ADAPTATION OF AN EVIDENCE-BASED BEHAVIORAL GROUP INTERVENTION TO REDUCE RISK FOR SEXUALLY TRANSMITTED INFECTIONS AMONG LOCAL FEMALE ADOLESCENTS IN HAWAIʻI

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ABSTRACT

Epidemiological data demonstrate teen girls in Hawai‘i are at significant and increasing risk for sexually transmitted infections (STIs). These data also indicate that teen girls in Hawai‘i are engaging in higher rates of high-risk sexual behavior than their male counterparts. Despite this compelling evidence, there is a paucity of published research on effective STI prevention protocols that target local female adolescents.

In light of public health needs, the specific aim of this study was to adapt an evidence-based, group-level STI behavioral prevention intervention targeting local teen girls in Hawai‘i. This adaptation was achieved using the Local Adaptation Procedures, which provided methodological adaptation steps that accommodate the logistics of conducting community-based research in Hawai‘i.

The current investigation consisted of three studies. In Study 1, a group behavioral intervention, *Girl Power,* was selected for adaptation based on a critical comparative review of the STI prevention intervention literature targeting female adolescents and consultation with key community stakeholders. The aim of Study 2 was to adapt *Girl Power* based on themes derived from the content analyses of four focus groups conducted among local teen girls. The themes guided modifications of the intervention and yielded the adapted intervention, *Girl Power Hawai‘i.* The aim of Study 3 was the final production of *Girl Power Hawai‘i,* and involved two theater tests of the adapted intervention among a sample of local teen girls and key community stakeholders. The purpose of theater testing was to pretest modules from the adapted intervention. Content analysis of participants’ evaluations of demonstrated content guided the final production of *Girl Power Hawai‘i*.

The local adaptation of *Girl Power* represents an important contribution to the adolescent

sexual health intervention literature by addressing a significant gap in services targeting the needs of female adolescents at risk for STI and related behavioral health issues. This empirical qualitative research provided the critical first steps in ensuring the relevance and acceptability of *Girl Power Hawai‘i* among local teen girls, resulting in a STI intervention that can be readily implemented by community-based organizations in Hawai‘i. Future research should focus on examining the effectiveness of the adaptation, including feasibility- and pilot-testing with partnering CBOs, and subsequent community-based, participatory dissemination RCTs.

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CHAPTER 1: INTRODUCTION

Emerging evidence of sexual health disparities among local teen girls in Hawai‘i clearly indicate a need for empirically-supported sexually transmitted infection (STI) risk-reduction interventions targeting unique behavioral, cultural, and developmental issues confronting this at-risk population. A high percentage of adolescent STI cases in Hawai‘i are among ethnically-mixed Native Hawaiian, Pacific Islander, and Asian American (NHPIA) females (Hawai‘i State Department of Health [DOH], 2008). An epidemiological study by Sasaki and Kameoka (2009) found that ethnically-mixed NHPIA adolescent girls engage in higher rates of risky sexual behaviors than girls of other ethnicities in Hawai‘i and this may contribute to increasing rates of morbidity and premature mortality resulting from STIs. These findings suggest that a majority of the adolescent female population of the state is at elevated risk for STIs. Despite this compelling evidence, there is a paucity of published research on effective STI prevention protocols that target local female adolescents and the community is underprepared to respond to this growing area of need in Hawai‘i.

In light of this need, the purpose of this study was to adapt an evidence-based, group-level STI behavioral prevention intervention targeting local adolescent girls in Hawai‘i for implementation by community-based organizations (CBOs). An important focus of the adaptation was gender-, and age-appropriateness, as these dimensions have been shown to be essential factors in the effectiveness and acceptability of evidence-based STI prevention interventions (e.g., Auerbach & Coates, 2000; Champion & Collins, 2010; Cornelius & St. Lawrence, 2009; DiCelmente et al., 2005, 2008, 2013; Jemmott & Jemmott, 2000; Kelly, Lesser, & Smoots, 2005; Lee, Dancy, Florez, & Holm, 2013; Lescano, Brown, Raffaelli, & Lima, 2009;

Mullen et al., 2002; Pedlow & Carey, 2003; Raj, Amaro, & Reed, 2001; Robin et al., 2004; Sales, Milhausen, & DiClemente, 2006; Wingood & DiClemente, 1996).

In support of the rationale for this study, the following sections will discuss the prevalence of high-risk sexual behaviors and related sequelae among teen girls in Hawai‘i. Empirically-supported programs that have been developed to address this problem in adolescent female populations will be reviewed. Within this context, a methodological model for adapting evidence-based STI interventions will be described.

STIs and Related Risk Behaviors among Teen Girls in Hawai‘i

STI Prevalence

Sexually active adolescents and young adults in the U.S. are at substantial risk for STIs and this risk constitutes a significant public health concern. According to the Centers for Disease Control and Prevention (CDC) Wide-ranging Online Data for Epidemiological Research (WONDER), approximately 18% of newly diagnosed human immunodeficiency virus (HIV) – the most lethal STI – cases nationwide are among young people ages 13 to 24 years and this group has the highest incidence of non-HIV STIs in comparison with any age group (CDC, 2014a). In fact, the U.S. ranks highest in numbers of adolescent STI cases among developed countries, with approximately one out of every four teens contracting an STI every year (Guttmacher Institute, June 2013). There are close to 20 million new non-HIV STIs reported in the U.S. each year, costing the American healthcare system almost $16 billion in direct medical costs alone (Owusu-Edusei et al., 2013) and nearly half of these cases are estimated to be among young people ages 15 to 24 years (Satterwhite et al., 2013). Owusu-Edusei et al.’s 2013 cost estimate reflects the lifetime direct medical cost per case of the eight most common STIs in the U.S. and does not include either indirect costs (e.g., loss of productivity) or intangible costs (e.g.,

pain and suffering) that would result in a substantially higher estimated economic burden (CDC, 2014b).

Prevalence rates of STIs, particularly chlamydia, among youth and young adults are increasing, demonstrating a poor trajectory for the sexual health of teens. Chlamydia is considered a strong surrogate marker for HIV incidence (Rhodes & DiClemente, 2003). According to the CDC Sexually Transmitted Disease Surveillance data (CDC, 2014a), chlamydia rates in 2007 were 1,706.8 per 100,000 among 15 to 19 year olds and 1,907.4 per 100,000 among 20 to 24 year olds. By 2013, chlamydia rates climbed to 1,852.1 per 100,000 among 15 to 19 year olds and to 2,451.6 per 100,000 among 20 to 24 year olds. Females make up a disproportionately large percent of these rates. In 2013, 80.0% of the STI cases among 15 to 19 year olds were girls (a rate of 3,043.3 per 100,000 for females versus 715.2 per 100,000 for males) and 72.2% of the cases among 20 to 24 year olds were female (a rate of 3,621.1 per 100,000 for females versus 1,325.6 per 100,000 for males).

Epidemiological data over the last decade in Hawai‘i also demonstrate greater and increasing STI incidence among adolescents and young adults. Since 2002, Hawai‘i has ranked consistently in the top 10 states in the U.S. for annual reported chlamydia rates (McGrath, Katz, Lee, & Rochat, 2011), particularly among those ages 15 to 24 years. In 2004, 63% of reported cases of chlamydia and 50% of gonorrhea cases in Hawai‘i were among young people in this age group (Advocates for Youth, 2008). Also, incidence rates of HIV for youth ages 15 to 24 years increased from 3% of new cases in 2008 to 6% in 2011 (Hawai‘i State DOH, May 2012). As in the case nationwide, young females have been at higher risk for STIs in Hawai’i, with 78% of chlamydia and gonorrhea cases combined occurring among 15 to 24 year old females in 2004 (Advocates for Youth, 2008). These data suggest that the sexual health of adolescent females in

Hawai‘i is a growing problem and, if not adequately addressed, will continue to present a significant area of unmet need in the community.

High-Risk Sexual Behaviors

These high and increasing rates of STIs among adolescents may be attributed to the prevalence of high-risk sexual behaviors in this age group. CDC Youth Risk Behavior Surveillance (YRBS) data indicate that adolescents in the U.S. are engaging in high rates of sexual risk behaviors associated with STIs (CDC, 2014b). In 2013, 46.8% of high school students nationwide reported having sexual intercourse, with 15.0% indicating four or more sexual partners. The same dataset revealed that 34.0% of the students reported being currently sexually active (defined as any sexual intercourse during the 3 months before the survey), of whom 40.9% endorsed that they did not use a condom use during, and 22.4% admitted to drinking alcohol or using drugs before, their last sexual encounter. Again, there is evidence to suggest that teen girls are at elevated risk. The 2013 YRBS data indicated that 46.9% of 9th through 12th grade females reported that they did not use a condom during their last sexual encounter compared with their male counterparts, of whom 34.2% denied condom use at last intercourse (CDC, 2014b).

Adolescents in Hawai‘i appear to be more likely to engage in risky sexual behavior than teens nationwide. In 2013, condom use among adolescents in Hawai‘i was among the lowest nationwide with 54.1% denying use during last sexual intercourse compared with the national average of 40.9% (CDC, 2014b). In Hawai‘i, teen girls are more likely to engage in high-risk sexual behaviors than boys, just as they are nationwide. According to YRBS data, adolescent females endorse higher rates of recent sexual activity overall and in each ethnic group for which data were reported (i.e., American Indian/Alaska Native, Hispanic, Native Hawaiian/Other

Pacific Islander, White, and Multiple Races). The YRBS data also indicates that 58.5% of 9th through 12th grade girls in Hawai‘i reported not using a condom during their last sexual intercourse, compared with 46.5% of boys (CDC, 2014b).

Complications associated with adolescent STIs that result from high-risk sexual behaviors can seriously compromise a young girl's health and quality of life into adulthood. The consequences of untreated STIs can be irreversible, especially those that go undetected because they often have no symptoms. Undiagnosed and untreated chlamydia or gonorrhea, for example, can put a woman at increased risk for chronic pelvic pain and life-threatening ectopic pregnancy, and can increase a woman's chance of infertility (CDC, 2014b). STIs can potentially lead to life-threatening disease, including cancer (e.g., cervical) and perinatal infection (Santelli & Beilenson, 1992). Thus, these elevated rates of STIs and risky sexual behavior among teen girls in Hawai‘i, and potential long-term health consequences indicate a need to develop programs to reduce STI risk behaviors in this population.

Ethnic Differences in Adolescent STIs and Risky Sexual Behavior in Hawai‘i

Ethnic differences in sexual health and high-risk sexual behavior among Hawai‘i adolescents are not clear because very little has been published on the topic; however, available data suggest NHPIA youth are at elevated risk. In 2004, 54% of adolescent chlamydia infections and 49% of adolescent gonorrhea infections in Hawai‘i were among mixed-ethnicity NHPIA (Hawai‘i DOH, 2008). Additionally, mixed-ethnicity NHPIA adolescents in Hawai‘i are less likely to use condoms than their ethnic counterparts across the nation (Hawai‘i DOH, May 2012; Sasaki & Kameoka, 2009). Of further concern, these statistics may underrepresent actual rates as, in general, NHPIA adolescents tend to underreport infection and risk behaviors due to

cultural norms that discourage disclosure of sexual behaviors (Faryna & Morales, 2000; National Minority AIDS Council, 1999).

In terms of disaggregated ethnic sexual health data for adolescents in Hawai‘i, even less has been published, but there is evidence to suggest that Native Hawaiian youth are engaging in higher rates of high-risk sexual behavior. In the only published study focused on ethnic differences in sexual behavior among youth in Hawai‘i, Sasaki and Kameoka (2009) reported significantly higher rates, and younger initiation age, of sexual intercourse among Native Hawaiian adolescents in comparison with their White, Filipino, and Japanese counterparts. Further published studies are needed to document more recent data on ethnic variations in STIs and related sexual risk behaviors among teens in Hawai‘i.

In summary, epidemiological data over the last decade demonstrate adolescents in the U.S. are at significant risk for STIs and prevalence rates in this group are increasing. Female girls experience elevated risk and are engaging in higher rates of high-risk sexual behavior than their male counterparts. These same trends are observed among Hawai‘i youth. Local teen girls in Hawai‘i appear to be at particular risk for STIs and, given the potential long-term consequences of risky sexual behaviors, there is a clear need for a gender- and developmentally-specific STI risk-reduction intervention for this vulnerable population.

Evidence-Based Adolescent STI Prevention Interventions

In response to the public health threat of STIs among youth in the U.S., many prevention programs targeting adolescents have been developed over the past several decades. Studies suggest that behavioral interventions designed to modify behaviors associated with STIs successfully reduce risk among youth. In a meta-analysis of behavioral risk-reduction interventions for youth published between 1988 and 1998, Mullen and colleagues (2002) found

that 16 interventions included in their analysis effectively reduced risk among sexually-experienced adolescents, as measured by a composite sexual risk variable (i.e., condom use, number of partners, and risk index). Scott-Sheldon, Huedo-Medina, Warren, Johnson, and Carey (2011) meta-analyzed 67 separate behavioral STI prevention interventions for adolescents across 42 outcome studies published from 1991 through 2010, and concluded that behavioral interventions significantly increase condom use and reduce STI incidence. Further, in a recent meta-analysis of 66 adolescent group-based comprehensive risk reduction interventions, Chin et al. (2012) found that group interventions are an effective strategy to reduce STIs and adolescent pregnancy.

Qualitative reviews also provide support for the effectiveness of youth behavioral STI prevention interventions. For example, Pedlow and Carey (2003) conducted a comprehensive review and synthesis of intervention studies published prior to September 2000 and reported that 13 out of 23 behavioral interventions were effective in reducing risk behavior. In a similar review, Sales, Milhausen, and DiClemente (2006) reported that, in outcome studies published between 1994 and 2004, 29 out of 39 behavioral interventions for youth across clinic, community, school, and specialized (e.g., forensic or inpatient) settings were effective in reducing sexually risky behaviors, especially unprotected sex. Both the Pedlow and Carey (2003) and Sales et al. (2006) reviews emphasized that a common characteristic of interventions found to be successful in reducing risk behaviors is a strong theoretical foundation underlying core elements of the interventions.

Additionally, Sales et al. (2006) concluded from their review that interventions with most success in decreasing high-risk sexual behaviors were those tailored to a particular subgroup. Similarly, Scott-Sheldon et al. (2011) found that among the interventions they reviewed, those

that addressed sociocultural, as well as behavioral, factors were most successful in increasing condom use. In fact, many STI prevention scientists agree that behavioral interventions for adolescents are most successful when specifically tailored to the cultural, gender, and sociodemographic characteristics of the target population (e.g., Auerbach et al., 1994; Champion & Collins, 2010; Cornelius & St. Lawrence, 2009; DiCelmente et al., 2005, 2008, 2013; Jemmott & Jemmott, 2000; Kelly, Lesser, & Smoots, 2005; Kirby & Laris, 2009; Lee, Dancy, Florez, & Holm, 2013; Lescano, Brown, Raffaelli, & Lima, 2009; Mullen et al., 2002; Pedlow & Carey, 2003; Raj, Amaro, & Reed, 2001; Robin et al., 2004; Sales et al., 2006; Wingood & DiClemente, 1996).

Despite this consensus supporting a tailored approach and the compelling evidence of gender disparities in sexual health and sexual risk behaviors among local adolescent girls in Hawai‘i, investigations of tailored STI interventions targeting sexual risk behaviors in this at-risk population have not yet been published. Therefore, there is need for studies on behavioral, evidence-based, gender and socio-culturally relevant STI risk-reduction intervention for this vulnerable population. Due to the cost, expertise, and time associated with the research invested in developing and testing of new interventions, adaptation of EBIs for specific target groups is clearly a logical approach for disseminating interventions shown to improve health behaviors and outcomes among at-risk sociocultural subpopulations (CDC, 2010). Methodological considerations for adapting STI prevention interventions for use among new target populations are discussed in the following section.

Adaptation of STI Prevention Interventions For a Target Subpopulation

Adaptation of an intervention involves modifying content, activities, and delivery methods to ensure relevance in a local setting and with a new population without compromising

core elements of the original evidence- and theory-based intervention (Ryan, Magro, & Sharp, 2011). Maintaining the core elements of the original intervention is a critical quality assurance aspect of the adaptation process (Kelly, Lesser, & Smoots, 2005). Adherence to this principle in the adaptation process ensures or enhances the effectiveness of the intervention in intended populations (Kelly et al., 2000).

In many contexts, as is the case for the current research, "cultural adaptation" is not synonymous with adaptation that targets a specific ethnic or racial group. Cultural adaptation considers language, social, and cultural context, patterns, meanings, and values to increase an intervention's effectiveness for a new target population (Bernal, Jimenez-Chafey, & Domenech Rodriguez, 2009). How the new target population is defined depends upon specific problems (e.g., health disparities) determined in the assessment of need for a particular intervention. The target population of the present study encompasses the diverse and mixed ethnic composition of Hawai‘i. Additionally, the current adaptation aimed to capture the unique sociocultural environment of local adolescent girls, which involves several specific factors, such as youth culture, gender, and local "Hawai‘i culture."

Falicov (2009) suggests that cultural adaptation can be viewed as a midpoint between a universal, "top-down" approach, where an intervention is considered to be applicable to all cultural subgroups, and a culture-specific, "bottom-up" approach, where culturally grounded content is developed using only the unique values, beliefs, traditions, and practices of a particular subcultural group. The current adaptation reflects this midpoint between the top-down and bottom-up approaches, which Falicov coined *cultural attunement*. Cultural attunement refers to additions to EBIs to boost engagement and retention of the new target population without compromising core effective elements. Examples of such modifications include relevant wording

and language, using bicultural staff, and incorporating familiar values, traditions, or practices (Falicov, 2009). Other similar terms that appear in the cultural adaptation literature include *culturally sensitive, culturally enhanced, culturally appropriate, culturally informed, culturally grounded, culture specific, culturally tailored, culturally targeted,* and *culturally focused* (e.g., Mier, Ory, & Medina, 2010; Wilson & Miller, 2003). Regardless of the terminology used, cultural adaptation will likely result in improved community support, client participation, program satisfaction, and health outcomes (Barrera, Castro, Strycker, & Toobert, 2012; CDC, 2010; Kelly, et al., 2000; Kennedy, Mizuno, Hoffman, Baume, & Strand, 2000; Kirby, 2008; Pedlow & Carey, 2003; Raj, Amaro, & Reed, 2001; Scott, Gilliam, & Braxton, 2005; Solomon, Card, & Malow, 2006; Stanton, Kim, Galbraith, & Parrott, 1996; Vinh-Thomas, Bunch, & Card, 2003; Wilson & Miller, 2003).

In the past decade, intervention scientists have started publishing discussions of the cultural adaptation of behavioral health interventions (e.g., Castro, Barrera, & Holleran Steiker, 2010; Domenech Rodriguez, Baumann, & Schwartz, 2011; McKleroy, Galbraith, & Cummings, 2006; Rotheram-Borus, Swendeman, & Chovnick 2009; Ryan, Magro, & Sharp, 2011) and specific approaches have been proposed to guide the adaptation process (for examples of those developed specifically for STI interventions, see Card, Solomon, & Cunningham, 2011; De´vieux, Malow, Rosenberg, & Dyer, 2004; Dworkin, Pinto, Hunter, Rapkin, & Remien, 2008; Kelly et al., 2000; McKleroy, Galbraith, & Cummings, 2006; Wingood & DiClemente, 2008). In a review of existing published cultural adaptation models for behavioral health interventions, Barrera et al. (2012) identified commonalities across models, which they synthesized into 5 stages: (1) information gathering and ascertaining need for adaptation; (2) initial adaptation with fidelity to core elements of original intervention and guided by feedback from stakeholders; (3)

feasibility and pilot testing of the initial adaptation; (4) refinement of the adapted intervention based on pilot test results; and (5) efficacy and/or effectiveness testing of the final version of the adapted intervention.

The ADAPT-ITT model, developed by Wingood and DiClemente (2008) to guide cultural tailoring of evidenced-based STI interventions for use among female ethnic-minority populations, covers the stages described by Barrera and colleagues (2012) in eight sequential phases. ADAPT-ITT is an acronym for each of the phases: Assessment, Decision, Adaptation, Production, Topical Experts, Integration, Training, and Testing. ADAPT-ITT underscores the scientific importance of maintaining fidelity to core elements of the original intervention and was refined through multiple applications (Wingood & DiClemente, 2008). The model incorporates community-based participatory strategies including needs assessment, focus groups, and elicitation interviews with the new target population and key community stakeholders; a comprehensive review of the relevant literature; "theater-testing," a test implementation of the intervention with members of the target population followed by the elicitation of feedback from participants; consultation with subject-matter experts; integration of additional outcome measures to assess new content, if any; and staff training for pilot testing in the target population.

In an example of the application of the ADAPT-ITT model, Wingood and DiClemente (2008) collaborated with Nelson Mandela School of Medicine scientists to adapt *SiHLE* for Zulu-speaking female adolescents in KwaZulu-Natal, South Africa. The adaptation team first conducted focus groups with adolescents from the target population and key community stakeholders, as well as consultations with local HIV prevention scientists. Theater-testing involved demonstrating the original *SiHLE* intervention to 15 adolescent girls recruited from local HIV/AIDS organizations and soliciting feedback from participants regarding the content

(e.g., language, activities, and materials) of the intervention. Community stakeholders observed the theater test and also provided feedback for adaptation. An adaptation plan was developed, based on information gathered from the focus groups, consultations, and theater-test, which guided the cultural tailoring of *SiHLE* materials for KwaZulu-Natal teen girls. Informed by feedback from girls in the focus group, the adapted intervention was renamed *SIBAHLE*, which translates to "We are beautiful" in Zulu. The ADAPT-ITT process yielded a cultural adaptation that included regional slang, local cultural concepts, and customs reflecting the collective and communal nature of African society. This adaptation project demonstrates the utility of the ADAPT-ITT model as an effective guide for the cultural adaptation of adolescent STI behavioral prevention interventions.

The Current Investigation

Sexual health data clearly demonstrate that STIs are a growing problem among local teen girls in Hawai‘i; however, there are no published evidence-based STI risk-reduction interventions targeting the unique needs of this at-risk population. Adapting an STI prevention EBI for use in Hawai‘i would begin addressing this significant gap in service, and the ADAPT-ITT model has been used successfully to adapt STI prevention EBIs for African-American and South African girls. Thus, the specific aim of the current investigation was to identify an intervention to adapt for use among local female adolescents in Hawai‘i, and to adapt the intervention using the ADAPT-ITT model as a basis for the adaptation process. This research consisted of three studies: (1) identifying an intervention to adapt, (2) the development of an initial test version of the adapted intervention, and (3) the development of the final version of the adapted intervention. These three studies provide empirical and foundational qualitative research

necessary for the development of a tailored STI prevention intervention that can be readily implemented by community-based organizations (CBOs) for local teen girls in Hawai‘i.

Partnership with a Community-Based Organization (CBO)

The objective of this investigation was to produce an intervention that will be used by CBOs; thus, a critical component of this project was a close collaboration with the Coalition for a Drug-Free Hawai‘i (CDFH), a youth-serving CBO in Honolulu. Founded in 1987, the CDFH is a leading CBO that provides substance abuse prevention services to youth and families on Oahu through awareness-building campaigns and education programs in high-risk communities. CDFH has a reputation as a lead non-profit primary prevention organization in Hawai'i and an established history of successfully implementing risk-reduction interventions for youth and families in Hawai‘i. Many of their programs have been funded by competitive federal grants. This organization is a program-rich environment that provided a fertile recruitment source for subjects, and agency staff assisted in recruiting participants at CDFH program sites. Six CDFH staff members (one program director and five program coordinators) comprised the Community Advisory Committee for this project and were consulted about the development of research procedures and materials.

Local Adaptation Procedures (LAP)

In developing the design of the current investigation, the ADAPT-ITT model was modified by Kameoka and Takishima-Lacasa (August 2013), resulting in the Local Adaptation Procedures (LAP). As previously described, the ADAPT-ITT model provides guidelines for adapting evidence-based STI prevention interventions and consists of methodological steps that ensure the original intervention's efficacious and defining core elements are maintained in the adaptation process (Wingood & DiClemente, 2008). LAP accommodates the unique attributes of

the partnering CBO, the targeted local Hawai‘i teen girl population, and the logistics of conducting community-based research in Hawai‘i.

As described in Table 1, LAP involves eight phases that incorporate community-based participatory strategies including:

Phase 1. Comprehensive review of the relevant literature to identify an evidence-based intervention for local adaptation;

Phase 2. Development of the adaptation process;

Phase 3. Focus groups with the new target population to guide adaptation of the original intervention;

Phase 4. Development of a test version of the adapted intervention based on focus group data;

Phase 5. “Theater-test” of the intervention with members of the target population;

Phase 6. Production of the final version of the adapted intervention based on theater test data;

Phase 7. Development of additional outcome measures to assess new content and training of implementation research staff;

Phase 8. Pilot test and effectiveness studies in the target population.

LAP Phases 1 through 6 comprise the methodological procedures used for the three studies. Specifically, Study 1 consisted of LAP Phase 1, Study 2 involved LAP Phases 2 through 4, and Study 3 included LAP Phases 5 and 6. Methods and results for each study are described separately in the following sections.

Table 1. Local Adaptation Procedures (LAP)

	LAP Phase	Methodology	Intervention Version(s)
Study 1	**1: Selection of the Intervention**	• Conduct a critical, comprehensive review of the literature to identify intervention to be adapted. • Identify partnering CBO for the project and key community stakeholders from the organization to comprise the Community Advisory Committee. • Enlist a Local Subject-Matter Expert knowledgeable in risk-reduction among teen girls. • Consult with Community Advisory Committee and Local Subject-Matter Expert to finalize intervention selection.	
Study 2	**2: Develop Adaptation Guide**	• Consult with Community Advisory Committee and Local Subject-Matter Expert regarding the adaptation process and study design; secure IRB approval. • Development of an *Adaptation Guide*, based on a systematic line-by-line review of the original intervention to identify content that requires adaptation, to ensure fidelity is maintained to the core elements of the original intervention during the adaptation process.	Original
	3: Focus Groups*	• Develop *Focus Group Questions,* based on the *Adaptation Guide*, with input from the Community Advisory Committee and Local Subject-Matter Expert. • Conduct focus groups with participants from the new target population recruited from CBO program sites.	Original
	4: Develop Test Version of the Intervention	• Analyze content of focus groups in consult with the Local Subject-Matter Expert, and expand the *Adaptation Guide* based on the results. • Production of the *Test Version* of the intervention, based on the expanded *Adaptation Guide,* incorporating feedback from the Community Advisory Committee and Local Subject-Matter Expert.	Original Test Version

Table 1. (Continued) Local Adaptation Procedures (LAP)

Study 3	**5: Theater Tests***	• Develop *Theater Test Questions*, based on the adapted content in the *Test Version*, with input from the Community Advisory Committee and Local Subject-Matter Expert. • Conduct theater test of the *Test Version* with participants from the new target population and the Community Advisory Committee.	Test Version
	6: Develop Final Version of the Intervention	• Analyze content of the theater tests in consult with Local Subject-Matter Expert, and expand the *Adaptation Guide* based on the results. • Production of *Final Version* of the adapted intervention, based on the expanded *Adaptation Guide*, incorporating feedback from the Local Subject-Matter Expert and integrating results of readability testing to ensure 3rd grade reading level.	Test Version Final Version
	7: Testing Preparation & Training	• Identify/develop quality assurance, process, and outcome measures. • Train staff to implement the *Final Version*, including recruiters, facilitators, and data management staff.	Final Version
	8: Effectiveness Studies*	• Test *Final Version* as part of a pilot study. • Analyze results of pilot study to inform additional revisions of intervention content and the design of an effectiveness study. • Conduct effectiveness study and analyze results.	New Intervention

Note. The development of LAP was guided by ADAPT-ITT model (Wingood & DiClemente, 2008); *Target population are directly involved in these phases of adaptation; *Study materials are italicized;* CBO = community-based organization; Greyed cells indicate LAP phases that were not included in this preliminary investigation.

CHAPTER 2: EVIDENCE-BASED STI PREVENTION INTERVENTIONS TARGETING FEMALE ADOLESCENTS

Study 1

Guided by the Local Adaptation Procedures (LAP), the aim of Study 1 was to identify a behavioral intervention that would be most appropriate for adaptation and implementation among local adolescent girls in Hawai‘i.

Study 1 Methods

Local Adaptation Procedures (LAP) Phase 1: Selection of the Intervention. A comprehensive review of the adolescent STI risk reduction literature was conducted to identify evidence-based group behavioral interventions targeting teen girls. Two primary sources were used to electronically search the relevant empirical literature on STI group intervention for girls in the U.S.: (1) online computer databases, including the Cochrane database of systematic reviews, PubMed, Medline, and PsycINFO; and (2) the CDC HIV/AIDS Prevention Research Synthesis (PRS) Project's Compendium of Evidence-based HIV Behavioral Interventions (2015) and Replicating Effective Programs Plus (REP+) packages through the Diffusion of Effective Behavioral Interventions (DEBI) projects. Definitions of these CDC designations are described below.

Keywords used for this electronic search included: *adolescents, female, sexually transmitted infections, sexually transmitted diseases, human immunodeficiency virus, prevention, risk-reduction, intervention,* and *risk factors*. Investigations that (a) did not target female adolescents, (b) were focused on individual counseling or macro-level interventions, and (c) were conducted outside of the U.S. were excluded from the present review. Other criteria for inclusion were English language, studies published within the last decade (i.e., 2002 to present),

and studies reporting reduction in sexual risk behaviors among intervention participants. This search process revealed eight evidence-based behavioral interventions developed for adolescent girls in the U.S. within the last decade. Table 2 summarizes these interventions and provides brief descriptions of study sample, design, and results of outcome studies supporting the interventions.

Table 2 also provides each intervention's CDC evidence designation (i.e., EBIs and/or DEBI REP+ packages) where relevant. Tier I EBIs, listed in the CDC's Risk Reduction Chapter of the Compendium, represent "best evidence" (versus Tier II, "good evidence") as determined by the CDC HIV/AIDS Prevention Research Synthesis (PRS) Project through a series of CDC efficacy reviews (CDC, 2015). The PRS's efficacy reviews use a standardized, systematic, and comprehensive process for searching and reviewing the prevention intervention research literature to identify interventions that have been rigorously evaluated and have demonstrated efficacy in reducing STI incidence and related risk behaviors or increasing protective behaviors in high-risk populations. CDC's PRS translates this evidence into program practice by integrating the scientific findings into "REP+ and DEBI projects." REP+ projects translate EBIs into user-friendly intervention packages through collaborations with researchers and community-based partners, and DEBI projects coordinate dissemination of these packaged interventions by providing training, technical assistance, and culturally appropriate capacity building assistance.

As noted earlier, successful STI prevention interventions are strengthened when derived by behavior change theory (Coates, 1990; Cornelius & St. Lawrence, 2009; Fisher & Fisher, 2000; Gluck & Rosenthal, 1995; Holtgrave, Qualls, & Curran, 1995; Jemmott & Jemmott, 2000; Stanton, Kim, Galbraith, & Parrott, 1996; Wingood & DiClemente, 1996, 2000). In fact, several meta-analyses and qualitative reviews have found that theoretically-derived

Table 2. Evidence-Based Group Behavioral STI Prevention Interventions Targeting Female Adolescents in the United States, 2002-2012

Study	Sample	**Intervention** (Content; Behavior Change Technique)	CDC Designation	Significant Findings
		AIDS Risk Reduction Model (AARM)		
Champion & Collins (2012)	409 clinic-based Latina and African American girls ages 14-18 with current STI and abuse history in the Southwest	***Project IMAGE*;** Two 3- to 4-hour workshops focusing on (a) awareness and perception of risk and (b) commitment and strategies to reduce risk behavior; 3-5 support groups; individual counseling sessions as initiated by participant; OL, TM	N/A	RCT; Intervention (*n*=199) versus wait-list control group (*n*=210); At 6- and 12-month follow-up, intervention participants experienced fewer STIs.
Harper et al. (2009)	378 CBO-based Latina girls ages 12-21 from 2 low-income urban neighborhoods in a large mid-west city	***SHERO*;** Nine 2-hour interactive group sessions addressing (a) HIV prevention, barriers, and risk factors and (b) risk reduction skills taught using games, group discussions, role-plays, direct feedback, lectures, and narrative ethnographic methods; OL, RP, DF, TM	N/A	Quasi-experimental design; Intervention (*n*=181) versus one 2-hour HIV information-only comparison group (*n*=197); At posttest, intervention participants more likely to carry condoms and report abstaining from vaginal sex in the previous two months; 2-month follow-up, they reported using condoms more often in the preceding two months and planned on using them more frequently in the coming two months.

Table 2. (Continued) Evidence-Based Group Behavioral STI Prevention Interventions Targeting Female Adolescents in the United States, 2002-2012

Study	Sample	**Intervention** (Content; Behavior Change Technique)	CDC Designation	Significant Findings
		Information-Motivation-Behavioral skills (IMB) Model		
Morrison-Beedy et al. (2013)	639 CBO-based sexually-active girls, mostly African American, ages 15–19 in upstate New York	***HIP Teens*;** Four weekly 2-hour group sexual risk-reduction sessions, and two 90-minute boosters at 3- and 6-month post-intervention, designed to (a) provide correct, current HIV-related information, (b) increase motivation to change risky behaviors, and (c) provide behavioral risk reduction training using instruction, modeling, games, skits, and practicing of interpersonal and self-management skills; OL, RP, DF, TM	N/A	RCT; Intervention (*n*=329) versus structurally equivalent general health promotion control group (*n*=310); Intervention participants more likely to be abstinent, and if sexually active, demonstrated decreases in (a) total number of vaginal sex at all follow-ups, (b) number of unprotected vaginal sex acts at 3 and 12 months, (c) total number of sex partners at 6 months, and (d) 50% reduction in positive pregnancy tests at 12 months for subset of participants for whom this data were available; No decrease in STI rates found in either group.
		Social Cognitive Theory (SCT)		
Koniak-Griffin et al. (2003)	497 7th-12th grade teen mothers, 78% Latina, in Los Angeles County schools	***Be proud! Be responsible! Be protected!*;** Four 2-hour HIV risk-reduction sessions with videos and skill-building tailored to pregnant teens, addressing maternal protectiveness related to sexual responsibility and impact of HIV on community and children; OL, RP, DF, TM	N/A	RCT (Project CHARM); Intervention (*n*=347) versus four 2-hour general health promotion control group (*n*=150); At 6-month follow-up, intervention participants demonstrated significantly higher intention to use condoms, AIDS knowledge scores, and had significantly fewer sexual partners.

Table 2. (Continued) Evidence-Based Group Behavioral STI Prevention Interventions Targeting Female Adolescents in the United States, 2002-2012

Study	Sample	**Intervention** (Content; Behavior Change Technique)	CDC Designation	Significant Findings
		SCT (cont.)		
Sieving et al. (2013)	253 community primary care clinic- and school-based girls ages 13-17	***Prime Time*;** Sexual risk-reduction and pregnancy prevention, including three components: (1) individual case management, (2) 7 *Just in Time* group sex education and life skills sessions led by peer educator who are complete a 16-session curriculum training, (3) *Its Our Time*, 12-session youth leadership and community service program; OL, DF, TM	N/A	RCT; Intervention (*n*=126) versus usual care control group (*n*=127); At both 12- and 24-month follow-up, intervention participants reported more consistent use of condoms, hormonal contraception, and dual contraceptive methods with their most recent partner.
Jemmott et al. (2005)	682 hospital-based, sexually experienced inner-city Latina and African American girls ages 12-19 in Philadelphia	***Sisters Saving Sisters;*** Single, 4-hour, skill-based STI risk-reduction session focusing on (a) risk reduction beliefs and education, (b) correct condom use and negotiation (including practice and role-playing), (c) cultural and personal risk, and (d) barriers to condom use, including substance use and negative beliefs and ways to surmount such barriers; OL, RP, DF, TM	EBI Tier I	RCT; Intervention (n=235) versus structurally equivalent information-only comparison group (n=228) and general health promotion control group (n=219); At 12-month follow-up, intervention participants (relative to comparison and control groups) reported less unprotected sexual intercourse and fewer sexual partners. No between-group differences were observed in STI rates at 3- or 6-months, and the only significant difference in STIs was between the intervention and the control conditions at 12-months.

Table 2. (Continued) Evidence-Based Group Behavioral STI Prevention Interventions Targeting Female Adolescents in the United States, 2002-2012

Study	Sample	**Intervention** (Content; Behavior Change Technique)	CDC Designation	Significant Findings
		SCT (cont.)		
DiClemente et al. (2004)	522 community clinic-based, sexually active, high-risk African American girls ages 14-18 in Alabama	***SiHLE*;** Four 4-hour interactive group sessions focusing on: (a) gender and ethnic pride by highlighting accomplishments of African American women, (b) building HIV awareness and skills by targeting sexual abstinence, condom use, and reducing sexual partners, (c) strengthening self-efficacy in negotiating safer sex (i.e., condom use and refusing unsafe sex), and (d) healthy relationships; OL, RP, DF, TM	EBI Tier I; DEBI	RCT; Invention (n=251) versus structurally equivalent general health promotion control group (n=271); At 6- and 12- month follow-up intervention group reported greater and more consistent condom use (at last intercourse, past 30 days, and past six months), fewer new sexual partners, and higher risk reduction knowledge, perceived barriers, attitudes, and self-efficacy scores.
DiClemente et al. (2009)	715 clinic-based, sexually-active, high-risk African American girls ages 15-21 in Atlanta, Georgia	***HORIZONS*;** Condensed version of *SiHLE* comprised of three components: (1) two 4-hour group sessions focused on cultural and gender pride and risk factors, (2) distribution of $20 STI services vouchers for participants' male partners, (3) four 15-minute booster telephone contacts; OL, RP, DF, TM	EBI Tier I; DEBI	RCT; Invention (n=348) versus enhanced usual care STI prevention promotion control group (n=367); At 6- and 12- month follow-up, intervention group had fewer chlamydia infections, increased condom use, less frequent douching, more frequent sex communication, greater condom self-efficacy, and HIV prevention knowledge.

Note: OL = Observational learning, RP = Role playing, DF = Direct feedback, TM = Tailored materials (for specific populations, e.g., cultural or gender); CBO = community-based organization; RCT = randomized controlled trial; EBI = CDC Designated Evidence-based STI Behavioral Intervention; DEBI = CDC Diffusion of Effective Behavioral Interventions packages.

intervention are most successful at reducing sexual risk behaviors among youth (Diclemente et al., 2004, 2005; Pedlow & Carey, 2003; Sales et al., 2006). The present review of the literature revealed that three major theoretical models have provided the foundation for efficacious STI prevention interventions for teen girls. As shown in Table 2, the theoretical models underlying the eight interventions are the AIDS Risk Reduction Model (AARM; two interventions), the Information-Motivation-Behavioral skills (IMB) Model (one intervention), and Social Cognitive Theory (SCT; five interventions). These theoretical frameworks underlying the eight STI prevention interventions are reviewed in the following sections.

AIDS Risk Reduction Model (ARRM)

The ARRM is a three–stage model of HIV harm reduction that integrates concepts from the health belief model and self–efficacy theory, as well as research on emotional influences, interpersonal processes, and attitude change that explains an individual's efforts to avoid contracting HIV through sexual contact (Catania, Kegeles, & Coates, 1990). Catania and colleagues (1990) posited that behavior change to prevent HIV infection occurs in three phases including labeling, commitment, and action stages of the ARRM model. These stages provide entry points at which HIV intervention can affect behavior change by targeting social and psychological factors that influence (1) labeling of high risk behaviors as problematic, (2) making a commitment to change high risk behaviors, and (3) seeking and enacting solutions directed at reducing high risk behaviors (Catania et al., 1990). STI interventions based on the AARM include *Project IMAGE* and *SHERO*.

***Project IMAGE* (Champion & Collins, 2012).** *Project IMAGE* is an STI risk-reduction intervention designed for African American and Mexican American teen girls with a history of abuse and STI. *Project IMAGE* was adapted from *Project SAFE*, an efficacious STI prevention

intervention that targets adult and adolescent ethnic minority women (Shain et al., 1999; Shain et al., 2002; Shain et al., 2004). Results of a randomized controlled trial (RCT) showed significantly lower STI rates over 6- and 12- month follow-up periods among girls in the treatment group. Also, control group participants were 11 times more likely to experience infection over the 12 months post-intervention (Champion & Collins, 2012).

***SHERO* (Harper, Banger, Sanchez, Doll, & Pedraza, 2009).** *SHERO* (a female-gendered version of the word "hero") is an HIV prevention intervention designed for Mexican American adolescent females 12 to 21 years old. The program incorporates components that address social and cultural issues affecting sexual health of the targeted Mexican American girls including cultural pressures to be a mother, sexual relationships with older men, gang affiliation, gender-based power inequalities in sexual relationships (e.g., *machismo),* and intimate partner violence. In a quasi-experimental study, *SHERO* participants demonstrated greater improvements at post-intervention and 2-month follow-up on measures of self-esteem, attitudes towards condom use, beliefs regarding a woman's control of her sexuality, beliefs regarding sexual assault, perceived peer norms regarding condom use, and HIV/AIDS knowledge. At 2-month follow-up, intervention participants reported using condoms more often in the preceding 2 months than comparison group participants.

Critique of AARM-derived interventions. Both *Project IMAGE* and *SHERO* are systematically developed and empirically tested sexual risk-reduction interventions shown to be efficacious for use among ethnic minority teen girls. Results of the longitudinal RCT of *Project IMAGE* provide evidence of the intervention's effectiveness among Mexican American and African American teen girls with abuse and STI histories. *SHERO* represents a successful culturally and ecologically tailored HIV prevention targeting Mexican American female

adolescents tested in a CBO setting. Since CBOs deliver the majority of HIV prevention services to communities of color in the U.S., the use of methodologies that involve CBO collaborations in the development and testing of interventions increases the likelihood those programs will be implemented and sustained by community agencies (Harper et al., 2009).

Although results of both the *Project IMAGE* and *SHERO* outcome studies provide strong support for their effectiveness, the appropriateness of the interventions and generalization of the findings are limited. Because *Project IMAGE* was specifically developed for, and tested among, girls with histories of abuse and STI, it is unclear if the findings are generalizable to other groups of girls without such histories. This limited the appropriateness of *Project IMAGE* for adaptation among the targeted local girls in this study as they may not necessarily have abuse or STI histories. Also, a major component of *Project IMAGE* requires a licensed clinical psychologist to provide individual counseling sessions and many CBOs may not have a qualified clinician on staff.

The outcome study of *SHERO* is also challenged by various limitations. A longitudinal design that includes follow up over a more protracted period (e.g., 12 months follow-up typical of efficacy studies) would establish whether the effects of SHERO are sustainable. Additionally, the length and number of sessions of *SHERO* could prove to be difficult to implement for CBOs with limited resources. The nine weeks involved in *SHERO* may also be a limiting factor due to the significant level of commitment required of participants to complete the intervention.

A more general limitation these two interventions share is based in critiques of the AARM, the theoretical foundation from which both interventions are derived. In contrast to other models described in this review, the ARRM was developed and used specifically for HIV prevention programming; however, mechanisms underlying HIV transmission are not identical

to those involved in the other STIs (e.g., HIV transmission by needle-sharing among intravenous drug users). Conceptually, while the ARRM provides insight concerning stages of behavioral change (i.e., labeling, commitment, and enactment), it posits very little about how to actually change behavior. The AARM assumes that intervention-facilitated changes in attitudes and knowledge during each stage of the model will eventually result in overt behavior change. This assumption is difficult to test empirically because it would be extremely challenging to assess the sequential effects specified by AARM within the context of a clinical trial. Also, Stanton and colleagues (1996) noted that the model is difficult to test because the hypothetical relationships among the core elements in the ARRM have not been specified sufficiently.

Information-Motivation-Behavioral skills (IMB) Model

The IMB Model (Fisher & Fisher, 1992, 2002) specifies causal relationships among three factors theoretically and empirically associated with HIV prevention and has been applied to the design of STI risk reduction interventions. This model posits that the initiation and maintenance of preventive behavior is determined by the degree to which individuals are (1) well-informed, (2) motivated to act, and (3) possess safer-sex skills (Fisher & Fisher, 1992). The first assumption of the IMB Model specifies that, because individuals often rely on heuristics to guide sexual behavior (Misovich, Fisher, & Fisher, 1997), prevention information must be presented in "easy-to-translate-into-behavior" facts about STI transmission and prevention (e.g., "Consistent condom use can prevent HIV") (Fisher & Fisher, 2000, p. 39). The second assumption of the model specifies that prevention motivation includes attitudes towards preventive acts, perceptions of social support for those acts, and assessment of personal vulnerability (Fisher & Fisher, 1992; Fishbein & Ajzen, 1975). The third assumption of the model posits that performing preventive acts (e.g., purchasing and negotiating the use of condoms) is influenced by an

individual's safe sex self-efficacy (Fisher & Fisher, 1992, 2000; Bandura, 1989, 1994; Kelly & Lawrence, 1988). The IMB Model provided the theoretical framework for the development of the *Health Improvement Project for Teens* intervention described below.

***Health Improvement Project for Teens* (*HIP Teens*; Morrison-Beedy et al., 2013).** *HIP Teens* was developed for use among teen girls (Morrison-Beedy, Carey, Aronowitz, Mkandawire, & Dyne, 2002) through the modification of an IMB-derived HIV risk-reduction intervention that demonstrated efficacy in reducing risk among minority adult women (Carey et al., 1997, 2000). Feasibility and efficacy of *HIP Teens* was initially evaluated in a small RCT study among sexually-active African American adolescent females (Morrison-Beedy, Carey, Kowalski, & Tu, 2005). Findings of this initial study guided content revisions of the intervention and the design of a subsequent larger-scale RCT among African American adolescent girls (Morrison-Beedy et al., 2013). Results indicated that *HIP Teens* participants were more likely to be sexually abstinent and, if sexually active, reported less total episodes of vaginal sex at 3-, 6-, and 12-month follow-ups, less unprotected vaginal sex acts at 3- and 12- month follow-ups, less total number of sex partners at 6 months, and a 50% reduction in positive pregnancy tests at 12 months in comparison with those in the health promotion control group. No decrease in chlamydia or gonorrhea rates were detected in either study group (Morrison-Beedy et al., 2013).

Critique of *HIP Teens*. Although the RCT findings suggested some promising interventions effects, the results were not maintained over time despite the inclusion of booster sessions. Most importantly, the intervention did not appear to influence rates of chlamydia or gonorrhea at any point through a full year. While this intervention was designed to be developmentally appropriate and gender-specific, it was not tailored for any specific socio-cultural group and this lack of specificity may explain why no intervention effect was observed

for the primary biological outcome measure. This lack of support for the efficacy of *HIP Teens* for reducing STI rates suggests further research and refinement of the intervention may be necessary before adaptation for another population is warranted.

Social Cognitive Theory (SCT)

SCT posits that human behavior is determined by interactions between environmental, behavioral, and personal influences, and self-efficacy beliefs are central to behavior change (Bandura, 1986). The reciprocal nature of these determinants allow for behavior change strategies to target personal (e.g., emotional, cognitive, or motivational processes), environmental (e.g., altering social conditions), and behavioral (e.g., increasing skills or competencies) influences (Bandura, 1994). According to Bandura (1986), beliefs that people have about their own ability to succeed is a critical determinant of behavior and motivation. These self-efficacy beliefs have been shown to be fundamental to efficacious prevention intervention programming.

SCT-grounded prevention interventions include (1) information to increase awareness and knowledge of consequences of behavior, (2) social and self-regulative skills development to translate the acquired knowledge into preventive action, (3) opportunities for guided practice and corrective feedback in applying the skills, and (4) suggested changes in social norms and supports for desired behavior change, since behavior change occurs in social contexts and social influence can affect initiation and maintenance of preventive behavior (Baranowski, Perry, & Parcel, 1997). Also modeling, role-playing, and practicing are incorporated into intervention strategies to modify behavior and strengthen self-efficacy (Bandura, 1977).

As shown in Table 2, SCT-grounded STI interventions include *Be proud! Be responsible! Be protective!* (*BBB*); *Prime Time*; *Sisters Saving Sisters* (*SSS*)*; Sisters Informing, Healing,*

Living, & Empowering (*SiHLE*); and *HORIZONS*. *SSS, SiHLE, and HORIZONS* are CDC-designated EBIs and/or DEBI REP+ Packages.

***Be proud! Be responsible! Be protective!* (*BBB*; Koniak-Griffin et al., 2003).** *BBB* is a STI prevention intervention designed for pregnant Latina teen girls. This intervention is an adaptation of a CDC-designated evidence-based HIV risk-reduction intervention for youth called *Be proud! Be responsible!* developed by Jemmott, Jemmott, and McCaffree (1996). *BBB* was developed using concepts derived from Theory of Reasoned Action (Fishbein & Ajzen, 1975; Ajzen & Fishbein, 1980) and Theory of Planned Behavior (Ajzen, 1985, 1991). Like SCT, the Theory of Reasoned Action suggests that attitudes toward, and subjective perception of norms for, a specific behavior influence an individual's intention to perform that behavior and whether that individual will engage in that behavior. To facilitate preventive behavior, prevention interventions like *BBB* promote positive attitudes toward STI prevention behaviors and accurate perceptions of norms that regulate these behaviors (Fishbein & Middlestadt, 1989; Fishbein, Middlestadt, & Hitchcock, 1994). Consistent with Bandura's construct of self-efficacy, the Theory of Planned Behavior also emphasizes the role of perceived behavioral control in behavior change (Ajzen, 1985, 1991). *BBB* targets and builds participants' belief in their ability to engage in specific preventive behaviors. Results of an RCT demonstrated significant improvements in AIDS knowledge and intention to use condoms as well as a significant decrease in number of sex partners at 6-month follow-up for the *BBB* intervention group versus the control group (Koniak-Griffin et al., 2003).

***Prime Time* (Sieving, et al., 2011, 2012, 2013).** The *Prime Time* intervention is an 18-month program, informed by SCT, to reduce high-risk sexual behaviors among girls ages 13 to 17 years. *Prime Time* is based on the assumption that youth sexual behaviors, violence, and

school behaviors are interrelated and the intervention targets modifiable environmental (e.g., peer relationships), personal (e.g., expectations), and behavioral (e.g., skills) variables associated with sexual risk behavior. The goals of *Prime Time* include engaging participants in positive peer, school, family, and community involvement and building girls' social-emotional skills and youth leadership experience. Results of a RCT showed significantly more consistent use of condoms, hormonal pregnancy contraception, and use of both methods among girls in the *Prime Time* intervention group compared with those in the usual care control group at 12- and 24-month follow-ups; however, no between-group differences were found in the number male sexual partners (Sieving et al., 2011, 2013).

***Sisters Saving Sisters* (*SSS;* Jemmott, Jemmott, Braverman, & Fong, 2005).** *SSS* is a risk-reduction intervention grounded in Theory of Reasoned Action and Theory of Planned Behavior, as well as SCT. Development of the culturally tailored curriculum was guided by pilot research targeting sexually-experienced adolescent African American and Latina girls. Results of a RCT showed significantly less days of unprotected sexual intercourse among *SSS* participants than those in the comparison and control groups at 12-month follow-up, but not at 3- or 6-month follow-ups (Jemmott et al., 2005). No between-group differences were observed in STI rates at 3- or 6-months; however, there were significantly fewer STI infections among *SSS* participants in comparison with girls in the control condition at 12-months.

***Sisters Informing, Healing, Living, & Empowering* (*SiHLE*; DiClemente et al, 2004).** *SiHLE* is a STI prevention intervention developed by DiClemente and colleagues (2004) to reduce sexual risk behaviors among African American adolescent girls. The development of *SiHLE*, which is also a woman's name in southern Africa that means "beautiful" and "be strong," was guided theoretically by SCT and a second complementary theory, the Theory of Gender and

Power (TGP; Connell, 1987). TGP is a social structural theory based on gender inequality and power imbalance. Connell (1987) theorized that women's health is influenced by gender-based division of labor, division of power, and social norms that define female sexual behavior. These norms can lead to socialization of women to be sexually passive or ignorant (Raj, Silverman, Wingood, & DiClemente, 1999), as well as development of low perceived control over condom use and low perception of risk among women (Wingood, DiClemente, Harrington, & Davies, 2002). RCT results showed significantly better condom application skills at post-intervention, and greater 30-day and 6-month consistent condom use, fewer new vaginal sex partners in the past 30 days, and more condom applications on partners at 6- and 12-months follow-up among *SiHLE* participants. Particpants also demonstrated higher scores on measures of HIV prevention knowledge, perceived partner-related barriers to condom use, attitudes towards condom use, and condom use self-efficacy at both follow-ups.

***HORIZONS* (DiClemente et al., 2009).** DiClemente and colleagues (2009) developed a 2-session STI prevention intervention, called *HORIZONS*, which is a shortened version of *SiHLE*. Both interventions share the same core elements and the content of *HORIZONS* group session activities are derived from the authors' original *SiHLE* intervention. Two components were included in *HORIZONS* in addition to the group sessions: (1) $20 STI screening/treatment vouchers for participants to give to their male sexual partners and (2) four 15-minute telephone contacts to reinforce prevention information presented in group sessions at 1-, 4-, 7-, and 10-month post-baseline assessment. Similar to *SiHLE*, risk factors targeted by *HORIZONS* include individual factors (STI risk–reduction knowledge, perceived peer norms supportive of condom use, condom use skills) and relational factors (enhancing male partner responsibility for condom use through communication techniques). Additionally, *HORIZONS* targets the dangers of

douching [based on Peters et al. (2000) findings that douching enhances STI vulnerability] and access to STI services.

Results of a large RCT provided strong support for the efficacy of *HORIZONS* among African American teens. The intervention group, in comparison with the control group, demonstrated significantly fewer new and recurrent chlamydial infections, greater and more consistent condom use, and less frequent douching in the 60-days preceding 6- and 12- month follow-up assessments. At both follow-ups, the intervention group demonstrated more frequent communication with partners regarding safe sex, greater condom use self-efficacy, and greater HIV prevention knowledge, and those participants with STIs were more likely to communicate their condition to their partners and have their partners tested or receive treatment, compared with those with STIs in the comparison condition.

Girl Power (DiClemente et al., under investigation). Recently, DiClemente and colleagues developed a SCT-based STI prevention intervention called *Girl Power*, which is an "ethnically neutral" and briefer version of *HORIZONS*. *Girl Power* was not included in Table 2 because the intervention is currently being tested by the authors of *HORIZONS* among an ethnically diverse sample of female adolescents ages 13 to 18 years (Emory University Center For AIDS Research, n.d.). *Girl Power* consists of two 3-hour group sessions, and core elements are identical to *HORIZONS*, except that all ethnically specific African-American references and materials have been removed from *Girl Power*. For example, an activity in *HORIZONS* involving group readings of poems about pride in being African-American women was deleted and replaced by an ethnically nonspecific self-esteem building activity. The targeted age range for *Girl Power* (13 to 18 year olds) is slightly younger than for *HORIZONS* (15 to 21 year olds).

Critique of SCT-derived interventions. The SCT-based STI interventions targeting

female adolescents reviewed included *Be Proud! Be Responsible! Be Protective!* (*BBB*); *Prime Time*; *Sisters Saving Sisters* (*SSS*); *Sisters Informing, Healing, Living, & Empowering* (*SiHLE*); and *HORIZONS*. Outcome studies of *BBB, Prime Time*, and *SSS* provided promising evidence of the effectiveness of those interventions among the targeted populations.

The RCT of *SiHLE* exhibited methodological strengths and results supported the efficacy of the intervention for use with African American adolescent girls. *SiHLE* includes all of the cornerstones identified by DiClemente and colleagues (2005) in their systematic review of efficacious adolescent STI prevention interventions: (1) provision of current and accurate information on STI-prevention in developmentally appropriate language; (2) relevant skill development and mastery (e.g., sexual negotiation/communication, condom application) using observational and active learning techniques (e.g., demonstration, role playing); (3) enhancing self-efficacy in those relevant skills; (4) motivating adolescents to use newly acquired STI-prevention knowledge and risk-reduction skills; and (5) gender and cultural tailoring.

The *HORIZONS* study represented a major improvement over the methodology used in the *SiHLE* study by the inclusion of a biological marker (i.e., STI test) as a primary outcome variable in addition to attitudinal and behavioral variables. The intervention is also an improvement over *SiHLE* in that *HORIZONS* is shorter and more easily implemented by CBOs with finite resources and among teen girls with limited attention and commitment capacity. Prevention researchers have found that active self-management training can dissipate over time and boosters targeting self-management skills improve sustainability (Rotheram-Borus, Koopman, Haignere, & Davis, 1991; Scott-Sheldon et al., 2011). Thus, another improvement in *HORIZONS* over *SiHLE* and other interventions is the inclusion of content-reinforcing booster telephone contacts.

Girl Power, the ethnically neutral version of *HORIZONS*, provides an adaptation-ready version for use in this study. Specifically, one of the first steps of the adaptation (i.e, removal of content specific to African Americans) had already been completed in *Girl Power*. Another significant strength of *Girl Power*, shared by other interventions in this category, is theoretical grounding in SCT. In their review of adolescent STI prevention interventions, Sales and colleagues (2006) found that SCT was among the theoretical frameworks most consistently used in programs that demonstrated success in reducing risk behaviors. The outcome studies of the SCT-derived interventions reviewed in this section suggest that the theory identifies empirically supported constructs critical to reducing adolescent female sexual risk behavior.

In contrast to results of the *SiHLE* and *HORIZONS* RCTs, the outcome studies of *BBB, Prime Time,* and *SSS* demonstrated major limitations. Although *BBB* intervention participants demonstrated significantly higher scores on AIDS knowledge, increased intention to use condoms, and decreased number of sex partners than the control group at 6-month follow-up, these outcomes were not sustained at 12-month follow-up. Furthermore, the program was specifically developed for pregnant teens and, therefore, the findings may not be generalizable to non-pregnant adolescent girls.

Results of the evaluation of the *Prime Time* program suggest that sexual health interventions that include multiple components can result in reduced risk behaviors. It is not clear, however, if the non-STI components of *Prime Time* contributed to the reduction of risky sexual behaviors among intervention participants in the RCT. The non-STI components of *Prime Time* are staffing- and resource-intensive and may not be feasible for implementation by CBOs with limited resources.

The evaluation of *SSS* included a biological outcome measure (i.e., STI tests) that

strengthened the validity of the findings, but significant group differences in STI rates and frequency of unprotected sexual intercourse were not detected until the 12-month assessment. This suggests a considerable delay in effect and it is not clear if those outcomes were due to the intervention or influence of another unknown interim causal variable. In contrast to the other interventions reviewed in this section, *SSS* did not demonstrate intervention effects at 3- or 6-months which suggests that the intervention does not have a timely impact on sexual risk behavior.

Study 1 Results

The first step of the LAP involved selecting the intervention to be adapted through an extensive review of the adolescent STI literature, which revealed eight evidence-based STI behavioral prevention interventions for use among teen girls. These interventions included (1) *Project IMAGE*, (2) *SHERO*, (3) *HIP Teens*, (4) *Be Proud! Be Responsible! Be Protective!*, (5) *Prime Time*, (6) *Sisters Saving Sisters*, (7) *SiHLE*, and (8) *HORIZONS*. All eight interventions were grounded in a strong theoretical foundation, which has been demonstrated to be a common and essential characteristic of effective STI risk reduction interventions for youth (e.g., Pedlow & Carey, 2003; Sales et al., 2006). Each intervention was uniquely customized to address the sociocultural, gender, and developmental characteristics of a target population. Such customization is a fundamental characteristic of successful behavioral interventions for adolescent sexual risk behavior (Sales et al, 2006; Scott-Sheldon et al., 2011). What was lacking across the interventions was a program customized for use among adolescent females in Hawai‘i.

To select an intervention appropriate for adaptation among local teen girls in Hawai‘i, each of the eight interventions was critically examined. In contrast to the SCT-based interventions, AARM-based interventions (*Project IMAGE* and *SHERO*) involve highly

restrictive limitations (e.g., specificity of the target population or content focus, staffing requirements, duration, and criticisms of the AARM) that made them poor candidates for local adaptation. Also, despite extensive testing and some promising findings, the IMB-based intervention (*HIP Teens*) did not demonstrate strong evidence of efficacy and therefore is not adaptation-ready. Among the SCT-based interventions, *HORIZONS* demonstrated the strongest efficacy and the ethnically neutral version of *HORIZONS*, *Girl Power*, provided the most viable starting point for local adaptation.

Throughout Study 1 meetings were held with CDFH Community Advisory Committee members for consultation regarding the selection of *Girl Power* for adaptation. As a result of these consultations, Community Advisory Board members were provided with the *Girl Power* manual, and were asked to review the materials and provide feedback regarding the content. Based on these meetings and the Community Advisory Committee feedback, *Girl Power* was selected as an appropriate intervention for adaptation among local teen girls in Hawai‘i.

CHAPTER 3. ADAPTATION OF *GIRL POWER* FOR USE IN HAWAI'I

Study 2

The aim of Study 2 was to adapt *Girl Power* to develop the Test Version of the adapted intervention. The study consisted of three LAP phases. LAP Phase 2 involved the creation of an Adaptation Guide to track modifications made to the original *Girl Power* content. The purpose of the Adaptation Guide was to document the rationale for each modification and to assure the core elements of the original intervention were maintained. LAP Phase 3 involved conducting focus groups among local teen girls. The purpose of the focus groups was to obtain information and suggestions for age- and gender-appropriate intervention materials to increase adaptation relevance for local use. LAP Phase 4 involved content analyses of focus group discussions. Themes derived from content analysis guided modifications of the intervention. The three phases of Study 2 are described in the following sections.

Study 2 Methods

Local Adaptation Procedures (LAP) Phase 2: Develop Adaptation Guide. LAP Phase 2 involved a line-by-line review of the modules that comprise the original *Girl Power* intervention and the development of an Adaptation Guide. *Girl Power* consists of two 3-hour group workshop sessions covering 22 activity modules. Table 3 summarizes the purpose of each of the 22 *Girl Power* activity modules. A logic model that specifies the relationship between the Social Cognitive Theory and the Theory of Gender and Power with each *Girl Power* intervention activity, targeted risk factors, risky behaviors, and intervention outcomes, is presented in Appendix A. The purpose of the Adaptation Guide was to document incrementally each modification of the intervention content and to ensure the core elements of the original *Girl Power* was maintained in the adaptation (see Table 4).

Table 3. Girl Power Intervention Activity Modules by Workshop Session

Workshop 1, *My Sista… My Girl…*

Session Purpose: discuss topics relevant to adolescent life; create a positive relationship between facilitators and participants; briefly discuss personal values and STIs and treatment; discuss the importance of setting future plans and goals.

1. Activity A, *Greeting & Icebreaker*. Module Purpose: greet each participant; enhance group bonds.
2. Activity B, *Program Introduction*. Module Purpose: welcome participants; briefly describe Girl Power; discuss Girl Power motto and pact; discuss commitment to program.
3. Activity C, *Music Masquerade*. Module Purpose: expose the negative images of young women in music and the media, and how those images can impact sexual decision-making.
4. Activity D, *Characteristics of Women*. Module Purpose: build gender pride using poetry about pride in being a woman and through identifying personal role models.
5. Activity E, *Values – What Matters Most.* Module Purpose: identify personal values; discuss why they are important to consider before making decisions.
6. Activity F, *The Value of My Body.* Module Purpose: assist participants in appreciating value of their bodies and in owning how it is going to valued.
7. Activity G, *Priceless Gift of Self-Esteem.* Module Purpose: discuss concept of self-esteem; participants complete a self-esteem inventory; assist participants' reflection on their own attributes.
8. Activity H, *Mapping My Life Out.* Module Purpose: identify the importance of establishing goals and setting future plans.
9. Activity I, *Character of Thyself.* Module Purpose: increase participants' focus on positive self-attributes through activity involving positive adjectives that describe themselves that spell out their names.
10. Activity J, *What did you think about…?* Module Purpose: participants complete workshop evaluation. Homework: provide the opportunity to think about future plans and goals through the completion of a *Map To My Future* worksheet.

Workshop 2, *It's My Body…*

Session Purpose: provide appropriate tools to communicate effectively with partners about condom use; reinforce that using a condom every time participants have sex can reduce STI risk.

1. Activity A, *Greeting & Icebreaker (STI Name Game).* Module Purpose: greetings; play a game that stresses the importance of protected sex.
2. Activity B, *Speaking of STDs.* Module Purpose: provision of STI education, including symptoms and treatment; revision information by playing a game.
3. Activity C, *OPRaH.* Module Purpose: teach participants correct condom application using OPRaH acronym; encourage condom use every time participants have sex.
4. Activity D, *Doing it in the Dark.* Module Purpose: practice condom application blindfolded.
5. Activity E, *Understanding Risks.* Module Purpose: identify risky sexual relationships; help participants find ways to manage STI risk with different types of partners.
6. Activity F, *Healthy and Unhealthy Relationships.* Module Purpose: discus factors of healthy and unhealthy relationships; play a game which will identify characteristics of healthy and unhealthy relationships.
7. Activity G, *Three Ways to Say It*. Module Purpose: educate participants on how to distinguish between passive, aggressive, and assertive communication styles.
8. Activity H, *How to Talk Safe Sex*. Module Purpose: teach participants how to communicate with sexual partners about safe sex; practice comebacks for partners' excuses.
9. Activity I, *Talking the Talk.* Module Purpose: role-play different safe sex communication scenarios.
10. Activity K, *Girl Power Bingo.* Module Purpose: play game to review STI facts, communication skills, and relationship topics.
11. Activity L, *Still I Rise.* Module Purpose: reading and discussion of Maya Angelou poem emphasizing that participants can overcome obstacles and follow their dreams.
12. Activity M, *What Do You Think About…?* Module Purpose: participants complete workshop evaluation.

Table 4. Girl Power Core Elements

1. Conduct small-group sessions that meet the session goals.
2. Implement with female teens between the ages of 13–18 (inclusive).
3. Use 2 skilled adult female facilitators, or one adult female facilitator (Health Educator) and one trained teen female facilitator (Peer Educator), who are knowledgeable about youth subculture to implement group sessions. Facilitators should possess group facilitation skills and a comprehensive knowledge of the intervention. Mastering co-facilitation is critical to implementation.
4. Use materials that are age and gender appropriate to motivate gender pride and to maintain teens' interest throughout the sessions.
5. Train teens in assertive communication skills to demonstrate care for their partners and to negotiate safer sex behaviors.
6. Teach teens proper condom use; foster positive attitudes and norms towards consistent condom use and to provide teens the appropriate instruction for placing condoms on their partner.
7. Discuss triggers that make negotiating safer sex for teens challenging.
8. Emphasize the importance of partner involvement in safer sex.
9. Deliver intervention to teens in community-based settings, not in a school-based setting or during school hours.
10. Determine if the agency is required to obtain parental consent for teens' participation by contacting the local health department's STI prevention office.
11. Deliver 4 brief telephone contacts (15 minutes) to teens to reinforce session materials and develop a tailored risk-reduction plan for each individual teen.
12. Provide a voucher that partners can redeem for STI testing and treatment services at the local health department.

Note: Modeled after *HORIZONS* core elements (DiClemente et al., 2009)

In LAP Phase 2, project meetings involving CDFH Community Advisory Committee members and the Local Subject-Matter Expert were conducted to discuss *Girl Power* intervention content, the adaptation process, project procedures, and Study 2 timeline. University of Hawai‘i Institutional Review Board (IRB) approval for research involving human subjects was obtained during this phase of the study.

Development of the Adaptation Guide. The original *Girl Power* intervention was systematically reviewed, line-by-line, by the study investigator to identify content requiring adaptation. This review resulted in the development of an Adaptation Guide, a spreadsheet listing each modification of the original *Girl Power* content and supplemental materials. Decision-making rationale for each modification was also documented in the Adaptation Guide. Modifications included selecting and incorporating updated and locally relevant songs and images, replacing African-American ethnic names used in vignettes with more common names used in Hawai‘i, and incorporating locally relevant terminology and slang.

The Adaptation Guide also documented the source of each adaptation (i.e., focus group findings, theater test results, CDFH Community Advisory Committee, Local Subject-Matter Expert, or research team consensus). Additionally, modifications listed in the Adaptation Guide were examined to ensure that they were not in conflict with the core elements of *Girl Power*. The Adaptation Guide was generated and expanded throughout the adaptation process by the study investigator in consultation with the Local Subject-Matter Expert (see Appendix B for the final version of the Adaptation Guide). The adaptation procedures and the specific changes made to the original intervention are described in the Results section below.

Local Adaptation Procedures (LAP) Phase 3: Focus Groups. LAP Phase 3 involved conducting focus groups among local teen girls. The purpose of these focus groups was to obtain

locally relevant information that instructed the initial adaptation of *Girl Power* content.

Measures: Focus Group Questions. Focus groups questions were developed in this phase, guided by consultation with members of the CDFH Community Advisory Committee and the Local Subject-Matter Expert. The questions (Appendix C) were developed based on information documented in the Adaptation Guide that identified content requiring modification due to the lack of relevance to local teen girls. The questions pertained to the specific content of *Girl Power* (e.g., music, references, and wording), including the naming of the new adapted intervention. The Focus Group Questions were also designed to facilitate discussions about local youth culture and norms for sexual behavior among Hawai‘i teens.

Participants. Thirteen local teen girls were recruited to participate in four focus groups. Participants were recruited through active CDFH program sites in two communities on Oahu (Kapolei and Ewa Beach). Two focus groups were conducted at Kapolei High School (n = 3 and n = 6, respectively) and two were conducted at Campbell High School (n = 2 for both). A majority of the participants (n = 10, 76.9%) identified as mixed NHPIA ethnicity, two of the girls self-identified as Chinese, and one as Filipino. Participant ranged from 13 to 18 years in age (median = 16 years; M = 15.69; SD = 1.5) and were enrolled in 9th to 12th grades (mode = 11th grade).

Procedures. Focus group participation was anonymous. Parent consent and participant assent forms (Appendix D) were developed in consultation with the Local Subject-Matter Expert and the CDFH Community Advisory Committee. To facilitate onsite recruitment, two CDFH program coordinators were provided a fact sheet describing the project (Appendix E). These onsite CDFH staff recruited girls between 13 and 18 years old in their after-school programs and obtained assent and consent from participants and their parents.

Standard, systematic focus group methodology was used for all focus groups (cf. Côté-Arsenault & Morrison-Beedy, 1999, 2005; Krueger & Casey, 2000; Morgan, 1998; Morrison-Beedy et al., 2001) including provision of light refreshments to "break the ice," skilled discussion moderation, a note-taking protocol using an note-taking template, and participant compensation of a $5 Starbucks® gift certificate. Sessions were held in classrooms that allowed for open discussion. Onsite CDFH program coordinators, with whom participants were already familiar, were present to foster the girls' comfort and sense of safety and trust. At the start of each focus group, basic demographic information (i.e., age, grade, school, and ethnicity) was anonymously obtained from each participant on a sign-in sheet. The study investigator then described the project to participants, answered questions, and verbally reviewed assent with group participants. Participants were informed that participation was voluntary and they could choose to stop participating at any time. Anonymity was emphasized, as such assurances have been shown to increase an adolescent participants' willingness to discuss potentially sensitive topics such as sex and substance abuse (Lamb, Puskar, & Tusaie-Mumford, 2001; Stanford et al., 2003). Participants were also informed that everyone's opinions should have a chance to be heard and there were no right or wrong answers (Morrison-Beedy et al., 2001).

For each focus group session, two methods of data collection were used. First, two research assistants were trained on a note-taking protocol developed by the study investigator based on guidelines in the adolescent focus group literature (e.g., Côté-Arsenault & Morrison-Beedy, 2005). Each research assistant trained in human subjects research (i.e., CITI Program) independently took detailed field notes on laptops that included participant responses, nonverbal behaviors, important themes, and discussion highlights using a note-taking template (see Appendix F for a sample page of the template). Second, an audio-recorded debriefing session

involving the study investigator, the research assistants, and the CDFH staff members was conducted immediately after each focus group session. The purpose of these debriefings were to review the session content, begin to identify and highlight important themes, and conduct evaluation of thematic saturation. Thematic saturation refers to the point at which no important novel themes emerged in a session (Fassinger, 2005). The debriefing session recordings were transcribed independently by two research assistants. Focus groups were conducted until thematic saturation was reached after the third focus group. A fourth focus group session was conducted to ensure saturation.

Data verification for both methods of data collection (i.e., field notes and debriefing session transcripts) for each focus group session was conducted. During this process, the content of the independent field notes and debriefing session transcripts for each focus group session were merged and noteworthy discrepancies between the two independent versions of the field notes and debriefing transcripts were resolved. This merging process resulted in four transcripts (one for each of the four focus groups), which comprised the final data set for Study 2. The methodological steps of LAP Phase 3 data collection are presented in Figure 1.

Study 2 Data Analysis

Local Adaptation Procedures (LAP) Phase 4: Develop Test Version of the Intervention.

LAP Phase 4 involved thematic content analyses of four focus group transcripts. The results of this analysis guided the production of intervention materials, resulting in the Test Version of the locally-adapted *Girl Power*.

Data Analytic Methods. A thematic and comparative analysis methodology (Braun & Clarke, 2006; Glaser & Strauss, 1967) was used to identify relevant themes from the data that, in turn, guided modifications of *Girl Power* content. The data analytic methods involved standard

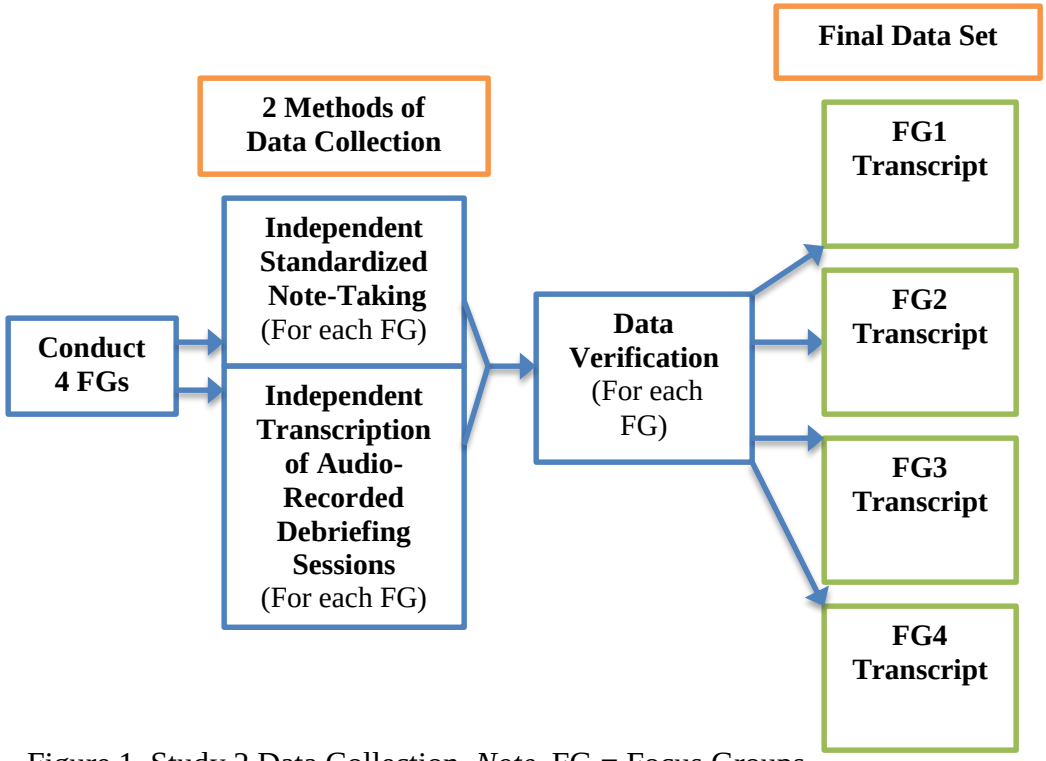


Figure 1. Study 2 Data Collection. *Note.* FG = Focus Groups.

qualitative data analytic steps (e.g., Miles & Huberman, 1994; Strauss & Corbin, 1994). Theses steps included: (1) Independent Unitization, (2) Independent First Round Coding and Verification, and (3) Independent Second Round Coding and Verification. As described below, these analyses yielded the Focus Group Themes that were used to modify intervention materials.

Step 1: Independent Unitization. Independent unitization involved identifying the smallest units of meaningful data from every line of each focus group transcript. A unit is the smallest amount of information (e.g., utterance) that is informative by itself, ranging from a word to a short phrase. This process was completed by two independent coders (i.e., the study investigator and a research assistant trained in the analytic protocol). Frequency counts were tabulated for each unit. In addition, notes regarding the intensity of utterances, nonverbals, group effects, and individual influences were included where relevant.

Step 2: Independent First Round Coding and Verification. Using the Focus Group Questions as a guide to determine a priori domains of interest, an initial set of themes relevant to the revision of the content, delivery style, and activities of the adapted intervention was independently generated by each coder. Unitized data were then independently categorized by sorting them into relevant themes. Each unit was categorized in only one theme. During this first round of coding, a definition and label was assigned to each theme, including a description of the criteria for inclusion in the theme. Themes emerging from new text were compared with existing themes in order to fully develop thematic categories. Thematic saturation was evaluated in an ongoing and continuous process of comparing themes from previous focus groups with the new themes emerging from subsequent focus groups.

Verification of the independent first round coding involved comparing and combining the two versions of each analyzed transcript. To increase reliability and reduce potential bias, the two codings of each focus group transcript were compared. Inter-coder reliability was calculated for each theme identified using an agreement coefficient calculated as the number of agreements divided by the number of agreement plus disagreements for each transcript (Popping, 2010). Most of the percent agreements were either 0% or 100% due to differences in the themes that the coders independently generated. To resolve these discrepancies between themes, a second round of coding was conducted.

Before initiating the second round coding, the themes from the first round coding were finalized. Discrepancies between coder unitization and coding were resolved by coder consensus. This process resulted in a combined initial set of themes, labels, definitions, and rules for each focus group. The themes from all four focus groups were then merged by research team consensus into a comprehensive list of themes to be coded in the second round coding.

Step 3: Independent Second Round Coding and Verification. Discrepancies between the independent unitizations in Step 1 were resolved by coder consensus. Unitized data from the four focus group transcripts were combined into one non-coded data set, and then re-coded independently by two coders. Percent agreement for this second round coding ranged from 67% to 100%, with an average of 95.8%.

The research team collaborated to negotiate and compare themes, and achieve consensus on category labels and definitions. Patton's (1990) dual criteria for judging themes (i.e., internal homogeneity and external heterogeneity) guided this process to ensure clear distinctions between themes and that data within themes cohered together meaningfully. Discriminative rules (i.e., criteria for excluding a unit and coding it another theme) were generated for themes that overlapped conceptually, and exemplars (i.e., a direct quote from a participant) were added to each theme definition. Irrelevant units were deleted by research team consensus during this process, resulting in the Focus Group Themes (see Appendix G for a sample page of the Focus Group Themes). The data analytic steps described above are summarized in Figure 2.

Study 2 Results

Focus Group Themes. Themes were grouped together by the domains of interest determined a priori by the Focus Group Questions. Sets of themes emerged to correspond with each question. As previously described, there were two kinds of questions: (1) those that elicited information to guide the adaptation of specific intervention content (e.g., popular music, commonly used slang terms, STI knowledge), and (2) general questions regarding social norms and shared experiences among local teen girls (e.g., values, goals, sexuality).

Themes Relating to Specific Intervention Content. Focus group participant responses to those questions pertaining to popular music, slang terms, role models, inspirational quotes, and STI

knowledge were generally congruent with what would be expected among teen girls throughout the U.S. For example, the most frequently mentioned role models were Beyonce and Michelle Obama. Therefore, references to both of these women were included in the activity of the adapted intervention in which positive female role models are discussed. Another theme that arose from the data was family members as role models, e.g., mothers, fathers, and grandparents, and so family was included as a suggestion in that activity. Focus group participants agreed that Oprah is not a common role model among local teen girls, and she was therefore removed as a reference in the adapted intervention.

Some focus group discussions generated noteworthy responses from the participants. For example, although the majority of the slang words endorsed by participants are used by most American adolescents (e.g., "awesome" and "on point") there were several terms that were based in a form of pidgin that is commonly spoken in Hawai'i (e.g., "ho cuz" and "irraz"). While most of the music mentioned by focus group participants was from international artists, several local Hawaiian musicians were noted, e.g., *Common Kings* or *Kolohe Kai*. As a result, a popular song from the *Common Kings* mentioned by participants was included in the adapted intervention along with other musicians discussed in the focus groups.

STI knowledge appeared to be very poor among all focus participants. Although most participants indicated that they had received some form of sex education in school, most appeared confused about the topic and were unable to provide accurate STI information. When asked about STI prevention, one participant responded "[We] don't really talk about the issue." Another girl stated "Girls tend to get things mixed up, for example, AIDS [and] blood versus sex." Only one focus group participant knew the meaning of douching, which suggests that it

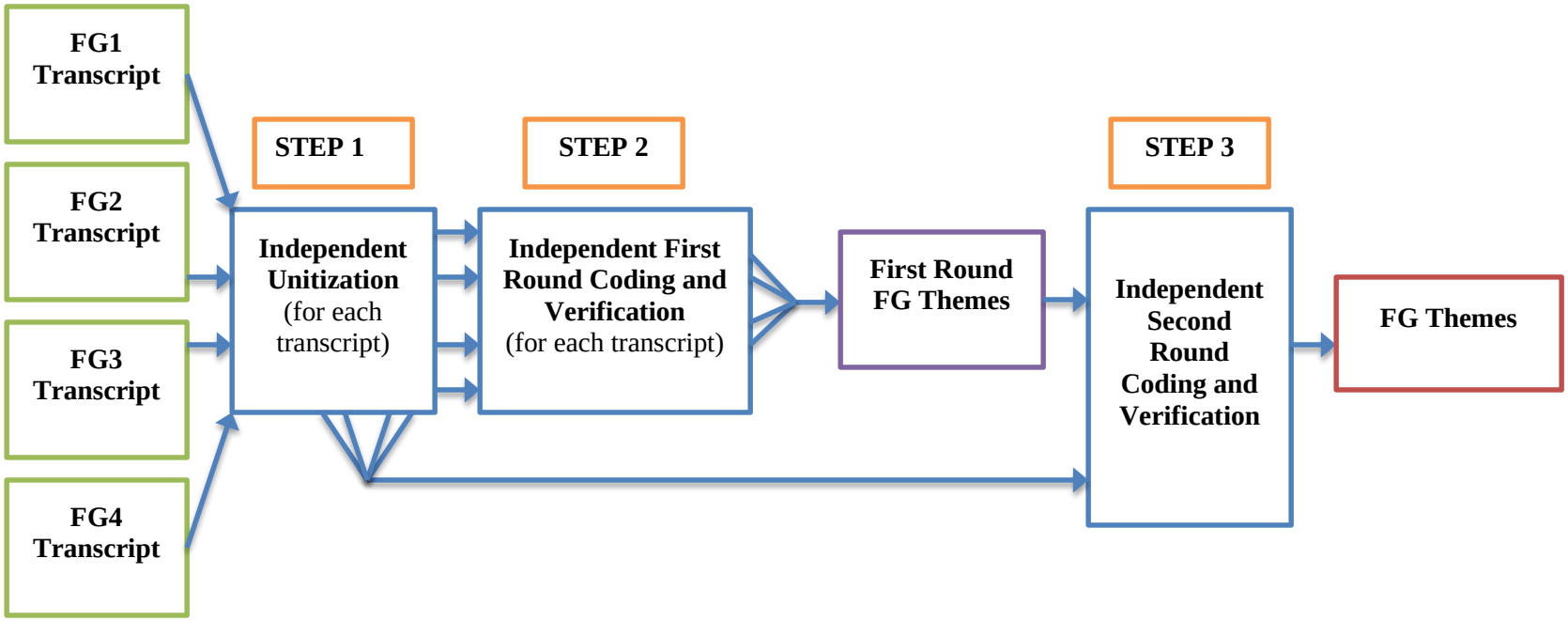


Figure 2. Study 2 Data Analytic Procedures. *Note.* FG = Focus Groups.

may not be a common behavior among local teen girls, and as a result intervention content regarding the risks of douching was removed.

Focus group participants generated many creative and interesting suggestions for naming the adapted intervention. The name that was endorsed most frequently was "Girl Power Hawai‘i," which became the new name of the adapted intervention.

Themes Relating to the Culture of Local Teen Girls in Hawai‘i. Focus group participant responses to questions pertaining to the shared experiences of local youth suggest that social norms, and not ethnically-based cultural factors, appear to influence their values, goals, and even their identity as "local." For example, while one girl endorsed "knowing Hawaiian culture" in response to the question "What does being 'local' mean to girls in Hawai‘i?" most of the girls related to a broader local identity that involves knowledge attained by being born or raised in Hawai‘i, regardless of ethnicity. Participants noted factors such as local foods (e.g., "We eat rice in, like, everything."), local language (e.g., "The moment a person speaks, you instantly know if they're local or not."), local traditions (e.g., "Hug and kiss, non-locals wouldn't understand."), local values (e.g., "Families having picnics clean up after themselves but tourists leave trash everywhere."), and local attitudes ("[Local] culture is very chill."). Participants also emphasized the importance of community and connection, best summarized by one participant's response: "You know the people in the community, the people around you."

The shared experiences that focus group participants discussed were not dissimilar from what most American teen girls would endorse. For example, they reported that they enjoy dressing up, wearing make-up, going shopping, dancing, and spending time with their friends. Most participants emphasized the importance of prioritizing family and doing well in school in order to be happy and successful in life, and that getting attention from others makes them feel

good about themselves. A majority of girls reported that they value trust, loyalty, and caring in their friendships. When asked about romantic relationships and sex, participants mentioned "support," "security," "feeling loved," and "needing attention" as reasons why girls their age have boyfriends. Most participants discussed the importance of balancing relationships with other priorities, such as school. Participants also noted "feeling loved" and "needing attention" as factors in sexual decision-making, and most girls cited peer pressure as a major influence. Examples include the following: "If you see other people doing it, then you want to feel a part of it, to fit in." Other girls have sex "for status, but the reality is there is no status [in it]."

When prompted to consider religious or family influences most girls generally agreed that those factors do not have a significant impact on whether girls have sex or not. For those girls who are influenced by religion, participants agreed that their ethnicity is a related factor. One participant stated that "some Polynesians are very religious and care about their virginity so they want to wait to have sex after marriage," and another participant noted "Filipino girls are hardcore Catholic, and that influences most of their decisions."

Test Version of *Girl Power Hawai'i*. The Focus Group Themes were incorporated into the Adaptation Guide and were used for revising the content, delivery style, and intervention materials. Based on the expanded Adaptation Guide, the research team developed and incorporated new content (e.g., graphics, words, phrases, music, activities, etc.) into the original *Girl Power* intervention. The Local Subject-Matter Expert reviewed every adaptation and provided feedback that instructed further modifications. These content revisions resulted in the Test Version of the locally-adapted intervention, *Girl Power Hawai`i,* named by the focus group participants.

In summary, the aim of Study 2 was to develop the Test Version of *Girl Power Hawai'i*, and involved LAP Phases 2 through 4. LAP Phase 2 involved the creation of an Adaptation Guide to track modifications made to the original *Girl Power* content. LAP Phase 3 involved conducting focus groups among local teen girls. LAP Phase 4 involved content analyses of focus group discussions, revision of original *Girl Power* intervention content, and production of the Test Version of *Girl Power Hawai'i.*

CHAPTER 4. DEVELOPMENT OF THE FINAL VERSION OF *GIRL POWER HAWAIʻI*

Study 3

The aim of Study 3 was to develop the Final Version of *Girl Power Hawaiʻi* and involved LAP Phases 5 and 6. LAP Phase 5 involved theater testing the Test Version of *Girl Power Hawaiʻi* among a sample of local teen girls. The purpose of theater testing was to pretest the intervention and to obtain participants' reactions to adapted content, materials, visual appeal, etc., of the intervention (Wingood & DiClemente, 2008). LAP Phase 6 involved analysis of the theater test data, which guided final production of *Girl Power Hawaiʻi*. These two LAP phases are described in the following sections.

Study 3 Methods

Local Adaptation Procedures (LAP) Phase 5: Theater Tests. LAP Phase 5 involved theater testing the Test Version of *Girl Power Hawaiʻi* among local teen girls and key community stakeholders. At the start of this phase, a meeting with CDFH Community Advisory Committee members and the Local Subject-Matter Expert was conducted to finalize theater test procedures, questions, and participant recruitment.

Measures: Theater Test Questions. Theater test questions were developed to obtain participants' reactions to demonstrated intervention activities (see Appendix H for the Theater Test Questions). Examples of questions include, "Will girls your age enjoy this activity?" and "Will girls your age relate to this activity?" The Theater Test Questions also elicited feedback on the proposed name and logo of the adapted intervention. One question designed to elicit factors influencing condom use among local teen girls was included: "What factors might influence girls your age in Hawaiʻi in whether or not they use condoms?"

Participants. Among the girls who were recruited, nine local teen girls and six CDFH community stakeholders participated in two theater tests. One theater test was conducted at CDFH in Honolulu (teen girl $n = 3$; CDFH staff $n = 3$). The three teen participants were students enrolled at Iolani, Moanalua, and Mililani High Schools. The second theater test was conducted at Leilehua High School in the community of Wahiawa (teen girl $n = 6$; CDFH staff $n = 3$). A majority of the teen girl participants identified as mixed NHPIA ethnicity ($n = 7$, 77.8%), and two of the girls self-identified as Filipino. Participants ranged from 14 to 16 years in age (median = 16 years; $M = 15.33$; $SD = 0.87$), and were enrolled in 9^{th} to 12^{th} grades (mode = 11^{th} grade).

Procedures. Theater test recruitment procedures were similar to those used for the focus groups in Study 2, except that participant compensation was increased from a $5 to a $10 Starbucks® gift certificate. This increase was suggested by the CDFH Community Advisory Committee due to the difficulty their program staff experienced when recruiting focus group participants in Study 2. The Theater Test Questions were administered using presentation software and an iClicker electronic response system that allowed participants to answer questions immediately and anonymously with a remote provided for the session. The results of the group responses to each question were instantly viewable on the presentation screen, and were used to facilitate discussion of participants' reactions to the demonstrated intervention activities. The presentation slides also included materials for the demonstration of adapted intervention content (e.g., song lyrics, activity samples). The demonstration of the adapted activities was role-played by the study investigator and a research assistant. Data collection procedures (i.e., note-taking, debriefing transcription, and verification) were identical to those used for the focus groups and resulted in a final data set of two transcripts, one for each of the two theater tests. Theater tests were conducted until thematic saturation was reached after the second focus group.

Study 3 Data Analysis

Local Adaptation Procedures (LAP) Phase 6: Develop Final Version of the Intervention. LAP Phase 6 involved thematic content analyses of two theater test transcripts. Results of the analyses guided the final production of the locally-adapted intervention, resulting in the Final Version of *Girl Power Hawai'i*.

Data Analytic Methods. The thematic and comparative analytic methodology used in Study 2 was also used to analyze the theater test transcripts. As shown in Study 2, Figure 2, these steps included Independent Unitization, Independent First Round Coding and Verification, and Independent Second Round Coding and Verification. Percent agreement for the second round coding ranged from 50% to 100%, with an average of 95.9%. These analyses resulted in the Theater Test Themes (see Appendix I for a sample page of the Theater Test Themes).

Study 3 Results

Theater Test Themes. All except one of the Theater Test Questions pertained directly to the effectiveness and relevance of the demonstrated activities of *Girl Power Hawai'i.* Responses to those questions were categorized according to the aspect of that activity that was being critiqued, and were used to guide further modifications to the adapted intervention. For example, theater test participants suggested that some of the images in the *Girl Power Hawai'i* were outdated and recommended that *Seventeen* could be used as a source for more updated images because it is a popular magazine among teen girls in Hawai'i. The research team subsequently searched current issues of the magazine for appropriate images to include in the adapted intervention.

Theater test participants had difficulty responding to the one question designed to elicit factors influencing condom use among local teen girls ("What factors might influence girls your

age in Hawai‘i in whether or not they use condoms?”). After being prompted to consider possible social, cultural, familial, or religious factors, some of the theater test participants were able to engage in limited discussions on the topic. Four themes emerged from the data, including peer influence, family influence, religious influence, and access. Due to the limited discussion generated by participants, each theme contained very few units. Most participants agreed that friends influence condom use, for example, by telling each that sex feels better without condoms. While some of the participants discussed family influences, they disagreed on the manner in which girls are impacted. One participant indicated that families encourage girls to use protection, but several others expressed that girls will do the opposite or even get pregnant to be “rebellious” or “to get back at parents.” Similarly, participants disagreed on religious factors. Many participants noted that if you are Christian, you are taught “no sex before marriage.” However, one participant stated “Some [religions] want you to have babies.” Finally, CDFH community stakeholder participants at one of the theater tests cited access as a significant factor, particularly the cost of buying condoms and ease of access to free condoms.

Final Version of *Girl Power Hawai‘i*. The Theater Test Themes were incorporated into the Adaptation Guide and were used for revising the content, delivery style, and intervention materials. Group responses to theater test questions, aggregated across both theater tests, were analyzed and informed decision-making regarding which themes to incorporate into the Adaptation Guide. The research team conducted final content revisions of *Girl Power Hawai‘i*, using this expanded Adaptation Guide. The Local Subject-Matter Expert reviewed every adaptation and provided feedback that instructed further modifications. Finally, readability testing was conducted to ensure a Flesch-Kincaid third grade reading level for all intervention content, resulting in the production of the Final Version of *Girl Power Hawai‘i.*

In summary, the aim of Study 3 was to develop the Final Version of *Girl Power Hawai'i*, and included LAP Phases 5 and 6. LAP Phase 5 involved theater testing of the Test Version of *Girl Power Hawai'i* among a sample of local teen girls. Content analyses of theater test results in LAP Phase 6 resulted in the production of the Final Version of *Girl Power Hawai'i.*

CHAPTER 5. GENERAL DISCUSSION

The purpose of this study was to adapt an evidence-based STI prevention intervention by optimizing the relevance and acceptability of the intervention for adolescent females in Hawai‘i. The need for a customized intervention for this target population was evidenced by epidemiological data that demonstrate a majority of the predominantly mixed NHPIA adolescent female population of Hawai‘i is at elevated risk for STIs (Hawai‘i State DOH, 2008; Sasaki & Kameoka, 2009).

The intervention selected for adaptation, *Girl Power*, was modified for use among local teen girls in Hawai‘i using the LAP (Kameoka & Takishima-Lacasa, August 2013). The LAP is a locally-customized adaptation process based on the ADAPT-ITT framework (Wingood & DiClemente, 2008). This rigorous and systematic adaptation process resulted in *Girl Power Hawai‘i,* an STI prevention intervention that is gender- and age-appropriate for local teen girls in Hawai‘i and is ready for further dissemination research.

Adapting STI Prevention EBIs

Adaptation Research in STI Prevention Science

Developing an evidence-based STI prevention intervention, such as the eight EBIs identified in the comprehensive review presented in Study 1, is a lengthy, costly, and research-intensive process. Applying the biomedical product development model adopted by clinical researchers, the validation of an EBI can take 20 years (Rotheram-Borus, Swendeman, & Chorpita, 2012). Each step of this validation process requires significant time and resource investment among researchers and partnering organizations. These steps can involve intervention development, pilot testing, efficacy and effectiveness trials, updating materials, and development of training for providers (Flay et al., 2005). To achieve these steps, significant funding must be

procured and maintained. This sequence of validating an EBI is often impeded by funding gaps or other issues that disrupt timely progress towards meeting unmet public health needs (Rotheram-Borus, Swendeman, & Chorpita, 2012).

Furthermore, this intensive process of developing and testing an EBI does not guarantee effective dissemination and implementation in populations or communities for which they were developed. For example, some of the CDC-designated STI prevention EBIs have not demonstrated significant uptake by community-based organizations (CBOs) and none have been fully scaled nationally (Rotheram-Borus, Swendeman, & Chorpita, 2012). This underutilization of STI prevention EBIs is not only wasteful, but also results in significant adverse public health consequences. The lack of diffusion of existing health promotion EBIs contributes to avoidable and excess morbidity, medical costs, and mortality (DiMatteo, 2004; Strong, Mathers, Leeder, & Beaglehole, 2005).

Adaptation of a well-developed STI prevention EBI for a new population facilitates effective dissemination and implementation of the intervention. STI prevention researchers agree that the relevance and acceptability of an EBI significantly influence uptake of the intervention (e.g., McKleroy, Galbraith, & Cummings, 2006; Solomon, Card, & Malow, 2006; Wingood & DiClemente, 2008). Selecting an existing EBI to adapt allows STI prevention researchers to customize the intervention, guided by direct feedback from members of the new target population and key community stakeholders. This process of tailoring content and delivery methods increases the appropriateness of the adapted intervention, and enhances the likelihood that it will be adopted by disseminating organizations and utilized by the target population. As a result, successful adaptation leads to enhanced community support, increased client participation, improved program satisfaction and outcomes (Solomon, Card, & Malow, 2006).

Adaptation of a STI prevention EBI builds upon extensive prior research invested in the development and validation of the intervention. Efficacious interventions consist of core components that controlled studies have shown to be responsible for reducing high-risk sexual behaviors among adolescent girls. These core elements include behavioral and attitudinal change strategies targeting high-risk sexual and related behaviors and attitudes such as condom use and safe sex self-efficacy. Core elements also include how the intervention is delivered such as use of a group format, peer facilitation, and/or computer-assisted administration.

As emphasized previously, a key guiding principle of the adaptation process is that, in modifying the original evidence- and theory-based intervention, these effective core elements underlying the intervention must not be compromised (e.g., McKleroy, Galbraith, & Cummings, 2006; Miller, 2007; Solomon, Card, & Malow, 2006; Wingood & DiClemente, 2008). Prior to adaptation, it is crucial to identify and define these components responsible for the effectiveness of the original intervention, so that only the "adaptable periphery" (e.g., wording, images, facilitator instructions, etc.) are modified (Damschroder et al., 2009). The LAP was developed to ensure that the current study adhered to this principle throughout the adaptation of *Girl Power Hawai'i* (Kameoka & Takishima-Lacasa, August 2013). Based on the ADAPT-ITT model (Wingood & DiClemente, 2008), the LAP uses a community-based participatory approach that includes a partnership with a CBO, consultations with a local subject-matter expert, and directly involves members of the new target population throughout the adaptation process. Also, the LAP provides a specific strategy—development and use of an Adaptation Guide—to ensure that the core elements of the original intervention are preserved in the adaptation process.

Adaptation of *Girl Power Hawai‘i*

As discussed in Chapter 1, epidemiological data showed that female adolescents in Hawai‘i are at elevated risk for STIs due to high rates of risky sexual behavior. These data indicate that a majority of teen girls in Hawai‘i across ethnic groups are not using condoms consistently. Therefore, *Girl Power Hawai‘i* was developed to modify sexual risk behaviors and attitudes by incorporating popular youth culture, local “Hawai‘i culture,” and gender appropriate materials relevant to teen girls in Hawai‘i.

Local teen girl focus group participants were asked to discuss popular culture, social norms, and shared experiences among their peers. These girls shared their perceptions about popular music, movies, books, and role models relevant in their lives and among their peers. Their responses guided intervention content modifications such as the music selected for, or the role models referenced in, intervention activities. Participants also discussed issues related to their personal values and goals such as what they perceive to be most important in their peer relationships, their priorities in life, as well as sexual norms. Themes generated by their responses were used to inform modifications in intervention activities designed to encourage intervention participants to reflect on personal values, develop life goals, and safe sex skill-building exercises.

Focus group themes were generally congruent with what might be found among adolescent girls throughout the U.S. Participant responses to questions pertaining to experiences of local youth suggest that social norms, and not ethnically-based factors, dictate their shared experiences, values, goals, and identity. For example, participants consistently reported they enjoy shopping, dressing up, and dancing. Most of the girls identified Beyonce as a major role model and emphasized the importance of their friendships with their peers. They believe peer

pressure and the desire for love and attention as primary influences in romantic relationships among their peers. These common themes typical of teen girls in general were also supplemented with information unique to local culture, such as use of pidgin slang terms, local Hawaiian songs, and local musicians. Due to relevance of these unique aspects of growing up in Hawai‘i, careful attention was given to incorporating these elements of local culture in the adapted intervention content where appropriate.

During the theater test, participants were asked to discuss possible social, cultural, familial, or religious factors that may influence condom use among their peers. Participants discussed peer pressure and the desire to "fit in" as significant influences. Most participants agreed that family-related factors, such as communication with parents regarding sex, impact some but not all girls. Participants also discussed religious influences, and there was consensus that the sexual decision-making of girls from specific ethno-cultural groups, such as Filipino Catholics, is most impacted by religion. In general, participants showed difficulty discussing socio-cultural factors that may influence condom use among their peers, and discussion on this topic was very limited. This difficulty may be due to limited insight on the issue, shyness, or a lack of sexual experience among the participants.

Although program content was modified to enhance the relevance of the intervention among local teen girls in Hawai‘i, a primary consideration of the current adaptation study was to ensure the importance of peer support and influence posited by the underlying Social Cognitive Theory was not compromised in *Girl Power Hawai‘i*. Assertive communication and empowerment exercises in the original intervention were reinforced in the adapted intervention to ensure behavioral and attitudinal risks such as safe sex negotiation and personal self-efficacy were clearly addressed in the local adaptation.

A close collaboration with the CDFH ensured the intervention is appropriate for implementation by CBOs in Hawai‘i and for community-based dissemination research. This community collaboration is a critical aspect of the LAP and an important focus of the current study because CBOs deliver the majority of STI/HIV prevention services to ethnic-minority and high risk communities (Harper et al., 2009). Also, close consultations with community stakeholders in the adaptation process significantly enhances dissemination and implementation effectiveness (Damschroder et al., 2009). In the current study, members of the Community Advisory Committee, including CDFH staff and administration, were integrally involved throughout the adaptation process, from the planning of study procedures, to coordinating data collection, and to participating in theater testing. This partnership with the CDFH in the development and testing of *Girl Power Hawai‘i* increases the likelihood the program will be implemented and sustained by the CBO and other community organizations serving youth in Hawai‘i.

Limitations

This qualitative study involved intensive work collaborating with CDFH and resolving unexpected challenges in the recruitment of study participants in community venues where CDFH sponsored after-school youth programs. In fact, the results of this study must be considered in light of this primary limitation dealing with uncertainties about the representativeness of focus group and theater test participants and restrictions in generalizability of the findings. Two major limitations regarding the sample composition includes (a) demographic characteristics and (b) risk status of the girls who participated in this study.

Study participation was anonymous to protect the identities of youth participants, who are considered a vulnerable research population. Anonymity has also been shown to increase

willingness to discuss potentially sensitive topics among adolescents (Lamb, Puskar, & Tusaie-Mumford, 2001; Stanford et al., 2003). Therefore, only basic demographic information (i.e., age, grade, school, and ethnicity) was collected from each participant, and did not include any indicator of socioeconomic status of the participants. Participants were recruited from either Leeward or Central Oahu. These geographic areas do not necessarily represent the diversity of communities across the state. Sampling from more socioeconomically diverse regions of the state would likely increase the diversity and representativeness of the sample.

Information regarding participants' personal sexual activity was also not collected. Sexually active teen girls are at much greater risk for STIs than their non-sexually active counterparts; thus, without this information, we were unable to determine the sexual risk status of the sample. Some inferences can be drawn from the data; for example, participant responses suggested the focus group participants, in general, were sexually naïve. Many participants indicated they responded based on their perception of the behaviors of their sexually active peers, rather than from personal experience. This may be because those girls who self-select to be involved in CDFH's after-school activities are those who are more focused on academic success and are less sexually active than their peers. The current findings may not generalize to sexually active local teen girls who are at highest risk for STIs. Again, several more focus groups targeting a broader cross-section of local teen girls would be necessary to confirm the themes derived from the current study. Despite these limitations, the adaptation developed in this study provides a strong framework for pilot studies and implementation of *Girl Power Hawai'i* in communities or venues serviced by CDFH. Other directions for future research are discussed in the following section.

Future Research

The present study involved the first six phases of the eight-phase LAP. The remaining two phases include the implementation phases and represent the next steps in assessing the effectiveness of *Girl Power Hawai'i.* LAP Phase 7 involves preparing for and designing effectiveness testing of the intervention. LAP Phase 8 includes feasibility and pilot testing as well as a community-based RCT.

LAP Phase 7, Testing Preparation, involves identifying and developing quality assurance, process, and outcome measures. Such measures would involve instruments used in the testing and implementation of the original intervention, including self-report questionnaires of STI knowledge, intention to use condoms, and self-efficacy in safe sex negotiation. These measures are piloted and adapted in this phase to ensure appropriateness of wording and content for use in local populations. Consultations with the Community Advisory Board and Local Subject-Matter Expert can be conducted to identify additional psychometrically and culturally appropriate measures. This phase also involves training study personnel, including training intervention facilitators in group management/facilitation skills, CBO staff in effective recruitment and retention techniques, and the research team in data collection, management, and analyses.

LAP Phase 8, Testing, involves two discrete steps. The first step involves conducting pilot testing with local teen girls. Pilot testing has been identified as a critical step in the process of adapting an intervention for a new target population (e.g., McKleroy, Galbraith, & Cummings, 2006; Wingood & DiClemente, 2008). Pilot tests serve as another opportunity to solicit feedback from participants, key stakeholders, and CBO staff on intervention content and delivery. This step provides preliminary evidence pertaining to the effectiveness of the

adaptation and implementation of *Girl Power Hawai'i*. The analysis of pilot data informs final intervention adaptations and the design of the study in the second step of Phase 8.

The second step of LAP Phase 8 is a community-based, participatory randomized controlled trial (RCT), involving randomizing participants from the target population to the final version of *Girl Power Hawai'i* or a control condition to evaluate its effectiveness. Wingood and DiClemente (2008) recommend that a base-line survey, process measures, and at least a 3-month post-intervention assessment should be administered to assess mediators and behavioral outcomes (e.g., changes in knowledge, attitudes, beliefs, and relevant behaviors).

As indicated earlier, it has been suggested that the potential impact of most STI prevention EBIs has not been realized and it is necessary to "scale up" those interventions for wider dissemination to maximize their reach (Rotheram-Borus, Swenderman, & Chorpita, 2012; Wingood & DiClemente, 2008). Scaling up would involve disseminating *Girl Power Hawai'i* on a larger scale, possibly statewide, to reach at-risk teen girls across Hawai'i. This would require testing the intervention with larger, cross-sectional samples. Obtaining larger, more diverse samples would also provide the opportunity to collect richer data on socio-cultural factors impacting sexual risk among local teen girls.

Modifying *Girl Power Hawai'i* to include text message, smart phone application, and/or social media components would expand the accessibility and impact of the intervention for a larger number of local teen girls. Rotheram-Borus, Swenderman, and Chorpita (2012), recommended the use of "disruptive innovations" in diffusing EBIs. Disruptive innovations are strategies primarily aimed at extending the impact of an EBI to target broader outcomes or reach the greatest number of consumers as possible. For example, mobile health (mHealth) technology provides an innovative intervention delivery format that is improving health outcomes on larger

scales and expanding the reach of EBI science. Incorporating a text message component to *Girl Power Hawai'i* could involve reminders for group sessions to promote attendance or boosters to reinforce group intervention content. Booster texts could include educational information such as STI facts or safe sex tips, or motivational messages that encourage participants to engage in the safe sex strategies they learned in the group intervention sessions.

Finally, the LAP provides procedures within an adaptable framework that can be used to guide the design of future local community-based health promotion intervention adaptations in Hawai'i and in other Asia-Pacific Island regions. According to Tabak and colleague's (2012) definitions for categorizing dissemination and implementation models, the LAP is sufficiently *operational* (ie., contains step-by-step implementation actions) to provide directly applicable assistance with study design, but also *broad* enough (ie., the steps themselves are loosely defined) to allow researchers the flexibility to apply the model in a manner that fits their specific objectives and contexts.

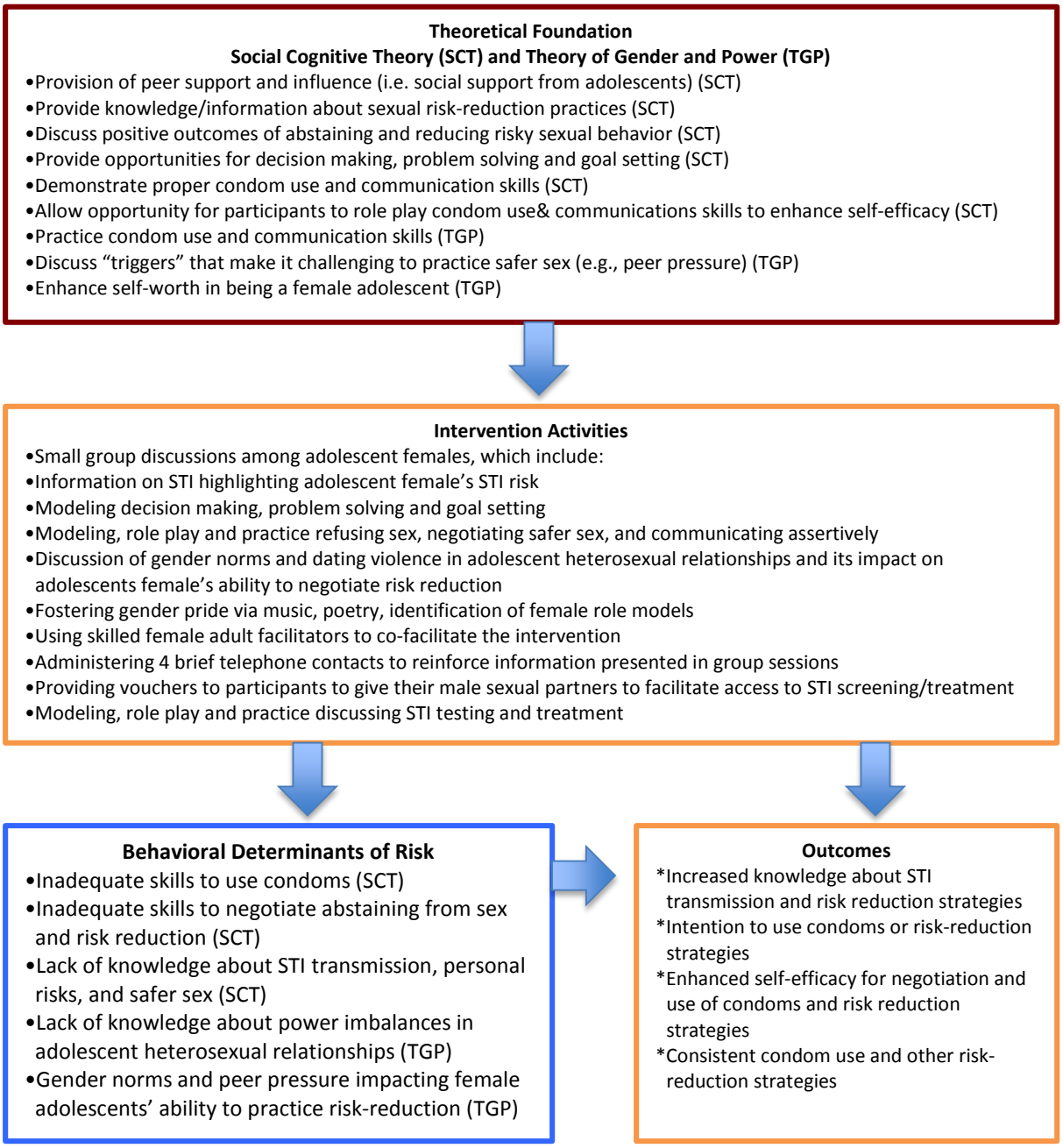
The LAP outlines systematic procedures involving both qualitative (e.g., focus groups) and quantitative (e.g., controlled effectiveness study yielding outcome data) methods, uses multiple and novel adaptation strategies (e.g., theater testing), and provides a specific strategy for maintaining the core elements of the original intervention. The use of existing dissemination and implementation models like the LAP increases the rigor of research efforts and encourages researchers to build on previous findings (Bartholomew et al., 2011; Sales et al, 2006; Van Achterberg, Schoonhoven, & Grol, 2008). Dissemination of the LAP as a template for building university-community research collaborations in Hawai'i may help maximize the value and importance of those partnerships.

Conclusions

This research represents an important contribution to the adolescent sexual health intervention literature. *Girl Power Hawai'i* was developed to address a major gap in services targeting the needs of local teen girls at risk for STI and related behavioral health issues. A review of the epidemiological data demonstrated that a majority of the adolescent female population of Hawai'i, who are predominantly of mixed NHPIA ethnicity, is at elevated risk for STIs (Hawai'i State DOH, 2008; Sasaki & Kameoka, 2009). STI prevention interventions demonstrating greatest success in decreasing high-risk sexual behaviors are those that address the unique sociocultural and behavioral factors of a particular subgroup (e.g., Sales et al., 2006; Scott-Sheldon et al., 2011), yet a comprehensive review of the adolescent STI literature revealed no EBIs specifically tailored to the unique needs of this population. The local adaptation of *Girl Power Hawai'i* provides the local STI prevention community with a customized program to address this growing area of need.

This adaptation provided the critical first steps in ensuring the relevance and acceptability of *Girl Power Hawai'i* among local teen girls, thus paving the way for the implementation of the intervention in at-risk communities in Hawai'i. Further testing is needed to establish effectiveness of the adaptation, including feasibility- and pilot-testing with partnering CBOs, and subsequent community-based, participatory dissemination RCTs.

APPENDIX A. *GIRL POWER* LOGIC MODEL



Note: Modeled after *HORIZONS* Logic Model (DiClemente et al., 2009)

APPENDIX B. FINAL ADAPTATION GUIDE

Girl Power Project
ADAPTATION GUIDE

Location	**Description of Modification**	**Source**	**Decision-Making Rationale/Notes**	**Type**
Throughout:				
	Transcribe text	Initial	So text is modifiable	Structure
	Replace "sisterhood" with "bonding"	Local Subject-Matter Expert	Outdated term	Language
	Replace STD with STI	Initial	For accurate terminology	Language
	Format content	Initial	For consistency	Structure
Workshop 1:				
Activity B	Remove dates (p. 5)	Initial	Irrelevant content	Structure
Activity B	Replace “inner spirit” with intuition (p. 10)	Initial	Outdated phrase	Language
Activity C	Replace “Music Masquerade” with "Media Messages"	Initial	More clear activity title	Language
Activity C	Replace “CD/tapes” with “audio”	Initial	Outdated reference	Language
Activity C	Replace “billboards” with “online” (p. 15)	Initial	Outdated reference	Language
Activity C	Replace named musician (p. 15)	Focus Group	Outdated references	Music
Activity C	Replace songs (p. 19-31)	Focus Group	Outdated selections	Music
Activity C	Add instructions to explain each image message & create a script for each image	Community Advisory Board	To increase the impact of the activity; refer to http://mediaal.wordpress.com/2008/10/07/28/	Instructions
Activity C	Add instructions for facilitators in Helpful Hints to select & replace songs with relevant current	Initial	So content can be continuously updated for increased relevance	Instructions

	songs (p. 14-15)			
Activity C	Examine People, Entertainment, & Seventeen magazines for current images	Theater Test	Relevant images not found	Visual
Activity D	Replace Characteristics of Women poem with current song lyrics: Roar by Katy Perry & Girl on Fire by Alicia Keys (p. 32-34)	Focus Group	Participants indicated they do not relate to poetry	Music
Activity D	Add instructions for playing audio clip of the song lyrics	Community Advisory Board	To increase song recognition	Music
Activity D	Consider alternative positive song lyrics (suggestions: Skycraper by Demi Lovato & Miss Moving On by Fifth Harmony	Theater Test	Suggested song lyrics not as relevant to the purpose of the activity as Roar & Girl on Fire, which participants said they also liked	Music
Activity E/G	Replace ethnic names (p. 37, 43) with "Pua & Kenji" & "Trina & Keoni"	Initial	Replace African American ethnic names with common local names	Language
Activity E	Replace "race" with "culture" (p. 39)	Initial	Increase generalizability	Language
Activity I	Create new name acronym (p. 48) using "Malia"	Initial	Replace African American ethnic name with common local name	Language
<u>Workshop 2:</u>				
Activity B	Add herpes & HPV summaries & fact sheets	Initial	Providing additional relevant information	Added Content
Activity B	Verify STI summaries/fact sheets (p. 12-18)	Initial	For accuracy of information	Content
Activity B/I	Replace ethnic names (p. 14, 39) with "Stephanie" & "Kelsie & Ryan"	Initial	Replace African American ethnic name with common local name	Language
Activity C	Replace OPRAH acronym with ROAR (p. 19-23)	Focus Group	Outdated reference	Role Models
Activity C	Add instructions to have girls repeat acronym ROAR out loud when practicing steps	Theater Test	To assist intervention participants in remembering the acronym	Instructions
Activity C	Add explanation that the oil in the Vaseline disintegrates the latex before the demonstration	Theater Test	To clarify purpose of the activity & avoid confusion	Instructions
Activity C	Add instructions to pass around condom box to	Community	To assist intervention participants in	Instructio

	point out expiration date & "STI protection" on packaging, & lube samples	Advisory Board	easily identifying this information in the future	ns
Activity C	Add instructions to discuss where to get free condoms locally & the cost of condoms versus the cost of STIs/pregnancy	Community Advisory Board	To assist intervention participants in assessing access to & benefits of using condoms	Instructio ns
Activity C	Add instructions to explain the risks of lambskin condoms (p. 19)	Initial	Providing additional relevant information	Instructio ns
Activity C	Modify script to "One reason some women don't use condoms…" (p. 19)	Community Advisory Board	To normalize condom use	Instructio ns
Activity C	Emphasize peer pressure & the need for attention/to be loved as barriers to condom use	Theater Test	To address customized factors discussed by participants as perceived barriers to condom use	Added Content
Activity D	Add Spinning activity from SiHLE to Activity D	Local Subject-Matter Expert	To provide experiential learning of the effects of alcohol on thinking & coordination	Added Content
Activity D	Add instructions to provide context for Spinning activity beforehand	Theater Test	To clarify purpose of the activity & avoid confusion	Instructio ns
Activity E	Update partner types wording (p. 26)	Initial	To provide locally-relevant examples (see notes)	Language
Activity F	Consider adding components of Talk or Walk activity from SiHLE to Activity F	Community Advisory Board	To address warning signs of violence & abuse which is a relevant issue among local teen girls; would likely extend the length of WS2 too long	Added Content
Activity G	Replace “Bashment” with “High School Block Party” (p. 31-32)	Initial	Outdated reference	Language
Activity G, I, K, & M	Replace graphics with island theme images (p. 33-35, 40, 43, 48)	Focus Group	Replace African American ethnic images with locally-relevant graphics	Visual
Activity K	Ensure consistent “Bingo” rather than “Tic Tac Toe” (p. 42, 43)	Initial	For consistency	Language
Activity L	Replace Still I Rise poem with song lyrics:	Focus Group	Participants indicated they do not relate to	Music

	What Doesn't Kill You (Stronger) by Kelly Clarkson (p. 44-46)		poetry (also was not able to find relevant replacement poem by a local female poet)	
Activity L	Consider alternative positive song lyrics (suggestion: Wings by Little Mix)	Theater Test	Suggested song lyrics not as relevant to the purpose of the activity as What Doesn't Kill You, which participants said they also liked	Music
Activity L	Revise Girl Power Creed/Pact to include *Girl Power Hawai'i* (p. 45)	Focus Group	Update content to reflect adapted intervention title	Title
Activity L	Consider revising intervention title to include "Wahine"	Theater Test	Local Subject-Matter Expert override: retain *Girl Power Hawai'i* because it is more generalizable & less ethnically-specific	Title
Activity L	Consider rephrasing REAL acronym in creed to be phrased positively: what to do, instead of what not to do	Community Advisory Board	Local Subject-Matter Expert override: it more powerfully stated as is	Language

APPENDIX C. FOCUS GROUP QUESTIONS

GIRL POWER PROJECT
Focus Group Questions

Instructions:
Before initiating focus group discussion: (a) verbally review assent, (b) describe the purpose of the focus group, and (c) answer any questions about the study.

1. What does being "local" mean to girls in Hawaii? What does it mean to be a local versus a non-local girl?

2. What words do girls in Hawaii use for what is cool? not cool?

3. Who do girls your age look up to as role models? Why?
(Prompt: Oprah?; Ex: Jennifer Lawrence – because she is inspirational, funny, didn't want her Katniss character to be skinny because she know that girls will look up to her image)

4. What songs/music/artists are popular right now?
(Ex: Katy Perry – Roar; Kelly Clarkson – What doesn't kill you makes you stronger; Beyonce – Run the world girls; also, Rihanna, Macklemore, Lorde, Ariana Grande, Bruno Mars)

5. What are some favorite, inspirational quotes, media messages, or poems among girls your age?
(Prompt: Which quotes, messages, or poems make you feel good about being a girl?)

6. [Optional, depending on time] What movies and books are popular among girls your age?
(Ex: Hunger Games; Perks of being a Wallflower; John Green books)

7. What kind of experiences make girls feel good about themselves or about being a girl? Why?

8. How would you describe girls who have strong self-esteem? What are they like? How do they act or think differently from girls who don't?

9. What do girls your age think is most important (or value most) in their friendships?

10. Do girls your age think it's important to have a romantic relationship, for example, having a boyfriend? Why?
(Prompts: What do girls think is most important in romantic relationships? How much time do girls your age who have boyfriends spend with them?)

11. How important is making out/having sex for girls your age? Why? Why do some girls your age have sex and others don't?
[Prompts to elicit cultural context data: Ask about what cultural/familial/religious factors might influence girls.]

12. Do most girls your age know what a sexually transmitted infection is? Do you think most girls know about this topic? What do some girls your age do (or not do) to prevent them or increase their chances of getting them?

13. Do most girls your age in Hawaii know what douching is?

14. What does being successful in life look like?

15. We are creating a program for local girls (girls in Hawaii) that helps them increase their self-confidence and make healthy decisions. Do you have any suggestions for what we could call this program?

APPENDIX D. PARENT CONSENT AND PARTICIPANT ASSENT FORMS

University of Hawai‘i
Parental/Guardian's Consent for Child to Participate in Research Project

GIRL POWER PROJECT

My name is Dr. Velma Kameoka from the Social Science Research Institute at the University of Hawai‘i at Manoa. We are conducting a research project to adapt a program called Girl Power for girls, grades 9 through 12, in Hawai‘i. Girl Power was originally developed for teen girls living in the Southern U.S. The Girl Power program was designed to build girls' life skills, strengthen self-esteem and ethnic/gender pride, and improve reproductive health by preventing sexually risky behaviors. The purpose of our project is to revise and adapt this program to make it appropriate and relevant for teen girls in Hawai‘i. Your child's participation in this project would provide important information to help us adapt the program for Hawai‘i's teen girls. We will also will ask your child if she agrees to participate in this project.

What activities will your child do in this research project and how long will the activities last? If you agree to your child's participation, she will be participating in a single, 1-hour theater test with other girls her age, where participants will be "talking story" or discussing local youth culture, what is popular among girls their age here in Hawai‘i (popular music, books, movies, quotes, role models), friendships, why they believe some girls are sexually active, and what girls their age know about preventing sexually risky behaviors. Two examples of the kind of question that will be discussed are, "What does being "local" mean to girls in Hawai‘i?" and "What kind of experiences make girls feel good about themselves or about being a girl?" If you would like to see a copy of all of the discussion questions, please contact us via the phone numbers or email addresses listed near the end of this consent form.

Benefits and Risks: Potential direct benefits of your child participating in this project include strengthening personal awareness and knowledge through discussing issues covered in the focus groups (i.e., self-esteem and self-confidence, ethnic/gender pride, friendships, relationships, sexual health) and gaining experience in participating in a research project that will help teen girls in general. We believe there is little or no risk to your child in participating in this project. Although unlikely, some of the focus group discussions may make your child feel uncomfortable. If that happens, she will be informed that she does not have to respond to that question, can take a break, or can withdraw from the project altogether.

Confidentiality and Privacy: All information gathered from participants, including their name, age, grade, and ethnicity will be kept completely anonymous, meaning that the information will not be associated with your child's identity or name in any way, and will be used for research purposes only. Participants will be informed that what they say will be kept strictly confidential by the research team. They will also be encouraged to keep all discussions confidential. Research records will be kept in a safe place for the duration of the research project. Several public agencies with responsibility for research oversight, including the University of Hawai‘i Human Studies Program, have authority to review research records. If you would like a copy of the final

report of the findings of this research project, please contact us at the number listed near the end of this consent form.

Voluntary Participation: Participation in this project is voluntary. Your child can choose freely to participate or not to participate. You can choose freely whether or not your child may participate in this project. At any point during this project, you can withdraw your permission, and your child can stop participating without any loss of benefits.

Compensation: Your child will be offered a $5 Starbucks gift certificate as compensation for her time and participation.

Questions: If you have any questions about this project, contact Dr. Velma Kameoka at (808)956-8930 or velmak@hawaii.edu, or Julie Takishima-Lacasa at (808)271-7748 or yuriet@hawaii.edu.

If you have questions about your rights, or your child's rights, please contact the University of Hawai'i, Human Studies Program, at (808) 956-5007 or uhirb@hawaii.edu.

Please keep the section above for your records.
If you consent for your child to be in this project, please sign the signature section below.

Tear or cut here

Signature(s) for Consent:

I give permission for my child to participate in the Girl Power Project. I understand that I must agree for my child to join this project. I understand that my child must agree to join this project too. I understand that my child change his or her mind about being in the research project at any time. I understand that I may change my mind about my child being in the project. I understand that I must tell the researcher of our decision to stop being in this project.

Name of Child (Print): _____

Name of Parent/Guardian (Print): _____

Parent/Guardian's Signature: _____

Date: _____

University of Hawai‘i
Adolescent Assent to Participate in Research Project

Research Title: GIRL POWER PROJECT

Researcher: Dr. Velma Kameoka

We are conducting a research project to adapt a program called Girl Power for girls, grades 9 through 12, in Hawai‘i. Girl Power was originally developed for teen girls living in the Southern U.S. This program was designed to build girls' life skills, strengthen self-esteem and gender pride, and improve reproductive health by preventing sexually risky behaviors. The purpose of our research project is to revise and adapt this program to make it appropriate and relevant for teen girls in Hawai‘i. If you want to be in the research project, you will need to sign this form. However, before you decide, it is important that you know:

- It is your choice to be part of this research project or not;
- If you decide to join the research project, you can stop at any time; and
- Your parent or legal guardian must also agree for you to be in this research project.

What will you be asked to do if you join this research project? You will be asked to participate in a single, 1-hour "talk story" group with other girls your age. Topics that will be discussed are local youth culture, what is popular among girls your age in Hawai‘i (popular music, books, movies, quotes, role models), friendships, why some girls are sexually active, and what girls your age know about preventing sexually risky behaviors.

Will anything happen to you that may make you feel uncomfortable or unsafe? We believe there is little or no risk in participating in this research project. If any of the group discussions make you feel uncomfortable, please let the adult in charge know. Your contributions to the group discussion are not graded and there are no right or wrong answers. You can choose to stop participating in the project at any time.

Who will be given information about me? All information you provide will be kept completely anonymous and will be used for research purposes only. This means that your parents will not know your answers, and your answers will not be connected to your name or identity in any way.

Are there any benefits to your participation in this research project? Potential benefits include strengthening personal awareness and knowledge through discussing issues covered in the focus groups (i.e., self-esteem, gender pride, friendships, relationships, sexual health issues) and gaining experience in participating in a research project that will help teen girls in general.

Are there costs or payments involved in this research project? There will be no cost to you for being in this research project. Food and refreshments will be provided at the group session and you will receive a $5 Starbucks gift certificate for your attendance.

Do you have to be in this research project? You don't have to be in this research project if you don't want to. It's up to you. If you want to stop being in the research project, you can just tell us. You will not be penalized in any way.

How do you get your questions answered? If you have any questions about the project, you can ask any of the project staff, or contact Julie Takishima-Lacasa at (808)271-7748 or the University of Hawai'i Committee on Human Subjects at (808)956-5007.

Agreement to take part in the research project:

Signing your name at the bottom of this form means that you agree to be in this research project. You and your parents or legal guardian will be given a copy of this form after you have signed it.

_____	_____	_____
Your name (print)	Your Signature	Date
_____	_____	_____
Researcher's Name	Researcher's Signature	Date

_____
Parent or Legal Guardian's Name (print)

APPENDIX E. *GIRL POWER* PROJECT SUMMARY SHEET

GIRL POWER
Project Summary

The purpose of this project is to adapt the "Girl Power" program for use among teen girls in Hawai‘i. "Girl Power" is a scientifically tested program originally designed to build life skills, strengthen self-esteem and ethnic/gender pride, and improve reproductive health by preventing sexually transmitted infections among African American teen girls. National data from the Center for Disease Control consistently show that risky behaviors and sexually transmitted infections are serious problems among young women ages 15-24 in Hawai‘i, with rates higher than the national average (Sasaki & Kameoka, 2009). Given these growing behavioral and reproductive health threats to Hawai‘i's girls, there is a critical need for an adapted version of the "Girl Power" program that incorporates meaningful elements that are culturally relevant and unique to positive life skills and self-efficacy development among local teen girls. In order to adapt the "Girl Power" program for Hawai‘i's teen girls, the specific aims of this project are to: (A) conduct small focus groups to gather information relevant to teen girl culture in Hawai‘i (e.g., role models, music, slangs, activities, etc.); (B) revise the original "Girl Power" using information derived from focus groups by incorporating culturally relevant themes and content; and (C) conduct "theater testing" (market test) of the revised "Girl Power" among girls and community-based service providers to obtain anonymous opinions about the program content. Methods to be used (Kameoka & Takashima-Lacasa, August 2013) to meet these specific aims are outlined below:

(A) Focus Groups. Approximately five Native Hawaiian, Pacific Islander, and Asian (NHPIA) 9th through 12th grade girls at CDFH-sponsored program sites will be recruited to participate in each of at least three one-hour focus groups. Focus groups will be continued until data saturation (the point at which a focus group fails to produce important novel themes); it is anticipated that three focus groups will yield data saturation. This phase will involve the following procedures:

1. We are asking for CDFH staff collaboration to recruit focus group participants, specifically to: (a) describe the purpose of the focus group to NHPIA teen girls participating in CDFH-sponsored activities or programs and (b) obtain parent consent and participant assent (see attached forms) from girls expressing interest in participation. Focus group participation will be anonymous and participants will not be asked to describe their own personal experiences nor feelings. Focus group participants will only be asked to provide opinions about popular youth culture and the general experiences of girls their age in Hawai‘i.
2. Focus group discussions will be moderated by the Research Coordinator, Julie Takishima-Lacasa. A CDFH professional staff member with whom participants are already familiar will also be present at each focus group to foster the girls' comfort and sense of safety and trust. Focus group sessions will take place in a private room that allows for open discussion. Light refreshments will be provided. At the start of each focus group, the Research Coordinator will answer questions about the focus group and verbally review participant assent. Participants will be introduced to two trained female research assistants who will be taking field notes of the focus group discussion.

3. Basic demographic information (ethnicity, age, and grade) will be anonymously obtained from each participant via a sign-in sheet. No names will be written on the sign-in sheet.
4. The Research Coordinator will elicit participant opinions about popular youth culture and the experiences of Hawai‘i’s teen girls in general using discussion prompts.
5. Each participant will be given a $5 Starbucks gift certificate as compensation for their time and participation in the focus group.
6. Immediately after each focus group, a debriefing session involving research team members and the CDFH staff will be conducted to review discussion content, identify important themes, compare notes, and resolve differences in observations.

(B) Development of Revised “Girl Power.” Results of content analyses of data from focus group sessions will guide the production of the adapted program materials and will result in a Draft Version of the NHPIA-adapted intervention. After the Draft Version has been finalized, theater testing will be conducted.

(C) Theater Testing. Theater testing involves a demonstration of selected modules of the Draft Version with a group of NHPIA girls (participants) and CDFH staff members (observers). The aim of this approach is to collect critiques of the content and delivery of the adapted intervention and to identify additional materials or activities that may be included to enhance its relevance and effectiveness for Hawai‘i teen girls. Theater tests will involve the following protocols:

1. We will ask for CDFH staff to again collaborate to recruit 15 teen girls for anonymous theater test participation. If one theater test session does not provide at least 10 participating girls, a second theater test will be conducted until a target sample of 10-15 girls is obtained. Recruitment and consent/assent procedures for theater testing will be identical to those used for focus groups.
2. To begin the one-hour session, the Research Coordinator will answer any questions about the theater test and verbally review participant assent. Light refreshments will be provided and theater test session will take place in a private room that allows for open discussion.
3. Basic demographic information (i.e., ethnicity, age, and grade) will be anonymously obtained from each participant via a sign-in sheet.
4. Selected adapted activities and materials of the Draft Version will be role-played in front of the participants and observers by the Research Coordinator and a trained female research assistant. A second trained female research assistant will take detailed field notes of the theater test.
5. Immediately after each demonstrated activity, participants and observers will anonymously respond to a series of queries using electronic feedback polling consistent with marketing research technology. Theater test queries will be developed by the research team upon completion of the Draft Version. Questions will be designed to obtain reactions to content, materials, and visual appeal of the Draft Version.
6. Each participant will be given a $5 Starbucks gift certificate as compensation for their time and participation in the theater test.
7. Immediately after the theater test, a debriefing session involving research team members and the CDFH staff will be conducted to review discussion content, identify important themes, compare notes, and resolve differences in observations.

If you want to discuss any concern or have any questions about the project, please call the Research Coordinator, Julie Takishima-Lacasa, at (808)271-7748. Mahalo!

UHM-SSRI Research Team:
Julie Takishima-Lacasa, Research Coordinator
Velma Kameoka, Ph.D., Principal Investigator

APPENDIX F. SAMPLE PAGES OF THE NOTE-TAKING TEMPLATE

GIRL POWER PROJECT
FOCUS GROUP NOTE-TAKING TEMPLATE

Date of Focus Group	
Location of Focus Group	
Number of Participants	
Moderator Name	
Note-Taker Name	

Brief Descriptions for Participant ID #s (as seated from left to right of moderator):

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

Responses to Questions:

Q1. What does being "local" mean to girls in Hawaii? What does it mean to be a local versus a non-local girl?

Brief Summary/Key Points	Exact Quote	Additional Data

APPENDIX G. SAMPLE PAGES OF THE FOCUS GROUP THEMES

GIRL POWER PROJECT
Focus Group Themes

Q1. What does being "local" mean to girls in Hawaii? What does it mean to be a local versus non-local girl?

Theme **(IRR)**	*Definition*	*Units (Frequency Count)*
1. Hawaiian **(2/2=1)**	Relating to Hawaiian culture; when participants specifically mention Hawaiian ethnicity or culture. Discriminative Rule(s): 1. Not relating to where one was "born" or "raised" (which would be categorized in Place of Origin code) 2. Not pertaining to generally "local" things (which would be categorized in one of the Local codes) Exemplar: "Knowing Hawaiian culture."	1. brought up Hawaiian 2. knowing Hawaiian culture
2. Place of Origin **(9/9 = 1)**	Relating to where one was born and/or raised Exemplar: Born and raised in Hawaii.	1."I'm not Hawaiian" *[but was raised here, & therefore am local]* 2. born and raised in Hawaii (6) 3. "someone who grew up here" (3) 4. "childhood is here, more like where you grew up" (2) 5. "Ask where they live" 6. "where they come from" 7. "being born here and moved away are still local" 8. not local is not born and raised here, someone who moved here 9. not local is not from here
3. Local Knowledge **(6/6 = 1)**	Knowledge of and involvement in local culture & traditions/customs. Discriminative Rule(s): 1. Excluding any units that fit better into Local Food,	1. knowing your *[own/local]* culture (3) 2. respecting your *[own/local]* culture (3) 3. "Supporting the *[local]* culture" 4. "know where you should and shouldn't be at a certain time, what." 5. Good vs. bad areas to avoid, knowledge of

	Local Language, Local Attitude, Local Dress, Community & Connection, or Malama Aina) Exemplar: *[Practicing] t*raditions, e.g., hug and kiss; non-locals wouldn't understand these traditions.	the lay of the land 6. *[Practicing]* traditions, e.g., hug and kiss, non-locals wouldn't understand these traditions
4. Local Food **(4/4 = 1)**	Relating to traditional or common local cuisine. Exemplar: People from the mainland have a different way of eating, e.g., "we eat rice in, like, everything."	1. eat the *[local]* food (2) 2. "had to explain to a friend why we like spam so much" (2) 3. People from the mainland have a different way of eating, e.g., "we eat rice in, like, everything," 4. nonlocals/mainlanders think we eat too much rice
5. Local Language **(6/6 =1)**	Relating to local vernacular and body language (versus non-local vernacular and body language). Exemplar: "We *[referring to locals]* call Mr/Mrs, aunty/uncle."	1. pidgin 2. the way they speak, "moment a person speaks, you instantly know if they're local or not" (2) 3. *[locals]* use more body language, use hands when they talk 4. military terminology *[not local]*: address parents as sir/ma'am vs. dad/mom "Out of respect," 5. "we *[referring to locals]* call mr/mrs, aunty/uncle" (2) 6. "people from the mainland tend to speak more proper"
6. Local Attitude **(4/4 = 1)**	Relating to stereotypical temperament of local people (versus non-local temperament). Exemplar: "Culture is very chill"	1. laid back 2. "Culture is very chill" (3) 3. Teachers are laid back "not as strict compared to the mainland" 4. "We're more friendly here"
7. Local Dress **(4/4 = 1)**	Relating to how locals dress. Exemplar: Locals wear normal casual, not going out clothes.	1. you can tell by the way they dress (2) 2. locals dress loosely 3. "the colors are different too," locals wear more bold or black *[that is what the subject and her friends are wearing]* 4. locals wear normal casual, not going out clothes
8. Community and Connection **(3/3 = 1)**	Relating to having connection with the local community (e.g., friends,	1. friends are here 2. not local is don't know anyone here 3. know people in the community, the people

	face recognition) <u>Discriminative Rule(s):</u> 1. Not relating to place of birth or where one is raised (which would be categorized in Place of Origin code). <u>Exemplar:</u> Know people in the community, the people around you, "well, their face could be familiar."	around you, "well, their face could be familiar,"
9. Malama Aina **(2/2 = 1)**	Relating to characteristic and cultural value of caring for the land. <u>Exemplar:</u> "Local people care more about cleaning up and stuff," e.g. families having picnics clean up after themselves	1. "local people care more about cleaning up and stuff," e.g. families having picnics clean up after themselves 2. tourists leave trash everywhere

From Debrief:

1. being Hawaiian was an issue, so the ethnicity *[there are subcategories of Hawaiian (ethnicity) + local OR not Hawaiian but still local]* - there is a local culture that is not necessarily Native Hawaiian culture but related*;* it kinda flipped back and forth between a local culture *[and Hawaiian culture]*, they mentioned being Filipino, and then that culture kind of as its own division and knowing and appreciating that one and then as well as an over all local culture

Q2. What words do girls in Hawaii use for what is cool? Not cool?

Theme **(IRR)**	*Definition*	*Units (Frequency Count)*
1. Cool **(8/8 = 1)**	Relating to words/phrases used for "cool." <u>Exemplar:</u> "Awesome."	1. "Cool" (4) 2. "Yes!" 3. "Awesome" (4) 4. "Ho cuz, I like see dat" if it's something that you like, you want to see it 5. wow 6. swag (2) 7. on point (2) 8. cute, for outfits (2)
2. Not Cool **(9/9 = 1)**	Relating to words/phrases used for "not cool." <u>Exemplar:</u> "Lame."	1. Negative 2. Dirts/dirty means rude (3) 3. Irrahz for irritating (3) 4. nailz 5. lame (4) 6. ewww (2)

APPENDIX H. THEATER TEST QUESTIONS

GIRL POWER PROJECT
Theater Test Questions

Pre-Theater Test Instructions:
Conduct icebreaker activity prior to theater test (while participants are eating provided snacks). Staff involved in demonstrations should be seated in front of the audience, at a separate table. Before initiating theater test: (a) describe the purpose of the theater test, (b) answer any questions about the study, (c) verbally review assent, and (c) present brief group guidelines.

After Demonstration of Media Messages, Songs Activity:
Please answer the following questions based on the activity that you just saw demonstrated:

1. Will girls your age enjoy this activity? [iClicker Yes or No]
    Discussion Prompts:
    (a) Why or why not?
    (b) What would make this activity better, more interesting, more engaging?

2. Do you think this activity shows the negative images of women portrayed in popular music? [iClicker Yes or No]
    Discussion Prompts:
    (a) Why or why not?

3. Will girls your age be able to relate to the song excerpts used in this activity? [iClicker Yes, No, or Some, But Not All]
    Discussion Prompts:
    (a) Why or why not?
    (b) Which ones worked and which ones didn't?
    (c) Do you have any suggestions for other songs we could use instead?

4. Do you have any other feedback about the activity you just saw demonstrated?

After Demonstration of Media Messages, Images Activity:
Please answer the following questions based on the activity that you just saw demonstrated:

1. Will girls your age think the images you just saw show negative messages about women portrayed in popular media? [iClicker Yes, No, or Some, But Not All]
    Discussion Prompts:
    (a) Why or why not?
    (b) Which ones worked and which ones didn't?
    (c) Do you have any suggestions for other images we could use instead?

2. Do you have any other feedback about the activity you just saw demonstrated?

After Demonstration of Characteristics of Women:
Please answer the following questions based on the activity that you just saw demonstrated:

1. Do you think this activity will empower girls to feel pride in being a woman? [iClicker Yes or No]
    Discussion Prompts:
    (a) Why or why not?

2. Will girls your age be able to relate to the words of both of the lyrics used in this activity? [iClicker Yes or No]
    Discussion Prompts:
    (a) Why or why not?
    (b) Which one worked and which one didn't?
    (c) Do you have any suggestions for other songs or poems we could use instead? (query Maya Angelo?)

3. Do you have any other feedback about the activity you just saw demonstrated?

After Demonstration of ROAR:
Please answer the following questions based on the activity that you just saw demonstrated:

1. Will girls your age find this activity to be helpful? [iClicker Yes or No]
    Discussion Prompts:
    (a) Why or why not?
    (b) What would make this activity better, more helpful?

2. Will girls your age be able to relate to the acronym ROAR used in this activity? [iClicker Yes or No]
    Discussion Prompts:
    (a) Why or why not?
    (b) Do you have any suggestions for other acronyms we could use instead?

3. Do you think this activity will teach girls your age how to correctly use a condom? [iClicker Yes or No]
    Discussion Prompts:
    (a) Why or why not?

4. What factors (social/cultural/familial/religious) might influence girls your age in Hawai‘i in whether or not they use condoms?

5. Do you have any other feedback about the activity you just saw demonstrated?

After Demonstration of Alcohol & Sex – Not a Good Mix:
Please answer the following questions based on the activity that you just saw demonstrated:

1. Will girls your age enjoy this activity? [iClicker Yes or No]
    Discussion Prompts:
    (a) Why or why not?
    (b) What would make this activity better, more interesting, more engaging?

2. Do you think this activity will show girls your age the dangers of using alcohol before sex? [iClicker Yes or No]
    Discussion Prompts:
    (a) Why or why not?

3. Do you have any other feedback about the activity you just saw demonstrated?

After Demonstration of, "What Doesn't Kill You (Stronger)":
Please answer the following questions based on the activity that you just saw demonstrated:

1. Will girls your age enjoy this activity? [iClicker Yes or No]
    Discussion Prompts:
    (a) Why or why not?
    (b) What would make this activity better, more interesting, more engaging?

2. Will girls your age be able to relate to the GIRL POWER HAWAII CREED used in this activity? [iClicker Yes or No]
    Discussion Prompts:
    (a) Why or why not?
    (b) Do you have any suggestions for how to make the creed better?

3. Will girls your age be able to relate to song lyrics used in this activity? [iClicker Yes or No]
    Discussion Prompts:
    (a) Why or why not?
    (b) Do you have any suggestions for other songs or poems we could use instead? (query Maya Angelou?)

4. Do you think this activity will make girls your age feel empowered to overcome obstacles and make good life decisions? [iClicker Yes or No]
    Discussion Prompts:
    (a) Why or why not?

5. Do you have any other feedback about the activity you just saw demonstrated?

Intervention Name & Logo:

All the activities we just showed you are part of a program that we are developing to empower girls your age in Hawai‘i. This program is to help girls avoid risky behaviors and situations that could result in getting a sexually transmitted infection, like chlamydia or HIV. This program is also designed to build self-esteem and confidence, and foster pride in being a young woman in Hawaii.

1. Do you think GIRL POWER HAWAI‘I is a good name for this program? [iClicker Yes, No, or Maybe]

Discussion Prompts:
(a) Why or why not? Or why “maybe’?
(b) Do you have any other suggestions for what we could call this program? (Probe using Pidgin or Native Hawaiian word(s)? Empower? Empowering? Empowerment?)

2. Do you think this is a good logo for the program? [iClicker Yes, No, or Maybe]

Discussion Prompts:
(a) Do you have any other suggestions for a logo?

Final Feedback:

1. Does anyone have any feedback, ideas, suggestions, even criticisms, about anything you saw demonstrated today?

2. Does anyone have any questions about the program or about today’s theater test, or anything else related to this project?

Post-Theater Test Instructions:

After completing the theater test: (a) thank participants for their important and useful contributions, (b) distribute gift certificates to each teen girl participant and have them sign-off on incentives log.

APPENDIX I. SAMPLE PAGES OF THE THEATER TEST THEMES

Girl Power Project
Theater Test Themes

*CDFH comments are coded in BLUE text.

After Demonstration of Media Messages, Songs Activity:

1. Will girls your age enjoy this activity?
A=Yes: 100%
B=No:

Theme **(IRR)**	*Definition*	*Units*
1. Enjoyable **(2/2+2=.5)**	What participants enjoyed about the activity. Exemplar: Some people would like it cuz "that's how society is portrayed."	1. "I liked it." 2. some people would like it cuz "that's how society is portrayed," reality 3. *[enjoyed]* the game, guessing next line 4. it was good (3)
2. Effective **(3/3+2=.6)**	What participants found effective about the activity. Exemplar: "Having the lyrics displayed liked that is really effective."	1. "having the lyrics displayed liked that is really effective" - that is where the enjoyment stops because like oh God that's what they said 2. glad that she is aware of the messages in the songs 3. to describe activity), "felt it was very effective"

[Teen girl observers very engaged and attentive during activity demonstration; Giggles at "Wiggle"]

2. Do you think this activity shows the negative images of women portrayed in popular music?
A=Yes: 100%
B=No:

Theme **(IRR**	*Definition*	*Units*
1. Positive Feedback **(2/2=1)**	What participants liked about the activity. Exemplar: "A lot of the students are visual learners, I noticed."	1. "a lot of the students are visual learners, I noticed" (3) 2. it's good to have the lyrics for participants to be able to read them

3. Will girls your age be able to relate to the song excerpts used in this activity?

(Leilehua)
A=Yes: 50%
B=No:
C=Some, Not All: 50%

(CDFH)
A=Yes: 67%
B=No:
C=Some, Not All: 33%

Theme **(IRR)**	*Definition*	*Units*

1. Artists/Songs **(7/7=1)**	Feedback specific to selected artists or songs. Exemplar: "Everyone knows that song Wiggle Wiggle."	1. "Everyone knows that song Wiggle Wiggle." 2. "I don't really know Partition" (2), but know Beyonce (3) 3. *[Everyone knows]* Common Kings 4. Beyonce, Chris Brown, Jason Derulo *[are relevant]* (3) 5. Chris Brown - Good (3) 6. not that I can think of *[no other songs they can think of]* (3) 7. other songs *[are good]* (6)
2. Effective **(2/2=1)**	What participants found effective about the activity. Exemplar: "I didn't even know that was the lyrics."	1. "I thought this activity was really effective," don't really think about the message in songs, activity is eye-opening (4) 2. just listens to the beat "not even the lyrics," "I didn't even know that was the lyrics" (6)
3. Criticisms **(1/1=1)**	Participant criticisms about the activity. Exemplar: Only a lot of swearing is really uncomfortable especially with your parents.	1. only a lot of swearing is really uncomfortable especially with your parents

4. Do you have any other feedback about the activity you just saw demonstrated?
No Discussion.

After Demonstration of Media Messages, Images Activity:

1. Will girls your age think the images you just saw show negative messages about women portrayed in popular media?

(Leilehua) (CDFH)
A=Yes: 62% A=Yes: 100%
B=No: B=No:

Theme **(IRR)**	*Definition*	*Units*
1. Effectiveness **(2/2=1)**	What participants found effective about the activity. Exemplar: Exposes negative messages in media.	1. Companies use subjugation of women to sell products (3) 2. Exposes negative messages in media (5)
2. Cameron Diaz **(4/4=1)**	Feedback specific to Cameron Diaz image. Exemplar: They know who Cameron	1. *[Cameron Diaz]* still looks photoshopped in the before photo 2. our standard of beauty is Cameron Diaz, skinny, blonde, Caucasian; a better pic might

	Diaz is? Yes, she is relevant to them.	be of Lorde (a picture of her at Coachella brought up as a possible photoshop example) 3. they didn't have to change Cameron Diaz 4. They know who Cameron Diaz is? Yes, she is relevant to them (5)
3. D&G **(2/2=1)**	Feedback specific to D&G image. Exemplar: *[D&G]* ad is relevant to content but the brand is not applicable to their age group.	1. *[D&G]* ad is relevant to content but the brand is not applicable to their age group (6) 2. Dolce doesn't have anything to do with the ad, they just sell bags and wallets, ad just trying to get your attention (3)
4. Bebe **(3/3=1)**	Feedback specific to Bebe image. Exemplar: Brand is relevant.	1. *[Bebe]* brand is relevant (3) 2. can't even see her clothes (3) 3. I don't know why she is in a cage *[in Bebe ad]*

C=Some, Not All: 38% C=Some, Not All:

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