, and social cognitive theory, have been used to develop evidence-based TPP programs [14–18]. These theories posit that changes in intermediary psychosocial constructs such as self-efficacy (e.g., youth with high self-efficacy to use condoms may report that they feel confident that they can use condoms correctly), attitudes, and positive behavioral intentions will result in behavioral changes [14–18]. Meta-analyses demonstrate that greater knowledge of HIV/AIDS, self-efficacy, condom use intentions, and more positive attitudes positively influence sexual and contraceptive behavior [19,20].

There is evidence to suggest that TPP interventions implemented with youth in out-of-home care settings can increase knowledge regarding pregnancy and HIV and STI prevention, attitudes toward condoms, and behavioral intentions to use condoms [21–24]. However, these studies have been limited by short-term immediate postintervention analysis and small sample sizes. One exception is a randomized controlled trial (RCT) that assessed whether behavioral interventions implemented with adolescents ( $N = 218$ ) in residential centers ( $N = 15$ ) could have long-term benefits on knowledge, attitudes, and intentions [23]. The study found that youth randomly assigned to a discussion-based intervention group demonstrated significant improvements in knowledge about AIDS and intentions to reduce their risk of HIV infection 9–12 months after the intervention, relative to youth in a control group. However, there was no intervention effect on attitudes toward condoms [23].

The purpose of this study was to determine the effectiveness of the Power Through Choices (PTC) program. PTC is a comprehensive, age-appropriate, and medically accurate sexual TPP intervention for youth living in group home care and other out-of-home settings. The previous analysis assessed the short-term effects of the PTC program on knowledge and psychosocial factors [25]. Immediately, postintervention results indicated that the PTC program positively affected knowledge of anatomy and fertility, HIV and STIs, and methods of protection; attitudes supporting methods of protection; self-efficacy regarding the ability to communicate with a partner and plan for protected sex and avoid unprotected sex; and behavioral intentions to avoid sex and use contraception. The purpose of this study is to determine whether these knowledge and psychosocial effects extend to 6- and 12-month follow-up.

## Methods

### Study design overview

The study design was a cluster RCT involving 1,036 youths recruited from 44 residential group homes in three states: California, Maryland, and Oklahoma. Group homes in each state were randomized to a treatment condition that received the PTC intervention or to a usual care control condition (i.e., did not receive any sexuality health education programming but some homes may have received other programming such as nutrition education). Identical surveys were administered in both the groups before the intervention, immediately after the intervention, and at 6 and 12 months after the intervention. The study was reviewed and approved by the Institutional Review Board at the University of Oklahoma Health Sciences Center.

### Random assignment procedures

Randomization took place at the group home level. The study was designed as a cluster RCT that assigned all the youth living in the same group home to the same research condition to avoid contamination effects. Group homes were stratified and clustered according to the state (California, Maryland, or Oklahoma), recruitment date, number of youths served (group home size), and gender of youths served. Group home participation proceeded only after consent and assent was obtained for 80% of youths in the group home or for a minimum of six youths. Group homes were recruited and randomly assigned on a rolling basis to allow for the possibility of randomly assigning the same group home more than once after the entire population of youth fully turned over. Twenty group homes were randomized once, 13 homes were randomized twice, nine homes were randomized three times, and two homes were randomized four times. The first four group homes recruited in California were randomly assigned as a stratum of four clusters. All other clusters were grouped into matched pairs of two clusters for random assignment. A sample of 80 clusters across 44 group homes was obtained. No clusters were lost to follow-up over the study period. An equal number of homes were assigned to the treatment and control groups and the randomized homes contained a nearly equal number of youths ( $N = 517$  in the treatment group and  $N = 519$  in the control group).

### Sampling

PTC is designed and is appropriate for youth living in many types of out-of-home care settings; however, the implementation of PTC described in this study is exclusive to youth living in group homes overseen by the child welfare (foster care) and/or juvenile justice systems. A group home is considered a “congregate care residential facility operated or contracted by a state child welfare system, a state juvenile justice agency, or by a private care provider” (Oman RF, Vesely SK, Green J, et al., unpublished study, 2016).

Group homes and youths were recruited to participate from 2012 to 2014. Homes were approached to participate if they had the capacity and commitment to support the study, were willing to participate, and had youth residents between the age of 13 and 18 years; therefore, sampling was purposive rather than random. Group homes were excluded from participation if they specifically served pregnant and parenting teens (maternity homes), youthful sexual offenders, and if they provided therapeutic

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