Brief Title: An Evaluation of Relationship and Coparenting Education Curricula for Adolescent Parents

Official Title: Strengthening Relationships/Strengthening Families (SR/SF)

Unique Protocol ID: 90FM0067-01-01

Document Study Protocol and Statistical Analysis Plan

Date 6/1/16

SR/SF LOCAL EVALUATION PLAN

Research Questions & Hypotheses.

1. Do pregnant and parenting adolescents who participate in the full-treatment group (Co-parenting AND Healthy Relationships) show larger improvements in their co-parenting and relationship knowledge and behaviors compared to those adolescents who participate in the partial-treatment group (Co-parenting OR Healthy Relationships)?

    H1: Youth participating in the full-treatment group will show larger improvements in their co-parenting and relationship knowledge and behaviors post treatment compared to youth in the partial-treatment group.

2. Do pregnant and parenting adolescents who participate in the full-treatment group show sustained improvements in co-parenting and relationship behaviors six-months post-treatment?

    H1: Youth participating in the full-treatment group will show more sustained improvements in co-parenting and relationship behaviors six months post-treatment than youth in the partial-treatment group.

3. Do couples who participate show significantly better co-parenting and relationship outcomes than couples where only one adolescent participated? (cost-effectiveness analysis)

    H1: Couples in the program will show better co-parenting and relationship outcomes than couples where only one adolescent participated.

4. Do pregnant and parenting adolescents who participate in the full-treatment group show immediate (post-treatment) and sustained (3- & 6-month follow-up) improvements in

well-being (i.e., reduced depressive symptoms, role overload, increased parental self-efficacy)?

> H1: Youth participating in the full-treatment group will show statistically significant immediate and sustained improvements in well-being.

Background

The development of healthy romantic relationship skills and supportive co-parenting skills are important to family functioning and parental well-being (Fagan & Palkovitz, 2011). Family systems perspective (Cox & Paley, 1997) and co-parental frameworks (Feinberg, 2003) suggest these two relationships are related but distinct; however, curricula targeting family functioning do not target both relationship dynamics. A possible reason for this oversight may be that co-parenting curricula have been created for adult couples (e.g., Bringing Baby Home, Family Expectations, Family Foundations, Two Families Now; National Registry of Evidence-Based Programs and Practices [NREPP]). Similarly, healthy relationship programs have been targeted towards adolescents and emerging adults, or premarital couple where co-parenting was not given substantial attention.

Only two co-parenting curricula exist that target adolescent parents, the Young Parenthood Program (YPP; Floursheim, McArthur, Hudak, Heavin, & Burrow-Sanchez, 2011) and the Family Foundations program (FFP; Lewin, Hodgkinson, Waters, Prempeh, Beers, & Feinberg, 2015). YPP states that it targets co-parenting skills, but the material actually targets healthy romantic relationship skills and the prevention of intimate partner violence (IPV), acknowledging youth developmental need to learn healthy relationship skills, but ignoring the saliency of co-parenting in this unique context. FFP does target the co-parenting relationship by

focusing on identifying childrearing goals and duties and supporting the co-parental relationship; however, this program does not target healthy relationship dynamics or the prevention of IPV.

Unfortunately, adolescent parents, who are experiencing an off-time transition into early parenthood, face the challenge of learning to positively engage in romantic and co-parental relationships at the same time. To better serve this population, the *SR/SF* program is targeting healthy relationship *and* supportive co-parenting skills. Because a program targeting both skills has not been implemented in any population, our evaluation will move the field forward by showcasing the efficacy of targeting two family relationship dynamics concurrently. Further, by comparing a full-treatment (co-parenting and healthy relationships) to partial-treatment groups (co-parenting only or healthy relationship only), we will be able to identify which relationship is more salient and impactful in increasing adolescent (e.g., depression, self-esteem, role overload) and parental (e.g., parental stress, parental self-efficacy) adjustment during this off-time transition into parenthood. Further, cost-effectiveness analysis will also provide information of the program impacts if services are provided to one or both members of the co-parental system. Taken together, the program model and supporting evaluation will help build our knowledge of the most salient needs of adolescent parents, and program service delivery best practices.

Relation to Program Logic Model

Research questions #1 and #2 address the immediate and intermediate outcomes focused on changes in knowledge and behaviors. Research question #4 addresses the intermediate outcomes focused on adolescents' well-being. Research questions #1 and #3 are also focused on identifying program implementation cost-effective practices.

Research Design

Adaptation. Formative evaluation techniques will be used to adapt the co-parenting curriculum to a Hispanic population within the school setting. Focus groups with *adolescent parents*, their grandparents, and PEP coordinators will be used to inform and validate the adaptation of the *Family Foundations* curriculum in Fall/Spring 2015. In Spring 2016, the newly modified modules and evaluation tools will be piloted in the schools through a focus group format to ensure the lesson content is developmentally and culturally appropriate for our population. Students in all participating schools will be invited to join the SR/SF team at a convenient time for the PEP staff, to learn about the SR/SF program, provide information about their needs as teen parents, and to participate in focus groups to discuss SR/SF classes or measures. These focus groups sessions will allow SR/SF to learn about the school system, and finalize materials in preparation for the Fall 2016 launch of our full program (Table 1).

Impact evaluation. An intent-to-treat randomized design coupled with a time-series design will be used to assess differential adjustment between the treatment and control groups, and to assess differential changes in adjustment between groups across four time-points. *SR/SF* participants will be recruited to participate in this evaluation (See Sample Section below). In addition, non-*SR/SF* participant adolescent fathers will be recruited to participate in the evaluation to serve as a non-random control group. The time-series design will be administered pre-treatment (early Fall semester: August), mid-treatment (end of Fall semester: December; participants only), post-treatment (end of Spring semester: May), and three-months post-treatment (August). Each school year, data will be collected from a new cohort of participating pregnant/parenting adolescents ($n_{participant/cohort}$ = 160-200) and non-intervention fathers ($n_{non-participant/cohort}$ = 40-50) for a total of four cohorts ($n_{participant}$ = 640-800; $n_{non-participant}$ = 160-200).

Table 1. Spring 2016 Evaluation and Training Schedule

Week	Overall Goals	Group 1	Group 2	Group 3	Group 4
1. 1/18-22	Relationship Building	**Relationship Building** Recruit for sessions			
2. 1/25-29	Scale Validation Weeks	**Measure Development:** Worry Scale		**Measure Development:** Worry Scale	
3. 2/1-5			**Measure Development:** Coparenting Scale		**Measure Development:** Coparenting Scale
4. 2/8-12	Lesson Testing and Fine Tuning/ Program Facilitator Training (Finalize the overall pre- and post-test survey)	**Mock Session:** Training and lesson validation		**Mock Session:** Training and lesson validation	
5. 2/15-19			**Mock Session:** Training and lesson validation		**Mock Session:** Training and lesson validation
6. 2/22-26		**Mock Session:** Training and lesson validation		**Mock Session:** Training and lesson validation	
7. 2/29-3/4					
8. 3/7-11			**Recruitment:** A focus on teen fathers		**Recruitment:** A focus on teen fathers
9. 3/14-18		SPRING BREAK	SPRING BREAK	SPRING BREAK	SPRING BREAK
10. 3/21-25		**Mock Session:** Training and lesson validation		**Mock Session:** Training and lesson validation	
11. 3/28-1					
12. 4/4-8			**Mock Session:** Training and lesson validation		**Mock Session:** Training and lesson validation
13. 4/11-15		**Recruitment:** A focus on teen fathers		**Recruitment:** A focus on teen fathers	
14. 4/18-22			**Mock Session:** Training and lesson validation		**Mock Session:** Training and lesson validation
15. 4/25-5/29	**Rapid Senior Sessions (Program implementation) begins)**				

Note. Empty spaces indicate a week were Program Facilitators will hold free discussion sessions and/or support PEP in required duties for the purposes of relationship building and learning a new school system.

Methods to Develop Research Groups

A block randomization design will be used to randomly assign the eight schools into one of four groups. All groups will receive the co-parenting (COPAR) and healthy romantic relationship (HRR) curricula, along with a third control (CONT) curriculum across the five school years; however, the order in which a school receives the curricula will vary by group membership and by year. Table 2 shows how every group will alternate from serving as the full-treatment or partial-treatment group depending on the school year. School demographic data (e.g., # of students enrolled, students' ethnic breakdown, % of students receiving free and reduced lunch, % of students identified as English language learners) will be used to assess similarities between groups. Additionally, by alternating which group receives the full-treatment, and partial-treatment services across years, we are able to account for potential school demographic differences that may confound the treatment effects.

Table 2. Block Randomization Curriculum Schedule and Data Collection Schedule per Cohort.

School Year &Semester	Randomized Treatment Groups (two schools per group)					Research Cohort			
	G1	G2	G3	G4	Pilot	1	2	3	4
15/16 FALL	Planning and Measurement Validation								
15/16 SPR	COPAR	CONT	CONT	HRR	Pilot – Pre & Post				
15/16 SUM									
16/17 FALL	COPAR	CONT	CONT	HRR		Pre			
16/17 SPR	HRR	HRR	COPAR	COPAR		Mid			
16/17 SUM						Post			
17/18 FALL	CONT	COPAR	HRR	CONT		3-M	Pre		
17/18 SPR	COPAR	CONT	CONT	HRR			Mid		
17/18 SUM							Post		
18/19 FALL	HRR	HRR	COPAR	COPAR			3-M	Pre	
18/19 SPR	CONT	COPAR	HRR	CONT				Mid	
18/19 SUM								Post	
19/20 FALL	COPAR	CONT	CONT	HRR				3-M	Pre
19/20 SPR	HRR	HRR	COPAR	COPAR					Mid
19/20 SUM									Post
2020 FALL	Final Report Due								

Note. Dark blocks indicate the full treatment group, Light grey blocks indicate the partial treatment (Healthy romantic relationships only) groups, and white boxes indicate the partial treatment (Coparenting only) group. Three-month activities are for student retention purposes.

After a school is assigned into one of the four groups, the program facilitators will be assigned to work with one group (two schools) for the duration of the grant. There is minimal risk for treatment crossover effects within this design given that block randomization will be conducted at the school-level, indicating that groups will not have many opportunities to interact with one another. We will further minimize the opportunities for treatment cross-over effects by ensuring program facilitators do not transfer to other treatment groups, that is, a facilitator will be assigned to one treatment group and will remain in that group for the remainder of the grant cycle. Interns will only receive training for the appropriate curriculum for their group each semester, and most Interns will only serve for one semester; thus further ensuring that information from a curriculum does not extend beyond a groups' treatment condition. Also, we will control for potential threats to our evaluation design by using an "attentional control format" where our program staff will host a control curriculum, focused on education, career, and financial literacy topics, during the semesters where a school is serving as our control group. By hosting an attentional control group, we are able to host sessions during our normally assigned time and prevent another program from using that same time to teach our adolescents about potentially overlapping topics. Finally, participants will be assigned a participant ID that our Project Coordinators will use to link participants' data across data collection time-points. If a participant were to transfer from one school to another, our Project Coordinators will make a note in the participants' record and special cases will be removed or statistically controlled when analyzing for program effects.

Lead Staff

The Project Directors will provide oversight of the entire intervention program, as well as the development and implementation of all policies, procedures, and processes. For the purposes

of the impact evaluation, Dr. Perez-Brena will serve as primary contact with the evaluation team

and will have supervisory responsibilities over the local evaluation contract to ensure evaluation

tasks and products (data collection tools, datasets, and analysis) are completed in coordination

with all other *SR/SF* program activities. The local evaluation will be conducted by Agile

Analytics, LLC. The team headed by Lead Evaluator Andrea Hutson, Ph.D., and supported by

Senior Evaluator Allison Caplovitz, Ph.D., will oversee the data collection, data quality

management, and data analyses for impact evaluation results. Graduate Assistants will support

evaluation activities (e.g., participant recruitment, survey administration, data entry,

transcription) with training and oversight by the local evaluation team and Dr. Perez-Brena.

Sample

All students participating in our program beginning Fall 2016 will be invited to

participate in this evaluation with the primary unit of analysis being the adolescent parent. We

will recruit 160-200 students/year for a total of 640-800 participants across four years. Our

sample demographics will be similar to the demographics of students served in previous *SR/SF*

service years (Table 3), with an additional 40 adolescent fathers/year recruited (by the evaluation

team) to serve as the non-equivalent control group for

Research Question #3. A breakdown of the sample size by

treatment group is described in Table 4. Regardless of

group membership, 440-550 adolescents will receive the

Table 3. Participant Demographics	
Category	M*(SD)/%*
Age	16.4*(1.2)*
Female	75%
Pregnant	32%
Parenting	78%
Hispanic	91%
Annual retention	92%

co-parenting curriculum, and 440-550 adolescents will receive the healthy romantic relationship

curriculum. Given our previous success in sample retention, we expect less than 20% attrition.

However, our intent-to-treat design and missing data handling techniques (see *Analysis* section)

will allow us to use the full sample in our analyses.

Table 4. Group and Sample Size Estimates if we Recruit 40 Students per Group (Minimum Goal) or 50 Students per Group (Maximum Goal) Across Four Cohorts

Research Groups:	Group N	Sample N (40/group/year)	Sample N (50/group/year)
Impact Evaluation Cohorts			
Full Treatment (Co-parenting & HRR)	6	240	300
Partial Treatment			
HRR only	5	200	250
Co-parenting Only	5	200	250
Cohort Sub Total		**640**	**800**
Non-participating adolescent fathers	4	160	200
Total		**800**	**1000**

     Power. Power to detect predicted effects will vary across outcomes and analytic models. All power analyses use $\alpha = .05$ and $1-\beta$ (power) $= .80$. Multiple Imputation or Full Information Maximum Likelihood will be applied to missing data; thus power analyses were based on the minimum projected complete data (640 participants + 160 non-participants = 800). Our power estimates are based on typical approximations from the project outcomes (using a smaller ICC of .10 and a larger ICC of .40 to represent possible school-clustered outcomes). For program effects with random effects ANCOVA or repeated measures random effects model, we used G-Power software (Raudenbush, 1997; Spybrook, Raudenbush, Liu, & Congdon, 2006) to estimate power. Given students are nested within groups/schools, we estimate that we will have power to detect small-medium effect sizes (Cohen's $d \geq .32$ for ICC's of .10-.40) with a sample of 627 or more. We should also have power to detect $d \geq .3$ for group differences on rates of change over time (Múthen, & Curran, 1997). For mediation models, we are interested in whether we have power to detect a mediation effect. We referred to the works by (a) Fritz and MacKinnon (2007), which provides a table for sample sizes needed to detect various levels of mediation effects at power of .80; and (b) Krull and MacKinnon (1998; 2001), which discusses power issues of testing mediation effects with clustered data. We would need at least 472 cases to identify a mediation effect where the effect size of an analytic path between the predictor and mediator

variable (path a) and the mediator variable and outcome variable (path b) were both small. These power estimations apply to all analytical models discussed in the Data Analysis section below.

Methods to promote sufficient evaluation participation. Program participants will be informed of the program evaluation prior to enrolling in *SR/SF*. If students agree to participate in the evaluation, then pre-test data will be collected at the initial intake. Students will receive monetary incentives to complete the survey data at the mid-test ($25), post-test ($25), three-month ($25) and 6-month follow-ups ($25). In addition, non-participant adolescent fathers will be identified through participating adolescent mothers' intake interviews. We will ask adolescents mothers for permission to contact the adolescent fathers along with their contact information. Non-intervention fathers will receive an incentive for their participation in a pre-test ($25) and post-test ($25), and 6-month follow-up ($25). Dr. Perez-Brena has had success overseeing a similar process to identify and interview adolescent/emerging adult romantic partners in a longitudinal study of Mexican-Origin families (R01HD39666; PI: Updegraff).

Data Collection

Constructs and measures. The measures used for this evaluation are categorized into ten larger categories. Table 5 details the data collection schedule for each category. The majority of measures have been used and validated with adolescent mothers in NIH (R01HD061376; PI: Umaña-Taylor) and ACF-HHS funded projects (90FE0128-05-00, PI: Toews; 90FM0007-01-01, PI: Toews; APRPA006011, PI: Umaña-Taylor). The attitudes and knowledge, family background, and household resources and arrangement measures have been endorsed by the ACF-HHS HMRE evaluation team as they will be collected using the nFORM intake, pre-test, and post-test assessment tools. Measures which will require validation within a Hispanic adolescent sample are noted in text. All measures will be available in English and Spanish.

12

Table 5. Outcomes Categories & Measurement Schedule

Construct	Pre		Mid	Post		Follow-up	
Attitudes & Knowledge	A	N	A	A	N	A	N
Romantic Relationship	A	N	A	A	N	A	N
Co-Parenting	A	N	A	A	N	A	N
Parenting	A	N	A	A	N	A	N
Psychosocial Functioning	A	N	A	A	N	A	N
Cultural Resources	A	N					
Family Background	A	N					
Household Resources & Arrangements	A	N	A	A		A	N

Note. A = Adolescent participant; P = Non-participating parent. Follow ups are completed at three and six months post-service for participating students and at six-month for non-intervention fathers.

Attitudes and knowledge. The HMRE nFORM pre- and post-test surveys will be used to assess changes in attitudes towards marriage (Section A1), healthy relationships (Section A3), romantic relationship conflict resolution (Section A4), and intimate partner violence (Section A5). An additional measure will be used to assess youths' expectation (3-items: co-parenting with [father's name] is the right thing to do) and commitment (2-items; I plan to continue to share childrearing decisions with [father's name]) to co-parent using the *Expectations to Co-parent scale* (Markman, Ganong, & Coleman, 2007).

Romantic relationships. Abusive behaviors between dating adolescents will be assessed using the *Conflict in Adolescent Dating Relationships Inventory* (CADRI; Wolfe et al., 2001). Physical, sexual, emotional, verbal, and threatening behaviors are assessed in this 31-item measure. The CADRI has demonstrated acceptable test-retest reliability, good internal consistency, and agreement between dating partners (Wolfe, et al., 2001). The *National Survey on Teen Relationships & Intimate Dating Violence (STRiV*; NORC, 2013) is an 8-item yes/no inventory of the occurrence and reaction to physical abuse between dating adolescents.

Co-parenting. Two subscales from the *Co-parental Communication Scale* (Ahrons, 1981) will be used to assess frequency of communication (7-item) and degree of conflict (7-item) that is present when discussing parenting issues between co-parents. This scale has been modified

and validated with Mexican adolescent mothers (Madden-Derdich, 2002; Herzog, Umaña-Taylor, Madden-Derdich, & Leonard, 2007) with good reliability in both subscales ($\alpha > .78$). A shortened version of the *Co-parenting Relationship Scale* (using 18 of the original 35 items) will be used to assess four domains of co-parenting behaviors, including childrearing agreement, support/undermining, satisfaction with division of labor, and family management (Feinberg, 2003; Feinberg, Brown, & Kan, 2012). The CRS showed Cronbach's alphas ranging from .91 to .94, indicating good reliability. The CRS will be validated with adolescent parents in the Spring 2016 as part of the SR/SF program planning activities.

Parenting. Using the *Parental Involvement Scale*, parents will be asked to rate how frequently (4-point) they, the other biological parent, and their mothers engage in three types of activities with their infants: literacy (reading, telling stories, singing), caregiving (e.g., changing diapers, feeding, preparing meals, putting child to sleep), and warmth (e.g., tickling, soothing, holding; Cabrera, Shannon, & La Taillade, 2009*)*. Having data on the target adolescent, the other parent, and mother, will allow us to asses parental and coparental involvement among families of adolescent parents. Previous work with Hispanic parents has shown good reliability ($\alpha = .87$). Adolescents' self-efficacy about becoming (pre-birth) or being (post-birth) parents will be assessed using the 25-item *Prenatal Parental Expectations Survey* (Reece, 1992; Reece & Harkless, 1998). The internal reliability of the measure was tested by the developer of the instrument (Reece, 1992) with Cronbach's alphas of .91 antepartum and .86 postpartum, and for the revised version used in the current study, reliabilities of .92 antepartum and .97 postpartum were reported (Reece & Harkless, 1998). The *Parental Stress Scale* (Berry & Jones, 1995) is an 18-item scale which assesses the rewarding and demanding stressors of parenthood. The measure has demonstrated both reliability and validity across gender and family type.

Psychosocial functioning. Global self-esteem will be assessed using the 10-item *Rosenberg Self-Esteem Scale* (Rosenberg, 1979), which has been validated within Hispanic adolescent samples with good reliability ($\alpha >$.71; Umaña-Taylor & Updegraff, 2007; Umaña-Taylor et al., 2004). *The Center for Epidemiological Studies Depression Scale (CES-D)* will be utilized to assess depressive symptoms (cognitive, affective, and behavioral depressive features) in 20 items. This 20-item measure has been tested for reliability and validity and has been used with Mexican-American samples in nationally representative studies (Devins & Orme, 1985; Himmelfarb & Murrell, 1983; Moscicki, Locke, Rae, & Boyd, 1989; Roosa, Reinholtz, & Angelini, 1999; Roosa, Reyes, Reinholtz, & Angelini, 1999). Robert and Chen (1995) obtained a .93 reliability score using the CES-D among a Mexican-origin adolescent sample. The *Penn State Worry Questionnaire* (PSWQ) is a 7-item inventory designed to capture the generality, excessiveness, and uncontrollability of pathological worry. It has been shown to have good internal consistency with samples consisting of older adults with generalized anxiety disorder (Beck, Stanley, & Zebb, 1995), community subjects (Brown et al., 1992), and undergraduates (Meyer et al., 1990). It has also demonstrated good test–retest reliability over 8–10 weeks. The worry scale will be validated for adolescent parent samples in the Spring 2016.

Cultural Resources. *Brief-Acculturation Rating Scale for Mexican Americans II*. Both Anglo and Mexican cultural orientation will be measured utilizing the brief-ARSMA II (Cuéllar, Arnold, & Maldonado, 1995). This 12-item scale, revised from the original verison (Cuéllar, Harris, & Jasso, 1980), yields a high Pearson correlation coefficient (r = .89) with the original scale (Cuéllar et al., 1995). Strong construct validity of ARSMA-II was demonstrated using a sample of 379 individuals representing five generations (Cuéllar et al., 1995). ARSMA-II is multifactorial and capable of generating multidimensional acculturative types (e.g., integrated,

separated, assimilated, and marginalized). *Mexican American Cultural Values Scale – Familism.* The familism measure is a subscale of the Mexican American Cultural Values Scale developed by Knight, Gonzales, Saenz, Bonds, Germán, Deardorff, Roosa, and Updegraff (2009). The familism scale is composed of 16-items measuring three conceptual domains: (1) support and emotional closeness; (2) obligations; and (3) family as referent. Five of the items were adapted from Sabogal et al. (1987) and the remaining items were developed through focus groups with Mexican American families. Alphas were above .88 for adolescents (Updegraff, McHale, Whiteman, Thayer, & Delgado, 2005). *Gender Role Attitude* towards parenting roles and child rearing will be assessed utilizing the 9-item *What is a Father* scale (Palkovitz, 1984). This scale was validated with SR/SF adolescent parents in Spring 2016.

Family background. This section was designed to gather demographic information about adolescent parents and their families. This includes information about ethnicity; generation status; language fluency; romantic relationship status and questions regarding pregnancy, delivery, and the baby's other biological parent. nFORM will be used to collect this data.

Household information. This section was designed to gather information about adolescent parents' living arrangements and resources. This includes information about household size and household members (age, gender, relationship to participant), household stability, and whether the adolescent receives state and federal resources (e.g., TANF, WIC, subsidized child care, health Insurance, etc.). nFORM will be used to collect this data.

Consent (and assent). Participation in this evaluation study is voluntary. During recruitment, and once again at the initiation of data collection, participants will be informed of their rights as human subjects. Parents of adolescents will be informed of the study at the beginning of the school year through a paper flyer sent home through the adolescent. Parents will

16

be asked to provide passive consent (except in AISD where active consent is required) and youth will be asked to sign an assent form indicating they were explained their rights as human research subjects and agree to participate prior to the beginning of the program. All forms will be available in English and Spanish.

Methods of data collection. Participant intake will be collected using the nFORM data collection tool using the ACASI format. A tablet will be made available to the adolescent at their initial meeting with the Program Facilitator or Intern which will occur prior to the beginning of the curriculum. Pre- and post-test data collected for the federal evaluation will be collected at this initial meeting with the Facilitator/Intern and at a close-out session with the Facilitator/Intern using nFORM. The local evaluation pre-, mid-, and post-session data will be collected in class using an online survey tool on days #1, #14, and #28 of the curriculum schedule. The 3- and 6-month follow-up data and the non-intervention father data will be collected using an online survey format. Focus groups sessions, administered by the local evaluation team, will occur on days #15 and #29 of the curriculum schedule. Focus groups will be audio recorded and transcribed by an evaluation team member and doubled checked by a second evaluation team member. Annual structured interviews with key project staff (e.g., Project Coordinators, Facilitators, and Interns) will be conducted in-person or by phone in the Spring of each program year beginning in Y2.

Ensuring and monitoring high-quality data collection. A training session for the data collection team will be offered at the beginning of each semester. Structured interview techniques, survey question nuances, and data quality techniques will be covered during the training. The local evaluator will work with any team member who requires additional support. Weekly meetings will be held between the Directors, local evaluator, and Project Coordinators

where they will discuss missing data issues and data discrepancies. If data can be recollected, Project Coordinators will provide on-site access to the evaluation team. If data are to be re-coded, the evaluation manager will oversee the process.

   Tracking participants and reducing attrition. We will minimize attrition through strategies that have been successful in our prior work, including developing cordial relationships with families, tracking techniques, providing monetary incentives, facilitating connections with the project via our school liaisons (PEP Directors) and regular communication with students during case management sessions. To account for the fact that students are often identified as pregnant/parenting within the first month of each semester, directly overlapping with our program start date, students will be allowed to enroll as late as Week 5/14 of our regularly scheduled activities (i.e., Introduction/nFORM, SRSF Pre-test, Lesson 1-3) as long as students are able to make up the missed activities before attending Lesson 4 (Week 6). Acknowledging that students may not be able to attend make-up sessions, a student will still be identified as a completer for each curriculum if they attend at least 6/10 lessons. If a student is close to becoming a completer, then we will make every effort to ensure students receives additional class materials, including offering students a make-up session within two weeks of missing a class. That is, once students are enrolled, students will be allowed to miss up to 4 lessons/curriculum without attending a make-up session. This threshold will be used for Year 2, however we intend to assess outcomes from Year 2 to identify core lessons or minimum attendance threshold for Years 3-5. Pre-, Mid-, and Post-test data collection will be administered by graduate research assistants in the school setting during the allotted time of the intervention. If students are absent during the day of data collection, Program Facilitators will contact students through the school, or through a phone call, to schedule and administer a make-up session prior

to the beginning of lesson 1, for Pre-test data, or within one month of the missed data collection date, for Mid-test, Post-test, and follow up data. Given the high mobility of this population, we believe it is important to maintain regular contact with students and to maintain multiple possible contacts for each student. For this reason, at onset of the program - during the intake survey administered through nForm - students will be asked to confirm contact information, and provide three-to-five additional contacts. The evaluation team will use this contact information to schedule three-month, and six-month follow-up activities with participating students. For non-intervention fathers, a small questionnaire (to get contact information updates) will be sent at the same time as participating students are completing their mid-test (December) and 3-month follow up (August) in order to maintain contact with these fathers between data collection waves. All participant alum will be invited to attend the Teen Symposium through postcard invitation that will also be used to verify participants' contact information.

Privacy

Prior to service delivery, all staff will be trained on the proper use of all data collection tools, including intake forms, service documentation forms, adverse event documentation, nFORM forms, attendance sheets, post-service reactions sheets, pre- and post- test surveys. All data collection materials and protocols will be reviewed and approved by the Texas State University IRB. Further, all *SR/SF* staff and evaluation staff will be trained in protection of human subject protocols (See *IRB/Protection of Human Subjects section*). Training will focus on **protecting confidential/sensitive information, participants' rights as human subjects, and how to handle and document adverse events (e.g., disclosure of domestic violence, suicide, child abuse)**. As an additional safeguard to protect program participants, all information will be collected so that it cannot be associated with any individual. Data collection forms will have

numeric IDs and will not include names. These forms will be scanned to produce electronic datasets, which will utilize the numeric ID and not include names, addresses, or other personal identifiers. After data collection is completed, the list matching participants and IDs will be in possession of the Directors, and will be secured in a locked office on a password-protected computer. The data collection forms will be shredded. The electronic datasets will be maintained on password-protected computers, housed in locked research offices, and only project research staff will have access to these computers and datasets. Data specifically requested for the Federal evaluation will include participant ID, but no identifiable information. All reports will provide aggregated data to ensure the participants' identities cannot be discerned from the information provided. Last, all identifiable information will be destroyed five years after the project completion.

IRB/Protection of Human Subjects

All evaluation procedures and materials will be reviewed and approved by the Texas State University Internal Review Board (Federal Wide Assurance: FWA00000191). Our process for protection of human subjects will include training, documentation, and monitoring for potential iatrogenic effects. Informed consent/assent is gathered from all human subjects (see *Consent (and Assent)* above) and privacy/confidentiality will be protected (see *Current Security & Confidentiality Standards* below).

Training. All data collection and implementation staff will receive training regarding adverse events (primarily with regards to domestic violence) during their initial staff training for this project, as well as ongoing supervision around these issues. Staff will be trained in what constitutes adverse events (identifying abuse, communicating with an upset student), how to communicate with their supervisor immediately following an adverse event, and the need to err

on the side of caution (i.e. over-reporting to direct supervisors and the Directors). Staff will also be trained in how to make a report to child protective services, in the case of potential physical or other harm, or to police, in the case of imminent physical harm to an adult, if for some reason they are unable to contact a supervisor or Director. If staff believe imminent harm is possible, they will be instructed to contact authorities immediately. In addition, evaluation team members will be coached to respond to participant embarrassment or discomfort with data collection or intervention in an appropriate and compassionate manner.

Documentation. All data collection and intervention protocols include a form on which research staff members (both data collection staff and implementation staff) record any problems with the data collection or implementation session, concerns about the child or family, or unusual occurrences during the collection or implementation session. All staff with participant contact will be trained regarding the use of this form, but will be instructed not to rely on the form to convey information to supervisors.

Potential iatrogenic effects safeguards. Potential adverse events as a result of participation in the intervention are not expected, but, if present, they may include: (1) Increases in adolescents stress if they identify that they are/were in an unhealthy/abusive relationship; and (2) increases in relationship conflict as a result of changes in the communication patterns of family members as they begin to adopt curriculum suggestions for enhanced problem-solving. We will monitor potential iatrogenic effects at the level of individual participants through monthly supervisory meeting of the Program Facilitators and Interns with the Project Coordinators. In these meetings, staff members provide an update on participants and their activities with them. Regular team meetings, in addition to these supervisory meetings, also provide an opportunity for the supervisors and investigators to get a

sense of how the intervention is affecting participants, as well as to learn about the activities of staff members.

Data

      Data reporting and transfer. Data will be stored using nFORM (for federal requested data), Qualtrics (for online pre-, post- and follow up surveys), and SPSS (for local evaluation data). Qualtrics, and SPSS have capabilities to export files in comma-separated formats.

      Ability to link. Contact information will be stored in an electronic file in nFORM in order to facilitate linking data to other sources if the federal government requires it.

      Current security and confidentiality standards. All parties who have access to the data have completed or will complete training on current security standards for data, and will be required to have logins and passwords and up-to-date anti-virus software on all computers used to access the data. Data will be encrypted using Bit Locker, File Vault, or other software that uses AES encryption algorithms. Confidential data will be encrypted and password protected and transmitted either on a secure HTTPS connection or on an encrypted USB drive.

Data Analysis

      Attrition/missing data. All analyses will be based on the initial treatment intent, such that participants who have been randomly assigned to conditions will be included in the analyses regardless of their level of participation in the intervention and subsequent withdrawal or deviation from protocol. We will apply modern methods to adjust for missing data (e.g., Multiple Imputation, MI, Schafer, 1997; Full Information Maximum Likelihood, FIML, Arbuckle, 1996). Although imputation of dependent variables is somewhat controversial, reviews of best practices (e.g., Schafer & Graham, 2002; Johnson & Young, 2011) suggest that it is necessary to impute both independent and dependent variables to avoid sample bias. Further, Young and Johnson

(2010) demonstrated that, as long as a relatively large number of datasets are generated programmatically (e.g., >20), there were no significant differences between results of a typical MI strategy and a MI strategy that deleted the imputed dependent variables from the final analyses. Attrition analyses (Jurs & Glass, 1971) and Little's test (1998) of the assumption of missing completely at random will be applied to examine the nature of missingness. Attrition analyses also allow us to examine if main effects of attrition or program x attrition interactions pose threats to internal and external validity (Jurs & Glass, 1971).

Data dependency. The multilevel structure of our data may result in data dependency from multiple assessments nested within adolescent parents, adolescents nested within couples (Research Question #3, only), and students nested within schools. All analyses will be conducted using a multilevel framework to adjust for such dependencies when they are present. Where the statistical technique has not yet been developed for higher-order multilevel data (i.e., three-level structural equation modeling), we will adjust standard errors of parameter estimates by the design effect (DEFF; an index combining the effects of ICC and cluster sample sizes).

Research questions #1-3: Assessment of program effects on romantic and co-parenting relationships. Program effects will be examined using two analytical approaches. First, we will examine short-term and long-term program effects by comparing means of the variables (as listed in Table 4) across the full and partial-treatment conditions at post-test, 3-, and 6-month follow up. Random effects or mixed effects analyses of covariance (ANCOVA), controlling for possible baseline differences, will be used. We will include the intervention condition x baseline status interaction to examine the possibility of the program effect being moderated by baseline risk (e.g., stronger intervention effects for youth at higher risk at pre-test; Brown, Wang, et al., 2008). Second, we will utilize measures from all assessment points together with a repeated

23

measures random effects model (i.e., time-point nested in individuals, individuals nested in schools; Raudenbush & Bryk 2002; Singer & Willett, 2003) or multilevel growth curve modeling to evaluate the intervention effects over time. Specifically, we will estimate whether individual changes over time (i.e., within-person estimations) vary from person to person and whether the inter-individual variation is systematically related to the intervention conditions (i.e., between-person estimations). We will also examine linear and non-linear (i.e., quadratic) program effects.

Research Question #4: Assessment of program effects, changes in romantic and co-parenting relationships and their relation to well-being. Next, we will conduct mediation analyses to examine whether intervention effects on the romantic/co-parenting relationship dynamics further affect well-being using time specific or growth modeling approaches. First, we will examine the prospective mediation effect using multilevel cross-lagged structure equation modeling (SEM; Cole & Maxwell, 2003; Preacher, Zyphur, & Zhang, 2010) as illustrated in Figure 1. Second, using repeated measures, we will apply multilevel parallel processing GCM modeling (Cheong, MacKinnon, & Khoo, 2003) to examine how the intervention affects the change in the mediators, which in turn, relate to the change in well-being outcomes (Figure 2).

Figure 1: Cross-lagged Prospective Mediation Model
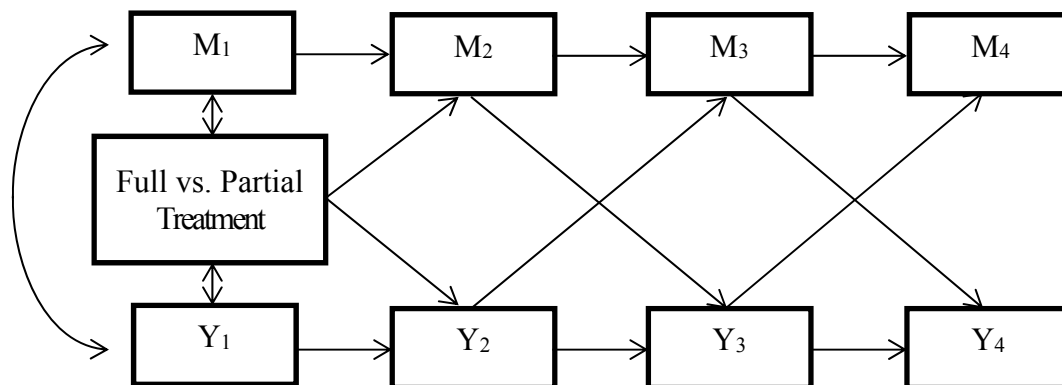
Adolescents' characteristics, cultural resources, and household background will be explored as moderators of program and mediation effects using multi-group comparisons, or interaction effects, in the above analytic models. If multigroup comparisons or interactions are significant, we will explore mechanisms through which these correlates have their effects. Using multilevel SEM, we will test whether these program factors mediate the links between correlates and youths' short-term and intermediate adjustment outcomes as well as outcome changes over

Figure 2: Parallel Processing Growth Curve Model
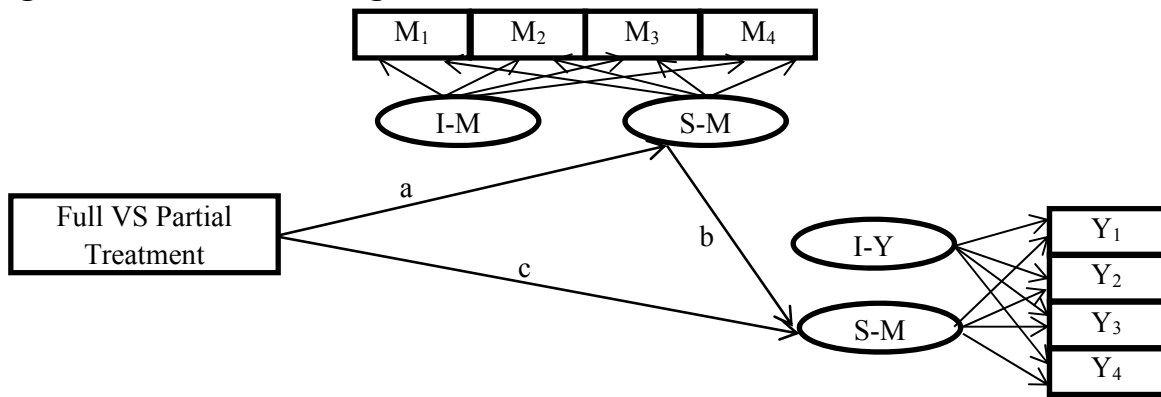
time. Given the complexity of analyses, research question #4 will only be analyzed until after data from all four cohorts has been collected.

Minimizing type-1 error. To minimize the risk of Type-1 error, we will limit the number of paths' estimated in our models, whenever possible. Further Bonferonni correction techniques will be used to set a more stringent *p*-value to correct for multiple comparisons.

Non-equivalent control groups. To address potential baseline difference between participating and non-intervention fathers, propensity scores will be used for more stringent comparison group tests. The use of non-equivalent controls is not tied to our primary program

effectiveness test. Instead, the use of non-equivalent control groups will help address additional process evaluation questions.

Dissemination

The Directors and subcontracted collaborator plan to present findings from this program at professional and academic conferences and submit manuscripts for publication in peer-reviewed journals. Analyses based on the research questions described above will be completed by the local evaluator to support the reporting of the overall program impacts to the federal government.

REFERENCES

Adler-Baeder, F., Kerpelman, J. L., Schramm, D. G., Higginbotham, B. & Paulk, A. (2007). The impact of relationship education on adolescents of diverse backgrounds. *Family Relations, 56*, 291-303.

Ahrons, C. R. (1981). The continuing coparental relationship between divorced spouses. *American Journal of Orthopsychiatry, 51,* 415-428.

Arbuckle, J.L. (1996). Full information estimation in the presence of incomplete data. In G.A. Marcoulides & R. E. Schumacker (Eds.). Advanced Structural Equation Modeling (pp. 243-278). Hillsdale, NJ: Lawrence Erlbaum.

Beck, J. G., Stanley, M. A., & Zebb, B. J. (1995). Psychometric properties of the Penn State Worry Questionnaire. *Journal of Clinical Geropsychology*, *1*, 33–42.

Berry, J. O., & Jones, W. H. (1995). The parental stress scale: Initial psychometric evidence. *Journal of Social and Personal Relationships, 12*(3), 463-472.

Brown, T. A., Antony, M. M., & Barlow, D. H. (1992). Psychometric properties of the Penn State Worry Questionnaire in a clinical anxiety disorders sample. *Behaviour Research and Therapy*, *30*, 33- 37.

Brown, C. H., Wang, W., et al. (2008). Methods for testing theory and evaluating Impact in randomized field trials: Intent-to-treat analyses for integrating the perspectives of person, place, and time. *Journal of Drug and Alcohol Dependence, 95* (Supplement 1), s74-s104.

Carroll, J. S., & Doherty, W. J. (2003). Evaluating the effectiveness of premarital prevention programs: A meta-analytic review of outcome research. *Family Relations, 52,* 105-118.

Cabrera, N. J., Shannon, J. D., & La Taillade, J. J. (2009). Predictors of co-parenting in Mexican American families and direct effects on parenting and child social emotional development. *Infant Mental Health Journal*, *30*(5), 523.

Cheong, J., MacKinnon, D.P., & Khoo, S.-T. (2003). Investigation of mediational processes using parallel process latent growth curve modeling. *Structural Equation Modeling*, 10, 238-262.

Contreras, J. M., Narang, D., Ikhlas, M., & Teichman, J. (2002). A conceptual model of the determinants of parenting among Latina adolescent mothers. In J. M. Contreras, K. A. Kerns, & A. M. Neal-Barnett (Eds.), *Latino children and families in the U.S.* (pp. 155-177). Westport, CT: Praeger.

Cole, D. A., & Maxwell, S. E. (2003). Testing mediational models with longitudinal data: Questions and tips in the use of structural equation modeling. *Journal of Abnormal Psychology*, *112*, 558-577.

Cox, M. J., & Paley, B. (1997). Families as systems. *Annual review of psychology*, *48*(1), 243-267.

Devins, G. M., & Orne, C. M. (1985). Center for Epidemiologic Studies Depression Scale. In D.J. Keyser, R.C. Sweetland (Eds.), *Test Critiques*, (pp. 144–159). Kansas City, MO: Test Corp of America.

Dion, M. R., Devaney, B., McConnell, S., Ford, M., Hill, H., & Winston, P. (2003). *Helping unwed parents build strong and healthy marriages: A conceptual framework for interventions.* Princeton, NJ: Mathematica Policy Research.

Fagan, J., & Lee, Y. (2011). Do coparenting and social support have a greater effect on adolescent fathers than adult fathers? *Family Relations, 60,* 247-258.

Fagan, J., & Palkovitz, R. (2011). Coparenting and relationship quality effects on father engagement: Variations by residence, romance. *Journal of Marriage and Family, 73*(3), 637-653.

Feinberg, M. E. (2003). The internal structure and ecological context of coparenting: A framework for research and intervention. *Parenting: Science and Practice, 3*(2), 95-131.

Feinberg, M. E., Brown, L. D., & Kan, M. L. (2012). A multi-domain self-report measure of coparenting. *Parenting, 12*(1), 1-21.

Floursheim, P., McArthur, L., Hudak, C., Heavin, S., & Burrow-Sanchez, J. (2011). The Young Parenthood Program: Preventing intimate partner violence between adolescent mothers and young fathers. *Journal of Couple & Relationship Therapy, 10*(2), 117-134.

Foshee, V. A., Linder, F., MacDougall, J. E., & Bangdiwala, S. (2001). Gender differences in the longitudinal predictors of adolescent dating violence. *Preventive medicine*, *32*(2), 128-141.

Fredland, N. M., Ricardo, I. B., Campbell, J. C., Sharps, P. W., Kub, J. K., & Yonas, M. (2005). The meaning of dating violence in the lives of middle school adolescents: A report of a focus group study. *Journal of School Violence*, *4*(2), 95-114.

Fritz, M. S., & MacKinnon, D. P. (2007). Required sample size to detect the mediated effect. *Psychological Science, 18*, 233-239.

Futris, T. G., & Schoppe-Sullivan, S. J. (2007). Mothers' Perceptions of Barriers, Parenting Alliance, and Adolescent Fathers' Engagement With their Children*. *Family Relations*, *56*(3), 258-269.

Gardner, S. (2001). Evaluation of the "Connections: Relationships and Marriage" curriculum. *Journal of Family and Consumer Sciences Education, 19,* 1-14.

Gardner, S., Giese, K., & Parrot, S. (2004). Evaluation of the "Connections: Relationships and Marriage" curriculum. *Family Relations, 53,* 521-527.

Halford, W. K., Markman, H. J., Kline, G. H., & Stanley, S. M. (2003). Best practices in couple relationship education. *Journal of Marital and Family Therapy, 29,* 385-406.

Harrykissoon, S. D., Rickert, V. I., & Wiemann, C. M. (2002). Prevalence and patterns of intimate partner violence among adolescent mothers during the postpartum period. *Archives of pediatrics & adolescent medicine*, *156*(4), 325-330.

Hawkins, A. J., Carroll, J. S., Doherty, W. J., & Willoughby, B. (2004). A comprehensive framework for marriage education. *Family Relations, 53,* 547-558.

Hendrick, S. S. (1988). A generic measure of relationship satisfaction. Journal of Marriage and the Family, 93-98.

Hendrick, S. S., Dicke, A., & Hendrick, C. (1998). The relationship assessment scale. *Journal of Social and Personal Relationships, 15*(1), 137-142.

Herzog, M., Umaña-Taylor, A. J., Madden-Derdich, D., & Leonard, S. (2007). Teenage fathers' involvement in parenting: The mediating role of mothers' satisfaction with and desire for fathers' involvement. *Family Relations, 56,* 244-257.

Himmelfarb, S., & Murrell, S. A. (1983). Reliability and validity of five mental health scales in older persons. *Journal of Gerontology*, *38*(3), 333-339.

Hoffman, S. D., & Maynard, R. A. (2008). *Kids having kids: Economic costs and social consequences of teen pregnancy* (2nd ed)*.* Washington, DC: Urban Institute Press.

Ismail, F., Berman, H., & Ward-Griffin, C. (2007). Dating violence and the health of young women: A feminist narrative study. *Health Care for Women International*, *28*(5), 453-477.

Johnson, D. R., & Young, R. (2011). Toward best practices in analyzing datasets with missing data: Comparisons and recommendations. *Journal of Marriage and Family*, *73*(5), 926-945.

Jurs, S. G., Glass, G. V. (1971). The Effect of Experimental Mortality on the Internal and External Validity of the Randomized Comparative Experiment. *Journal of Experimental Education, 40*, 62-66.

Kerpelman, J. (2010). *The YouthBuild USA evaluation study of Love Notes.* Retrieved from: http://www.dibbleinstitute.org/Documents/YBUSA-Love-Notes-Evaluation-report-2010.pdf

Kost K and Henshaw S, *U.S. Teenage Pregnancies, Births and Abortions, 2010: National and State Trends by Age, Race and Ethnicity*, New York: Guttmacher Institute, 2014.

Krull, J. L., & MacKinnon, D. P. (1999). Multilevel mediation modeling in group-based intervention studies, *Evaluation Review, 23*, 418-444.

Krull, J. L., & MacKinnon, D. P. (2001). Multilevel modeling of individual and group level mediated effects. *Multivariate Behavioral Research, 36*, 249-277.

Kurdek, L. A. (1994). Conflict resolution styles in gay, lesbian, heterosexual nonparent, and heterosexual parent couples. *Journal of Marriage and the Family*, 705-722.

Lewin, A., Hodgkinson, S., Waters, D. M., Prempeh, H. A., Beers, L. S., & Feinberg, M. E. (2015). Strengthening Positive Coparenting in Teen Parents: A Cultural Adaptation of an Evidence-Based Intervention. *The Journal of Primary Prevention*, *36*(3), 139-154.

Lewin, A., Mitchell, S. J., Beers, L. S., Feinberg, M. E., & Minkovitz, C. S. (2012). Coparenting in teen mothers and their children's fathers: Evidence from the early childhood longitudinal study–birth cohort. *Academic pediatrics*, *12*(6), 539-545.

Little, R. J. A. (1988). A test of missing completely at random for multivariate data with missing values. *Journal of the American Statistical Association, 83*, 1198-1202.

Macomber, J. E., Murray, J., Stagner, M. (2004). *Service delivery and evaluation design options for strengthening and promoting healthy marriage.* http://www.acf.hhs.gov/programs/ opre/strengthen/serv_delivery/reports/service_delivery/service_delivery.pdf

Madden-Derdich, D. A. (2002). The teen-aged mothers project: An exploration of the parental and coparental relationships of teenaged parents. Report prepared for the City of Phoenix.

Markman, M. S., Ganong, L. H., & Coleman, M., (2007). Coparental identity and mothers' cooperation in coparental relationships. *Family Relations, 56*(4), 369-377.

Martin, P. D., Specter, H. G., Martin, D., & Martin, M. (2003). Expressed attitudes of adolescents toward marriage and family life. *Adolescence, 38,* 359-367.

McLanahan, S., Garfinkel, I., Reichman, N., Teitler, J., Carlson, M., & Audiger, C. N. (2003). *The Fragile Families and Child Wellbeing study: Baseline national report.* Princeton, NJ: Center for Research on Child Wellbeing, Princeton University.

Meyer, T.J., Miller, M.L., Metzger, R.L., & Borkovec, T.D. (1990). Development and validation of the Penn State Worry Questionnaire. Behavior Research Therapy (1990) 28:488.

Moscicki, E. K., Locke, B. Z., Rae, D. S., & Boyd, J. H. (1989). Depressive symptoms among Mexican Americans: The Hispanic health and nutrition examination survey. *American Journal of Epidemiology*, *130*(2), 348-360.

Múthen, B. O., & Curran, P. J. (1997). General longitudinal modeling of individual differences in experimental designs: A latent variable framework for analysis and power estimation. *Psychological Methods, 2*, 371-402.

Newman, B. & Campbell, C. (2011) Intimate partner violence among Latino pregnant and parenting adolescents. Journal of Interpersonal Violence., 26 (1),2635-2657.

National Campaign to Prevent Teen Pregnancy. (2004). *Science says: The relationship between teenage motherhood and marriage.* Retrieved from: http://www.thenationalcampaign.org/ resources/pdf/SS/SS11_MotherhoodandMarriage.pdf

National Healthy Marriage Resource Center. (2009). Healthy marriage and relationship programs: Promising practices in serving low-income and culturally diverse populations. Retrieved from: http://www.healthymarriageinfo.org/docs/PromisingPracticesGuide.pdf

NORC at the University of Chicago (2013). National survey on teen relationships and intimate violence. Retrieved from *http://www.norc.org/PDFs/STRIV/STRiV_Youth_Year%201.pdf*

Ooms, T., & Wilson, P. (2004). The challenges of offering relationship and marriage education to low-income populations. *Family Relations, 53,* 440-447.

Pearson, M. (2009). *Love Notes: Making Relationships Work for Young Adults and Young Parents. Instructor manual.* Berkeley, CA: Dibble Institute.

Pew Research Center (2010). The New Demography of American Motherhood. Retrieved June 15, 2015: http://www.pewsocialtrends.org/2010/05/06/the-new-demography-of-american-motherhood/

Preacher, K.J., Zyphur, M. J., & Zhang, Z. (2010). A general multilevel SEM framework for assessing multilevel mediation. *Psychological Methods, 15*, 209-233.

Reardon-Anderson, J., Stagner, M. Macomber, J. E., & Murray, J. (2004). *Systematic review of the impact of marriage and relationship programs.* Retrieved from http://www.acf.hhs. gov/programs/opre/strengthen/serv_delivery/reports/systematic_rev/systematic_rev.pdf

Raudenbush, S. W. (1997). Statistical analysis and Optimal Design for cluster randomized trials. *Psychological Methods, 2*, 173-185.

Raudenbush, S. W. & Bryk, A. S. (2002). Hierarchical Linear Models: Applications and Data Analysis Methods. Thousand Oaks, CA: Sage Publications.

Reece, S. M. (1992). The Parent Expectations Survey: A measure of perceived self-efficacy. *Clinical Nursing Research, 1*, 336-346.

Reece, S. M., & Harkless, G. (1998). Self-efficacy, stress, and parental adaptation: Applications to the care of childbearing families. *Journal of Family Nursing, 4*, 198-215.

Reilly, M.D. (1982). Working wives and consumption. *Journal of Consumer Reaearch, 8,* 407-418.

Roberts, T. A., Auinger, P., & Klein, J. D. (2005). Intimate partner abuse and the reproductive health of sexually active female adolescents. *Journal of adolescent health*, *36*(5), 380-385.

Roosa M.W., Reinholtz C., Angelini P. J. (1999). The relation of child sexual abuse and depression in young women: Comparisons across four ethnic groups. *Journal of Abnormal Child Psychology. 27*(1), 65–76.

Roosa M. W., Reyes L., Reinholtz C., Angelini P. J. (1998). Measurement of women's child sexual abuse experiences: An empirical demonstration of the impact of choice of measure on estimates of incidence rates and of relationships with pathology. *Journal of Sex Research*. 35(3), 225–233.

Rosenberg, M. (1979). *Conceiving the self*. New York: Basic Books.

Schafer, J. L. (1997). *Analysis of Incomplete Multivariate Data*. London: Chapman & Hall.

Schafer, Joseph L, and John W. Graham. 2002. "Missing Data: Our View of the State of the Art."

Psychological Methods 7 (2):147-177.

Sears, H., Byers, S., Whelan, J., Saint-Pierre G. and The Dating Violence ResearchTeam (2006) "If it hurts you, then it is not a joke": Adolescents' ideas and experiences of abusive behaviour in dating relationships. *Journal of Interpersonal Violence, 21*(9), 1191–207.

Sedgh, G., Finer, L. B., Bankole, A., Eilers, M. A., & Singh, S. (2015). Adolescent Pregnancy, Birth, and Abortion Rates Across Countries: Levels and Recent Trends. *Journal of Adolescent Health*, *56*(2), 223-230.

Shapiro, A. F., Gottman, J. M., & Carerre, S. (2000). The baby and the marriage: Identifying factors that buffer against decline in marital satisfaction after the first baby arrives. *Journal of Family Psychology, 14,* 59-70.

Silliman, B., & Schumm, W. R. (2004). Adolescents' perceptions of marriage and premarital couples education. *Family Relations, 53,* 513-520.

Simon, V. A., & Furman, W. (2010). Interparental conflict and adolescents' romantic relationship conflict. *Journal of research on adolescence*, *20*(1), 188-209.

Singer, J. D., & Willett, J. B. (2003). Applied Longitudinal Data Analysis. New York, NY: Oxford University Press.

Spybrook, J., Raudenbush, S. W., Liue, X & Congdon, R. (2006). Optimal design for Longitudinal and multilevel research: Documenation for the "Optimal Design" Software. *Survey Research Center of the Institute of Social Research at University of Michigan*.

Stanley, S. M. (2001). Making a case for premarital education. *Family Relations, 50,* 272-280.

Stanley, S. M., Markman, H. J., & Jenkins, N. H. (2002). *Marriage educations and government policy: Helping couples who choose marriage achieve success*. Denver, CO: PREP.

Toews, M. L., Yazedjian, A., & Jorgensen, D. (2011). "I haven't done nothin' crazy lately": Reducing violence in adolescent mothers' dating relationships. *Children and Youth Services Review, 33,* 180-186.

Toews, M. L., & Yazedjian, A. (2010). "I learned the bad things I'm doing": Adolescent mothers' perceptions of a relationship education program. *Marriage and Family Review, 46*(3), 207-223.

Umaña-Taylor, A. J., & Updegraff, K. (2007). Latino adolescents' mental health: Exploring the role of discrimination, ethnic identity, acculturation, and self-esteem. *Journal of Adolescence, 30*, 549-567.

Umaña-Taylor, A. J., Yazedjian, A., & Bámaca-Gómez, M. Y. (2004). Developing the Ethnic Identity Scale using Eriksonian and Social Identity perspectives. *Identity: An International Journal of Theory and Research, 4*, 9-38.

Waite, L. J., & Gallagher, M. (2000). *The case for marriage: Why married people are happier, healthier, and better off financially.* New York, NY: Doubleday.

Wolfe, D. A., Scott, K., Reitzel-Jaffe, D., Wekerle, C., Grasley, C., & Straatman, A. L. (2001). Development and validation of the conflict in adolescent dating relationships inventory. *Psychological assessment*, *13*(2), 277.

Young, R. & Johnson, D. R. (2010). *Imputing the Missing Y's: Implications for survey producers and survey users.* Unpublished paper presented at the Proceedings of the Survey Research Methods Section, American Statistical Association, Ottawa, Canada. Retrieved from http://www.amstat.org/sections/srms/proceedings/y2010/Files/400142.pdf.