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FLORIDA INTERNATIONAL UNIVERSITY

Miami, Florida

SEXUAL HEALTH PROMOTION PROGRAMMING
FOR YOUTH IN OR AT-RISK FOR FOSTER CARE:
IMPROVING KNOWLEDGE, ATTITUDES AND BEHAVIORS

A dissertation submitted in partial fulfillment of the

requirements for the degree of

DOCTOR OF PHILOSOPHY

in

PSYCHOLOGY

by

Maya M. Boustani

2016

To: Dean Michael R. Heithaus
College of Arts, Sciences, and Education

This dissertation, written by Maya M. Boustani, and entitled Sexual Health Promotion Programming for Youth in or at-risk for Foster Care: Improving Knowledge, Attitudes and Behaviors, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

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Date of Defense: May 2, 2016

The dissertation of Maya M. Boustani is approved.

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Vice President for Research and Economic Development
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Florida International University, 2016

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DEDICATION

I dedicate this dissertation to my parents, who instilled in me the love of learning and the value of an education from a young age; to my husband who has supported me unconditionally throughout my graduate studies, despite the many challenges; and to my daughters who always bring a smile to my face, and remind me that you should never give up.

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To the mentors who have provided guidance and support, the instructors who have opened doors and showed me new possibilities, and to the friends and colleagues who have encouraged me: You each have my profound thanks.

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ABSTRACT OF THE DISSERTATION
SEXUAL HEALTH PROMOTION PROGRAMMING
FOR YOUTH IN OR AT-RISK FOR FOSTER CARE:
IMPROVING KNOWLEDGE, ATTITUDES AND BEHAVIORS

by

Maya M. Boustani

Florida International University, 2016

Miami, Florida

Professor Stacy Frazier, Major Professor

Among girls in foster care, 48% become pregnant at least once by age 19 (Dworkey & Courtney, 2010). Teen moms are less likely to graduate from high school and their children also are more likely to be placed in foster care due to abuse or neglect (Hoffman, 2006). Furthermore, 50% of 21-year-old men aging out of foster care report they have gotten someone pregnant, compared to 19% of their peers not involved in foster care (Courtney et al., 2007). Youth in or at-risk for foster care (YFC) report limited knowledge about, access to, and use of condoms; ambivalent attitudes toward teen parenting; and participation in other risky behaviors. For the current study, we adapted and supplemented an evidence-based sexual health program called SiHLE, using a systematic adaptation framework (ADAPT-ITT, Wingood & DiClemente, 2008), to address these unique and targeted needs of YFC. Thirty-six youth participated in four sessions of SiHLE-YFC during their stay at a temporary shelter. Four 90-minute sessions focused on increasing sexual health knowledge, improving attitudes toward and self-

efficacy of condom use, and developing core skills such as problem-solving and communication. As hypothesized, youth showed high satisfaction with the intervention and significant improvement in sexual health knowledge from pre to post. At one month follow-up, youth continued to show significant improvement in sexual health knowledge, along with a significant reduction in risky sexual behaviors. Though not significant, there were moderate effect sizes for changes in attitudes toward teen pregnancy and condoms. There were no changes in attitudes towards teen parenting. Taken together, findings suggest that sexual health education directly targeting the unique needs of YFC may improve sexual health knowledge and behavior, and are discussed in the context of challenges associated with intervention and research with this population.

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I. RESEARCH STATEMENT

I am pursuing a program of implementation research focused on reducing mental health disparities for vulnerable youth and families. My research rests on three principles (a) prioritize research-practice partnerships in the design and delivery of services; (b) identify low-cost ways to disseminate evidence-based practices in communities of need, using indigenous resources; and (c) attend closely to workforce and organizational factors that support feasibility, effective implementation, and sustainability of evidence based practice.

Public Health Impact

Significant challenges in transporting evidence-based programs to community settings have been documented extensively. Often, evidence-based programs developed under highly controlled conditions are neither feasible for community providers nor sustainable with community resources. These challenges are even more pronounced in communities of poverty, where the potential for impact is greatest and most urgent. Aligned with NIMH 2015 Strategic Objective 4, my research focuses on the provision of care for patients in real world settings, utilizing indigenous resources that can be sustainable in routine care. My extensive collaboration with community partners ensures that findings are relevant and practical for diverse youth and families. My research questions examine the transportability and implementation of evidence-based practice toward reducing mental health disparities and closing the science to practice gap.

I first became interested in partnering with community-based organizations as a Research Associate at the University of Miami, coordinating studies focused on reducing

risky adolescent behaviors such as substance use and preventing juvenile justice involvement. Needs assessment and partnership building activities led me to appreciate the value of merging scholarly and local knowledge to ensure that intervention responds directly to the most urgent and critical needs. My involvement in large-scale, longitudinal studies funded by the National Institutes of Health (Dakof, Cohen, Henderson, Duarte, Boustani, et al., 2010; Dakof, Henderson, Rowe, Boustani, et al., 2015) motivated me to pursue an academic career in psychological clinical science. As I watched interventions come to an end with the conclusion of each grant, I was determined to develop a program of implementation research that brings mental health services to vulnerable youth in community settings by leveraging without over-extending indigenous resources, strengthening organizational capacity, and planning early for sustainability.

In this spirit, my research has developed along two lines. The first reflects that multiple poor outcomes share common underlying risk and resilience pathways, and seeks to examine modular approaches to prevention and intervention as a way to minimize the burden on community agencies. The second relates to forming and sustaining community partnerships and capacity building for the implementation of evidence-based programs in community settings.

Common Elements to Risk and Resilience

Comorbidities among mental health problems are high, and risky behaviors among youth tend to co-occur, reflecting overlap among the empirical predictors of poor outcomes such as substance abuse, conduct problems and sexual risk-taking. It stands to reason that if problems co-occur, so too might the tools and strategies we can use to build resilience

and mitigate risks. In order to explore potential overlap in program content, I applied a Distillation and Matching Model (Chorpita et al., 2005) to identify the common elements of adolescent prevention programs (Boustani, Frazier, Becker et al., 2015). Findings showed that regardless of program focus (e.g., sexual health, violence prevention, life skills), *problem solving*, *communication*, *insight building*, and *assertiveness* emerged as the most frequent skills taught in empirically-supported prevention programming, corresponding to a growing literature on common elements and modular treatments. In partnership with a community-based emergency shelter for youth (Miami Bridge), I pilot tested a problem-solving intervention component in which teens create and perform role-play theatre skits about a risky situation (substance abuse, violence, conflict with authority, sexual health). During the role-play, the facilitator “freezes” the skit to guide teens explicitly through the problem-solving sequence (e.g., identify problem, generate possible responses, and anticipate the likely benefits and outcomes of each response). Preliminary youth-report data indicate high satisfaction (9 out of 10) and high likelihood to use the skills (3.4/4).

Current and Future Directions. I am currently preparing a companion paper, for which I am exploring the common elements of empirically-supported prevention programming for elementary school aged children. While I expect that there will be some overlap with skills for teenagers, the explicit focus of programs vary, and some skills may emerge as more important for younger children compared to older children. In addition, I am eager to examine more closely the role of problem-solving skills as a protective factor, as it has emerged as the most frequently used element across programming, age group, and

diagnosis, highlighting a rich literature on problem-solving as an effective tool for promoting healthy trajectories.

Community-Partnered Implementation Research

For my dissertation, I extended my partnership with Miami Bridge and collaborated with staff on their sexual health curriculum. As I explored the sexual health literature, I learned that youth in or at-risk for foster care are at highest risk for teenage pregnancy, with rates nearing 50% by the time youth turn 19 years old. Unfortunately, interventions that demonstrate success in a university setting with mainstream youth often have a much smaller impact when transported to more diverse communities and routine care settings. Therefore, I was determined to use an intervention that would maximize potential for positive outcomes and increase the probability of adoption by providers. I selected SiHLE (Sistas, Informing, Healing, Living, Empowering, DiClemente, 2004), an evidence-based HIV prevention program nationally recognized for improving sexual health outcomes for African American females, for its engaging activities especially developed for minority youth; its emphasis on core skills (communication skills, assertiveness training, and insight building) important in the prevention of co-occurring high-risk behaviors; and brief format, making it feasible to implement in an adolescent shelter with high mobility.

Phase 1: Qualitative Research

Initially, I was interested in youth and staff perspectives on teenage pregnancy in the community, specifically the perceived benefits, reflecting a growing literature suggesting that high rates of pregnancy may reflect an ambivalent desire to have a baby. Through qualitative interviews and thematic analysis, I learned that teens with poor family

attachment minimize the risks, and identify many benefits to teen parenting, including keeping their partner in the relationship, creating an emotional bond with the baby, seeking independence (financial incentives), and feeling grown-up (Boustani, Frazier, Hartley, et al., 2015).

Phase 2: Adaptation of intervention

I utilized an evidence-based, eight-step adaptation framework (ADAPT-ITT, Wingood & DiClemente, 2008) to adapt and supplement SiHLE for the unique needs of youth at Miami Bridge, thereby integrating community and expert input, and iteratively improving the intervention over time. For instance, sexual health programs largely have focused on STD/HIV prevention and risk behaviors, with no consideration for teens' emotional ambivalence toward pregnancy and parenting that was revealed in our qualitative data. Hence, I supplemented SiHLE with a cost-benefit module explicitly addressing these. Furthermore, I wanted to ensure that all youth participating in the program learned critical skills that could be applied across a variety of risky situations and reflect common deficits underlying multiple poor outcomes (Boustani, Frazier, Becker et al., 2015). The original SiHLE intervention curriculum already included assertiveness training, communication skills, and insight building; I dedicated an additional session to problem-solving, reflecting my common elements research and related growing evidence of its contribution to a successful trajectory.

Phase 3: Pilot Trial

Following completion of the SiHLE adaptation, I pilot tested its feasibility and promise to impact adolescents' knowledge, access, and use of condoms; expectancies about teen parenting, and overall problem-solving skills. I examined within participant change

over 3 time-points. Results indicate that the intervention strongly increased youth's sexual health knowledge, even after leaving the shelter for over one month. The program also improved youth's attitudes towards condom use, increased problem-solving skills, and decreased positive attitudes towards teen parenting (Boustani, Frazier, & L'Esperance, 2015).

Current and Future Directions

I am continuing to collaborate by distance with staff at Miami Bridge to problem-solve barriers and support ongoing implementation. I am working now, during my clinical internship, with an inpatient juvenile justice mental health facility in Houston (Harris County Psychiatric Center) to implement SiHLE in a setting with youth exhibiting an even higher level of risk, and with even higher turnover.

Conclusion

To summarize, my program of community-based implementation research focuses on adapting evidence-based practices to leverage the strengths and respect the constraints of communities with high needs and low resources. Extensive involvement by Miami Bridge staff in the SiHLE adaptation process described above helped to ensure that the curriculum would be engaging for minority youth, acceptable to community providers, effective at improving outcomes, and more likely to be implemented and sustained by indigenous staff. In future research, I will begin to examine more closely how organizational characteristics, such as leadership, staff turnover, and professional development influence the implementation and sustainability of evidence-based practices in routine care settings.

II. CHAPTER 1

COMMON ELEMENTS OF ADOLESCENT PREVENTION PROGRAMMING:

MINIMIZING BRDEN WHILE MAXIMIZING REACH

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Abstract

A growing number of evidence-based youth prevention programs are available, but challenges related to dissemination and implementation limit their reach and impact. The current review identifies common elements across evidence-based prevention programs focused on the promotion of health-related outcomes in adolescents. We reviewed and coded descriptions of the programs for common practice and instructional elements. Problem-solving emerged as the most common practice element, followed by communication skills, and insight building. Psychoeducation, modeling, and role play emerged as the most common instructional elements. In light of significant comorbidity in poor outcomes for youth, and corresponding overlap in their underlying skills deficits, we propose that synthesizing the prevention literature using a common elements approach has the potential to yield novel information and inform prevention programming to minimize burden and maximize reach and impact for youth.

Key Words: prevention, mental health promotion, common elements, core skills, adolescent mental health, school prevention

Common Elements of Adolescent Prevention Programs:

Minimizing Burden while Maximizing Reach

Introduction

Three decades of research show that prevention programs for adolescents can build resilience, improve academic performance, facilitate healthy choices and, in turn, minimize risks for violence, substance abuse, and risky sexual behavior (Durlak & Wells, 1997; Durlak & Wells, 1998; Durlak, Weissberg, Dymnicki, Taylor, & Scellinger, 2011). Prevention programs can achieve positive outcomes whether delivered during (Durlak et al., 2011; Wilson, Gottfredson, & Najaka, 2001) or after (Eccles, Barber, Sone, & Hunt, 2003; Eccles & Templeton 2002; National Research Council and Institute of Medicine 2002) school; with more pronounced benefits for economically disadvantaged youth (Durlak, Weissberg, & Pachan, 2010; Lauer, Akiba, Wilkerson, Apthorp, Snow, & Martin-Glenn, 2006). The current review is informed by recent efforts in children's mental health to organize and manage existing knowledge with a common elements approach to service delivery in community settings.

Challenges to Dissemination and Implementation

Significant challenges in transporting evidence-based programs to community settings have been documented extensively, most recently in the widely cited article by Kazdin and Blasé (2011). Often, evidence-based programs developed under highly controlled conditions are neither feasible for community providers nor sustainable with community resources. These challenges are even more pronounced in communities of poverty, where the potential for impact is greatest and most urgent (Gager & Elias, 1997). The majority of youth prevention programming has been designed for schools (Durlak &

Wells, 1997; Lauer et al., 2006; Durlak et al., 2010; Durlak et al., 2011). However, time for training teachers or implementing “bulky” programs is limited (p. 639, Weisz, Sandler, Durlak, & Anton, 2005), reflecting a decade of increasing demands on teachers to raise standardized test scores and priorities that emphasize basic skills and minimize social-emotional goals (e.g., Atkins, Graczyk, Frazier, & Adil, 2003; Lambert & McCarthy, 2006; Rotheram-Borus, Swendeman, & Chorpita, 2012). In impoverished communities where teachers operate under considerable stress and face conditions characterized by overcrowding, limited resources, and physical deterioration (Cappella, Frazier, Atkins, Schoenwald, & Glisson, 2008; Shernoff, Atkins, Frazier, Marinez-Lora, & Jakobson, 2011), there are high rates of enrollment in special education and behavior problems among students (Coutinho, Oswald, & Best, 2002; Wagner, Kutash, Duchnowski, Epstein, & Sumi, 2005). Although these communities are most in need of prevention programs, they are least well positioned to adopt them. Moreover, schools that do invest time and resources into prevention implement programs with insufficient strength or fidelity to produce a measureable difference in desired outcomes (Gottfredson & Gottfredson, 2002; Gottfredson, Gottfredson, & Czeh, 2000).

In order to reach a larger proportion of at-risk youth, efforts are underway to transport prevention curricula beyond schools to other neighborhood settings (e.g., after school programs, primary care) and providers (e.g., youth care workers, paraprofessionals). However, familiar challenges related to program resources, staff training and turnover, and administrative support similarly interfere with implementation and sustainability (Lyon, Frazier, Mehta, Atkins, & Weisbach, 2011). Hence, youth have limited opportunities to learn and practice the social-emotional skills that facilitate

healthy development, and in turn remain at high risk for mental health problems that necessitate more intensive and expensive services in the face of dwindling resources.

Competing Priorities

Given that most prevention programs appear highly specific (e.g., violence prevention, bullying prevention, pregnancy prevention, or suicide prevention) schools are left to choose among what appear to be competing priorities (with limited data on reach and impact to guide their selection) or else invest even more time and resources for training, materials, and implementation. Comorbidities among problem behaviors, however, suggest there may exist a common set of underlying predictors and in turn a common set of skills that can reduce risk, build resilience, minimize burden and maximize reach.

Indeed, risky behaviors among youth tend to co-occur, reflecting overlap among the empirical predictors of poor outcomes such as substance abuse, conduct problems and sexual risk-taking (e.g., Biglan, Brennan, Foster & Holder, 2004; Carnegie Council on Adolescent Development, 1995; Lindberg, Boggess, Porter, & Williams, S., 2000). Accordingly, underlying skills deficits appear to be associated with a broad range of internalizing and externalizing problems. For instance, deficits in problem solving are associated with both depression (Spence, Sheffield, & Donovan, 2002) and conduct disorder (Lochman & Dodge, 1994). Similarly, poor emotional regulation is associated with anxiety (Suveg & Zeman, 2004) and depression (Chaplin, Cole, & Zahn-Waxler., 2005; Cole, Teti, & Zahn-Wacler, 2003; Forbes & Dahl, 2005; Levin, Heller, Mohanty, Herrington, & Miller, 2007; Silk, Steinberg, & Morris 2003), as well as conduct problems (Caspi, Henry, McGee, Moffit, & Siva, 1995; Silk et al., 2003), antisocial behavior

(Hinshaw, 2002), substance abuse (Kuntsche, Knibbe, Engels, & Gmel, 2007; Tarter, Vanyukov, Giancola, Dawes, Blackson, Mezzich, et al., 1999), and Attention Deficit Hyperactivity Disorder with aggression (Melnick & Hinshaw 2000). Finally, social skills deficits have been linked to depression (Segrin, 2000) and social phobia (Spence, Donovan, & Brechman-Toussaint, 1999), as well as to peer conflict (Hawkins, Catalano, & Miller, 1992), peer deviancy (Hawkins et al., 1992), conduct disorders (Gaffney & McFall, 1981, Spence & Marzillier, 1981), delinquency (Hawkins et al., 1992) and substance abuse (Hawkins et al., 1992). Given the overlap in skills deficits across domains and diagnoses, the present review examined overlap in program content across prevention programs to reveal a subset of evidence-based practice elements exhibiting potential for broadest relevance and greatest impact.

Borrowing from Children's Mental Health: A Common Elements Approach

Like school principals trying to prioritize competing prevention curriculum, growing literature highlighting the science-to-service gap has raised attention to comparable challenges in children's mental health services, where agency directors are faced with the challenge of selecting among highly specialized treatment manuals. Decades of systematic treatment development and examination in carefully controlled efficacy trials have produced an expansive array of evidence-based programs that has increased the cost and complexity of selecting and training providers in routine care settings, although notable efforts to seamlessly integrate existing programs exist (e.g., Domitrovich, Bradshaw, Greenberg, Embry, Poduska, & Ialongo, 2010).. Within children's mental health, meaningful efforts are underway to examine the common components across programs and integrate them within existing service systems (Becker

& Stirman, 2011; Chorpita, Bernstein, & Daleiden, 2011). For example, Embry & Biglan (2008; <http://promiseneighborhoods.org/kernels/>) identified 52 treatment units of behavioral influence – “kernels” – that have been replicated with demonstrated efficacy in rigorous randomized controlled trials. Most of these kernels are simple, easy-to-implement and low-cost (e.g., time-out, praise, self-monitoring) and can be implemented across settings, situations, and age groups.

Similarly, Chorpita and colleagues applied a Distillation and Matching Model (DMM; Chorpita & Daleiden, 2009; Chorpita, Daleiden, & Weisz, 2005) to identify the most common elements of effective mental health treatments for children. *Common elements* refer to individual treatment practices (e.g., problem solving, communication skills) that comprise packaged interventions. The DMM involves a systematic review of evidence-based programs to *distill* the common components across programs and then *match*, or tailor, specific practices to youth characteristics. The DMM approach aggregates knowledge across interventions to identify practice elements that are the most frequent, and potentially the most potent,, hence reducing the influence of those that are less robust (Chorpita et al., 2011). This knowledge can be strategically applied to enhance services in the context of a modular approach to treatment.

In modular approaches, the content, sequencing, and duration of treatment are tailored to each child’s needs (Chorpita et al., 2005; Weisz, Chorpita, Palinkas, Schoenwald, Miranda, Bearnen et al., 2012). Recent data from the first randomized clinical trial revealed promising results, with the modular approach outperforming both usual care and standard evidence-based treatment (Weisz et al., 2012). The modular approach provides an alternative paradigm for community mental health by providing a

treatment manual that can work for multiple disorders (ADHD, depression, trauma, conduct problems; MATCH; Chorpita & Weisz, 2005) and accompanying clinical dashboard (Weisz et al., 2012) to guide service delivery goals, priorities and activities in a way that maximizes efficiency, minimizes burden, and improves client outcomes in routine care settings (Barth, Lee, Lindsey, Collins, Streider, Chorpita et al., 2012; Chorpita, Becker, & Daleiden, 2007).

Applying Common Elements to Prevention Research

These efforts to extract and apply what we know works for children's mental health *treatment* offer promising avenues for disseminating and implementing evidence-based *prevention* in a similarly efficient and widespread manner. Applying DMM to the prevention literature offers an important first step to identifying a subset of skills most likely to initiate a healthy trajectory for youth, in particular for youth living in communities of poverty where there is heightened risk for exposure to risky behaviors. Although DMM provides valuable information regarding time spent on various skill components, it cannot speak to the relative potency of those components or the extent to which they are associated directly with outcomes of interest, which represents a subsequent step for this program of research. Nevertheless, we believe DMM represents an important first step toward closing the science to service gap for prevention.

Current Study

There is theoretical convergence in the literature around a core set of skills considered important for healthy development including assertiveness, problem solving and decision-making (Dryfoos, 1996; Eisen, Pallito, Bradner, & Bolshun, 2000), cognitive coping and social support (Peters, 1988). The goal of the present study was to

identify empirically the practice and instructional elements most common across evidence-based prevention programs. We applied codes from the Distillation and Matching Model (DMM; Chorpita & Daleiden, 2009) to five categories of prevention programs: substance use, life skills, sexual health, depression & anxiety, and violence prevention. While this was an exploratory process, we predicted that a subset of practice elements would emerge as common across programs that may help to inform a more efficient and effective modular approach to prevention.

Method

Literature Search

We began with a systematic search to identify universal and indicated prevention programs for adolescents aged 12 – 18 years and targeting health-related outcomes (e.g. violence, drug use). We restricted our study to prevention programs in middle school and high school for two reasons. First, risk behaviors increase during adolescence (Eaton, Kann, Shanklin, Ross, Hawkins, et al., 2008) and contribute to high school dropout (Lynskey & Hall, 2000; Suh & Suh, 2007). School health interventions (e.g., sexual health, violence prevention, substance use prevention) have been recommended previously for adolescents as part of a coordinated strategy to improve school completion rates and corresponding health outcomes (Freudenberg & Ruglis, 2007). Second, most programs attend closely to developmental considerations by targeting select grade levels. We expect that while there may be overlap with programs designed for elementary schools, the volume of programs and studies for that age group coupled with important developmental differences in curriculum and risk behaviors warrant their own examination.

Three primary search strategies were used. First, we identified programs by searching the following online databases: National Registry of Evidence-based Programs and Practices (<http://www.nrepp.samhsa.gov/>) ($n=30$), Office of Juvenile Justice and Delinquency Prevention Model Programs Guide (<http://www.ojjdp.gov/mpg/>) ($n=6$), and Promising Practices Network ($n=11$) (<http://www.promisingpractices.net/>). Second, we reviewed three meta-analyses (Durlak et al., 2010; Durlak et al., 2011; Lauer et al., 2006) and identified relevant programs cited within them ($n=38$). Further, we reviewed the reference sections from studies of these programs to identify additional programs ($n=39$). Third, we searched ProQuest, PubMed, PsycInfo, and ERIC with a combination of key words including *prevention, mental health promotion, adolescent risk behavior, universal prevention, substance abuse prevention, violence prevention, STD prevention, pregnancy prevention, adolescents and school-based prevention*, which resulted in just two additional programs not previously identified by former efforts. These search strategies resulted in an initial list of 126 programs.

Inclusion & Exclusion Criteria

Studies of programs were eligible for coding if they met the following criteria for inclusion: 1) at least one published outcome study since December 31, 1987 ($n=13$ programs excluded); 2) designed as a universal prevention program (i.e., classroom or school wide efforts, targeting all kids regardless of risk) ($n=9$ excluded); 3) sample included youth ages 12 to 18 ($n=15$ excluded); 4) included a control group ($n=16$ excluded); 5) targeted youth outcomes ($n=6$ excluded); and 6) reported a majority (more than half) of positive findings on targeted outcomes ($n=9$ excluded). Our inclusion criteria are similar to those used in meta-analyses in the field (e.g., Durlak et al. 2010;

2011), but less stringent than those recommended for standards of Evidence such as Flay, Biglan, Boruch, Gonzalez Castro, Gottfredson, Kellam et al., 2005). For example, quasi-experimental studies were retained as long as they included a control group comparable to the treatment group, given the extensive challenges to randomization in school and community settings. In the case where the same program had multiple studies, we retained the program as long as all studies had a majority of positive outcomes and met the other inclusion criteria outlined previously. Hence, findings reveal practice and instructional elements common only to the most promising, evidence-based adolescent prevention programs. Of the original ($n=126$) programs identified for possible inclusion, $n=58$ (46%) met inclusion criteria and were retained for coding.

Program characteristics

The 58 prevention programs were categorized according to their primary outcome: substance use prevention ($n=15$; 26%); life skills ($n=14$; 24%), sexual and reproductive health ($n=12$; 21%), violence prevention ($n=9$; 15%), and anxiety & depression prevention ($n=8$; 14%). These categories were informed by initial coding procedures, and they map clonto health intervention categories recommended to improve school completion (Freudenberg & Ruglis, 2007). Substance use programs focused on preventing tobacco, alcohol, and drug use. Life skills programs included social emotional learning curriculum that prioritized psychosocial development and academic achievement. Sexual and reproductive health programs examined outcomes related to pregnancy, STDs, and relationships. Depression and anxiety prevention programs targeted anxiety and stress management, depression and suicide prevention. Violence

prevention programs examined bullying, exposure to community violence, and anger/aggression.

Programs were delivered primarily in schools ($n=47$, 81%), with the remainder offered in after-school or community settings ($n=11$, 19%). They have been examined in studies that included racially and ethnically diverse samples ($n=23$, 38%), minority-only (African American, Latino, Native American) youth ($n=18$, 30%), and white-only youth ($n=8$, 13%). Most studies included an equal number of males and females, except for a few gender-specific programs (e.g., sexual health programs $n=4$, 7%).

Coding Procedures

Coding system. Program content was synthesized from a combination of published outcome articles, related publications and freely available materials. The development of the coding system was based on the PracticeWise Clinical Coding System (PracticeWise, 2005).. Program content was categorized into “practice elements” or “instructional elements”. Practice elements (e.g., problem solving) describe a specific skill or set of skills that youth learn as part of a program (Chorpita et al., 2005) whereas instructional elements (e.g., psychoeducation) are methods of information delivery used by the program facilitator. This distinction between practice and instructional elements has been made before, albeit with different labels (e.g., “treatment techniques” Accurso, Taylor, & Garland, 2010; “instructional strategies” Gottfredson & Gottfredson, 2002). The PracticeWise codebook contains coding definitions for 72 practice and instructional elements. We excluded 15 parenting codes due to very low frequency of parent components in adolescent prevention programs (likely reflecting the fact that a majority of programs are delivered during school). In fact, only 15 programs that met criteria for

inclusion had any parent component, most of which were limited to monthly newsletters, orientation night, pamphlets or homework assignments. Among the remaining 57 practice and instructional elements from PracticeWise, we excluded 31 that were completely absent from prevention programs (e.g., biofeedback, eye movement) and 13 more that were nearly absent (e.g., personal safety skills, present in 2% of programs; behavioral contracting, 2%; motivational interviewing, 3%; and peer pairing, 8%). Following procedures set forth by Chorpita & Daleiden, we excluded these 13 codes given the sensitivity of the kappa statistic to base rate extremes. Therefore, 13 original codes from the PracticeWise codebook were applied to prevention programs in the present study.

In addition, four new codes were added reflecting content unique to prevention. Initially, these elements were coded as “other” but the frequency with which they emerged (3 practice elements: self-efficacy, 25%; civic responsibility, 11%; and coping skills, 18%; 1 instructional element: role play, 21%) led the investigators to label and examine them. Table 1 provides a list of all practice and instructional elements and their definitions.

Coders, procedures, and training. Coders included four doctoral students and two post-doctoral fellows. Coders were provided with a database of articles (and other freely available materials (sample lessons, descriptions from developer or evidence-based database websites) describing the programs included for coding. An average of 2 scholarly journal articles were provided for each program (range of 1 to 6). Coders marked “present” or “absent” for practice and instructional elements, and they maintained careful notes accompanying each coding decision. Initially, the first author was trained in coding procedures by an expert rater (third author) who has significant experience using

the PracticeWise coding materials. Then, the first author facilitated an initial two-hour training for coders that began with an introduction to the codebook and coding materials. Coders practiced coding two programs independently and reconvened with the first author to compare codes and identify discrepancies and ambiguities, which were resolved through discussion with the expert rater. Thereafter, coders met weekly for one hour to control for coder drift and to discuss questions and problem-solve concerns. Doctoral students coded 13 to 14 programs each, while the post-doctoral fellows coded 4 to 5 programs each.

Reliability. Every program was coded independently by two raters. Low inter-rater agreements were addressed by meeting, clarifying, discussing, and re-establishing consensus on operational definitions followed by another round of independent coding. Final kappas for the original 13 PracticeWise codes averaged 0.86, with a range from 0.67 to 0.96. The expert rater resolved discrepancies by reviewing each coder's notes to determine whether the element was present or absent. We did not conduct a reliability analysis on the additional 4 codes because they emerged as a result of the coding process.

Data Analysis

Codes were summarized by frequency counts and presented in bar graphs to illustrate the most common elements of evidence-based prevention programming for youth ages 12 through 18 according to their primary target outcome.

Results

Across all prevention programs in all program categories (life skills, substance abuse, violence prevention, sexual health, and mental health), *problem solving* (present in 76% of all programs) emerged as the most common practice element, followed in order

by *communication skills* (45%) and *assertiveness training* (45%) and *insight building* (38%). In addition to these most common elements, the following practice elements were present in *all* program categories: *cognitive coping*, *social skills training*, *coping skills*, *goal setting*, and *support networking*. Among instructional elements, *psychoeducation* (62%) emerged as most common, followed by *modeling* (31%) and *role play* (21%). Figure 1 illustrates the overlap in practice and instructional elements across program categories.

Practice Elements by Program Category

The frequencies of practice elements across program categories varied such that some were common to all programs and others were unique to certain categories. *Problem solving* was the most common practice element overall, emerging as most prevalent in all categories except for depression/anxiety programs where it came second after *cognitive coping*. *Insight building* (64%) and *self-efficacy* (57%) were common to life skills programs. *Cognitive coping* was present in 75% of anxiety/depression programs. *Problem solving* (75%), *communication skills* (67%) and *assertiveness skills* (67%) were common to sexual health programs. *Insight building* and *coping skills* (60% each) were common to substance abuse programs. Finally, *communication skills* (78%) and *anger management* (67%) were common to violence prevention programs.

Certain elements were relatively unique to specific program categories. For example, *anger management* was frequent among violence prevention programs (67%), but was absent in depression/anxiety prevention and sexual health programs and present in only a small number of life skills (14%) and substance abuse (13%) programs.

Cognitive coping - though present in all of the program categories – was included in a majority of anxiety/depression programs (75%) but was less common among other programs (Range: 8%-33%). Relatedly, some practice elements were absent altogether from specific program categories. *Relaxation* was absent from sexual health programs, *self-efficacy* was absent from violence prevention programs, *civic responsibility* was absent from depression/anxiety prevention programs, *self-monitoring* was absent from sexual health programs, and *anger management* was absent from sexual health and depression/anxiety prevention programs. A detailed overview and breakdown by program category is provided in Figure 1.

Discussion

Despite their distinct goals, prevention programs appear to emphasize overlapping practice elements. Frequency counts of practice elements across program categories revealed problem solving, communication skills, insight building, assertiveness training, and cognitive coping as the most common elements. This predicted overlap in program content likely reflects the corresponding overlap in underlying skills deficits common to multiple risk trajectories among adolescents. The current findings lend initial support for this method of knowledge aggregation to identify a core set of skills designed to reduce common pathways to risk behaviors such as conduct problems and substance use — and to prepare youth for healthy trajectories characterized by successful relationships, prosocial behaviors, sexual health, and positive adjustment.

The common elements extracted from the prevention literature and presented here may enhance clinical decision-making and help to inform community providers, school principals, and after school program directors regarding prevention goals and priorities,

and in turn their selection, integration, and implementation of specific content and curriculum. Toward this end, these data reveal a small subset of common skills that may offer community providers the *biggest bang for their buck* in prevention programming, beginning with problem solving. Although it was beyond the scope of the present study to examine directly the associations of specific common elements with positive youth outcomes, a rich and extensive literature provides support for problem solving as an effective tool for promoting healthy trajectories (Dubow and Tisak 1989; Dubow, Tisak, Causey & Hryshko, 1991; D’Zurilla and Sheedy, 1991; Goodman, Gravitt, & Kaslow, 1995). Problem solving encompasses a sequential approach to solving social problems and resolving conflict that commonly includes some form of initial emotion regulation, problem identification and interpretation, solution generation, selection and evaluation. It is represented by a wide range of acronyms (e.g., SCIDDLE, Farrell, Meyer, & White, 2001; ADAPT, D’Zurilla & Nezu, 2007; RIBEYE, Reinecke, Dattilio, & Freeman, 2006; FIG-TESPM, Elias & Tobias, 1990), corresponding perhaps to the wide range of life problems for which it can be applied, including interpersonal conflict, sexual risk-taking, exposure to alcohol and drugs, and problems of daily life.

The comprehensive and inclusive nature of problem solving may designate it the skill with greatest potential for impact across prevention goals. A closer look at time spent on problem solving (31 programs provided session by session breakdown) revealed that programs in the present study dedicate an average of one-third of sessions ($M=30\%$, Range=8% to 100%) to problem solving materials, activities, and practice. Moreover, several more practice elements (e.g., cognitive coping, anger management, assertiveness training, goal setting) overlap with or reflect a specific application of problem-solving

skills, lending further support to problem-solving as, perhaps, a “meta”-element that merits highest priority when time and resources are limited.

In addition to problem solving, insight building and communication skills also emerged as widespread across several categories. Insight building includes perspective taking, emotional exploration, and self-awareness. Communication skills involve negotiation, active listening, synthesizing and paraphrasing information, changing negative statements into positive ones, and using verbal and non-verbal cues. Problem solving, insight building and communication skills appear to have broad applicability and may together comprise a small subset of universal prevention elements appropriate for all youth.

In contrast, a few elements appeared relatively unique to certain prevention targets and might be introduced as indicated elements when certain risk factors are present. Anger management, for example, was unique to violence prevention. Perhaps this reflects empirical data that suggests intense anger and emotion dysregulation tend to precede violent behavior but tend not to accompany other poor outcomes such as sexual risk-taking, substance use, or depression and anxiety. When resources are limited, anger management might be reserved for settings where risk for violence is especially high, such as communities of concentrated urban poverty characterized by high rates of crime, domestic conflict, and neighborhood violence. Similarly, cognitive coping was prominent in depression/anxiety programs, and may be among the priorities for schools and settings where the perceived risks for internalizing problems are high, such as those attended by high numbers of immigrant, refugee, or military families facing frequent separations and reunifications. It is worth noting, however, the substantive overlap (see Table 1) between

anger management and problem solving (especially when problem solving includes conflict resolution), and between cognitive coping and problem solving – overlap that perhaps lends even further support for prioritizing problem solving when time and resources are scarce.

Regarding instructional elements, our data indicate that psychoeducation, role play, and modeling are most commonly used across all program categories. These data nicely mirror the most recent findings from the education literature that demonstrate students learn best via a combination of modeling, didactic instruction, and repeat opportunities for practice with performance feedback at their own instructional level (Rosenshine, 2012). Taken together, then, our findings suggest that opportunities to model, discuss, and practice problem solving may maximize the reach and impact of prevention efforts for adolescents.

Weisz et al. (2005) recommend that we view prevention and treatment along a continuum. In fact, Chorpita & Daleiden (2009) reported similar findings in the youth psychosocial intervention literature, identifying 27 common elements for the treatment of anxiety, depression, trauma, and conduct disorders, among them the five elements reported here as most common to prevention programs. This overlap in common practice elements across prevention and treatment literatures lends support to the vision for a continuum of care, reinforcing the notion that prevention can be a cost-effective and efficient way to reduce risk for problem behaviors, build resilience, and improve youth trajectories (Bringewatt & Gershoff, 2010), and aligns with recent calls for a public health approach to mental health (Atkins & Frazier, 2011; Kazdin & Blasé, 2011).

Limitations

Our analyses and findings are primarily descriptive thereby providing a platform for more substantive investigation. First and most notably, we cannot conclude that these particular practice elements that emerged as most common are necessarily the same ones responsible for positive outcomes. While we included only evidence-based programs in our review and systematically excluded programs that had negative or inconsistent findings, we do not have the dismantling data to examine associations between specific practice elements and outcomes, and indeed this represents an important next step for the work. A dismantling approach would involve rigorous and systematic examination, through a series of randomized controlled trials, of the unique and incremental contribution made by each individual practice element to children's healthy outcomes (Hambry & Grych, 2013). Second, although multiple articles and supporting materials were reviewed for each program and most included thorough descriptions of program content, lack of resources prevented us from reviewing full program manuals. Hence, it is possible that certain practice or instructional elements were overlooked. Nevertheless, one would expect that authors would include all essential elements in published descriptions of their programs. Third, only programs designed for middle and high schools were included in the current sample, reflecting attention to risk behaviors that increase during this developmental period, contribute to school dropout, and predict poor health outcomes. Nevertheless, a companion study to code programs offered during elementary school is warranted to examine opportunities for continuity in skills training from childhood to adolescence. Fourth, we excluded parenting elements due to their low frequency and limited scope (e.g., pamphlets and newsletters).

Future Directions and Conclusions

While it would be premature to conclude that a modular approach is a viable option for prevention, there does appear to be substantive overlap in program content corresponding to overlap in risk factors and skill deficits. Indeed, adolescents tend to engage in more than one risky behavior at a time. By identifying common elements across effective prevention programs, we can begin to identify theoretical and programmatic components that allow for greater synthesis of knowledge collected over decades of research (Rotheram-Borus et al., 2012). Although a set of common elements emerged, our data also revealed another set of practice elements that appear to be category-specific, perhaps reflecting a unique or targeted need. Nevertheless, the current data point to problem solving as the most common and comprehensive evidence-based practice element that may help to build resilience and protect youth from a broad range of negative outcomes. As a next step in our own research, we are examining the feasibility and impact of integrating problem solving into the recreational activities and natural routines of community-based after school programs. In turn, a modular approach to prevention may help to minimize burden on teachers and program providers and maximize reach to youth, while contributing to a public health effort to reduce the mental health burden facing our country (Atkins & Frazier, 2011) with a simpler, more accessible and less expensive alternative that meets *most* needs (Rotheram-Borus et al., 2012).

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Table 1. Practice and Instructional elements definitions abbreviated from PracticeWise (2009)

Practice Elements (n=14)

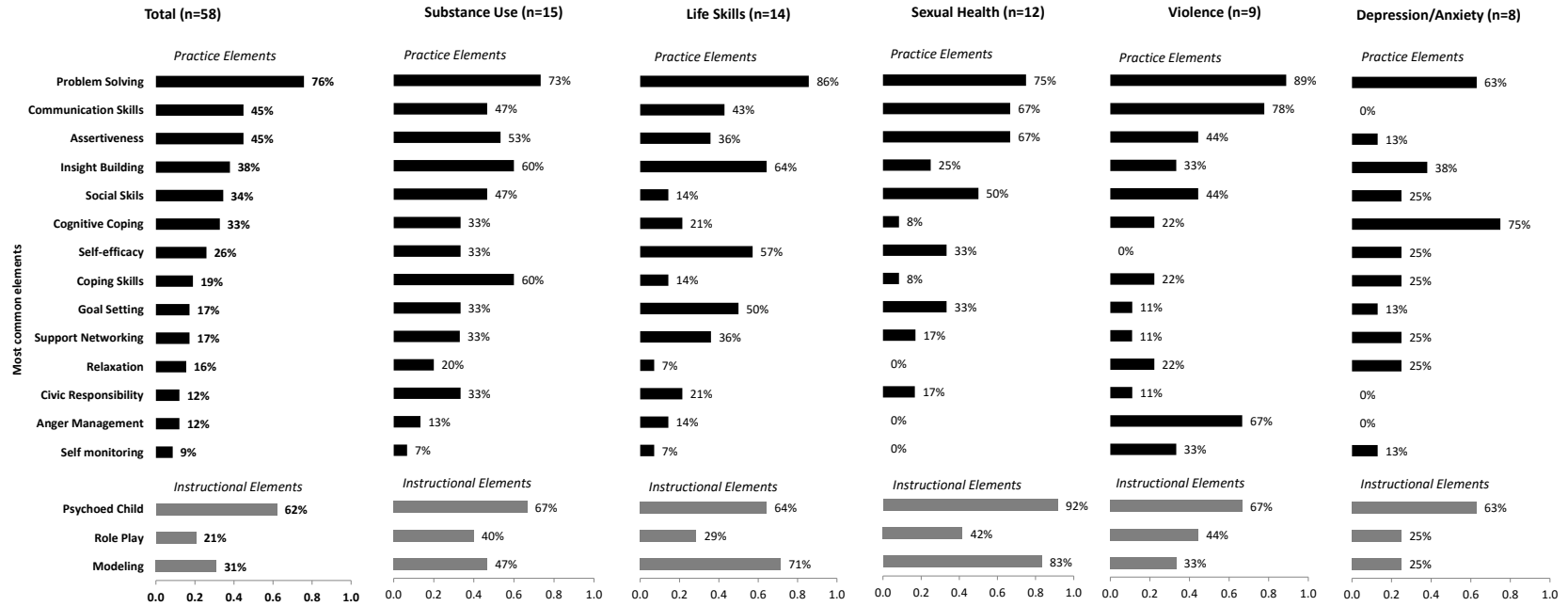
<i>Anger Management</i>	Exercises or techniques designed to promote the youth’s ability to regulate or prevent anger or aggressive expression, and seek productive resolutions to conflict.
<i>Assertiveness Training</i>	Exercises designed to promote the youth’s ability to assert his or her needs appropriately with others
<i>Civic Responsibility*</i>	Teaching youth civic engagement, respect for people and property, advocacy & volunteerism
<i>Cognitive Coping</i>	Any techniques designed to alter interpretation of events through examination of the youth’s reported thoughts
<i>Communication Skills</i>	Training for youth in how to communicate more effectively with others
<i>Coping Skills*</i>	Exercises or strategies designed to enhance ability to deal with stressful situations
<i>Goal setting</i>	The explicit selection of a therapeutic goal for the purpose of working toward achieving that goal.
<i>Insight Building</i>	Activities specifically designed to help a youth achieve greater self-understanding.
<i>Problem Solving</i>	Training in the use of techniques, discussions, or activities designed to bring about solutions to targeted problems
<i>Relaxation</i>	Techniques or exercises designed to induce physiological calming.
<i>Self Monitoring</i>	The repeated measurement of a target index by the youth.
<i>Self-efficacy*</i>	Techniques and training to enhance self-confidence and improve self-efficacy and/or self-esteem.
<i>Social Skills Training</i>	Providing constructive information, training, & feedback to improve interpersonal verbal or non-verbal functioning.
<i>Support Networking</i>	Strategies to explicitly identify, engage, develop, or otherwise increase the involvement or effectiveness of individuals in the client’s social ecology.

Instructional Elements (n=3)

<i>Modeling</i>	Demonstration to the youth of a desired behavior.
<i>Psychoed Child</i>	The formal (usually didactic) review of information.
<i>Role Play*</i>	Practicing of a desired behavior during session.

* Not found in Practice Wise codes, but identified while reviewing prevention literature

Figure 1. Common Elements by category



III. CHAPTER 2

PERCEIVED BENEFITS OF TEEN PREGNANCY: PERSPECTIVES FROM YOUTH CARE WORKERS

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Boustani, M. M., Frazier, S. L., Hartley, C., Meinzer, M., & Hedemann, E. (2015). Perceived benefits and proposed solutions for teen pregnancy: Qualitative interviews with youth care workers. *American Journal of Orthopsychiatry*, 85(1), 80-92. doi: <http://dx.doi.org/10.1037/ort0000040>

Abstract

Purpose: To examine youth care worker perceptions of the specific and unique sexual health needs of youth at risk for foster care.

Methods: Semi-structured interviews were conducted with youth care workers (N = 10) at a shelter for youth in or at-risk for foster care.

Results: Youth care workers perceive that youth have unique experiences and needs related to sexual health programming and pregnancy prevention. Reflecting a great deal of family dysfunction, three themes emerged that revealed perceived benefits of teen pregnancy: youths' effort to prove themselves as adults, opportunity to secure their relationship with a partner, and desire to create an emotional connection with a baby. Lack of knowledge and accumulation of risk factors were viewed as most problematic.

Conclusions: Current pregnancy prevention programs assume teen pregnancies are unwanted and emphasize the costs of sexual risk-taking. Current findings suggest that sexual health programming for youth in or at-risk for foster care additionally should account for three perceived benefits of teen pregnancy. New opportunities for improving the reach and effectiveness of intervention for youth in or at-risk for foster care are discussed.

Keywords: *Adolescent pregnancy prevention, Foster care, Child welfare, Sexual health, Qualitative design*

Perceived benefits of teen pregnancy: Perspectives from youth care workers

Introduction

Nearly half a million children live in foster care [1]. Involvement in foster care is associated with increased vulnerability for a variety of problems regarding employment and financial stability; family, peer, and romantic relationships; substance abuse and mental health diagnoses. This study explores the perspectives of youth care workers on teenage pregnancy among youth in or at-risk for foster care. Special attention is given to the perceived costs and benefits of teenage pregnancy for these vulnerable youth.

Costs and Consequences of Teen Parenting

Consequences of teen parenting include social, economic, school and emotional problems [2, 3]. Teen parenting is negatively related to academic achievement [4, 5]. Teen moms complete 1.9 to 2.2 fewer years of school than women who have children after age twenty-nine [2]. Nearly half of teen moms complete high school or obtain their GED but that number drops to 16% among teen moms in foster care, with GPAs ranging from 1.25 to 1.79 [6]. Only 64% of teen moms graduate within 2 years of their scheduled graduation compared to 94% of their peers [7]. Less school results in more job difficulties and more public aid: Nearly 80% of teen moms eventually receive public assistance [8, 9]. Having a second child further diminishes opportunities; with each additional child decreasing the odds of obtaining a GED or high school diploma by half [6]. Mental health is also affected, with teen moms experiencing significant distress, particularly depression [10], including post-partum depression rates that are higher compared to adult moms [11-14].

As with teen moms, teen dads have lower school attainment and fewer job opportunities compared to their childless peers [15]. They often come from low income communities, making it difficult for them to contribute financially to supporting their child [16]. They have greater psychological and emotional difficulties and high rates of delinquent behavior [17-19].

Babies born to teen parents are at similarly elevated risk for adjustment difficulties that begin even before they are born. First, teen moms are less likely to access prenatal care or they initiate care later in pregnancy [20]. Their babies are more likely to be born premature or low birth weight, leading to delays, health problems [5, 21-24] and increased mortality [25, 26]. Babies are more likely to be abused [27-32] and arrive in state care, especially if the mom herself is in foster care (10% vs. 2% [6]). Compared to their peers, children of teen moms have less supportive or stimulating home environments, lower cognitive development, more behavioral problems and are more likely to drop out of school [24, 33, 34]. Boys born to teen parents are more likely to be incarcerated and girls born to teen parents are more likely to become teen moms too [33].

Finally, the economic costs of teen parenting are significant, with estimates ranging from 9.06 to 11.3 billion dollars annually [34]. Factors include lost income (and lost income tax) due to decreased opportunities, increased healthcare costs, and costs associated with public assistance (food stamps, housing), foster care, child welfare, and incarceration of children of teen moms [34]. These estimates are conservative, reflecting costs reliably linked to teen parenting versus associated risks, such as poverty.

Disproportionate Needs among Youth in Foster Care

Adolescence is a developmental period in which youth engage in high-risk behaviors [35]. Youth who experience poor family functioning, low parental attachment, or who have experienced hardship (such as abuse), are even more likely to engage in risky behaviors [36]. Youth in foster care or at risk for foster care are among the most vulnerable, by nature of their histories of abuse, displacement from their homes, and low family functioning [37]. They are more likely to come from low-income, single parent families, with unemployed parents [38]. They generally have 2.5 to 3.5 times higher rates of externalizing problems [39-43] and internalizing problems, including higher likelihood of attempting suicide [43]. They are more likely to abuse substances [43, 44] and have problematic sexualized behavior [44]. Furthermore, youth in foster care have elevated rates of teenage pregnancy compared to youth in the community [45].

Approximately 30% of youth in foster care report engaging in high levels of risky sexual behaviors [46]. They are sexually active at a younger age than their peers: 30% report not using protection, and 15% report a history of STDs [46]. Despite progress in reducing teen pregnancy nationwide [47], pregnancy rates among foster care girls remain high, more than double those of their peers [48-50]. Among girls in foster care, nearly half (48%) have been pregnant by age 19 and 30% by age 17 [45] compared to 20% and 13.5% of teens in a national sample [20]. Repeat pregnancies are also disproportionate: 46% and 23% of foster care girls become pregnant at least once more by ages 19 and 17, respectively, compared to 34% and 17% in a national sample [45]. There are few data about teen dads in general, and even less about teen boys in foster care who become fathers [51]. However, 50% of 21-year-old males aging out of foster care report they are

responsible for a pregnancy; compared to 19% of their peers not involved in foster care [52].

The negative consequences directly associated with parenting responsibilities during adolescence in general are significant. Although longitudinal data specific to teen parents from foster care are not available, we expect that negative sequela would be exacerbated for these youth whose lack of family support and educational underachievement already place them at disproportionate risk for poor outcomes.

Current Efforts in Sexual Health and Pregnancy Prevention Programming

Several sexual health and pregnancy prevention programs have been rigorously examined and widely implemented (e.g., [53] [54]). Most programs deliver information on teen sexual health, with psychoeducation about abstinence, STDs, contraception, relationships, and consequences of risky sexual behavior. Common to most is an emphasis on skills-building via modeling [55], role plays, discussions, and videos [56, 57] on how to protect oneself, specifically teaching youth assertiveness, refusal skills, and proper use of condoms. Some programs target specific populations (e.g., gender, ethnic group, or sexual orientation) with certain features of the curriculum designed to align with unique cultural norms or respond to specific needs. For example, SiHLE [53] focuses on African American females, using activities focusing on ethnic and gender pride, with examples of prominent African American females discussed in the context of intervention. Cuidate! [54] focuses on Latino teenagers, and thus addresses cultural beliefs related to sexual risk behaviors that are common among many Latino subgroups, such as familialism and gender-role expectations, including machismo.

Evidence-based sexual health and pregnancy prevention programs share several features common to their development, content and implementation. First, program developers invited significant involvement from community stakeholders (e.g., nurses, providers, families) to design a needs assessment that in turn informed content and activities consistent with community values [58]. Second, content prioritizes prevention of HIV/STDs or/and pregnancy by focusing on specific empirically based predictors, including psychosocial risk and protective factors. Content is delivered most often via weekly group-based modules, presented by counselors, in a pre-determined sequence, and within a safe environment, via activities designed to be engaging, culturally relevant, and developmentally appropriate [58]. Some programs also include general life skills such as problem solving, communication, assertiveness, and insight building [56, 57].

A review of 55 sexual health programs with rigorous research designs (15% focused exclusively on pregnancy prevention, 40% focused on both HIV/STD and pregnancy prevention, and 45% focused only on STD/HIV prevention), revealed variable success at reducing risky sexual behaviors, as measured by delayed initiation (41% of programs successful), decreased frequency of sex (31%), fewer sexual partners (40%), increased condom use (42%), and increased use of contraception (40%) [56]. Programs are delivered in a variety of settings (school, community, clinic) and data show the greatest impact for low- and middle-income youth.

Current Interventions are Inadequate to Meet the Needs of Youth in Foster Care

Despite their promise, current sexual health and pregnancy prevention programs may be insufficient to meet the unique needs of the most vulnerable youth, such as those in or at-risk for foster care or juvenile justice, accounting for the persistently high rates of

pregnancy among youth involved in these systems [51, 59]. Perhaps this reflects that programs share a common conceptual model according to which teenage pregnancies are understood as accidental, unwanted, and avoidable for teens armed with sufficient knowledge and skills to refuse unprotected sex [59]. In fact, although many teen pregnancies are indeed unplanned, approximately 35% of them are intended [49, 60].

Qualitative interviews with youth in care and youth care workers reveal that too little information is available too late [6, 46]. Foster youth initiate sex earlier than non-foster care youth and before encountering any information about contraception [34]. They report challenges to accessing condoms and concerns that using them might ruin the mood or decrease pleasure [46]. Some teens perceive that benefits to having a baby outweigh the costs [46]. Desire for pregnancy is associated with family dysfunction and lack of family connectedness [60], both characteristics common to youth in or at-risk for foster care. Youth report several reasons for wanting a baby related to emotional growth (e.g., healing childhood wounds or seeking attachment to baby or baby's father [49, 61-63]) or independence (e.g., exiting the child welfare system and obtaining independent living [63, 64]).

While prior studies provide youth data or youth perspectives on teen pregnancy, we are only aware of one study that included a sample of youth care workers [6], but interviews emphasized access and utilization of services for pregnant and parenting foster care youth. There were no questions related to costs and benefits of teen pregnancy. Youth care workers are a good choice for qualitative interviewing. They interact with high frequency and via multiple roles with youth in their care, and often they belong to the same community as the youth, thus providing insight regarding neighborhood

influences. Hence, youth care workers are well positioned to provide a unique and objective perspective on teen pregnancy. Furthermore, youth may feel shame or embarrassment that may bias their responses to questions, whereas workers are less likely to feel inhibited. Lastly, as a workforce involved with sexual health and pregnancy prevention programming for youth, care workers are well positioned to speak to intervention feasibility, needs, content, format, and delivery.

The Current Study

We conducted semi-structured interviews with youth care workers (n = 10) from a shelter for youth in or at-risk for foster care to examine possible contributors to inflated rates of teenage pregnancy among this vulnerable group. Questions included perceptions regarding the costs and benefits of teen pregnancy and potential new avenues for prevention programming. We predicted that youth care workers would (1) echo concerns previously highlighted in the literature, including insufficient knowledge about sexual health and lack of access to birth control and other forms of contraception and (2) perceive ambivalent desires for pregnancy among youth, with possible benefits that may outweigh underestimated costs and consequences. Findings will inform the design of a sexual health intervention uniquely tailored for the needs of youth at highest risk for pregnancy and poor outcomes.

Method

Participants

Ten youth care workers (60% female, 60% African American, 40% Latino) participated. They were employed by a shelter for teenagers in foster care or at-risk for foster care and held positions that involved daily contact with youth including clinicians

($n = 5$), shift leaders ($n = 3$), nurse ($n = 1$), and director of shelter operations ($n = 1$). They reported experience working with children in foster care (RANGE = 3 to 30 years, $M = 11.1$ years, $SD = 8.09$), length of employment at the shelter (RANGE = 1 to 3 years, $M = 1.75$ years, $SD = 0.95$), and direct contact with youth per week (RANGE = 5 to 40 hours, $M = 20.6$ hours, $SD = 8.9$).

The collaborating youth shelter is located in a large city in the southeastern United States. Two sites together serve 700 youth and families each year, and both sites participated in the current study. The shelter provides temporary accommodations as well as food, schooling, and mental health care (inpatient and outpatient) to youth in foster care (removed from their homes and awaiting placement, approximately 30%) or at-risk for foster care (by virtue of elevated family dysfunction, approximately 70%). Youth in both categories and at both sites share similar demographics. They are ages 11 to 17, with the majority ages 15 to 16 ($M = 14.87$, $SD = 1.66$, median = 15, mode = 16). They are of racial and ethnic minorities (51% Hispanic, 49% African American) and from families characterized by economic vulnerability and high rates of dysfunction (e.g., truancy, youth and parental substance abuse, domestic violence, youth and parental justice involvement). Youth are referred or directed to the shelter by local police officers or Department of Children and Families caseworkers, though a subset of youth arrive on their own (e.g., runaways) or accompanied by family. Youth remain at the shelter for as little as one week and as long as ten weeks ($M = 3.78$, $SD = 2.54$). All staff members in supervisory or service delivery roles were eligible to participate.

Materials and Procedures

Following approval from the shelter's director and institute's IRB, the first author invited youth care workers individually, during hours pre-arranged with site directors, regarding their interest and availability to participate in a brief interview related to inflated teenage pregnancy rates among youth in foster care. One hundred percent of youth care workers who were approached about participating (10 of 10) consented to participate. For interested workers, time was planned to complete consent documents (for participation and audio-recording), demographic information, semi-structured interview (administered by the first author), and an accompanying measure regarding priorities of sexual health and pregnancy prevention programming efforts.

Semi-Structured Interviews. Youth care workers participated in semi-structured interviews to examine the perceived costs and benefits of teenage pregnancy among youth in or at-risk for foster care. Questions were few and focused to ensure completion of the interview within a brief amount of time. They were planned for 30 minutes acknowledging the competing priorities, limited time available for participation, and absence of compensation. Additional time for consenting, collecting demographics, and completing the checklist described next together totaled closer to 40 to 50 minutes of workers' time. The interview began with broad questions regarding general knowledge of teen pregnancy. Then, we presented four open-ended questions based on extensive literature reviews and informal conversations with teenagers and staff at the shelter: 1) To what extent do you think youth living in this shelter are at higher risk for teen pregnancy than other youth in the community? 2) What do you think some teens may perceive as possible benefits of teen pregnancy? 3) What do you think some teens may perceive as

possible costs of teen pregnancy? and 4) What do you think adults, teachers/schools and community programs can do to help teens delay pregnancy? Each question was followed by a brief set of probes to elicit additional detail. Interviews lasted on average 27 minutes (Range: 13 to 42 minutes, SD = 12.18). Audio recordings were professionally transcribed for coding.

Prevention Priorities Checklist. This checklist was developed for this study to elicit youth worker perspectives on content for sexual health and prevention programming for youth in or at risk for foster care. Topics presented on the checklist were derived from a recent comprehensive literature review of treatment elements common to existing evidence-based sexual health programs [55]. The list was divided into two parts: 1) Building knowledge (8 items): risk behaviors, STDs, abstinence, healthy relationships, puberty and hygiene, costs and consequences of teen pregnancy, benefits of delaying sex, benefits of safe sex; and 2) Building Skills (10 items): condom use, problem-solving, decision-making, assertiveness, communication with partner, communication with parent, autonomy, personal responsibility, decrease barriers to contraceptive use, and discuss feelings and emotions. Workers were instructed to nominate three most important elements from each category. Frequency counts for each element summarized workers' perspectives on the critical ingredients of sexual health programming for this high risk population.

Data Analysis. Transcripts were coded to identify emergent themes. Following convention [65-68], coding procedures began with "open coding" for which two independent graduate student coders reviewed each transcript line by line to identify words or phrases related to the overall theme of teenage pregnancy. Both coders then met

to compare codes to ensure all relevant phrases were captured and none were missed. The second step involved “axial coding” during which the same two coders reviewed the initial list of words and phrases to identify major themes across groups of words. They subsequently organized these themes into hierarchical categories to create a codebook. Next, two new, independent, graduate student coders were trained to reliability (pooled kappa = 0.82) and recoded all transcripts according to the codebook. The final step involved “consensus coding”, during which the first author reviewed both coders’ transcripts and met with them to resolve any inconsistencies.

Results

Thematic Overview

A list of codes with their frequency counts across all transcripts, and counts of how many workers cited that code is provided in Table 2. We coded 9 transcripts representing 10 interviews (at their request, two youth care workers were interviewed together). A total of 447 excerpts were coded across all interviews (open coding), with a range of 31 to 73 excerpts for each interview (Mean = 46.3.5, SD = 18.2). Excerpts (direct quotes from the participants) were organized into several themes (e.g., family functioning, communication) that in turn were organized for the codebook into four higher-order categories (axial coding): 1) Risks for teen pregnancy and parenting, 2) Perceived benefits of teen pregnancy, 3) Perceived consequences of teen pregnancy, and 4) Potential solutions to prevent teen pregnancy. Below we present representative excerpts of the most frequent themes from each of the four categories. Themes are presented according to the percentage of workers who endorse them (highest to lowest).

Furthermore, overall frequency counts for each theme also are presented (i.e., # individual excerpts coded as representing that theme across all workers).

Risks for teen pregnancy and parenting

Youth care workers cited a variety of risk factors that they believe influence sexual risk-taking among teens. Most commonly noted was lack of family functioning (90% of workers provided 37 excerpts), followed in order by lack of knowledge (90% of workers provided 19 excerpts), lack of adult presence (70% of workers provided 7 excerpts), life stressors (60% of workers provided 19 excerpts), unresolved emotional issues or trauma (60% of workers provided 15 excerpts), peer or cultural pressures (50% of workers provided 14 excerpts), and a physical drive to have sex (50% of workers provided 9 excerpts). Other reasons offered by fewer than 50% of workers are included in Table 1.

Lack of family functioning emerged as the most common risk factor for unprotected sex and teen pregnancy. Workers described “*hostile*” and “*volatile*” home environments characterized by a “*generational curse*”, “*poor communication*” and high rates of parental psychopathology, drug abuse, and incarceration. Youth were described as being “*isolated*”, “*emotionally cut off*” with few models for and minimal exposure to healthy families. One respondent described a conversation with an adolescent who said: “*I don’t know of a different world, like a healthy relationship with a partner, coming together and building a family. What is a family? I have no idea what a family is.*”

Lack of knowledge, as suggested in the literature, emerged as one of the reasons for teen pregnancy with most capacity for change. Youth care workers described that many of their youth lack basic knowledge about sexual health and minimize the health risks

associated with becoming sexually active: *“I’ll say that 90 percent of the problem is that they don’t have enough information (...) Most of them think that STDs are curable; take some medication, that’s it. Some of the STDs are not curable, so again, lots of (lack of) information on every aspect of having sexual contact I think.”* Lack of information extended to pregnancy as well, and several youth care workers expressed that their youth lack information about how to protect themselves, such as where and how to access contraceptives: *“They get pregnant because they don’t know how to avoid getting pregnant.”*

Lack of positive adult presence was described as a lack of monitoring of youth’s time after school, lack of positive examples of healthy relationships, and lack of mentorship. Although this code was mentioned by 7 different workers, it was not discussed in detail, and usually within the context of lack of family functioning.

Life Stressors refer to stressors that extend beyond parental behaviors and family dynamics. Youth care workers described an additional set of individual life stressors that place their youth at high risk for unprotected sex, teen pregnancy, and STDs. *“Usually teens in this context are either homeless, locked out, or within this custody of the state.”* They often experience *“higher exposure to crime, higher exposure to victimization, exploitation, higher exposure to abuse, domestic violence.”* These early life experiences lead them to develop a host of problems including *“lack of impulse control and anger management issues”*, and *“increased sexual behaviors.”* As one person described: *“Kids in DCF, they’re moving from one foster place—if a foster parent said I need them to go, they need to go, so they don’t have that stability. They don’t trust anybody. Then they are*

susceptible to being bamboozled, for a lack of a word, by the streets, of just a little type of trust and safety.”

Emotional Trauma emerged as a separate, yet related theme to life stressors. Several workers described histories of physical and sexual abuse experienced by foster youth in their care, and they explained how trauma may shape youth sexual risk-taking and desire for pregnancy: *“Their narrow goal is to run from pain. (...) Sometimes babies, for young people is to replace the pain.”* Childhood trauma and multiple separations from their biological family was described as most damaging to youth: *“It is major and it follows them into adulthood you know if they don’t clear that thought or at least work with it affects all types of relationships: work and at home, and intimate relationships throughout their lives.”*

Peer and cultural pressure for teenagers to become sexually active took several forms, but the main theme revolved around the need to belong to a group or a culture within their peer circles, in which having sex and getting pregnant are normative and desirable: *“16, 17 year old girl sees all her friends getting pregnant so she wants to do the same thing”*; *“they see their friends, and their friends are talking about having sex and so on, so they feel left out if they’re not having sexual contact like their friends.”* Also noted was a need to feel that they belong to somebody, usually having sex with their partner satisfied that need: *“a need to belong and often times they think that the guys that they’re with it-it’s like they, need to belong to a person, they want to feel special.”*

Physical drive to have sex was discussed in the context of how youth may impulsively have sex for pleasure, without thinking about the consequences such as an

unplanned pregnancy, blaming “*raging hormones*” and “*need for that pleasure*” and those “*physical feelings*” that they feel need to be satisfied as reasons why youth engage in risky sexual behaviors.

Perceived benefits of teen pregnancy and parenting

Youth care workers spoke with great confidence about what they perceived to be teens’ expectancies related to the benefits of pregnancy and parenting. They cited the teen’s desire to create an emotional connection with their baby (100% of workers provided 20 excerpts), and desire to secure their relationship with their romantic partner (100% of workers provided 20 excerpts). Workers also suggested that teens expect certain financial incentives to accompany parenting (90% of workers provided 17 excerpts) and they wanted be viewed and treated as an independent adult (50% of workers provided 22 excerpts). Other reasons offered by fewer than 50% of workers are listed in Table 1.

Create an emotional bond with the baby appeared to reflect youth experience of “abandonment” and desire for family attachments they were denied growing up in a home characterized by dysfunction and want: “*They’ve never had love, someone to love.*” Babies were perceived as filling a void and providing hope for a future that included healthier relationships and emotional connections via “*a sense of family, a sense of unity.*” Simply stated, youth workers reported that the absence of love in their families of origin and deep longing for reciprocity - to give and receive love - led youth to romanticize a new life wherein a baby was viewed as their opportunity to “*create (their) own family*”.

Keep romantic partner referred to youth worker perceptions that youth wanted a baby as a mechanism by which to secure their romantic relationships and thereby create stability and consistency in their lives. Girls were described as wanting to “*keep a man in their life longer*” and boys were described as “*intentionally getting the girl pregnant in hopes of keeping her.*” Overall, teens were perceived as expecting a baby would give their partner reason “*to actually stick around in their life this time cuz most of the them like their parents are in and out, out of jail or just in out of their life period. So if they have a child by somebody else that would give them a reason to be around.*”

Financial incentives refer to worker perceptions that youth expected a baby to bring government assistance. They spoke of a “*generational curse*”- at home and within the broader community - a shared norm that attributed high value and positive expectancy to welfare: “*easy money that they don’t have to work for.*” First, welfare was considered a vehicle by which to leave home, exit the system, and seek independent living: “*it’s an easy way outta the parents’ house, so even if public assistance, even if that’s a start or something that’s long-term, it’s definitely something.*” Moreover, increased financial burden associated with having a baby was minimized “*because a lot of them will say well since I’m so young I’ll get food stamps, they will give me food for the baby, they will help me with daycare.*”

Desire for Independence, on the one hand, reflects an age-appropriate developmental milestone [69]. But according to participating youth care workers, youth desire for independence was complex and multi-faceted. Very simply, it reflected the desire to be grown up: “*I’m an adult because I have a kid.*” But more than that, it reflected a longing to prove themselves better than their parents: “*They feel like if they*

have a kid they can give them a chance to do it right and do it better than their parents.”

It reflected an opportunity to assume control, be responsible, and create stability, perhaps to compensate for the long-standing instability that characterized their family of origin.

Workers also reported that youth wanted a baby as something that “*would be their own*”, “*something that actually belongs to them*”, reflecting a desire for something stable – “*this is that one thing they can control.*”

Perceived costs and consequences of teen pregnancy

Youth care workers strongly agreed that most youth are completely unaware of or else deny or minimize the consequences of having a baby as a teenager (90% of workers provided 22 excerpts). When prompted, they were able to offer a few perceived costs including educational (50% of workers provided 10 excerpts), social (50% of workers provided 5 excerpts), and financial (40% of workers provided 8 excerpts) consequences.

The majority of the discussion focused on adolescents’ overall *lack of awareness* regarding costs and consequences of becoming a teen parent. Most indicated that teens begin to think about the consequences only after it is too late: “*I think all of that is on the back burner, and it doesn’t come forward until something happens like an STD or pregnancy.*” A few respondents suggested that some youth do not fully understand the consequences even after the baby is born: “*They don’t have a clue. It’s like all they think about is the beauty of this little bundle in their arms cuz they don’t understand the responsibility...*” In particular, there was concern that teens had little appreciation for the financial consequences of teen parenthood, mirroring the aforementioned perception that government assistance would be sufficient to raise a baby, despite their own experience of growing up on welfare and in poverty: “*They live in the projects or something like*

some government assisted home, and it's look how you're living, and then you wanna have a child, and your parent, the parents' barely making it, but I don't think they look at the cost." In fact, workers observed teen parents to spend money irresponsibly, even after their baby was born: *"(They) have (their) nails and hair done and they not looking at the reality of taking care of baby and is not oh I bought a couple of outfits, some powder and milk. No, you have to set that child up for the rest of his or her life as far for future, medical wise. What if you can't get that check from welfare, what are you going to do?"*

Although emphasis during discussion was on teens' overall lack of awareness regarding the extensive costs, there was consensus among respondents that teens sometimes consider the educational, social, and financial consequences associated with teen parenthood. First, respondents spoke about adolescents facing significant challenges or dropping out of high school reflecting their perception that *"some are able to attend school and tend to the baby's needs, and some are not - some can't handle the pressure."* Some respondents suggested that teens considered potential loss of freedom and decreased opportunities for socializing with peers that would accompany parenthood: *"they won't have the freedom of going wherever they wanna go every time they wanna go because they have somebody to take care of."* Lastly, a few respondents noted that some teens were more realistic about the financial implications of raising a baby, though most believed teens only began to consider such costs after they were already pregnant: *"They might—maybe when they get to the point that they're pregnant, that they're about to have their baby, that they don't have the money to take care of the baby or take care of themselves, maybe at that point they start thinking of financially."*

Potential Solutions

Youth care workers were invited to offer potential solutions to the high rates of teen pregnancy and teen parenting among youth in or at risk for foster care. Many cited the importance of system-wide prevention efforts (80% of workers provided 23 excerpts) and the importance of having a positive adult influence (70% of workers provided 13 excerpts). Educating teens about the realities of having a baby also emerged as a potential solution (60% of workers provided 24 excerpts). Other themes included general psychoeducation (60% of workers provided 11 excerpts) and harm reduction efforts (50% of workers provided 12 excerpts).

System-wide prevention efforts, including community, school, and media-based strategies, were enthusiastically endorsed as the best strategy for reducing pregnancy among teens. Many suggested that sex education in the schools was the place to start: *“They need to put more—they need to take a look at sex education in the school system.”* Workers also described the importance of providing access to prevention programs, testing, and contraception: *“to have random STD screenings or continual type of campaigns or legislature that says certain social service agencies need to, if you're federally or state funded, to have pregnancy prevention, psycho-educational programs once every six months or per their compliance with regulatory measures or something to that effect.”* Several youth workers alluded to a key opinion leader model [70, 71] noting the power of good role models and celebrity endorsements: *“bringing in a celebrity to maybe endorse a campaign of sorts, made a couple of talks or in the community, and then had the local paper showcase it. Maybe even—yeah, so sponsors have the campaign the youth can relate to that will bring awareness to the issue.”*

Positive adult influence refers to an opportunity for positive role modeling, support, or mentoring that was largely absent in youth families of origin. Particularly, workers expressed confidence in the value of a mentor model: *“I believe in a mentor, positive mentors just gettin’ in the kids’ lives and showing them what’s right and what’s wrong, and not to make the same mistakes that we made in life, or just giving ‘em examples of what worked and what didn’t work.”* While to some extent the youth workers were envisioning a more generic positive influence, some were thinking more specifically about creating an opportunity for youth to talk more explicitly about sex with a caring and knowledgeable adult: *“A lot of young ladies out here don’t have that mentor, that person that can come and talk to them or they feel they go talk to and say hey I’m ready to have sex but in reality your mind is not ready to have sex.”*

Educating teens about the realities of having a baby was widely acknowledged as important. Some suggested leveraging media: *“it could be a YouTube video (...) where you see a 16-year old girl running through all the thoughts a 16-year old girl might run through as to getting pregnant.”* Others proposed more active learning opportunities - “show me, don’t tell me” - to raise youth awareness, for example, about the financial implications of having a baby: *“Let’s go to Toys R Us. Let’s go to Walmart. Let’s see how much this stuff actually costs. (...) This is real. This is not the average person made blah, blah, blah. No, this is how much I make. I don’t know about over there. This is something if my household bring in and this is how much my expenses are. Bunch of money. This is serious.”* Finally, several workers suggested that youth may be more responsive to messages from “near peers” who share similar demographic characteristics or community experiences - *“I’m talking about looking next-door neighbor-type person, the family next*

door” - and perhaps some who also have become teen parents “I think you have to bring in people who’ve been there, done that.”

General psychoeducation and harm reduction efforts versus abstinence education were also discussed. Generally, youth care workers agreed that abstinence education was a waste of time, although some suggested it could be part of a message that also emphasized harm reduction: *“I call it straight talk to speak to them about what’s going on, and don’t try to censor it. (...) You need to educate ‘em.”* There was general consensus that for this population, harm reduction was a smarter, more strategic, and likely more effective approach: *“We’re not condoning this behavior, but if you’re going to engage in high-risk behaviors, know the consequences and at least, at minimal, protect yourself.”* Workers discussed the importance of providing youth with opportunities for hands-on skills practice, in particular regarding condom use: *“Most teenagers, they don’t have a condom. They know to put it on, but they don’t know the right way to put it on; they don’t know the right way of keeping a condom.”* They also described the importance of providing youth with the tools and knowledge about sexual health resources available in their communities.

Prevention Priorities Checklist

Frequency counts summarized worker perspectives on the knowledge and skills most critical for youth to acquire during sexual health and pregnancy prevention programming. From eight “knowledge” items, three emerged as most supported (received a ranking of 1, 2, or 3) by a minimum 50% of respondents. These included teaching youth about *risk behaviors* (nominated by 90% of participating youth workers), followed by *teaching youth about STDs* (70%), and *building healthy relationships* (50%). From ten

“skills” items, three emerged as most supported (received a ranking of 1, 2, or 3) by a minimum 50% of respondents. These included *developing condom use skills* and *problem solving skills* (each nominated by 60% of staff), followed by *decision making skills* (50%). Table 2 provides details about the number of times each item was nominated as a top 3 component.

Discussion

Youth care workers offer an unbiased and uninhibited perspective on the perceived costs and benefits of teen pregnancy and sexual health education for vulnerable youth. Their daily experience with youth in foster care, coupled with their opportunity to intervene, formally and informally, lends credibility and relevance to their views, interpretations, and proposed solutions. We predicted that youth care workers would (1) echo concerns previously highlighted in the literature, including unique risk factors for youth in care and (2) report ambivalent desires for pregnancy among youth, with perceived benefits that may outweigh anticipated costs and consequences. The qualitative data supported our hypotheses, indicating that youth overestimate the benefits and underestimate the costs of being a teen parent.

Youth care workers reported multiple risk factors, especially family dysfunction and childhood abuse, reflecting traumatic histories that differentiate youth in or at-risk for foster care from youth in the community. These findings support a rich literature that indicates youth lacking social support [72], abandoned or runaway teens [73], abused and neglected teens [74], and teens who live in shelters [75] are at increased risk for teen pregnancy. For instance, in a prospective study, maltreated adolescent girls were twice as likely as non-maltreated peers to become pregnant (20.3% versus 9.4%), even after

controlling for other known risk factors such as demographics, high levels of sexual activity, and low contraceptive use. Youth in the maltreated group who reported neglect had three times the rate of teen births (27.5%) than those in the non-maltreated group [74]. In fact, a meta-analysis of 21 studies found an aggregate effect size of 2.21 for teen pregnancy among maltreated youth, especially those experiencing sexual abuse [76].

Perceived Costs and Benefits

Our data suggests that workers believed youth minimized the potential costs of teen pregnancy, supporting prior findings that some at-risk youth prioritize short-term benefits over long-term consequences [77]. This may reflect a larger body of literature on adolescent impulsivity, which has been linked to a lack of maturity in the prefrontal cortex [78], and partially explains why adolescents engage in high risk behaviors such as unprotected sex. In fact, some research suggests that youth living in poverty, with heightened risk for psychological distress, may have even more difficulty delaying gratification compared to their peers [79]. Related studies on discount rates present youth with opportunities to earn cash (\$400) right away or wait for much more cash (\$1,200), double the cash (\$800) or slightly more cash (\$500). Youth with higher discount rates (i.e., youth who place a higher priority on the here and now, and in turn discount the future, even when the cash is 200% more) were significantly more likely to initiate sex earlier (before age 16), engage in risky sexual behaviors, have multiple sexual partners in a short amount of time, become infected with an STD, and become (or get someone) pregnant [80].

As expected, youth workers reported that many youth in their care perceive specific benefits to becoming teen parents, thereby helping to explain why youth in prior

studies express an ambivalent desire for pregnancy [e.g., 60, 81, 82]. The most salient benefits reported here included opportunities to create an emotional connection with their baby, secure their relationship with their partner, and prove themselves as independent adults. Decades of research on attachment theory suggests that healthy attachment is critical for a healthy developmental trajectory [83, 84]. Perhaps it follows that for youth in foster care, the absence of secure attachments within their families of origin lead them to seek emotional connection elsewhere, with a baby or a romantic partner. Furthermore, workers frequently referred to youth wanting to do things differently from their parents and prove themselves, including wanting to feel grown-up and emancipated. Seeking independence at this age is normative [85], yet for youth at high risk, this ability to seek independence through positive pathways such as social and academic competence [86] is undermined. This lack of psychosocial functioning may lead youth to explore other ways to “prove” themselves, including becoming young parents.

Reducing Teen Pregnancy among Youth in Foster Care

Traditional sexual health programs maintain an underlying assumption that teen pregnancies are unplanned and unwanted, such that increasing knowledge about the etiology and consequences of STDs, and how to use or access a condom will be sufficient to encourage adolescents either to delay sex or use birth control [59]. The current findings suggest that knowledge may be necessary but not sufficient for this vulnerable group of youth, for whom perceived benefits may outweigh the underestimated costs, and whose rates of teen pregnancy and parenting are disproportionate and stable. We propose that prevention programs will be more effective at meeting the unique needs of foster

care youth if they target more directly the ambiguous desire for pregnancy, including a close examination of perceived costs and benefits associated with teen parenting.

For instance, youth care workers proposed that teen parents from the youth's own community may be influential talking to youth about the experience, costs, and benefits of having a baby. The model of using key opinion leaders from similar backgrounds has been successful in reducing risky sexual behaviors among gay men [87]. Youth peer leaders also appear to benefit from being in an opinion leader role, with their own knowledge about sexual health increased and sustained over time [88]. Another possibility is to integrate an explicit and engaging cost-benefit exercise, perhaps borrowing strategies from Motivational Interviewing [89], used successfully in health clinics to motivate young girls at high risk for teen pregnancy to obtain and utilize birth control [82]. Related, youth care workers proposed teaching youth about the real financial costs of having a baby by preparing a household budget, calculating the specific and extensive costs associated with caring for a baby immediately and over time. We are in the process of piloting different activities to determine how we can best address the costs and benefits of teen pregnancy.

Youth care workers also indicated that sexual health prevention programs should include skills related to condom use, but also more general life skills such as decision-making, problem solving, and communication. These findings reflect growing attention to a set of underlying core skills that together may prevent a multiplicity of adolescent risky behaviors, reflecting a literature on skills deficits that have been linked to sexual risk-taking as well as conduct problems, alcohol and substance abuse, and mental health problems including anxiety and depression [55]. Workers prioritized these core skills

over other components specific to sexual health such as the benefits of safe sex and decreasing barriers to accessing birth control.

Limitations

The current findings should be interpreted with caution in light of the following limitations. First, the sample size was small, representing only two sites, and the interviews were brief, to increase participation in a setting with many competing demands, thereby providing a smaller data set. However, we applied rigorous and conventional qualitative methods to code and interpret the data, and given the overall lack of information available for this vulnerable group of youth, we believe the findings contribute meaningfully to inform growing solutions to a seemingly intractable problem. Second, we interviewed youth care workers instead of the youth themselves. Although we have discussed some advantages to interviewing workers (e.g., less inhibition, perspective from interventionist), this does come with some limitations. The biggest drawback is that the workers are reporting second-hand about their impressions on what they think youth might consider as a benefit or cost to teenage pregnancy. We do not know for sure if that is what the youth are thinking too.

Future Directions

Despite their increased vulnerability and disproportionate rates of teen parenting, there currently exist no evidence-based sexual health interventions or pregnancy prevention programs uniquely tailored to the needs of youth in or at-risk for foster care. We are currently working with the participating teen shelter to adapt an evidence-based sexual health curriculum to respond to the unique needs of youth in foster care. Using a published and systematic framework that has been shown to be effective for adapting

sexual health programs (ADAPT-ITT [90]), and informed by the current findings, we are pilot testing activities that specifically address the cost-benefit of becoming a teenage parent, using suggestions derived from the interviews and from the literature, including listing pros and cons, calculating the financial costs of having a baby, and using peer leaders.

Although national rates of teenage pregnancy have been decreasing steadily among the general population [47], rates among the most vulnerable youth remain disproportionate and stable, and teen parenting initiates a life trajectory characterized by decreased opportunities for educational and career success, which leads to the perpetration of the cycle of poverty . These youth face life stressors that reflect persistent and pervasive poverty; inconsistent, harsh, or unavailable parenting; and high risk for risky behaviors including substance abuse, violence, internalizing and externalizing disorders, and high risk sexual behaviors [38, 43-45] Currently available and empirically supported sexual health and pregnancy prevention programs are designed to increase knowledge about and access to contraception, a necessary but insufficient strategy for protecting youth in care. Due to their increased vulnerability and ambiguous thoughts about teenage pregnancy and parenting, it is imperative to understand how to best address the unique needs of this population.

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Table 1.

Frequency counts of excerpts per code and of workers who cited that code (*out of 10)

<i>Reasons for teen pregnancy & parenting</i>	<i>Staff who cited*</i>	<i>Number of Excerpts</i>
Lack of family functioning	9	37
Lack of knowledge	9	19
Lack of positive adult presence	7	7
Life Stressors	6	19
Unresolved emotional issues or trauma	6	15
Peer & cultural pressures to have sex &/or babies	5	14
Physical pleasure, drive to have sex	5	9
Accidental pregnancy / unplanned sex	4	8
Getting attention from parents, peers, community	3	5
Fear of stigma	3	3
Lack of skills	2	4
Abstinence policies	2	2
Lack of access	2	2
Don't take care of themselves	2	2
Religious and Cultural stigma	1	6
Stereotype of being a "man"	1	5
<i>Perceived benefits of teen pregnancy & parenting</i>	<i>Staff who cited*</i>	<i>Number of Excerpts</i>
Create emotional connection with baby	10	20
Keep romantic partner	10	20
Financial incentives	9	17
Prove self as independent and adult	5	22
Babies are cute	4	4
Financial incentive to have a sexual partner	1	1
<i>Perceived Costs & Consequences</i>	<i>Staff who cited*</i>	<i>Number of Excerpts</i>
Not thinking or knowing consequences	9	22
Educational Consequences	5	10
Decreased social life	5	5
Financial consequences	4	8
Put responsibility of their baby on their parents	2	2
Forced to have their baby	1	1
Stigma of being a pregnant teen or a teen parent	1	1

<i>Potential Solutions</i>	<i>Staff who cited*</i>	<i>Number of Excerpts</i>
Proactive and/or preventive system-wide efforts	8	23
Positive adult influence	7	13
Educate about the realities of having a baby	6	24
Psychoeducation	6	11
Harm Reduction education (condom use)	5	12
Abstinence education	5	4
Increase access to sexual health resources	4	10
Strengthen families	4	4
Decrease stigma and shame - talk about sex	2	9
Skills training	2	6
Increase monitoring & decrease opportunities for sex	2	2
Parenting education for parenting teens	1	1
Putting girls on birth control	1	1
<i>Other Thoughts about teen pregnancy</i>	<i>Staff who cited*</i>	<i>Number of Excerpts</i>
Teen Dad issues	6	11
Having a baby while in foster care or in crisis	5	8
Abortion	3	4
Lack of preparation to become a teen parent	3	2
Prostitution	2	7
Spending money on self over baby	2	3
Potential for abuse	2	2

Table 2.

Number of nominations as a top three sexual health programming component

KNOWLEDGE	Total nominations	SKILLS	Total nominations
Risk Behaviors	9	Condom Use	6
STDs	7	Decision Making	6
Healthy Relationships	5	Problem Solving	6
Benefits of delaying	3	Communication with parents	5
Benefits of safe sex	2	Personal Responsibility	2
Cost & Consequence	2	Assertiveness	1
Abstinence	1	Decrease barriers	1
Sexual Abuse	1	Family & Natural Support	1
		Feelings and Emotions	1

IV. CHAPTER 3
SEXUAL HEALTH PROMOTION PROGRAMMING
FOR YOUTH IN OR AT-RISK FOR FOSTER CARE:
IMPROVING KNOWLEDGE, ATTITUDES AND BEHAVIORS

Abstract: Among girls in foster care, 48% become pregnant at least once by age 19 (Dworkey & Courtney, 2010). Teen moms are less likely to graduate from high school and their children also are more likely to be placed in foster care due to abuse or neglect (Hoffman, 2006). Furthermore, 50% of 21-year-old men aging out of foster care report they have gotten someone pregnant, compared to 19% of their peers not involved in foster care (Courtney et al., 2007). Youth in or at-risk for foster care (YFC) report limited knowledge about, access to, and use of condoms; ambivalent attitudes toward teen parenting; and participation in other risky behaviors. For the current study, we adapted and supplemented an evidence-based sexual health program called SiHLE, using a systematic adaptation framework (ADAPT-ITT, Wingood & DiClemente, 2008), to address these unique and targeted needs of YFC. Thirty-six youth participated in four sessions of SiHLE-YFC during their stay at a temporary shelter. Four 90-minute sessions focused on increasing sexual health knowledge, improving attitudes toward and self-efficacy of condom use, and developing core skills such as problem-solving and communication. As hypothesized, youth showed high satisfaction with the intervention and significant improvement in sexual health knowledge from pre to post. At one month follow-up, youth continued to show significant improvement in sexual health knowledge, along with a significant reduction in risky sexual behaviors. Though not significant, there were moderate effect sizes for changes in attitudes toward teen pregnancy and condoms. There were no changes in attitudes towards teen parenting. Taken together, findings suggest that sexual health education directly targeting the unique needs of YFC may improve sexual health knowledge and behavior, and are discussed in the context of challenges associated with intervention and research with this population.

Introduction

Nearly half of 500,000 youth in foster care are adolescents who are vulnerable for poor mental health outcomes (Child Welfare Information Gateway, 2015). Compared to children not involved in foster care, they are more likely to come from families who experience multiple stressors, live in poverty, with significant difficulties even before entering the child welfare system (Connell, Bergeron, Katz, Saunders, & Tebes, 2007; McGuinness and Schneider 2007). Factors such as exposure to abuse, trauma history, and poverty are further exacerbated following placement outside of the home, leading to disruption of family, peer, and community relationships (Boonstra, 2011; Cunningham & Diversi, 2012). These vulnerabilities, in turn, place youth at risk for unhealthy trajectories characterized by sexual risk-taking, STDs, teen pregnancy, mental health problems, substance abuse problems, and juvenile justice involvement. The risk for teen pregnancy, especially, far exceeds the risk of their peers not involved in foster care (Dworskey & Courtney, 2010) with rates reaching up to 50% by the time they age out of the system. Despite these alarming rates, there are currently no evidence-based sexual health programs specially designed to leverage the strengths or mitigate the unique risks for youth in care.

Adolescent Sexual Health and Risk-Taking

Adolescence has long been recognized as a period of enhanced risk-taking, including substance use, sex, and aggression (World Health Statistics, 2012). Risky behaviors generally co-occur and are mutually predictive (Guillamo-Ramos, Litardo, & Jaccard, 2005), as a consequence of underlying risk factors characterizing families, schools, and neighborhoods (National Research Council, 2010). For example, in a

national survey, as many as 22.1% of adolescents used drugs the last time they had sex (Eaton et al., 2012). Compared to adolescents who don't use drugs, adolescents who regularly abuse substances are more likely to initiate sex at an earlier age (Madkour, Farhat, Halpern, Godeau, & Gabhainn, 2010), have more sexual partners (Connell, Gilreath, & Hansen, 2009), and have unprotected sex (Tucker, Ryan, Golinelli, et al., 2012), leading to increased risk for STDs and unplanned pregnancy (Swartzendruber, Sales, Brown, DiClemente, & Rose, 2013). Early risk taking is associated with negative outcomes into adulthood, including addiction, poor mental health, higher risk of school dropout, and under-employment (Mirza & Mirza, 2009; Flory, Lynam, Milich, Leukefeld, & Clayton, 2004).

Brain imaging studies have provided new information regarding this well-documented rise in risky behaviors during adolescence. The frontal cortex is the last part of the adolescent brain to develop, and is responsible for motivation and impulse control. That area remains immature during adolescence, leading to impulsive decisions determined by emotion rather than reasoning, thus increasing the likelihood of risk-taking (Steinberg, 2008). Furthermore, adolescents show greater ambiguity tolerance; thus, they are willing to absorb more risk without engaging in a systematic cost-benefit analysis regarding potential outcomes, also reflecting immaturity of the frontal cortex (Knutson, Delgado, & Phillips, 2008).

Despite a decrease in early onset of sex and increase in contraceptive use in the past 10 years, approximately 50% of US high schoolers have had sexual intercourse, and about 6% of them had their first experience before age 13; this rate rises to 13% for African American youth (Eaton et al., 2012). Adolescents and young adults (ages 15–24)

account for 25% of sexually active persons in the U.S., yet they are responsible for half of new sexually transmitted disease cases each year (Centers for Disease Control and Prevention, 2015). Furthermore, one in four females have a history of STDs, and females aged 18–24 have the highest rate of unintended pregnancies (Finer & Henshaw, 2006), together reflecting high rates of unprotected sex (upwards of 50% of sexually active teenagers use condoms regularly; Martinez, Copen, & Abma, 2011) and multiple sex partners (approximately 15% of sexually active adolescents report four or more partners; Eaton et al., 2012).

Comparison of teen pregnancy rates over time and with other nations may help to contextualize and add perspective to the scope of the problem. The U.S. teen birth rate (among women aged 15–19 years) decreased from 61.8 to 24.2 births per 1000 from 1991 to 2014, a 61% decrease (CDC, 2015). Success is credited to increased condom use among teenagers; for instance, among sexually active teenagers 59.1% reported using a condom during their last encounter in 2011, compared to 46.2% in 1991 (Eaton et al., 2012). Nevertheless, the U.S. teen birth rate remains the highest among developed countries, where teen birth rates are reported as low as 3 and 4 per 1000 in industrialized Asian countries and no higher than 14 or 15 per 1000 in Australia and the U.K. (The World Bank, 2014). Similarly, disproportionate numbers of new STD infections among adolescents and young adults in the U.S. contrast sharply with STD rates in other industrialized nations (<http://www.advocatesforyouth.org/publications/419-adolescent-sexual-health-in-europe-and-the-us>). Some groups, such as youth in foster care (YFC), are at a disproportionate risk for poor health outcomes.

Sexual Health Risks Are Even Higher for Adolescents in Foster Care

Significant interest in sexual risk taking among youth in foster care is represented by two decades of epidemiological studies examining national (Pecora et al., 2003; Carpenter, Clymean, Davidson, & Steiner, 2001) and regional data (Barth, 1990; Courtney & Dworskey, 2006; Dembo, Schmeidler, & Childs, 2007; Polit, White, & Morton, 1990; Risley-Curtiss, 1997) in addition to a smaller number of outcome studies (Slonim-Nevo, 2001; Slenim-Nevo, Auslander, Ozawa, & Jung, 1996). Despite variability in estimates for sexual risk behaviors, studies coalesce over time around one outcome - YFC experience disproportionately higher rates of teen pregnancy (Winter, Brandon-Friedman, & Ely, 2016). Studies point to older age, history of sexual abuse, and externalizing problems as the most robust predictors of sexual risk-taking (Ramseyer-Winter et al., 2014). Amid persistent controversy regarding whether or not youth with a history of foster care placement engage in more risky sexual behaviors, there are compelling data that points to earlier sexual initiation and more sexual partners (Ahrens, Stansell, & Jennings, 2010; Boonstra 2011; Carpenter et al. 2001; Gramkowski et al. 2009; James et al. 2009; Ramseyer Winter et al., 2016). YFC are also more likely to engage in sex for drugs or money (Mukandavire, Garira, & Tchuente, 2009; Ramseyer Winter et al., 2016). Finally, a history of trauma (Ahrens et al. 2010; Boonstra, 2011) may exacerbate sexual risk-taking (Barnes, Noll, Putnam, & Trickett, 2009; Roemmele & Messman-Moore 2011), unhealthy relationships with romantic partners (DiLillo, Lewis, & Loreto-Colgan, 2007; Feiring, Rosenthal, & Taska, 2000), and victimization by an intimate partner (Trickett, Negriff, Ji, & Peckins, 2011).

An examination of a nationally representative sample of YFC (N = 877 youth, mean age 15.3 years at Wave 4; age range 11 to 14 at wave 1; ages 14 to 17 at wave 4), 54% female, 52.1% White, 27.9% African American, 13.3% Hispanic, and 6.7% “other”) offers important insight into current indicators of sexual health and risk taking (James et al., 2009). According to youth, parent, and caseworker reports, 50% had engaged in consensual sex. Of those that had already engaged in sexual activity, 40.5% had their first encounter at age 13 or younger, 68% reported using protection often or always during sex, and 20% of all girls in the sample reported having become pregnant at some time before their 18th birthday. Hispanic girls were more likely to become pregnant (41.5%) compared to Caucasian girls (19%) and African American girls (10.9%). Girls exhibiting more delinquency or associating with deviant peers also were more likely to become pregnant. Influences of caregiver education, history of maltreatment, and drug use approached significance.

Despite reductions in teen pregnancy nationwide, pregnancy rates among foster care girls remain high, more than double those of their peers (Chernoff, Combs-Orne, Risley-Curtiss, & Heisler, 1994; Courtney, Terao, & Bost, 2004). Among girls in foster care, nearly half (48%) have been pregnant by age 19 and 30% by age 17 (Dworskey & Courtney, 2010) compared to 20% and 13.5% of teens in a national sample (Harris et al., 2009). Estimates from Casanueva et al. (2014) suggest that 45% of females ages 18 to 20 formerly in foster care reported having been pregnant at least once, and 25% of those had a second child. Leslie et al. (2010) found that 4.3% of 12 to 14 year-olds and 18.7% of 15 year-olds with a history of foster care had been pregnant (females) or got someone pregnant (males). Southerland, Casanueva, and Ringeisen (2009) compared these

findings to those obtained in the Current Population Study of transition age and found that youth (mean age of 19.4 years) with a history of foster care were significantly more likely to be parenting (29%) compared to youth with no history of child welfare involvement (7%). In a longitudinal study, Wilson et al (2014) used data from young adults who aged out of foster care in Illinois, Iowa, and Wisconsin and found that by the age of 24, 77% of the females had been pregnant, compared to 40% of non-foster care young adults from the Add Health Study. Multiple regional studies have found similar trends, with higher teen pregnancy rates reported among youth with a history of foster care: 31% in Utah (Singer, 2006); 40% in Washington state (Bradford & English, 2004); 53.3% in Arizona (Stott, 2012); and 57.1% in Alaska (Williams et al., 2005), all significantly higher than state and national averages.

Repeat pregnancies and STDs are also disproportionate. For instance, 46% and 23% of foster care girls become pregnant at least once more by ages 19 and 17, respectively, compared to 34% and 17% in a national sample (Dworskey & Courtney, 2010). In a study of YFC in California, among youth who gave birth by age 18, more than 40% had a repeat pregnancy by age 20 (Putnam-Hornstein & King, 2014). Ahrens et al. (2010) examined three waves of data from the National Longitudinal Study of Adolescent Health (1994-2002). They found that females with a history of foster care placements reported higher sexual risk behaviors and incidence of trichomonas, but not gonorrhea or chlamydia, compared to youth in the community. Compared to youth in the community, males with a history of foster care placements did not report higher sexual risk behaviors but did have a higher incidence of both gonorrhea and chlamydia, but not trichomonas.

Consequences of teen parenting are well documented, extensive, and long-lasting, and include social, economic, school and emotional problems for mother, father, and baby. Mothers are less likely to complete high school (Fergusson & Woodward, 2000; Hofferth & Mott, 2001; Manlove, 1998), more likely to receive public aid (Sarri & Phillips, 2004), are at higher risk for depression including post-partum depression (Barnet, Jofe, Duggan, Wilson, & Repke, 1996; Deal & Volt, 1998; Figueredo, Pacheco, & Costa, 2007; Patel & Sen, 2011; Schmidt, Wiemann, Rickert, & Smith, 2006). Teen fathers also have lower school attainment and fewer job opportunities, greater psychological difficulties and higher risk for delinquency (Bunting & McAuley, 2004; Fagot, Pears, Capaldi, Crosby, & Leve, 1998; Southamer-Loeber & Wei, 1998; Wei, Loeber, & Southamer-Loeber, 2002). Babies born to teen parents are more likely to be abused, to end up in state care, to be born premature or low birth weight, have poor cognitive development and more behavioral problems (McFarlane, Paret, & Soeken, 1996; Connelly & Strauss, 1992). Boys born to teen parents are more likely to be incarcerated and girls born to teen parents are more likely to become teen mothers compared to children born to adult mothers (Levine, Pollack, & Comfort, 2001; Rafferty, Griffin, & Lodise, 2011; Terry-Humen, Manlove, & Moore, 2005). For YFC, negative consequences are exacerbated by contextual vulnerabilities, including lack of family support and structure. According to 2010 national statistics, costs associated with teenage pregnancy equaled \$9.4 billion, reflecting increased healthcare, foster care, incarceration of children of teen parents, and lost tax revenue because of low employment among teen mothers (Martin, Hamilton, Osterman, Curtin, & Matthews, 2015).

Historical Perspective on Sexual Health Education and Pregnancy Prevention

Systematic sexual health education for teenagers emerged in the early 1900s, inspired by the military's sexual education program following the outbreak of syphilis during World War I. It largely took the form of psychoeducation against the vices of sex, including masturbation. Following the AIDS epidemic in the 1980s, every state passed a mandate of AIDS education for teens. They have since evolved to become more behavioral than they were, with the goal of changing adolescents' attitudes towards and beliefs about condoms by building communication, assertiveness, and decision-making skills, along with increasing overall knowledge regarding STDs and other risky behaviors (Romero, Galbraith, Wilson-Williams, & Gloppen, 2010).

Despite concerns that education might encourage sexual initiation and risk-taking (Oettinger, 1999; Dailard, 2006; Rector, 2002), research suggests that comprehensive sexual health education leads to better sexual health outcomes such as reduced rates of STD and unplanned pregnancy (Beh & Diamond, 2006; Chin et al., 2012), while abstinence-only programs have been linked to higher incidence of teenage pregnancy, even after controlling for factors such as SES, ethnicity, and education (Stanger-Hall & Hall, 2011). For instance, Kohler et al. (2008) presented data from the national Survey of Family Growth (N = 1,719; 47.4% female, median age: 17 years; 76.7% White, 14% African American) that showed youth who had participated in comprehensive sexual health programming were significantly less likely to report a teen pregnancy compared to youth who received no formal sexual health education, and less likely to engage in risky sexual behaviors compared to those who received abstinence-only education.

The patterns revealed by survey research are important but are to be interpreted with caution because of inherent limitations of retroactive self-report. To our knowledge, only one study has directly compared abstinence-only programs to comprehensive sexual health curriculum (Jemmott, Jemmott, & Fong, 1998). Jemmott et al. (1998) randomly assigned middle schoolers in a low-income African-American community to one of three conditions: an abstinence intervention encouraging the delay of sexual intercourse; a safer sex intervention emphasizing condom use; and a control health and wellness curriculum that lacked content on sexual behaviors. All interventions consisted of eight 1-hour modules. Compared to youth in the control condition, youth participating in the abstinence program were less likely to report having sexual intercourse in the 3 months after the intervention, but differences between conditions disappeared at 6 and 12 months follow-up. Compared to control youth, those who participated in the safer sex intervention reported more consistent condom use at 3 months, and more frequent condom use at all time points. Among youth who were *already sexually active at baseline*, those in the safer sex condition reported less sexual activity compared to those in the abstinence-only and control conditions, suggesting that for this high-risk group, comprehensive sexual health education is more effective than abstinence only programming.

A systematic review of 16 randomized controlled trials examining sexual health programs and youth outcomes (Bennet & Assefi, 2005) revealed that comprehensive sexual health programs are most likely to increase knowledge and use of contraceptives compared to abstinence-only programs. However, among sexually experienced teens, none of the programs (abstinence or comprehensive) decreased frequency of sexual

activity. A recent systematic review (Chin et al., 2012) concluded that group-based comprehensive sexual health was effective at reducing adolescent teen pregnancy and STDs, but could not draw conclusions on the effectiveness of abstinence-only education. These findings have led to ongoing controversy regarding our nation's ethical responsibility regarding adolescent sexual health education (Santelli et al., 2006).

Though research has been slow to offer clear and robust recommendations, frequent changes in political climate and funding have influenced the development and delivery of sexual health programming in the United States. Until the Affordable Care Act in 2010, federal funding was available only for abstinence-only curriculum, and developers were required to comply with eight federal abstinence education guidelines stating that sexual health education should: (1) Have as its exclusive purpose teaching the social, psychological, and health gains to be realized by abstaining from sexual activity; (2) Teach abstinence from sexual activity outside marriage as the expected standard for all school-age children; (3) Teach that abstinence from sexual activity is the only certain way to avoid out-of-wedlock pregnancy, sexually transmitted diseases, and other associated health problems; (4) Teach that a mutually faithful, monogamous relationship in the context of marriage is the expected standard of sexual activity; (5) Teach that sexual activity outside the context of marriage is likely to have harmful psychological and physical effects; (6) Teach that bearing children out of wedlock is likely to have harmful consequences for the child, the child's parents, and society; (7) Teach young people how to reject sexual advances and how alcohol and drug use increases vulnerability to sexual advances; (8) Teach the importance of attaining self-sufficiency before engaging in sexual activity (www.ssa.gov/OP_Home/ssaact/title05/0510.htm).

Hence, for several decades, federal funding was not available for comprehensive school-based sexual health program development or evaluation. Nevertheless, following the AIDS epidemic in the 1980s, funds were made available for HIV and STD prevention programming through the Center for Diseases Control (CDC). Despite the overlapping content, funding streams were kept separate, limiting the amount of comprehensive school-based sexual health programing (<http://www.siecus.org/>). Federal funding has increased significantly during the past six years for implementation of evidence-based comprehensive pregnancy prevention programs in targeted geographic areas. In response to research supporting comprehensive sexual health programming over abstinence-only programs, federal funding for abstinence-only programs has been cut by two-thirds (<http://www.siecus.org/>).

Evidence-Based Sexual Health and Pregnancy Prevention Programs

Goesling, Colman, Trenholm, Terzian, & Moore (2014) offer a thorough and systematic review of 31 evidence-based (based on ratings by the US Department of Education's What Works Clearinghouse) adolescent sexual health programs. Of these, 22 had a statistically significant impact on youth sexual activity, six did not have an impact and three did not measure sexual activity as an outcome. Among other outcomes measured, 14 of 22 had a statistically significant positive impact on contraceptive use and five of five had a statistically significant positive impact on rates of STD and pregnancy or birth outcomes.

Although programs use different strategies or target different age groups, genders, ethnic or special risk groups, most sexual health interventions include a set of common elements that are hypothesized to facilitate improvements in attitude or behavior.

Effective programs have been found to share the following components: actively engage youth; provide developmentally appropriate knowledge; shape attitudes, norms, self-efficacy, and motivation; and teach behavioral skills such as goal-setting, problem-solving, and communication (Albarracin et al. 2005; Kagesten, Parekh, Tunçalp, Turke, & Blum, 2014; Boustani et al., 2015; Rotheram-Borus, Swendemann, & Chovnick 2009). School-based interventions, for example, target large groups of heterogeneous youth (although 51% have been examined with largely urban, African-American samples), while community-based programs have targeted specific racial, gender, age, or risk groups.

Some have been designed with close attention to the unique needs of particular groups, such as *Assisting in Rehabilitating Kids* (St. Lawrence, Crosby, Brasfield, & O'Bannon III, 2002) for youth abusing substances; *Project IMAGE* (Champion, Dimmit, & Collins, 2012) for ethnic minority adolescent females with a history of abuse and STDs; *Safer Sex* (Shrier et al., 2001) for youth who have a history of STDs; *Respeto/Proteger* for young Latino parents; *Sexual Health Adolescent Risk Prevention (SHARP)*; Bryan, Schmiede, & Broaddus, 2009) and *Rikers Health Advocacy Program* (Magura, Kang, & Shapiro, 1994) for incarcerated youth; and *SiHLE* for African-American heterosexual females. A close look at specialized programs reveals much overlap in format and content. Goesling et al. (2014) provide additional details about various sexual health evidence-based programs. More details on a few examples are provided below.

Respeto/Proteger (Lesser, Koniak-Griffin, Huang, Takayanagi, & Cumberland, 2009) for young Latino parents (ages 14 to 24) leverages parent-child emotional attachment and parent protectiveness to reduce risk for HIV. It is a 12-hour community-

based, couple-focused intervention, in which facilitators use personal experience to guide discussion on HIV awareness, elicit attitudes about safe sex and beliefs about HIV, and introduce condom use and negotiation skills (in the context of a romantic relationship). Positive parenting is highlighted through written activities to enhance participants' goal setting and future orientation in the form of a "letter to my baby". In a randomized trial of 172 parents (86 couples), those assigned to Respeto/Proteger were significantly less likely to report unprotected sex (Lesser et al., 2009) compared to parents assigned to a control group that received a 90-minute didactic HIV prevention curriculum. The effect was strongest for mothers, especially if their male partner had a high parental protectiveness score at baseline.

SHARP, Sexual Health and Adolescent Risk Prevention for incarcerated youth is delivered within a detention setting, via motivational enhancement toward safe sex, and includes general HIV knowledge, condom use, and self-efficacy, problem-solving for high-risk situations, particularly those involving alcohol (Bryan, Schmiege, & Broaddus, 2009). SHARP was examined via 3-group RCT with 484 adolescents randomized to SHARP with or without the alcohol module or an information only control group. Youth in both SHARP conditions reported a higher frequency of condom use compared to the control condition.

SiHLE (DiClemente et al., 2004). *Sistas Informing Healing Living Empowering* was designed as four 4-hour sessions to be delivered in community settings for heterosexual, sexually active, African-American girls. Through the theme of gender pride, girls are encouraged to reflect on their values and personal goals. Session content includes HIV knowledge, communication skills, and healthy relationships. In a

randomized trial, 522 African-American girls were assigned to receive a health and nutrition intervention or SiHLE at a local community health agency. Youth assigned to SiHLE reported condom use more consistently at 6 and 12 months compared to youth assigned to the health and nutrition intervention. They were also less likely to have a new sexual partner in the last 30 days, had better condom application skills. Promising effects were also observed for self-reported STD and pregnancy.

Unique Programming Needs for Youth in Foster Care

The examples provided above suggest that programs tailored to unique needs of high risk groups hold promise for reducing sexual risk-taking and improving healthy trajectories. Despite well-documented elevated and persistent rates of sexual risk-taking and pregnancy among YFC, their unique needs have been left unaddressed by currently available programs.

We propose that the literature points to the following unique needs for YFC: (a) lack of knowledge, access, and use of condoms, (b) ambivalence about teen parenting, and (c) broader vulnerability for high-risk behaviors (Figure 1).

Lack of knowledge, access, and use of condoms: Foster youth report that when it comes to sexual health, too little information is available too late (Love, McIntosh, Rosst, & Tertzakian, 2005; Dworskey & DeCoursey, 2009; Kirby & Laris, 2009; Boustani, Frazier, Hartley, & Meinzer, 2015). Perhaps because sexual initiation occurs earlier among foster youth compared to non-foster peers (Hoffman, 2006), they are already sexually active by the time they first receive any information about birth control (Love et al., 2009). Youth have too little information, misinformation, and concerns that condoms might ruin the mood or decrease pleasure (Love et al., 2005). YFC also cite that they

either find it challenging to access condoms and general sexual health care, or they are afraid or embarrassed to seek it (Leonard, Dixon, Fantroy, & Laffert, 2013; Freudlinch, 2003).

Ambivalence about teen parenting: Although many teen pregnancies are unplanned, up to 35% of them are intended (Leonard et al., 2013; Hacker et al., 2000). Some teens, especially those involved in foster care, perceive that the advantages of having a baby outweigh the risks or costs (Love et al., 2005; Boustani, Frazier, Hartley et al., 2015). Desire for pregnancy is associated with family dysfunction and lack of family connectedness (Hacker et al., 2000; Boustani, Frazier, Hartley et al., 2015) that often characterizes YFC. Youth report several reasons for getting pregnant such as wanting to heal childhood wounds or obtain emotional closeness (e.g., with the baby or baby's father; Love et al., 2005; Boustani, Frazier, Hartley et al., 2015; Virginia Teen Pregnancy Prevention, Gordon, 1996). Others report that having a baby facilitates their exit from the child welfare system and access to independent living (Boustani, Frazier, Hartley et al., 2015; Stevens-Simon, Kelly, Singer, & Cox, 1996; Davies et al., 2003).

Broader vulnerability for high-risk behaviors: YFC are at disproportionate risk for a trajectory of co-occurring negative outcomes. Epidemiological statistics reveal overall heightened rates of mental illness among YFC; for example, state-level data from Washington reveal rates as high as 72% (Trupin, Tarico, Low, Jemelka, & McClellan, 1993) and data from three counties in California reveal rates that were two and a half times higher than a community sample (Clausen, Landsverk, Ganger, Chadwick & Litrownik, 1998). More recent reports show 28% (Auslander et al., 2002) to 51.1% (James, Montgomery, Leslie, & Zhang, 2009) of youth in care meeting clinical cutoffs on

standardized measures of externalizing behavior problems, and 25% meeting cutoffs for internalizing problems (James et al., 2009); rates more than double those of community samples (<http://www.nimh.nih.gov/health/statistics/prevalence/any-disorder-among-children.shtml>) and higher than children living in poverty (Henneghan et al., 2013; McMillen et al., 2005; Masi & Cooper, 2006).

In addition to these unique needs, welfare-involved youth in congregate care (communal housing such as group homes) are uprooted from their communities and placed with unfamiliar peers who are experiencing significant challenges themselves (Polvere, 2011). High turnover makes it difficult to forge relationships with peers and adults (Fox & Berrick, 2007). Substance abuse is widespread with 28% reporting alcohol, cigarette and/or marijuana use in the past 30 days, and 15% reporting the use of harder drugs such as cocaine or heroin (James et al., 2009). Furthermore, youth report an average of 6.1 delinquent acts in the past 6 months and experiencing 8.6 instances of abusive acts from their caregivers in the past 12 months (James et al., 2009). They are also more likely to have problematic sexualized behavior (Baker et al., 2007).

Despite the widely documented sexual risk trajectories of YFC, comprehensive sexual health programs tailored to their unique needs are not available. To our knowledge, the only sexual health intervention intended specifically for YFC is Power through Choices (Becker & Barth, 2000), developed in the mid-1990s but never rigorously evaluated (currently undergoing independent review by the University of Oklahoma National resource center for Youth Services <http://www.powerthroughchoices.org/>). Like many evidence-based programs, Power through Choices reviews the basics of reproductive health and STDs over several

sessions (10 sessions twice weekly for 5 weeks), and encourages teens, through role plays and discussion, to develop goals that inform their choices around sexual health and behaviors. Though intended for YFC, it is not clear from the information available how this program differentiates itself from others or how it addresses the unique needs of this high risk group.

The content of currently available evidence-based programs may be necessary but not sufficient for YFC. Evidence-based sexual health interventions share common themes (e.g., abstinence, STDs, contraception, and relationships), formats (e.g., psychoeducation, role plays, discussions, and videos) and content (e.g., problem-solving, communication, assertiveness, and insight building) (Kirby et al., 2009; Boustani et al., 2015). However, they are limited for three reasons: 1) Themes: Although many important themes are present (e.g., STD prevention, condom use skills), none of the programs appear to address the ambivalence many high-risk teens experience about teen parenting. 2) Format: Most school-based programs are built around the academic year or have multiple sessions that are not suitable for a foster care environment with high turnover. 3) Content: Specific skills such as problem solving and communication are presented but limited to examples involving sexual encounters and decision-making, thus limiting their generalization to and perceived applicability for other settings where youth are exposed to opportunities and pressures to experiment with other risky behaviors (e.g., substance use). We propose to leverage intervention design and content that has been modified for other high-risk groups and implemented in community settings toward the development and testing of a sexual health program unique for YFC.

Current Study

Informed by a growing literature and qualitative data provided by youth and staff at our collaborating teen shelter (Boustani et al., 2015), we adapted and supplemented an evidence-based sexual health program – SiHLE – using a systematic adaptation framework (ADAPT-ITT, Wingood & DiClemente, 2008) to address the unique and targeted needs of YFC, and we tested its impact via an open trial design. Youth participated in four sessions of SiHLE-YFC (Smart teens Informing Healing Living Empowering – Youth in Foster Care) during their stay at a temporary shelter. Four 90-minute sessions focused on increasing sexual health knowledge, improving attitudes toward and self-efficacy of condom use, and developing core skills such as problem-solving and communication. We collected pre-treatment, post-treatment, and one month follow-up self-reports of sexual health knowledge, attitudes toward condoms and teen parenting, and sexual behaviors (frequency of intercourse, number of partners, and use of protection). We hypothesized that youth would acquire increased sexual health knowledge, more positive attitudes towards condoms, and more negative attitudes towards teen parenting from pre to post intervention. Furthermore, we hypothesized that improvements in knowledge and attitudes would be sustained at 1-month follow-up, accompanied by reductions in sexual risk-taking behaviors compared to pre-treatment, after youth had returned to their communities.

Method

Research Design

This research was conducted in accordance with APA Ethical Guidelines, and with full approval by the University's IRB and our community partner (IRB # 14-0209).

Setting and Community Partnership. We partnered with a youth shelter in a large Southeastern city. The shelter provides housing, food, schooling, and mental health care (inpatient and outpatient) services to youth in or at-risk for foster care. Youth residing at this shelter were either in foster care with no available foster home, or at-risk for foster care as a result of parental abuse, domestic violence, truancy or other difficulties in the home. Youth are referred by law enforcement, child welfare case managers, brought in by their parents or self-referred. Youth are 12 to 18 years old, approximately 50% female, of ethnic and racial minority (51% Hispanic, 49% African American) and from low-income families. They are in foster care, without placement, or experiencing problems at home (e.g., neglect, truancy), and are temporarily placed at the shelter. Youth stay an average of 3 weeks with a maximum of 6 weeks. Staff at the shelter are largely of ethnic minority (approximately 60% African American; 40% Latino) and hold positions that involve daily contact with youth, including clinicians, shift leaders, nurses, and administrators. Collaboration began one year prior to the start of the current study, with several discussions focused on shelter priorities and opportunities, staff responsibilities and availability, and youth unmet needs and risky behaviors. Subsequent interviews with staff and youth regarding sexual health needs of YFC (Boustani, Frazier, Hartley, et al., 2015) informed the present work.

Sample. A total of 118 youth were admitted to the shelter from August 26, 2014 to May 28, 2015 and thus participated in SiHLE-YFC as part of routine services. Consent from a legal guardian to participate in the research was obtained for 42% of admitted youth (49 of 118). Of the 69 youth for whom consent was not obtained, the majority arrived at the shelter on their own, accompanied by law enforcement or a case manager who did not have the authority to grant consent for participation in a study. Among the consented 49 youth, two declined to participate, one left the shelter before participating in the intervention, one did not speak English (and could not complete research questionnaires), and one was attending school outside of the shelter so was not present for any sessions. An additional eight youth provided pre-intervention data, but no post-intervention or follow-up data were obtained. The final sample thus consisted of 36 consented and assented youth who completed pre-intervention assessments, at least one SiHLE-YFC intervention session, and at least one additional assessment (89% of 36 completed post-intervention assessment and 47% of 36 completed follow-up assessment).

Youth ($n = 36$) were 55% male, 45% female, ages 13 to 17, with a mean age of 14.96 (SD 1.31). The majority were of ethnic minority, with 57% identifying as Black and 40% as Hispanic. Baseline sexual history varied significantly. In terms of sexual orientation, 92% ($n = 33$) identified as heterosexual and 8% ($n = 3$) as bisexual. A majority of youth (66.7%, $n = 24$) reported having ever had sexual intercourse, with 47.2% ($n = 17$) indicating they were sexually active at the time of intake. The mean age of first sexual contact was 12.8 years (range 10-16), with the exception of one youth who was a victim of sexual abuse and reported first sexual contact at the age of 5 (not calculated in average). Reports on the number of sexual partners in their lifetime varied

from 0 to 20 ($M = 5.9$, $SD = 5.8$). Number of sexual partners in the past 6 months varied from 0 to 6 ($M = 1.9$, $SD = 2$). At pre-intervention, 40% reported ever getting tested for STDs, and 10.5% reported ever testing positive. Eight participants (22%) reported a history of pregnancy (or partner pregnancy for boys). Among these, five reported past pregnancies; of those, two resulted in live births, two abortions, and one miscarriage. Four participants were pregnant during the study (one pregnant with her second child, and one had an abortion during the study).

Recruitment & Consent Procedures. All youth admitted to the shelter participated in SiHLE-YFC as part of routine clinical services. Only those with written permission from a legal guardian or caseworker, and those who provided written assent, completed research measures. Consent forms were included within standard intake packets completed by shelter staff with youth's parents or other adults accompanying them to the shelter. If a legal guardian was available, a consent form was signed at the time of intake. If a legal guardian was not available (if the youth came alone or was accompanied at arrival by law enforcement or a case manager), consent could not be obtained. Intake staff tried to collect signatures from legal guardians if they came to visit their child. If the child began receiving the intervention without consent, they were no longer eligible to participate in the study. Consent forms were generally signed by a biological parent, a legal guardian (often a grandparent) or a case manager if the child was a ward of the state.

Intervention Selection, Adaptation, and Implementation

We followed the standardized 8-phase ADAPT-ITT model (Wingood & DiClemente, 2008) (see Table 2) to identify, adapt, deliver, and pilot test a sexual health intervention for YFC.

Phase 1 Needs Assessment: Phase 1 is intended for the research partner to become familiar with the unique strengths and needs of their community collaborators and target population. Needs assessment began early in the partnership and consisted of semi-structured interviews with staff and youth at the shelter to elicit information on the perceived risks and benefits of teen parenting and broad perspectives on pregnancy prevention. Staff and youth identified many benefits to teen parenting, including keeping their partner in the relationship, creating an emotional bond with the baby, becoming independent (financial incentives), and feeling grown-up (Boustani, Frazier, Hartley et al., 2015). We developed a checklist to elicit staff perspectives on sexual health content to be prioritized in the intervention. Staff indicated that teaching youth about risky behaviors, STDs, and healthy relationships were most critical.

Phase 2 Intervention Selection and Adaptation: Phase 2 began with a comprehensive literature review to identify the best fitting intervention and includes university-community discussion on the extent to which adaptations are required. After a thorough review of available evidence-based sexual health interventions, SiHLE (Sistas, Informing, Healing, Living, Empowering; DiClemente et al., 2004), an evidence-based HIV prevention program nationally recognized for improving sexual health outcomes for African American females was selected (See National Registry Evidenced Programs and Practices, NREPP, <http://www.nrepp.samhsa.gov/>; Program Archive on Sexuality,

Health, and Adolescence, PAHSA, <http://www.socio.com/pasha.php>; and Center for Disease Control, CDC, <http://www.cdc.gov/hiv/prevention/research/compendium/rr/complete.html>). The intervention was selected for its (1) engaging strategies especially developed for minority youth, (2) hands on strategies to increase condom knowledge and use, (3) emphasis on communication skills, assertiveness training, and insight building that have been identified as most common to evidence-based prevention programs for adolescents (Boustani, Frazier, Becker et al., 2015) and important in the prevention of co-occurring high risk behaviors, (4) content that staff had identified as critical, specifically healthy relationships, dating violence prevention, and abuse prevention and (5) brief format that would facilitate implementation in an adolescent shelter with highly mobile youth.

SiHLE was originally designed for African American heterosexual females. Hence, it was adapted in several ways to meet the unique needs of youth in or at risk for foster care. First, we expanded the intervention to be inclusive of all races, both genders, and multiple sexual orientations and gender identities by replacing gender-specific language with gender neutral pronouns such as “they” or “he/she” and by using the word “partner” instead of “boyfriend”. We also removed ethnic and gender pride activities. Second, we addressed the unique needs of YFC as previously described and outlined in Figure 1: (1) *Access to condoms*: Youth received a supply of condoms before leaving the shelter and information about where to access free condoms in their community; (2) *Ambivalence towards teen pregnancy*: Ambivalence was addressed explicitly through a role playing activity in which youth described the disadvantages of teen parenting to a “friend” who wanted to get pregnant; (3) *Broader vulnerability*: We added a problem-

solving module, reflecting findings that problem-solving is ubiquitous to mental health intervention and prevention programs (eg: Goodman, Gravitt, & Kaslow, 1995), to strengthen resilience and reduce risk for co-occurring conduct problems (e.g., substance use, delinquency). The resulting adapted intervention was named SiHLE-YFC: Smart teens Informing, Healing, Living, Empowering for Youth in Foster Care.

Phase 3 Theatre Test: Theatre tests are designed to assess, with a small sample of targeted service recipients, feasibility of and satisfaction with proposed adaptations. We closely collaborated with our partnering shelter to conduct a theater test of SiHLE-YFC. First, we pilot tested a problem-solving component in which teens create and perform role-play theatre skits about a risky situation (substance abuse, violence, conflict with authority, sexual health). During the role-play, the facilitator “freezes” the skit to guide teens through the problem-solving sequence (e.g., identify problem, generate possible responses, and anticipate the likely benefits and outcomes of each response). Ongoing collaboration with youth and staff focused on refining the problem-solving module to ensure it reflected the unique needs of the youth and made explicit the generalization of these skills beyond sexual health scenarios. Second, we pilot tested a module to address ambivalence about teen pregnancy and parenting in which youth received information and engaged in activities and calculations revealing the significant financial costs associated with having a baby and raising a child over time. Pilot testing revealed that youth grossly under-estimated or dismissed the costs, believing they would receive most items as gifts, and that family members would assist with ongoing costs. The original activities were deemed ineffective and replaced by a debate format, in which youth were divided into two teams to debate the risks and benefits of teen parenting. The debate

activity was also deemed ineffective, as youth under-appreciated the opportunities of debate to reveal facts (expressing that everyone is entitled to their opinion), and appeared generally unhappy and disengaged. Finally, we theatre tested a role play format in which the facilitator pretended to be a 16 year-old girl who wants to get pregnant, reflecting on some of the most commonly perceived advantages of becoming a teen parent. The youth were charged with convincing their “friend” to consider the disadvantages associated with teen parenting and reconsider her plans for getting pregnant. Discussions were especially rich and engaging when at least one youth within the group was a parent or had a close friend who was a teen parent, and could speak first-hand about the associated challenges.

A full theater test of SiHLE-YFC consisting of four 90-120-minute sessions delivered over two weeks (2 sessions per week) was carried out over a period of 2 months, with 26 youth. Youth-report data indicated high satisfaction (M = 9 on a scale from 1 “not satisfied” to 10 “very satisfied”) and high likelihood to use the skills (M = 3.4 on a scale from 1 “unlikely to use skills” to 4 “very likely to use skills”).

Phase 4 Production: During this phase, the original manual was modified to include the two new modules (problem-solving and reducing ambivalence) and to make language and content applicable to all youth regardless of race, ethnicity, gender, sexual orientation, or sexual identity. This resulted in draft 1 of the manual.

Phase 5 Topical Experts: Shelter youth (n = 5) and staff (n = 3; Director of Operations, nurse, social worker) were invited to review the manual and provide feedback on content and format. All youth and staff members offered positive feedback

and high enthusiasm for SiHLE-YFC. They offered minimal edits or recommendations for improvement.

Phase 6 Integration: During this phase, edits and feedback from topical experts were integrated into the intervention and draft 2 of the manual was produced. As a result of the largely positive feedback, few changes were needed from draft 1 to draft 2.

Phase 7 Training: The on-staff nurse at the shelter was trained to conduct the intervention. She was provided the manual to read and then it was reviewed with her in detail. She observed the first author implement all four sessions, then they co-facilitated all four sessions. However, as a consequence of high staff turnover (five nurses in two years), none of the nurses completed the training, and the PI (first author) implemented the intervention for the pilot trial (phase 8), with assistance from an undergraduate assistant (third author). The PI was trained on SiHLE by the developers in the context of a separate study. Ongoing consultation with the developers further supported the implementation.

Phase 8 Pilot testing: SiHLE-YFC was provided twice per week for two weeks (total of four sessions) on a rolling basis to ensure that all youth completed the program during their 3-4 week stay at the shelter. Sessions lasted 90 to 120 minutes with an average of 12 youth in attendance per session. The entire intervention (all 4 sessions) was delivered 12 times in a period of 9 months. All youth at the shelter participated in the intervention, as it was integrated into their required and routine clinical services. However, only youth with signed consent and assent completed research measures. At least one staff member (e.g., nurse, social worker) attended each session, reflecting the shelter's ongoing priority and commitment, despite challenges associated with staff

retention that interfered with their direct implementation. Nevertheless, their participation in the sessions familiarized staff with intervention content and enabled them to continue discussions with youth outside of scheduled sessions.

Procedures and Timeline

Pre and post-intervention data collection were conducted at the shelter. Intake staff alerted the PI whenever a new youth had been consented into the study. The PI then explained the purpose of the study to the youth during her next visit to the shelter, emphasizing that although their legal guardian had provided consent, they were free to decline participation, without any repercussions. Youth who assented to participate in the research then completed a baseline data packet with questions about their sexual health history and knowledge, and their attitudes towards condoms, teen pregnancy and parenting. Following completion of the pre-intervention packet, they joined the group (regardless of which of the four sessions was scheduled next). All youth received services together in one group (i.e., groups were comprised of both males and females, and all ages 12-17). Attendance was tracked for each participant. Youth completed post-intervention data packets after they had participated in all four SiHLE-YFC sessions (i.e., the full intervention). Youth continued to attend intervention sessions if they remained at the shelter even after completing their post-test. These youth were invited to assume an informal leadership role as “peer facilitator” by modeling activities, explaining concepts, distributing materials, etc. This maintained their engagement while allowing for (1) additional rehearsal of skills; and (2) opportunity to build self-efficacy. Follow-up data were collected via phone, one month following discharge from the shelter.

Description of Measures.

Measures were selected to correspond directly to the conceptual model (Figure 1). A copy of each measure is provided in Appendix 1.

Youth Demographics and Sexual History Form. The self-report form was developed for the present study and was used to collect information about age, gender, foster care status, sexual orientation, sexual health history (5 yes/no questions about sexual activity, STD testing, and abuse), and history of pregnancy, abortion, live births, and parenting (2 questions). This information was used for descriptive purposes.

HIV Prevention Knowledge (DiClemente, 2004). Youth answered 16 true/false questions ($\alpha = .68$) related to their HIV knowledge (e.g., People who have the AIDS virus generally feel sick right away) and standard safe practices (e.g., Using oil based lubricants with condoms will reduce the risk of pregnancy and STDs). Youth received 1 point for every correct answer; scores represented the sum of points across all 16 items. The questionnaire demonstrates satisfactory psychometric properties and was used with minority youth (DiClemente et al., 2004).

Condom Attitudes and Self-Efficacy Scale (DiClemente, 2004). This scale consists of 23 items assessing partner related barriers, attitudes, and self-efficacy towards condoms. Youth reported their agreement on a scale from 1 to 5 (1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree). Partner related barriers were assessed via six items ($\alpha = .82$) such as “If I asked my partner to use a condom, he/she might think I was cheating on him/her.” Attitudes towards condoms were assessed via eight items ($\alpha = .68$) such as “Condoms spoil the mood”. Self-efficacy about condom use was assessed via nine items ($\alpha = .88$) such as “I would know where to get a

condom”. Responses to the questions from the subscales created a total score that was averaged and could range from 1 to 5. This questionnaire demonstrates satisfactory psychometric properties and was used with minority youth (DiClemente et al., 2004).

Problem Oriented Screening Instrument for Teenagers HIV/STD Risk Screen (Rahdert & Czechowicz 1995). This questionnaire measures youth sexual behavior with 11 yes/no items related to condom use, number of partners, and risk-taking (e.g., “ever had sexual intercourse”, “had sex with two or more people in the past month”, “ever had an STD”). It is the first developmentally appropriate HIV/STD-risk screen for use in a wide range of settings and validated with diverse samples across the country (Rahdert et al., 2005). One point is assigned for each item that is answered “yes” and zero points for those that are answered “no”. A total score is calculated by summing across items. Scores that fall in the range of 8 to 11 are considered *high risk of exposure* to HIV/STDs, whereas scores ranging from 0 to 2 are considered *low risk of exposure* (Rahder et al., 2005).

Perceived Consequences of Teenage Childbearing Scale (Unger, Molina, & Teran, 2001). Youth reported perceived costs and benefits of teen parenting by rating 11 statements ($\alpha = .80$) on a 4-point scale, reflecting the extent to which each statement applied to them (1 = definitely not, 2 = probably not, 3 = probably yes, 4 = yes definitely). Sample items include “I would feel like someone really needs me”, “I would feel more like an adult”. Responses to the questions were averaged to create a score that could range from 1 to 4.

Teen Attitude Pregnancy Scale (Sommers, Johnson, & Sawilowsky, 2002). Youth reported on their attitudes towards teen parenting via 16 items ($\alpha = .73$) reflecting future

orientation (e.g., “I have plans to further my education”), realism about child rearing (e.g., “I am financially able to be a parent”), personal intentions (e.g., “Birth control is important”), and sexual self-efficacy (e.g., “I can resist sex if contraceptives are unavailable”). Respondents indicate how strongly they agree with each statement on a scale of 1 to 5 (1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree). Responses to the questions are averaged to create a score that could range from 1 to 5. This measure has demonstrated good internal consistency and concurrent validity (Sommers et al., 2002).

Social Problem-Solving Inventory for Adolescents (Frauenknecht & Black, 1995).

The SPSI-A, short version consists of 30 items ($\alpha = .93$) representing problem-solving and decision-making skills in adolescents (e.g., “When I have a problem, I think of the ways that I have handled the same kind of problem before”; “When faced with a hard problem, I believe that, if I try, I will be able to solve it on my own”). Youth report how true each statement is of them on a scale from 1 to 5 (1 = not at all true of me, 2 = slightly true of me, 3 = moderately true of me, 4 = very true of me, 5 = extremely true of me). Responses are averaged to create a score that could range from 0 to 4. This measure has demonstrated good reliability and validity (Frauenknecht & Black, 1995).

SIHLE-YFC Satisfaction Scale. After every session, all youth (regardless of study participation) anonymously rated their satisfaction with the session on a 4-point Likert scale (1 = I liked it a lot, 2 = It was OK, 3 = Meh, 4 = I did not like it at all). This scale was developed for use in this study to assess acceptability and inform improvement. Sample questions include “How much did you enjoy today’s session?”, “How much did

you like the handouts?” In addition, youth had the option to write what they liked most and least about the session and something new they learned.

Data Analysis. In order to assess whether the intervention influenced change, paired samples t-tests and Cohen’s d effect sizes were calculated to examine change over time in youth sexual health knowledge, attitudes and, behaviors.

Results

Intervention Implementation. The full intervention (4 sessions) was delivered 12 times over 9 months. Youth participated in 1 to 12 sessions ($M = 6.5$, $SD = 3.04$), with 36% of youth participating in a full cycle of the intervention a second time, as peer facilitators. Attendance was mandatory for all youth and average attendance per session (including youth not enrolled in the study but receiving services) was 11.4 youth per session ($SD = 2.64$) with a minimum of 6 youth and a maximum of 16 youth. Because of rolling admission into the shelter and ongoing service delivery, it was not possible to always begin at session 1 (53%). Some youth started the intervention at session 2 (25%), session 3 (17%) and session 4 (6%). Seventy-six anonymous satisfaction reports were collected (including from consented youth and youth receiving the service per routine shelter care but not participating in the research). Youth reported high satisfaction with group content: 76.4% reported that they liked the group “a lot” and 18.6% rated the group as “OK”. Satisfaction did not differ across the four sessions. Means and standard deviations for data collected at each time point are available in Table 4.

Preliminary Analyses. Data were analyzed only for participants who had a minimum of two time points of data available. There were no differences in demographics (age, gender, race, and ethnicity) between youth who were retained at

follow-up ($n = 17$), compared to those who were not ($n = 19$). Regarding baseline sexual history, youth differed only on condom use, such that youth lost at follow-up reported higher frequency of using condoms compared to youth retained at follow-up. T-tests were calculated to examine differences in pre or post treatment mean scores between participants lost and retained at follow-up. Sexual health knowledge was higher at baseline for youth retained at follow-up ($M = 8.35$, $SD = 3.26$) compared to youth lost at follow-up ($M = 4.84$, $SD = 3.85$). The difference was no longer significant at post-test. Youth retained at follow-up also were involved in higher risky sexual behaviors at baseline ($M = 4.53$, $SD = 2.43$), compared to youth lost at follow-up ($M = 2.00$, $SD = 2.08$). These differences were no longer significant at post-test.

Pre to Post-Intervention Change. Pre to post-intervention change was available for 32 youth (89% of the sample) and analyzed using paired samples t-tests and Cohen's d effect sizes. Youth significantly increased their sexual health knowledge from pre to post $t(31) = 6.81$, $p < .001$, $d = -1.08$. Problem-solving skills $t(31) = -.14$, $p = .89$, $d = -0.02$, sexual risk behaviors, $t(31) = 1.37$, $p = .18$, $d = 0.26$, attitudes towards condoms, $t(31) = .10$, $p = .31$, $d = 0.16$, teen pregnancy, $t(31) = .63$, $p = .54$, $d = 0.07$, and teen parenting, $t(31) = .40$, $p = .69$, $d = 0.02$, remained unchanged.

Pre to Follow-up Change. Follow-up data were available for 47% of the sample (17 of 36 youth). Of these, 62.5% of this subsample reported being sexually active in the past two weeks, suggesting high risk for teen pregnancy and STDs. Results are reported in Table 4. Sexual health knowledge increased, $t(16) = 7.14$, $p < .001$, $d = -1.71$, and sexual risk-taking decreased, $t(16) = 3.11$, $p < .01$, $d = 0.82$, from pre to follow-up. Attitudes toward condoms improved and change was marginally significant with a large

effect size $t(16) = 2.01, p = .06, d = 0.32$. Problem-solving skills, $t(16) = -1.61, p = .87, d = -0.04$, negative attitudes towards teen pregnancy, $t(16) = 1.75, p = .09, d = 0.27$, and teen parenting, $t(16) = 1.21, p = .24, d = 0.36$, all remained unchanged.

Post to Follow-up Change. Post to follow-up analyses required that participants have both data points available. This was true for 36% of the sample (13 of 36 youth). Though under-powered, exploratory paired sample t-tests were calculated. Sexual health knowledge increased from post-test to follow-up, $t(12) = -.286, p < .05, d = -.90$. There were no other significant effects. Therefore, despite having opportunities to engage in risky behavior, there was no significant increase in risky behavior once youth had left the shelter for one month.

Discussion

Although national rates of teenage pregnancy have been decreasing steadily among the general population, rates among YFC remain disproportionate and stable (Dworskey & Courtney, 2010). Teen parenting - especially among vulnerable youth - initiates a life trajectory of decreased opportunities for educational and career success, which leads to perpetuating the cycle of poverty. Youth in foster care face life stressors that reflect persistent and pervasive poverty; inconsistent, harsh, or unavailable parenting; and high risk for substance abuse, violence, internalizing and externalizing disorders, and sexual risk-taking (Tarren-Sweeney, 2008). Currently available and empirically supported sexual health and pregnancy prevention programs are designed to increase knowledge about and access to contraception, a necessary but insufficient strategy for protecting youth in care, whose unique needs reflect negative attitudes toward condoms, poor access to and insufficient information about condoms; ambivalence toward teen

pregnancy and parenting; and vulnerability to co-occurring risk behaviors. Findings reveal promise for sexual health interventions tailored to these unique needs to increase adolescents' sexual health knowledge, improve attitudes towards condoms and decrease sexual risk-taking.

The pilot study suggests that there is promise in adapting an evidence-based sexual health intervention for youth in or at-risk for foster care. Satisfaction was high and outcome trends were overall positive. Improvement in sexual health knowledge was the strongest and most robust finding, and significant at all time points. Improvement in attitudes towards condoms was marginally significant from pre to follow-up ($p = .062$). Perhaps most notable was a reduction in risky sexual behaviors from pre to follow-up, and no difference between post and follow-up, suggesting that once youth returned to their communities, their sexual risk taking behaviors had dropped to levels equivalent to those reported while in the shelter, where explicit rules and close supervision prohibited opportunities for sexual risk-taking.

Despite dedicating almost an entire session to problem-solving kids, including several role-plays, findings revealed no change in problem-solving skills. Findings also revealed no change in youth attitudes toward teen pregnancy or parenting. Youth acknowledged that there may be challenges associated with becoming a teen parent, but they largely minimized these challenges, had a positive view of relatives and friends who became parents at a young age, and believed that becoming a teen parent would not interfere with their education or more distal life goals. This further confirms qualitative findings by Boustani, Frazier, Hartley et al., (2015) and others (e.g., Connolly, Heifetz, & Bohr, 2012; Constantine, Jerman, & Constantine, 2009; Knight, Chase, & Aggleton,

2006; Love et al., 2005; Pryce & Samuels, 2010) who have reported that youth with poor family attachment tend to feel ambivalent about becoming a teen parent. Although attitudes did not change, robust improvements in sexual health knowledge, and change in risky behaviors at follow-up is encouraging.

According to Health Belief Theory (Becker, Radius, & Rosenstock, 1978), behavior change begins with the perception that the risks associated with a particular behavior outweigh the benefits. The module added to address ambivalent attitudes toward teen pregnancy among YFC integrated some components of motivational interviewing (Miller & Rollnick, 2012), by engaging youth explicitly in weighing the pros and cons of becoming a teenage parent. Previous research suggests that positive attitudes towards contraception predict use of contraception. On the other hand, an ambivalent attitude toward teen pregnancy is associated with inconsistent contraceptive use. Present findings revealed that improvement in attitudes towards condoms approached significance. A separate exploratory analysis using pre-intervention data and last time point available (combination of either post or follow-up data, $n = 32$) increased our statistical power and that change became significant ($p = 0.05$). In future work, a more extensive and systematic incorporation of motivational interviewing principles may help to influence more robust changes in attitudes.

Intervention Adaptation

Amidst long-standing and ongoing controversy regarding the risks and benefits of program adaptation, research accumulated over time suggests that programs adapted for the unique needs, strengths, and constraints of an agency are more likely to be delivered effectively (Blakely, 1987) and sustain over time compared to programs implemented

without modifications (Arthur & Blitz, 2000; Glaser & Backer, 1977; Rogers, 1995). Indeed, adapted interventions have become more the norm than the exception in mental health, and are more likely to be effective when adapted for a particular population (Greiner & Smith, 2006). Taking heed of this literature, we applied the ADAPT-ITT model to select, modify, and pilot test SiHLE for youth in or at risk for foster care. Revisions to language and content were intended to expand its applicability to males and females of various racial, ethnic, sexual orientation, and sexual identity backgrounds. Modules on problem-solving and cost-benefit ratio related to ambivalence toward teen pregnancy and parenting were added. Core activities related to sexual health were retained and delivered as designed. Findings replicated increased knowledge and safer sexual health behaviors as seen in prior evidence-based sexual health programming studies. Added modules related to problem-solving and ambivalence did not yield improvement in problem-solving skills or attitudes towards teen pregnancy and parenting, suggesting that more work is required to understand how to influence these.

Lessons learned from indigenous staff

We interviewed five staff (nurse, intake worker, director of shelter and two shift supervisors) following completion of the study. These interviews were brief exchanges, and although they were transcribed and reviewed, they were not long enough or systematic enough to warrant formal qualitative analyses. Rather, these interviews were meant to serve as a debriefing and “lessons learned” opportunity to reflect on the program. Though anecdotal, we believe some of what we learned warrants comment, as they point to enthusiasm for the intervention and may inform possible future directions. First, staff reported that youth enjoyed the intervention and felt comfortable

communicating about sexual health issues. They liked the engaging nature of activities and role plays, and they perceived hands-on practice (e.g., practicing with condoms and penis models) to be especially helpful. Although unconventional, they perceived benefits to inviting males and females to participate together. For example, staff stated that it helped boys better understand girls' perspectives on relationships and important discussions regarding issues such as dating violence and active consent ensued (both within and outside of group).

Perhaps of greatest importance, several staff members shared that following intervention sessions, youth often continued discussions with them or raised sexual health concerns. For instance, at least two teens were treated for STDs following discussions, and one teen requested a pregnancy test. In future studies, we will assess the extent to which sexual health intervention influences ongoing communication and supportive relationships with frontline staff, and the extent to which it facilitates linkage to services. As mentioned, we initially had intended to train the nurse on staff to deliver the intervention directly, in order to maximize these benefits. Unfortunately, high staff turnover made it difficult to accomplish this goal. Nevertheless, it was beneficial that the shift leaders (who monitor the youth throughout the day) were present during intervention delivery, as it allowed them to learn the information and facilitate ongoing conversations with the youth.

Challenges and Opportunities in Child Welfare Research

Recruitment: Obtaining consent for research in this population was especially challenging. Many parents were not available or dropped off their teens at the shelter without completing paperwork. Some youth arrived in the company of law enforcement

or case managers who were not their legal guardians and thus unable to provide consent. Several were returning youth that already had participated in SiHLE-YFC or in the theater test, making them ineligible. Occasionally, youth went through the revolving door of the shelter so quickly, there was no opportunity to assent or participate. We relied heavily on intake staff to find legal guardians and obtain required paperwork that included consent to research. In order to reward and encourage their efforts, we designed a poster like those of fundraising events to track the number of consents obtained. Rewards (e.g., donuts, pizza) were offered to the intake team for every 10 consents completed. Despite all of these efforts, recruitment remained extremely difficult, resulting in one-third of eligible shelter youth enrolling into the study, and 69 youth that participated in SiHLE-YFC but whose outcomes we could not assess.

These consent and participation data raise important questions regarding the potential risks and benefits of increased human subjects protections for vulnerable populations. While on the one hand it is imperative to adequately protect our participants, especially vulnerable populations such as youth in foster care, increased protections may also interfere with learning what is necessary to improve quality and outcome of services for them. Securing consent for a child involved in foster care is far more complex than securing consent for other children in clinic-, community- or school-based studies. It is not always clear who the legal guardian is, birth parents are often unavailable, children may be in the care of extended family, and case managers are sometimes reluctant to sign research consent, even if the child is under their custody. Children in foster care are a vulnerable group who need more evidence-based services. Unfortunately, the difficulties associated with recruitment and retention of these families discourages researchers from

pursuing research with such vulnerable groups, and severely limits what we learn about how best to serve them. We discussed with our Institutional Review Board the possibility of allowing the shelter director to sign consent for these youth, but this was strongly discouraged. Ideally, we would prefer for legal guardians to be involved and actively consent for their child's participation in research. Unfortunately, for a population such as those in child welfare, the difficulty associated with obtaining consent not only restricts our sample sizes, but excludes the most vulnerable youth who have no contact at all with their biological family and who, correspondingly, are not represented at all in our data.

Welfare-involved youth are mobile and vulnerable. Beyond the complexities associated with recruitment and informed consent, the high mobility of YFC lead to loss of more than half of the sample at follow-up. Anticipating these challenges we had collected at baseline multiple types of contact information (email, phone, social media, contact information for relatives and friends) that enabled us to reach the youth that we did. Among the 19 youth lost at follow-up, 58% (11 youth) were unreachable (change of contact information, wrong contact information, no response, etc.); 27% (1 youth and 2 parents) refused to complete follow-up questionnaires over the phone; 27% (3 youth) were placed in group homes or with relatives for which no contact information was available; 9% (1 youth) was sent to a juvenile justice residential setting; and 9% (1 youth) was reportedly “on the run”. These data highlight the constant mobility and tremendous vulnerability of youth in foster care, and point to our obligation to leverage every opportunity to provide generalizable skills they can use to navigate daily challenges. Brief, targeted, biggest-bang-for-buck intervention tools are critical to address areas of

highest need, with most meaningful long-term consequences. We cannot rely on lengthy and complex interventions, as these youth are not in the same placement long enough to complete them. Hence, brief and targeted solution-focused strategies are necessary, such as SIHLE-YFC, which was delivered within a two-week period. A focus on core skills that may generalize to multiple problem areas, such as those included in most evidence-based prevention programs, may be a potential avenue to explore. These skills include problem-solving, communication, assertiveness, and insight building, and are generally taught using a combination of psychoeducation, modeling, and role-play (Boustani, Frazier, Becker et al., 2015). SiHLE represents an example of this.²

Group inclusion and open format. Reflecting the needs and preferences of the shelter, all youth participated in SiHLE-YFC regardless of age (shelter age restrictions were 12 to 17), gender, gender identity, sexual health history, sexual orientation, previous or current pregnancies or whether or not they had children. Although some interventions are designed for a specific racial or gender group, the large majority (70%) have mixed gender groups (Goesling et al., 2014). Furthermore, because of real-world constraints in the implementation of this intervention, youth had to begin the intervention as soon as they were admitted into the shelter – regardless of what session was being covered at the time. Therefore, the group was “open”, meaning that youth could join during any session. For this reason, sessions were self-contained - content did not build on or extend information from prior sessions. Key concepts, though, were reviewed at the beginning of each group. As a consequence of the transient nature of youth admitted to the shelter, the open group format allowed most youth to receive the full 4 sessions before returning to their homes or community placements. Post-intervention data was collected following

completion of 4 sessions (1 round of treatment), while follow-up data was collected one month after discharge from the shelter. During the time between post and follow-up, 26 of the 36 youth participated in additional sessions, as part of routine services, until they were discharged from the shelter. As a result, youth participated in an average of 6.5 sessions with 36% of youth completing the intervention (all 4 sessions) more than once.

Furthermore, because of the shelter requirement for all youth to participate in clinical services, some youth who remained at the shelter for a long time participated in several rounds of intervention as peer facilitators. They assumed responsibilities for modeling learned skills, clarifying definitions and terms, distributing materials, etc. Anecdotally, youth expressed a great deal of enjoyment as peer facilitators, reflecting an extensive literature regarding the opportunities and benefits to peer assisted learning (e.g., Mathur & Rutherford, 1991). A future iteration of the program could further capitalize on the peer-assisted learning opportunity by formalizing the process via brief training that may allow youth to further spread sexual health knowledge to their community and peers, reflecting a literature on consumer-delivered services that highlights opportunities to expand the continuum of care from highly specialized trained individuals to lay workers and consumers (Kelly, 2004; Salzer, 2002).

Limitations

Findings should be interpreted with caution in light of several methodological limitations. First, this was an open trial design with no comparison group, reflective of the Phase 8 pilot test in the context of the ADAPT-ITT framework. Although we considered randomizing youth to experimental versus comparison conditions, we deferred to shelter leadership who preferred that all youth participate together in SiHLE,

which replaced their previous routine clinical service. Future studies should consider randomization to further strengthen the rigor of design and examination of intervention impact. Second, the sample size was small. As described, obtaining consent for this population was especially challenging. Despite the small sample, results suggest that pre- to post- and pre- to follow-up analyses were sufficiently powered to detect effects, and risky behavior reduction outcomes, especially, are promising. Third, follow-up data were collected for only one month post discharge from the shelter, and obtained for only half of the sample, limiting what could be learned regarding impact of the intervention on STD and pregnancy outcomes. Nevertheless, the significant reduction from pre to follow-up in risky sexual behaviors is promising. Fourth, data were based on self-report, reflecting the nature of the research questions focused on knowledge, attitudes, and risk behaviors. In future work, biological samples could more accurately identify pregnancies and STDs in long-term follow-ups.

Future Directions

Much work remains in order for teen pregnancy rates among YFC to drop to levels comparable to their peers in the community. Findings suggest three high priority avenues for future research: 1) Consider how best to integrate, teach and measure change in core skills, such as problem-solving, communication, and insight building. 2) Improve strategies for addressing the frequently cited ambivalence toward teen pregnancy which puts so many YFC at higher risk for teen parenting. 3) Develop internal capacity of welfare youth serving agencies so that indigenous staff can select and deliver evidence-based interventions effectively, sustain them over time, and collect their own data with which to evaluate their youth outcomes and inform ongoing improvements.

Conclusions

It remains unclear who is responsible for providing comprehensive sexual health services to YFC and if anything is being provided in a systematic manner. However, state welfare agencies are required to assess and plan for foster children's health. Children in foster care are automatically eligible for Medicaid up to age 26, which reimburses contraceptive care, STD testing, treatment, and other sexual health services (Boonstra, 2011). Persistent disproportionate rates of STDs and pregnancies among foster care youth suggest that we need to search for new avenues for bringing comprehensive sexual health education to this vulnerable population. Several evidence-based and skill-focused programs are available, relying on cognitive-behavioral principles, emphasizing sexual risk reduction, delivered in small groups, and including multiple sessions (Rotheram-Borus et al., 2009). The current findings suggest they can be adapted successfully for foster care youth, delivered in foster care settings, favorably received, and effective at increasing sexual health knowledge, improving attitudes toward condoms, and reducing sexual risk-taking. Of interest, The Fostering Connections to Success and Increasing Adoptions Act, enacted in 2008, requires states to help adolescents as young as age 14, to develop a transition plan to age out of foster care (<https://www.childwelfare.gov/pubPDFs/majorfedlegis.pdf>). This may present a natural opportunity to plan for youth to receive sexual health programming and access to contraception, in order to delay pregnancy until they've achieved more stability and maturity during adulthood.

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Figure 1. Conceptual Model

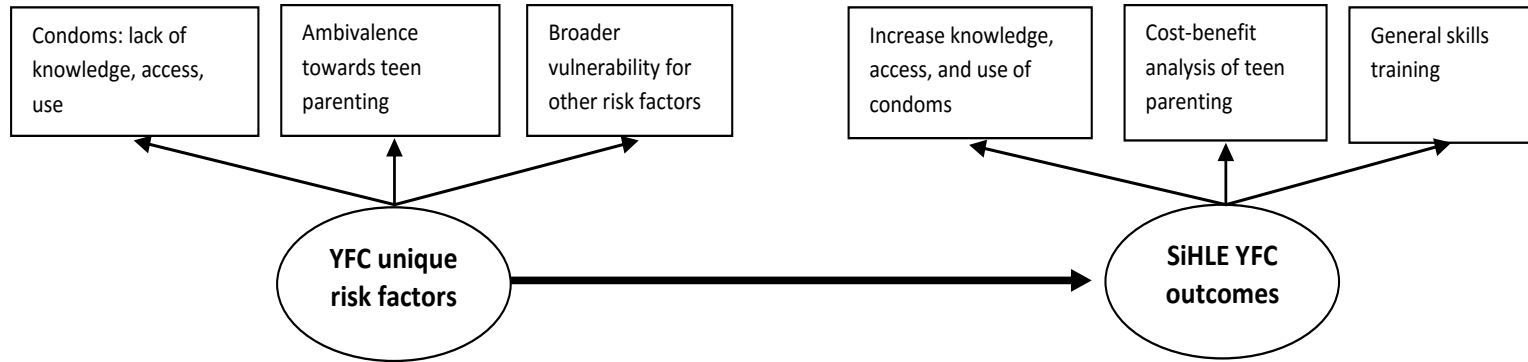
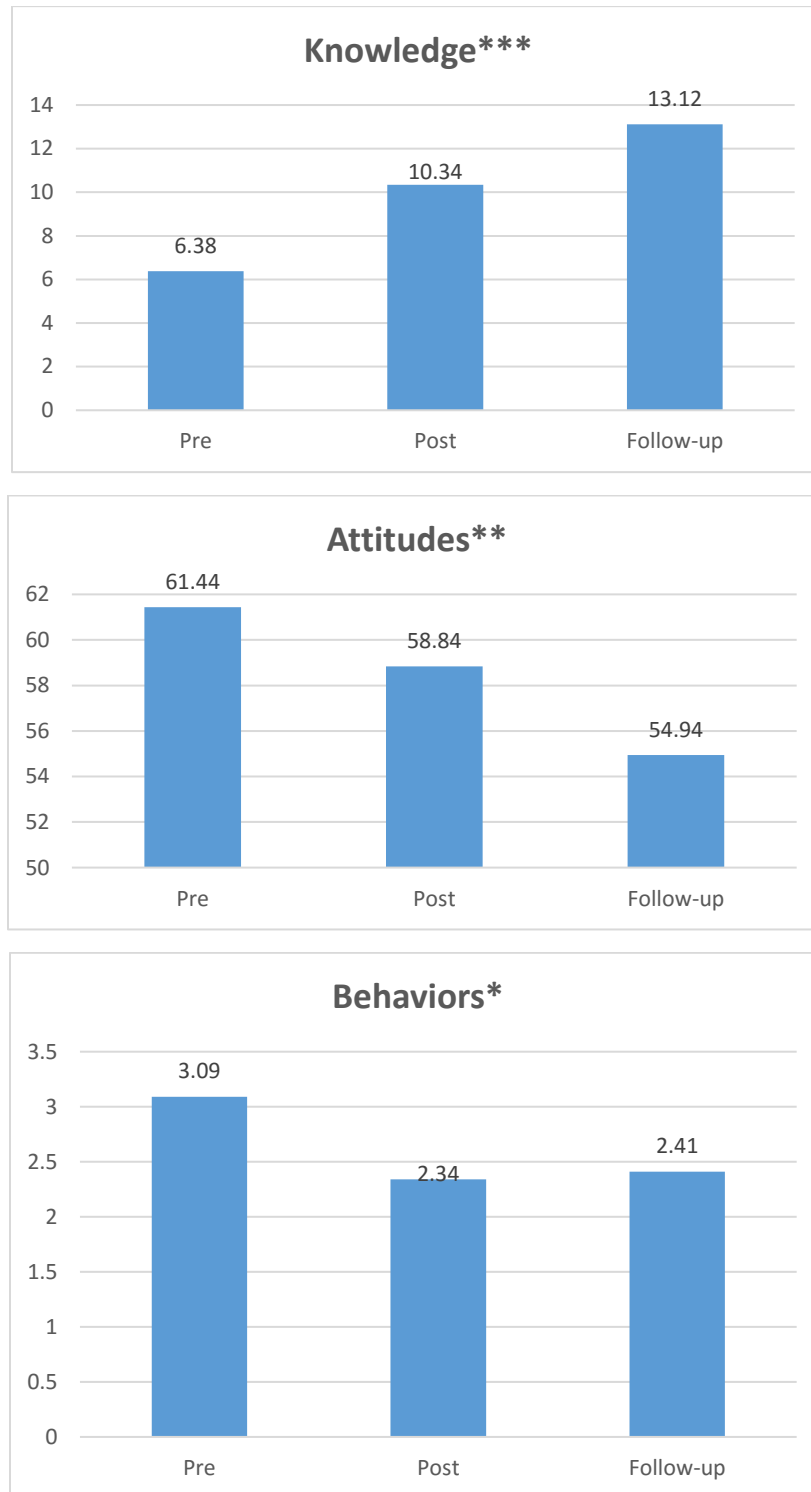


Figure 2. Changes in outcomes over time



***Significant from pre to post, post to f.u., and pre to f.u.

** Marginally significant from pre to f.u. (p=.06)

*Significant from pre to f.u.

Table 1. ADAPT-ITT Phases (Adapted from Wingood & DiClemente, 2008)

Phase
1 <i>Assessment:</i> Conduct focus groups and interviews with target population and key stakeholders
2 <i>Decision:</i> Review EBIs and decide which to be selected. Decide on whether to adopt or adapt EBI.
3 <i>Administration:</i> Administer a theater test with members of the new target population and invite key stakeholders to observe. Administer a brief survey to elicit reactions. Analyze results of the theater test.
4 <i>Production:</i> Produce draft 1 of the adapted EBI. Balance priorities while maintaining fidelity to the core elements and underlying theoretical framework. Develop an adaptation plan. Develop quality assurance and process measures.
5 <i>Topical experts:</i> Identify topical experts. Actively involve topical experts in adapting the EBI.
6 <i>Integration:</i> Integrate content from topical experts based on the capacity of the agency, and create draft 2 of EBI. Integrate scales that assess new intervention content in study survey. Integrate readability testing of draft 2 of the EBI to create draft 3.
7 <i>Training:</i> Train staff to implement draft 3 of adapted EBI.
8 <i>Testing:</i> Test draft 3 of the adapted EBI as part of a pilot study.

Table 2. SiHLE-YFC Table of Contents

Session	Content	Purpose	Example activity
Session 1	*Steps of problem solving	Go over the steps of problem-solving acronym and practice	Youth identify a problem and role play the steps of problem solving
	Values-What matters Most	To identify personal values and to understand why it is important to first consider personal values before making a decision.	Youth write down their most important values and imagine their lives without them
	ThoughtWorks – Visualize 25	To promote the participants’ identification of their goals and dreams as it relates to valuing themselves.	Youth draw a pictograph of what they hope their life will be like at age 25
	*Becoming a teen parent	Pros and cons of teen parenting discussion, how does it affect your personal values and life goals	Facilitator role plays a teenager who wants to get pregnant. Youth try to explain to her why this might be a bad idea
Session 2	Speaking of STD’s	To explain the nature and impact of having an STI on the life and future of teens.	Psychoed about STDs
	Name Game	To demonstrate how HIV is spread by heterosexual contact.	Youth are given 3 cards with their names and told to exchange cards. One of the cards represents HIV infection, all those who have a card with the name of the infected person is infected, then all those with the name of any person who has had contact with the infected person is infected. By the end of the activity, all youth are “infected”
	R U at Risk?	To discuss sexual behaviors that reduce one’s chance of getting STDs, including HIV.	Group discussion

Session	Content	Purpose	Example activity
	Consider This...The Penetrating Question	To evaluate how getting an STI or HIV could affect values and goals.	Group Discussion
	Introducing LIPSTICK	To introduce participants to proper condom use through an acronym.	With the use of penis model and condom, facilitator demonstrates how to properly put on a condom
Session 3	Love and Kisses	To review knowledge about the sexual behaviors that place teens at risk for STI infection, including HIV.	Youth are given cards with sexual behaviors and they have to determine how risky each one is
	What's In It For You?	To reinforce knowledge about HIV and STI prevention.	Group Discussion
	Why Don't Young People Use Condoms?	To discuss the common reasons why young people do not use condoms and to reinforce sexual responsibility for condom use.	Group Discussion
	K.I.S.S.: Know Indicate State and Stand!	To teach a model to assist in asking sex partner(s) to use condoms	Psychoeducation
	Three Ways to Say It	To teach the difference between passive, assertive, and aggressive communication styles.	Psychoeducation + Role play of different communication styles via a hypothetical situation (first basic every day situation, then in a situation with a romantic partner)
	LIPSTICK "Rehearsal"	To teach the steps for proper condom use.	Youth each get a penis model and condom and practice condom use skills.
	RING: The Female Condom	To teach the steps for proper female condom use.	Psychoeducation and modeling about proper use of female condom

Session	Content	Purpose	Example activity
Session 4	Condom Consumer Report	To demonstrate the importance of examining the condom for safety, personal appeal and ease of application.	Youth each get a condom and make a report about its features and presents it to the group.
	What Do Healthy and Unhealthy Relationships Look Like?	To describe the characteristics of healthy and unhealthy relationships.	Psychoeducation
	Pieces and Parts	To raise participant's awareness about healthy and unhealthy relationships.	Participants each get cards with a description of typical relationship situations. They have to discuss and determine if that relationship is healthy or unhealthy.
	What Does Abuse Look Like	To define verbal, emotional, physical and sexual abuse.	Psychoeducation
	Partner Types	To discuss different types of sexual partners and identify risky sexual partnerships. Further enable the teens to find ways to manage STI and HIV-risk with different types of sexual partners.	Youth are given a card with a partner type written on it (e.g., most popular person at school, rich person, etc.) and then they role play condom negotiation skills with this hypothetical partner
	Your Options For Self-Care	To describe options for safety and counseling for unhealthy relationships.	Psychoed and resources provided

*Additions not included in original curriculum. All other activities were not modified from original intervention.

Table 3. Youth demographics and sexual health

Gender	Male: 55.6%	Female: 44.4%
Age	15.03 (1.25)	
Race	White: 38.9%	Black: 58.3%
Ethnicity	Hispanic: 44.4%	Non-Hispanic: 55.6%
Ever had sex	Yes 66.7%	No 30.6%
Sexually Active	Yes: 47.2%	No: 50%
Age of sexual initiation	12.5 (2.19)	
Lifetime Sexual partners	7.17 (5.3)	
Partners in past 6 months	2.19 (2.06)	
Ever tested for STDs	Yes: 36.1%	No: 50%
Ever tested positive for an STD	Yes: 11.1%	No: 72.2%
Ever Sexually Abused	Yes: 9.7%	No: 90.3%
How often do you use a condom?	Not sexually active	10%
	Occasionally	30%
	Most of the time	25%
	All of the time	35%
Expecting a baby	Yes: 2.8%	No: 83.3%
Ever had a baby	Yes: 72.2%	No: 11.1%

Table 4. Mean Scores across pre, post, and follow-up assessments

	Pre (M, SD) (N =36)	Post (M, SD) (N=32)	FU (M, SD) (N=17)
Sexual Health Knowledge ^{a, b, c*}	6.5 (3.95)	10.34 (3.25)	13.12 (2.23)
Sexual Risk-taking Behavior ^{c*}	3.19 (2.56)	2.34 (3.22)	2.41 (2.71)
Negative Attitudes towards Condoms	60.86 (15.95)	58.84 (17.43)	54.94 (14.33)
Attitudes towards Teen Pregnancy	29.31 (9.40)	28.00 (9.50)	28.35 (7.61)
Problem-Solving	93.56 (20.37)	95.03 (23.52)	94.88 (26.76)
Attitudes towards Teen Parenting	58.61 (10.17)	58.38 (8.88)	55.29 (8.01)

* p < 0.05

a baseline to post-test

b Post-test to follow-up

c Baseline to follow-up

Appendix 1. Measures

Youth Demographics and Sexual History Form

This information is collected to give us an idea of who the responses are coming from. We will not be collecting any information that will identify you.

Demographics

- Your age: _____
- Your Gender: Male Female Transgender Other:

- Race: Black White Other: _____
- Ethnicity: Are you Hispanic or Latino? YES NO

Sexual History

- 1) Sexual Orientation: Heterosexual Homosexual Bisexual
 Questioning
 Other: _____
- 2) Have you ever had sex? (If yes, continue). YES NO
- 3) Are you currently sexually active? YES NO
- 4) How old were you the first time you had sex? _____
- 5) How many sexual partners have you had in your lifetime? _____
- 6) How many sexual partners have you had in the last 6 months? _____
- 7) Have you ever been tested for STDs? YES NO
- 8) Have you ever tested *positive* for an STD? YES NO
- 9) Have you ever been the victim of sexual abuse? YES NO

Pregnancy History

- 1) Are you currently expecting a baby? YES NO
- 2) Have you ever been pregnant/caused a pregnancy? YES NO

If yes, please complete below:

- Year of 1st pregnancy: _____
 - Did pregnancy result in live birth? YES NO
 - If yes, are you currently caring for the child? YES NO
 - If no, who is caring for child? _____
- Year of 2nd pregnancy: _____
 - Did pregnancy result in live birth? YES NO
 - If yes, are you currently caring for the child? YES NO
 - If no, who is caring for child? _____
- Year of 3rd pregnancy: _____
 - Did pregnancy result in live birth? YES NO
 - If yes, are you currently caring for the child? YES NO
 - If no, who is caring for child? _____

HIV Prevention Knowledge

The following statements are about STDs (Sexually Transmitted Diseases) and HIV, the virus that causes AIDS, and pregnancy. Please indicate whether you think the statement is "true" or "false". If you aren't sure, circle "Don't know"

	TRUE	FALSE
Don't Know		
1. Douching after sex helps protect you from pregnancy or STDs.	<input type="radio"/>	<input type="radio"/>
2. You can't get the AIDS virus through a cut in your skin.	<input type="radio"/>	<input type="radio"/>
3. You can't always tell if your partner has a STD.	<input type="radio"/>	<input type="radio"/>
4. Pre-ejaculatory fluids can cause pregnancy.	<input type="radio"/>	<input type="radio"/>
5. People who have the AIDS virus generally feel sick right away.	<input type="radio"/>	<input type="radio"/>
6. You can't get the AIDS virus by sharing knives and forks or a bathroom with a person who has the AIDS virus.	<input type="radio"/>	<input type="radio"/>
7. An untreated STD can possibly result in being unable to have children.	<input type="radio"/>	<input type="radio"/>
8. Condoms with spermicide will protect you from pregnancy and STDs.	<input type="radio"/>	<input type="radio"/>
9. Women can spread STDs to men when they don't use condoms.	<input type="radio"/>	<input type="radio"/>
10. If a woman uses birth control pills, it lowers her risk for getting the AIDS virus.	<input type="radio"/>	<input type="radio"/>
11. Having an STD puts you at greater risk for getting the AIDS virus.	<input type="radio"/>	<input type="radio"/>
12. If a person has the AIDS virus, it is still safe to kiss them on the lips, as you would kiss a friend or relative.	<input type="radio"/>	<input type="radio"/>
13. The most effective way to prevent pregnancy and STDs is abstinence from sex.	<input type="radio"/>	<input type="radio"/>
14. Sheep skin condoms are better than latex condoms for preventing pregnancy and STDs.	<input type="radio"/>	<input type="radio"/>
15. Using oil based lubricants (Vaseline, Crisco) with condoms will reduce the risk of pregnancy and STDs.	<input type="radio"/>	<input type="radio"/>
16. All STDs, except for the AIDS virus, can be cured with antibiotics.	<input type="radio"/>	<input type="radio"/>

Condom Attitudes and Self-Efficacy Scale

The following statements are about condoms. Please indicate how much you agree or disagree with each statement by circling the appropriate number.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. Most of the time we don't have a condom when we need one.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I can never find a condom right before sex.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. I/My partner won't use a condom.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. If I used/ I asked my partner to use a condom, she/he would think I didn't trust her/him.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. I usually forget to use a condom.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. If I used/ I asked my partner to use a condom, she/he would think I was accusing her/him of cheating.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. If I used/ I asked my partner to use a condom, she/he might think I was cheating on her/him.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Condoms rub and make you feel sore.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. I wouldn't know where to get a condom.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Condoms don't feel good.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Condoms spoil the mood.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. Condoms feel unnatural.
13. If I used/ I asked my partner to use a condom, she/he might get angry.
14. Condoms don't fit right.
15. Condoms cost too much.
16. I don't have a way to get condoms.
17. I would be embarrassed to buy condoms or ask for them.
18. It's up to the man to provide a condom.
19. I feel close to my partner without a condom.
20. If I used/ I asked my partner to use a condom, she/he might think I was putting her/him down or insulting her/him.
21. I don't need to use a condom because I never get pregnant or catch anything.
22. When I use a condom, I feel less involved or committed to my partner.
23. Condoms change the climax or orgasm.
24. I don't need to use a condom because I use another method

POSIT

1. Have any of your closest friends started having sex? **YES** **NO**
2. Have you ever had any kind of sexual contact with another person? **YES** **NO**
3. Have you had sexual intercourse? **YES** **NO**
4. Have you ever had sexual intercourse without using a condom? **YES** **NO**
5. Do you find it difficult to use condoms every time you have sex? **YES** **NO**
6. Have you ever thought you or your partner might be pregnant? **YES** **NO**
7. Have you been or gotten someone pregnant? **YES** **NO**
8. Have you been tested for HIV? **YES** **NO**
9. Have you had sex with two or more people in the past 3 months? **YES** **NO**
10. Have you ever had anal intercourse (sex in the butt)? **YES** **NO**
11. Have you ever had a sexually transmitted disease? **YES** **NO**

Perceived Consequences of Teen Childbearing Scale

Definitely Not: 1

Probably Not: 2

Probably Yes: 3

Yes, definitely: 4



1. I would feel like someone really needs me.
1 2 3 4

2. It would be the first time I had something that was truly mine.
1 2 3 4

3. For the first time, I would have someone who really loves me.
1 2 3 4

4. I would never be lonely.
1 2 3 4

5. I'd be able to make enough money to support the baby and myself.
1 2 3 4

6. My boyfriend / girlfriend would be more committed to me.
1 2 3 4

7. I would feel more like an adult.
1 2 3 4

8. I would feel like I had truly done something meaningful in life.
1 2 3 4

9. I'd still be able to finish my high school education.
1 2 3 4

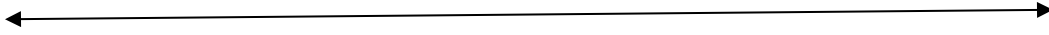
10. My family would help me to raise the baby.
1 2 3 4

11. My family would let me continue to live at home.
1 2 3 4

Teen Attitude Pregnancy Scale

Please rate how much you agree or disagree with each of the statements below.

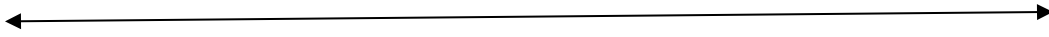
Strongly Disagree: 1 Disagree: 2 Neither Agree nor Disagree 3 Agree: 4 Strongly Agree: 5



1. It is important to finish high school
1 2 3 4 5
2. A child impedes high school education
1 2 3 4 5
3. I have plans to further my education
1 2 3 4 5
4. A child impedes post high school (college) education
1 2 3 4 5
5. I can care for a child by myself
1 2 3 4 5
6. I can be a responsible to be a parent
1 2 3 4 5
7. I am financially able to be a parent
1 2 3 4 5
8. I am emotionally able to be a parent
1 2 3 4 5
9. I have knowledge of how to avoid pregnancy
1 2 3 4 5
10. Birth control is important
1 2 3 4 5
11. I will avoid STDs
1 2 3 4 5
12. I will use birth control
1 2 3 4 5

Please rate how sure are you about each of the statements below

Very Sure: 1 Sure: 2 Neither Sure nor Unsure 3 Unsure: 4 Very unsure: 5



13. I can resist sex if contraceptives unavailable

1 2 3 4 5

14. I can use birth control when having sex

1 2 3 4 5

15. I can delay sex until after high school

1 2 3 4 5

16. I can resist sex if pressured by partner

1 2 3 4 5

Social Problem-Solving Inventory for Adolescents (SPSI-A):

Short Version

Identifier:

Directions: Below are statements that reflect how you respond to problems and how you think and feel about yourself afterward. You should think of serious problems that are related to your family, health, friends, school, and sports. You should also try to think about a serious problem that you had to solve recently as you reply to these statements.

Read each statement carefully. Think about how you usually think, feel, and behave when you face these types of problems. Circle the number that best describes how true the statement is of you.

A = Not at All B = Slightly C = Moderately D = Very E = Extremely
True of Me True of Me True of Me True of Me True of Me

1. When I have a problem, I think of the ways that I have handled the same kind of problem before. _____
2. To solve a problem, I do what has worked for me in the past. _____
3. When I solve a problem, I use the skills I have developed that have worked for me in the past. _____
4. When I can't solve a problem quickly and easily, I think that I am stupid. _____
5. I often doubt that there is a good way to solve problems that I have. _____
6. When faced with a hard problem, I believe that, if I try, I will be able to solve it on my own. _____
7. I feel afraid when I have an important problem to solve. _____
8. Complex problems make me very angry or upset. _____
9. I often become sad and do not feel like doing anything when I have a problem to solve. _____
10. I put off solving a problem for as long as I can. _____
11. I avoid dealing with problems in my life. _____

12. I put off solving problems until it is too late to do anything about them. _____
13. When I have a problem, I find out if it is part of a bigger problem that I should deal with. _____
14. I try to solve a complex problem by breaking it into smaller pieces that I can solve one at a time. _____
15. Before I solve a problem, I gather as many facts about the problem as I can. _____
16. When I solve a problem, I think of a number of options and combine them to make a better solution. _____
16. I try to think of as many ways to approach a problem as I can. _____
18. When I solve a problem, I think of as many options as I can until I can't think of any more. _____
19. When I decide which option is best, I predict what the outcome will be.
20. I weigh the outcomes for each of the options I can think of.
21. I think of the short-term and long-term outcomes of each option.
22. Before I try to solve a problem, I set a goal so I know what I want to achieve.
23. Before solving a problem, I practice my solution to increase my chances of success. _____
24. I write a specific objective down so I know how to solve my problem. _____
25. After solving a problem, I decide if the situation is better. _____
26. After I solve a problem, I decide if I feel better about the situation. _____
27. I often solve my problems and achieve my goals. _____
28. If the solution to a problem fails, I go back to the beginning and try again. _____
29. When a solution does not work, I try to determine what part of the process went wrong _____
30. I go through the problem-solving process again when my first option fails. _____

VITA
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PUBLICATIONS AND PRESENTATIONS

Maríñez-Lora, A. M., Boustani, M. M., Del Busto, C., & Leone, C. (2015). A framework for translating an evidence-based intervention from English to Spanish. *Hispanic Journal of Behavioral Sciences*.

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