Published in final edited form as:

J Adolesc. 2016 December ; 53: 34–44. doi:10.1016/j.adolescence.2016.08.011.

Stress and Behavioral Risk among Young Expectant Couples

Anna Divney^a, Derrick Gordon^b, Urania Magriples^b, and Trace Kershaw^c

^aGraduate Center, City University of New York

^bSchool of Medicine, Yale University

^cSchool of Public Health, Yale University

Abstract

Few studies have explored stress and coping among adolescents who are expecting a baby. In particular, young men's experiences during pregnancy have largely been ignored, despite the fact that a young man's experiences and behaviors carry implications for his own, his partner's and his child's health. This study examined the association between maternal and paternal experiences of stress during pregnancy with one's own and one's partner's health behaviors and depressive symptoms among 294 young expectant couples in the U.S. Multilevel modeling showed that one's own experiences of stress were associated with more unhealthy behaviors and more depressive symptoms among both expectant mothers and fathers. Paternal experiences of stress were predictive of more maternal conduct problems, while maternal experiences of stress were predictive of more paternal depressive symptoms and less paternal substance use. These findings highlight the importance of social relationships in affecting health behaviors and mental health among expectant adolescents.

Keywords

Stress; Couples; Adolescents; Health Behavior; Substance Use; Pregnancy

Learning to cope with stress is a fundamental component of adolescent development. Decades of research has shown us that exposure to stressors and the ways in which adolescents manage their emotions, thoughts and behaviors influence their mental and physical health (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Zimmer-Gembeck & Skinner, 2008). Much research has helped elucidate the types of stress adolescents experience and the ways in which they cope, which can include unhealthy behaviors such as substance use (e.g. Aneshensel & Sucoff, 1996; Bennett, Wolin,

Corresponding Author: Anna Divney, 365 Fifth Ave, New York, NY 10016, adivney@gradcenter.cuny.edu, 315-368-8196 (phone), No fax available.

Derrick Gordon, 389 Whitney Ave., New Haven, CT 06511, Derrick.gordon@yale.edu, 203-789-7645

Urania Magriples, 789 Howard Avenue, New Haven, CT 06519, Urania.magriples@yale.edu, 203-785-2140 (phone)

Trace Kershaw, 60 College Street, Room 415, New Haven, CT 06510, Trace.kershaw@yale.edu, 203-785-3441

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Robinson, Fowler, & Edwards, 2005; Booker, Gallaher, Unger, Ritt-Olson, & Johnson, 2004; Fleming, White, Oesterle, Haggerty, & Catalano, 2010; Kowaleski-Jones, 2004; Lanctôt & Smith, 2001; Ross & Mirowsky, 1999; Sampson, Morenoff, & Gannon-Rowley, 2002). There has been little investigation, however, into the basic nature of exposures to stress and coping among adolescents who are expecting a baby. This population is important because their responses to stress exposures (take for example, smoking) carry implications not only for their own health, but also for the unborn child. In addition, coping styles are sensitive to situational factors and developmental changes, such as pregnancy. Pregnancy may further provide a window of opportunity for intervention—expectant parents are often motivated to change or establish healthy behaviors for the good of their child (Kershaw, Magriples, Westdahl, Rising, & Ickovics, 2009)—and pregnancy may therefore be an opportune time to help couples learn to better manage their response to stress exposures in an effort to support their health and their relationship as parents. We need better information, however, about the nature of the stressors that expectant adolescents experience and their responses in order to inform effective interventions.

The experience of becoming a parent is a major life transition that may elicit many new stressors for young parents, even if it is not their first child. In fact, having other children can be an added stress. This is true not only for young women, but also for young fathers. Despite the fact that pregnant adolescent females in the United States are usually unmarried (Martin, Hamilton, Osterman, Curtin, & Mathews, 2015), many still have a relationship with the baby's father during pregnancy (Cutrona, Hessling, Bacon, & Russell, 1998), who is also experiencing this major life transition. Substantial research has shown us that social support can improve coping and buffer the effect of stress on well-being (e.g. Feldman, Dunkel-Schetter, Sandman, & Wadhwa, 2000; Hoffman & Hatch, 1996), and that romantic relationships can be a significant source of this much needed social support. In fact, research has shown that compared to nulliparous adolescents, partner support may play a more important role in the emotional well-being of pregnant and parenting adolescents (Milan et al., 2004). Studies have also shown that a romantic partner's experiences of stress can cross over and affect one's own well-being (Bakker, Westman, & van Emmerik, 2009; Mina Westman, 2001). Despite the interpersonal nature of stress and coping, and the fact that romantic relationships are present and important among pregnant adolescents (Furman & Wehner, 1997; T. Kershaw et al., 2013; Milan et al., 2004), few studies of adolescent experiences of stress during pregnancy include the direct report of experiences and behavioral responses of the baby's father.

This paper uses stress and coping theory, and stress and strain crossover theory to explore how exposure to life stressors affects risk behavior and mental health of pregnant adolescents and their partners. The sample used in these analyses were mostly teen women (64.3% age 19 and under; range 15-21) and their male partners who were, on average, 2.6 years older (range: 14-39). For many of the young parents, this was not their first child (21.1% of women and 24.5% men had at least one other child).

Stress and Coping among Expectant Adolescents

Extensive research has demonstrated a consistent association between experiences of stress and negative health behaviors (e.g. Booker et al., 2004; Folkman & Lazarus, 1980; Siqueira, Diab, Bodian, & Rolnitzky, 2000; Weaver, Campbell, Mermelstein, & Wakschlag, 2008; Wills, 1986). This research is based on the hypothesis that people use negative health behaviors to cope with the distress that they experience. Individuals experience stress when demands exceed the resources the individual has to deal with the demands (Folkman & Lazarus, 1980). When individuals appraise a stressor as harmful, threatening or challenging, they use coping strategies to regulate the stress they experience (Compas et al., 2001; Skinner, Edge, Altman, & Sherwood, 2003). Additionally, there is evidence that men and women have different coping responses to stress exposures. Studies have found that men are more likely to exhibit externalizing coping behaviors, such as substance use, in response to stress, while women are more likely to exhibit internalizing behaviors or affect (e.g. depressive symptoms) in response to stress.

Adolescents and young adults experience stressors that emanate from various life domains, including close relationships (e.g. a fight with a romantic partner) and general personal hardships (e.g. having something important stolen) (Williamson et al., 2003; Zimmer-Gembeck & Skinner, 2008). For adolescents and young adults who are racial and/or ethnic minorities and are from a low socioeconomic status (SES), daily stressors often extend beyond these typical developmental challenges. This population is disproportionately affected by other more severe and chronic stressors, such as neighborhood problems, racism and discrimination (Tolan & Grant, 2009). In the face of chronic and severe stressors that adolescents have little control over, such as discrimination and neighborhood problems, avoidant coping strategies (such as substance use) may provide transcendence from the day to day burden of stressors (Rosario et al., 2003; Tolan & Grant, 2009).

Additionally, pregnancy can be a stressor for an expectant parent of any age (Geller, 2004; Lobel, Hamilton, & Cannella, 2008); however, for adolescents and young adults, the transition to parenthood and associated stressors may further overload an adolescent's coping resources (Florsheim et al., 2003; Paschal, Lewis-Moss, & Hsiao, 2011). Expectant adolescents may engage in poor health behaviors to cope. Many studies have demonstrated that maternal experiences of stress during pregnancy are associated with poor maternal health behaviors (e.g. smoking and substance use)(Dunkel Schetter & Lobel, 2012; Weaver et al., 2008), although these studies have been conducted among adult women.

There is very little research exploring experiences of stress and negative health behaviors among expectant fathers (of any age), despite the fact that a partner's pregnancy is also a major life transition for expectant fathers who may also have concerns about many issues, including finances and relationships. A young man's experiences during pregnancy may impact his own health and behavior, as well as his pregnant partner's behavior, carrying implications for the health and development of their child.

Substantial evidence has shown that social relationships have important influences on our health and well-being (Cohen, 2004). A majority of expectant female adolescents and young

adults are involved with the baby's father during pregnancy (Cutrona et al., 1998) and evidence shows that he likely has an important influence on her during her pregnancy (Furman & Wehner, 1997; Kershaw et al., 2013; Milan et al., 2004). Despite this fact, the paternal experience during pregnancy has largely been ignored in the literature, and when it is acknowledged, it is usually reported by the expectant mother, introducing potential measurement error.

Stress and Strain crossover: Theory and Evidence

While substantial evidence demonstrates that experiences of stress are predictive of one's own health behaviors, some evidence suggests that experiences of stress can also crossover and affect the well-being of one's romantic partner (Bakker et al., 2009; M. Westman, 1998; Mina Westman, 2001). For example, a woman's partner's experiences of stress have been associated with increases in her own depressive symptoms (Westman, 2001). It is thought that experiences of stress can be transferred from one person to the next through the socio-emotional process of empathetic distress, or the “emotional involvement in the problems and distressed feelings of a relationship partner, to the point of taking on the partner's emotional distress and experiencing it as one's own (Smith & Rose, 2011).” While empathy for others is considered a developmentally adaptive competency (Zahn-Waxler & Radke-Yarrow, 1990) and is fundamental to the development of close relationships (Rubin, Bukowski, & Laursen, 2011), evidence has shown that there can be substantial emotional “costs of caring” (Kessler & McLeod, 1984) that can be mediated by this process of empathetic distress (Smith & Rose, 2011). Other studies have documented the crossover of stress from one family member to the next. For example, Nelson et al. (2009) demonstrated maternal and paternal job role dissatisfaction crossed over to their partner's supportive responses to their child's behaviors (Nelson et al., 2009).

This crossover of stress has been documented among young adolescent friend pairs, with young women reporting more empathetic distress than young men (Smith & Rose, 2011). Given evidence that men and women report different patterns in internalizing and externalizing responses to stressors (Kessler et al., 1993; Matud, 2004), it is possible that young men may report less empathetic distress, but more externalizing coping behaviors (e.g. substance use) as a result of his partner's stressful experiences.

Current Study

The current study examines how both personal and partner experiences of stress are associated with poor health behaviors and mental health during pregnancy among a sample of expectant adolescent and young adult couples who are largely racial and/or ethnic minorities and have a low socioeconomic status. First, we describe expectant parents' experiences of stress during pregnancy across several domains (e.g. personal hardship, close relationship stressors, neighborhood problems and discrimination). Second, drawing from stress and coping theory, we describe the association of these experiences with negative health behaviors and mental health (substance use, conduct problems and depressive symptoms). Third, we draw upon stress and strain crossover theory to explore partner effects

—the association between a *partner's* experiences of stress with one's own poor health behaviors and mental health.

Method

Participants and Procedures

The current study is a secondary cross-sectional data analysis of baseline data collected between 2007 to 2011 from 296 expectant young couples (females ages 14–21 years and their male partners ages 14+ years) enrolled in a longitudinal study of relationships and health during the transition to parenthood in the United States. Young women and men in a romantic relationship and expecting a baby were recruited from four urban university affiliated hospital-based clinics in southern Connecticut (CT) (Yale University Women's Center and ultrasound clinic, Bridgeport Hospital OB/GYN clinic, New London OB/GYN clinic, and Hospital of St. Raphael OB/GYN clinic). At each recruitment site, women and their male partners, if present, were approached, provided brief information about the study and screened against the inclusion criteria, if willing. If the baby's father was not present at the time of screening, research staff asked for permission to contact him to explain the study. Research staff provided informational materials for the baby's father and asked her to talk to him about the study. Couples were eligible if (a) women were age 14–21 years; men were age at least 14 years, at time of the interview; (c) both members of the couple reported being in a romantic relationship¹ with each other; (d) both reported being the biological parents of the unborn baby; (e) both agreed to participate in the study and (f) both were able to speak English or Spanish. While no data is available on the number of women approached initially, 413 couples were eligible based on the inclusion criteria. Of 413 eligible couples, 296 (72.2%) couples enrolled in the study. Compared to those who refused to participate, participants were on average two weeks further along in pregnancy at screening ($P < 0.03$). Participation did not vary by any other pre-screened demographic characteristic (all $P > 0.05$).

The couples completed **separate** audio computer-assisted self-interviews (A-CASI) in the second or third trimester of pregnancy. This technology allows participants with low literacy to complete the survey (Des Jarlais & Turner, 1998) and elicits more accurate and valid responses to sensitive questions (C'de Baca, Lapham, Skipper, & Watkins, 1997; Latkin, Vlahov, & Anthony, 1993).

A research assistant obtained informed consent from each member of the couple (individually) at the baseline survey. Participation was voluntary, confidential, and did not influence the provision of health care or social services. All procedures were approved by the Yale University Human Investigation Committee and by Institutional Review Boards at study clinics. IRB approval to use the de-identified PARTNRS data was also obtained from the CUNY Graduate Center.

¹Romantic relationship was defined for the participants as “a relationship with a primary partner you might call a boyfriend/girlfriend), ‘hubby’/‘wifey’, husband/wife, lover, etc.”

Measures

Both expectant mothers and fathers provided **separate** reports for the following measures.

Stressors—*Stressful life events* related to close relationships and personal hardship were evaluated via an adapted version of the Life Events Scale (Brugha & Cragg, 1990).

Respondents indicated whether they had experienced 11 stressful life events in the previous 6 months. Four stressful life events, including broke off a steady relationship, a relative suffered a serious illness, injury or assault, a family member or close friend died and had a serious problem with a friend, neighbor, or relative, were grouped and summed as events related to close relationships. Seven stressful life events, including having money problems, being unemployed, moving, having something lost or stolen, problems at work or school, problems with the police, and suffered a serious illness, injury or assault, were grouped and summed as events related to personal hardship. Higher scores on these measures indicate that the respondent experienced more stressful life events.

Respondents' perception of *neighborhood problems* was assessed using a 15-item adapted version of the Perceived Neighborhood Problems Scale (Ellaway, Macintyre, & Kearns, 2001). Respondents indicated how much various neighborhood problems were an issue in their neighborhood on a 3-point scale ranging from 1="not a problem" to 3="serious problem." Sample items from the original scale include "smells and fumes," "assault and muggings," and "vandalism." Two additional items were added to the original 13-item scale: "feeling unsafe after dark" and "drugs." Responses to items were summed to form a total *neighborhood problems* scale ranging from 15 to 45 ($\alpha = .95$).

Perceived *general discrimination* was assessed using a 20-item adapted version of the Daily Life Experiences Scale, a subscale of the Racism and Life Experiences Scales (Harrell, Merchant, & Young, 1997). Items concerned how often respondents experienced discriminatory treatment, such as not being given service in a store or restaurant, or being stared at by strangers. Responses were indicated on a 6-point scale ranging from 0="Never" to 5="Once a Week or More." A mean score was calculated from the 20 items to form the *general discrimination* score ($\alpha = .93$).

Health behavioral risk—Four categories of *substance use* were measured using an adapted, 7-item version of the Recreational Drug Use Scale (Halkitis & Parsons, 2003). Questions asked respondents how often they used cigarettes, alcohol, marijuana, crack, heroin, methamphetamines, and "other hard drugs" using a 5-point Likert scale, ranging from 0 = "Never" to 4 = "Every Day." We summed the reports of the use of crack, heroin, methamphetamines, and "other hard drugs," to form a *total hard drug use* score (range 0 to 16) due to the low frequencies of these individual items.

Conduct problems were assessed by means of an adapted, 7-item version of the DSM Conduct Problems Scale (Rotheram-Borus, Rosario, Van Rossem, Reid, & Gillis, 1995). Respondents reported the frequency of various conduct problems in the previous 6 months on a 4-point scale ranging from 1= "Not at All" to 4="5 or more times." Sample items included "skipped school or work," "got in a fight," and "stole something." Items were

summed to form a total conduct problems score ranging from 7 to 28, with higher scores indicating more conduct problems.

Mental health—*Depressive symptoms* over the past week were measured using 15 of the 20 items in the Center of Epidemiological Studies-Depression Scale (CES-D) (Radloff, 1977). Participants responded on a 4-item scale ranging from 0=“Less than 1 day” to 3=“5-7days.” Items included “during the past week I had crying spells” and “during the past week I felt depressed.”

Data Analysis

We produced descriptive statistics using IBM SPSS Statistics V22 (IBM Corporation, Armonk, NY) of the demographic characteristics, stressors, mental health and behavioral risk outcomes among the sample population. Two men were missing data for stressful life events and therefore we excluded two couples from the analysis resulting in a final sample of 294 couples (n = 588). Maternal and paternal responses were analyzed as matched pairs. We used paired t-tests and McNemar's tests to compare the demographic characteristics, stressors and behavioral risk outcomes variables between paired men and women.

We used multilevel modeling to explore the relationship between experiences of stressors and the behavioral risk and mental health outcomes during pregnancy: smoking, drinking, marijuana use, hard drug use, conduct problems and depressive symptoms. Specifically, we used the Actor-Partner Interdependence Model (APIM), to account for the correlated nature of the data. This model allowed us to assess the influence of both the respondent (actor effect) and their partner (partner effect). An actor effect indicates whether a respondent's score on a predictor variable is associated with their own outcome (e.g. woman's experiences of stressors relates to her own smoking). A partner effect indicates whether a respondent's partner's score on the predictor variable is associated with the respondent's outcome (e.g., male partner's experiences of stressors influences his female partner's smoking). The APIM uses a single analysis to incorporate responses from both members of a couple and treats the members of a couple as nested scores within the same group (Kenny, Kashy, & Cook, 2006).

To conduct the APIM analysis we created a pairwise dataset in which each person's own stressor variables appeared twice in the dataset—once in the person's own record as an actor effect and once in the person's partner's record as a partner effect. Each multilevel model included the actor and partner effects for the predictor variables (e.g. neighborhood problems and partner neighborhood problems), the distinguishing variable of **couple**, and **gender** as the variable that distinguished members of the couple. A detailed description of APIM analyses using multilevel modeling programs by Kenny, Kashy, & Cook (2006) served as the guide for our analysis. We used the SPSS MIXED command with heterogeneous compound symmetry (CSH) to allow for the variances to differ by couple. To assess whether the influence of actor and/or partner stressors on the outcomes differed by gender, gender by stressor interaction terms were tested in each multilevel model. Analyses involving hard drug use were restricted to the male data because no females reported hard drug use.

All models controlled for maternal and paternal age, education, income and race/ethnicity. In addition, analyses controlled for role occupancy (defined in this analysis as whether they worked, went to school or had other children) because people who have greater role occupancy are likely exposed to more stressors (Turner & Wheaton, 1997).

Results

Descriptive Statistics

Demographic characteristics of the participants are displayed in Table 1. The young men were generally older, had more personal income, were more likely to be employed, and were less likely to be in school compared to their female partners.

Table 1 also shows that young men and women reported a similar number of stressful life events related to close relationships and stressful life events related to personal hardship (both $p > .05$). Young men reported more neighborhood problems and more general discrimination compared to young women. Table 2 shows that money problems were the most common life event stressor in the past six months among both men and women. About one third of the respondents also reported moving within the past six months.

Table 3 shows the Pearson product-moment correlation coefficients between maternal and paternal predictor and outcome variables within couples. These values demonstrate the level of non-independence of parental reports within couples (Kenny, Kashy, & Cook, 2006). There was a small amount of non-independence in parental reports of general discrimination and marijuana use, and a moderate amount of non-independence in parental reports of personal and neighborhood stressors, drinking, conduct problems and depressive symptoms.

Multilevel Regression Analyses

Base model controlling for covariates—Table 4 shows the results of the multilevel regression models examining the association between the stressors and the outcomes. Each outcome was tested in separate models controlling for maternal and paternal age, education, personal income, employment status, parity, whether currently in school and race/ethnicity. In adjusted models, greater frequency of personal hardship stressors predicted more smoking, marijuana use, conduct problems and depressive symptoms (Table 4). Greater frequency of neighborhood problems predicted more smoking and depressive symptoms. Greater frequency of general discrimination predicted more conduct problems and more depressive symptoms.

Effects by gender—Subsequent models introduced gender by stressor interaction terms to assess whether gender moderated the influence of stressors on the health behavior and mental health outcomes. The results below describe the results of the gender interaction analyses. Table 5 provides a description of the significant associations between one's own and one's partner's experiences of stressors and behavioral risk among the young men and women within couples.

Personal hardship stressors and health behaviors and mental health: Gender interacted with personal hardship stressors when predicting marijuana use ($t=1.96$, $p=.05$) and alcohol

use ($t=1.97$, $p=.05$). Greater frequency of personal hardship stressors was associated with more marijuana use ($B=.14$, $SE=.05$, $t=2.76$, $p=.006$) and alcohol use ($B=.10$, $SE=.04$, $t=2.817$, $p=.005$) among young men only. Gender also interacted with *partner's* personal hardship stressors when predicting marijuana use ($t=2.66$, $P=.008$) and depressive symptoms ($t=-2.11$, $p=.04$). Greater frequency of *partner's* personal hardship stressors was associated with less marijuana use ($B=-.13$, $SE=.05$, $t=-2.48$, $p=.014$) and more depressive symptoms ($B=0.77$, $SE=.28$, $t=-2.79$, $P=.006$) among young men only.

Close relationship stressors and health behaviors: Gender interacted with close relationship stressors when predicting smoking ($t=2.096$, $p=.037$) and marijuana use ($t=2.92$, $p=.004$). Greater frequency of close relationship stressors predicted more smoking ($B=.22$, $SE=.09$, $t=2.44$, $p=.015$), marijuana use ($B=.30$, $SE=.08$, $t=3.58$, $p<.001$) and hard drug use ($B=.34$, $SE=.09$, $t=3.81$, $p<.001$) among young men only. Gender also interacted with *partner's* close relationship stressors when predicting conduct problems ($t=2.1$, $p=.04$). Greater frequency of *partner's* close relationship stressors related to more conduct problems among young women only ($B=.58$, $SE=.20$, $t=2.88$, $p=.004$).

Neighborhood problems and health behaviors: Gender interacted with neighborhood problems when predicting smoking ($t=2.09$, $p=.037$), alcohol use ($t=2.63$, $p=.009$), marijuana use ($t=3.30$, $p=.001$) and neighborhood problems ($t=2.42$, $p=0.16$). Greater frequency of neighborhood problems predicted more smoking ($B=.04$, $SE=.01$, $t=3.89$, $p<.001$), alcohol use ($B=.02$, $SE=.007$, $t=3.035$, $p=.003$) and marijuana use ($B=.03$, $SE=.008$, $t=3.77$, $p<.001$) among young men only. Greater frequency of neighborhood problems predicted more depressive symptoms ($B=.12$, $SE=.04$, $t=2.71$, $p=.007$) among young women only. Gender interacted with *partner's* neighborhood problems when predicting smoking ($t=-2.07$, $p=.039$). Greater *partner's* neighborhood problems related to less smoking among young men only ($B=-.02$, $SE=.01$, $t=-2.02$, $p=.04$).

General discrimination and health behaviors: Gender interacted with general discrimination when predicting alcohol use ($t=2.63$, $P=.009$) and depressive symptoms ($t=-2.54$, $p=.01$). Greater frequency of general discrimination predicted more alcohol use ($B=.15$, $SE=.06$, $t=2.652$, $p=.008$) and hard drug use ($B=.22$, $SE=.08$, $t=2.82$, $p=.01$) among young men only. Greater frequency of general discrimination predicted more depressive symptoms among both young men ($B=2.68$, $SE=.56$, $t=4.81$, $p<.001$) and young women ($B=.86$, $SE=.38$, $t=2.29$, $p=.02$) although the effect was much stronger for men than women.

Discussion

The findings of this study demonstrate that one's own experiences of several types of stressors are related to substance use, conduct problems and depressive symptoms among both young expectant women and men. Negative health behaviors common during adolescence and young adulthood predict future patterns of behavior and health outcomes into adulthood. These behaviors are also important due to their capacity to affect the health of their baby.

The evidence from this study also concurs with the stress and strain crossover theory, in which stressful experiences in one's own life, may cross over and affect the health and well-being of a close partner (Mina Westman, 2001). While several studies have demonstrated that maternal experiences of stress are associated with poor maternal health behaviors during pregnancy (Dunkel Schetter & Lobel, 2012; Weaver et al., 2008), this study is the first to show that *paternal* experiences of stress are predictive of maternal conduct problems. Previous studies examining the patterns and predictors of maternal health behaviors have largely neglected paternal influences, despite increasing evidence that social and romantic relationships influence health and health behaviors (Umberson & Montez, 2010) particularly among adolescents (Kershaw et al., 2013; Milan et al., 2004).

Personal Experiences of Stress and One's Own Health Behaviors

This study identified several domains of stress exposures that were associated with negative health behaviors among young expectant men. Notably, a greater number of personal experiences of all sources of stress (relationship stressors, personal hardship stressors, neighborhood problems and discrimination) was associated with more substance use among the young men in this study. While most research has focused on predictors of maternal health behaviors, understanding the predictors of *paternal* health behaviors has important implications not only for his health, but for his pregnant partner's health as well. Men's negative health behaviors, such as smoking, can directly influence maternal health (e.g. by increasing her exposure to second hand smoke) and men's health behaviors can influence his partner's health behaviors. For example, studies have shown that women are less like to quit smoking during pregnancy if her partner smokes (Schneider, Huy, Schütz, & Diehl, 2010). Programs and interventions that aim to reduce substance use among young expectant mothers may be more effective if the substance use of *both* parents is addressed.

Among the young women in this study, however, significant associations between stress experiences and substance use were sparse. We did find, however, that a greater number of experiences of personal hardship stressors was associated with more smoking among women. The lack of consistent associations between maternal experiences of stress and substance use in this study may be an artifact of the low prevalence of the report of substance use among the women. These results, however, may show that the stressors that affect paternal and maternal substance use during pregnancy may be different. Previous research has shown that different types of stressors predicted smoking among adolescent girls compared to boys (Byrne & Mazanov, 1999). Previous research has shown that young men and women may use different coping mechanisms to deal with stress (Belle, 1987; Rose & Rudolph, 2006) and the evidence from this study may concur: substance use was associated with young men's experiences of stress more frequently among young men than among young women in this study.

Partner's Experiences of Stress and One's Own Health Behaviors

A majority of previous evidence supporting the stress and strain crossover theory has found negative effects of stress and strain on a partner's well-being (Bakker et al., 2009). Contrary to this evidence and our hypothesis, all of the significant effects of the young women's experiences of stress were associated with *less risk* behavior and *more protective* behavior

among her male partner. Young women's experiences of personal hardship stressors were significantly associated with less marijuana use among her male partner, and women's experiences of neighborhood problems were significantly associated with less smoking among her male partner. Although the effect sizes of these counterintuitive findings were small, they still suggest that we should further explore cross-over effects, as current theories and models may not appropriately characterize the relationship processes and dynamics among young couples expecting a baby.

This study also found, however, that young men's depressive symptoms were associated with his partner's experiences of personal hardship stressors. The effect size of this association was substantial ($B=.77$, $p=.006$) This evidence is consistent with the theory of empathetic distress in which a person takes on the experiences of stress and distressed emotions of his/her partner and experiences them as one's own (Smith & Rose, 2011).

Popular culture may portray young expectant women's partners only as sources of stress or complication; however, the findings from this study suggest that young men who see that their partner is under significant stress, may improve their health behaviors for their partner's benefit and may empathize with their partner's troubles to the point that they take on the distressed emotions as their own. For all of the negative portrayal of young fathers, they can be an important source of support (Letourneau, Stewart, & Barnfather, 2004) and young fathers may have a meaningful influence on the health of their pregnant partners (Martin, McNamara, Milot, Halle, & Hair, 2007). In fact, recent research among the young couples from this study showed that better relationship adjustment, in terms of secure attachments, relationship equity and feelings of love were important for women's mental and physical health (Kershaw et al., 2013).

Strengths, Limitations, and Future Research Directions

This secondary data analysis has several limitations. This study was cross-sectional and therefore experiences of stress and behavioral risk were assessed at the same point in time, limiting our ability to infer causation. The timeframes referenced by each question, however, make the direction of the hypothesized association plausible. The risk behavior items referred only to behaviors in the previous 3 months. Both personal hardship and close relationship stressors referred to experiences within the past six months. While neighborhood problems and general discrimination were more general questions referring to their daily life, these constructs are likely consistent over time.

Also, pregnant women reported few negative health behaviors in this study during pregnancy. Therefore, the association between experiences of stress and behavioral risk among the women in this sample may be spurious; regardless, we were able to identify a few significant relationships between stress and health behaviors among the women. In addition, the small sizes and counterintuitive nature of some of the cross-over effects may suggest that the cross-over results were due to chance. Future research is warranted given that we found cross-over effects that were more substantial (i.e. greater effect sizes).

Despite these limitations, this study is one of the few that includes a direct report from men of their experiences of stress during their partner's pregnancy and its relationship to risk

behavior. In addition, this study includes experiences of stress from multiple domains and their distinct associations with behavioral risk and mental health outcomes. This study also assessed the influence of a *partner's* experience of stress on one's own behavioral risk and mental health, which very few studies, if any, have done. In addition, this study assessed stress crossover from both sides of the couple—many studies just focus on crossover from one member of the couple to the other (Bakker et al., 2009).

In conclusion, this study filled important gaps in the literature on the factors influencing the health behaviors of young couples expecting a baby. The findings demonstrate that experiences of stress across multiple life domains are associated with both maternal *and paternal* health behaviors and mental health among young couples during pregnancy. Interventions that address healthy coping mechanisms among this population may help reduce the effect of stress on young parents. Programs and interventions targeting prenatal health behaviors (particularly among adolescents and young adults) overwhelmingly neglect young male partners of the expectant young woman. These findings indicate that experiences of stress are associated with young men's health behaviors during this time. These health behaviors have important implications for their health into adulthood and for the health of their partner and child.

This research also revealed that young women's experiences of stress may crossover and impact the health behaviors and mental health of her romantic partner. The male partners of young expectant women can be an important source of support and may have a significant influence on the health of their pregnant partners. It is critical that programs and interventions aimed at improving young women's prenatal health behaviors include romantic partners, when feasible and desired by both members of the couple, and address the importance of the influence of this relationship on their own and their baby's health.

Acknowledgments

This research was funded by The National Institute of Mental Health (Grant #5R01MH075685)

References

- Aneshensel CS, Sucoff CA. The neighborhood context of adolescent mental health. *Journal of Health and Social Behavior*. 1996; 37(4):293–310. [PubMed: 8997886]
- Bakker AB, Westman M, van Emmerik IH. Advancements in crossover theory. *Journal of Managerial Psychology*. 2009; 24(3):206–219.
- Belle, D. In *Gender and stress*. Vol. xii. New York, NY, US: Free Press; 1987. Gender differences in the social moderators of stress; p. 257-277.
- Bennett GG, Wolin KY, Robinson EL, Fowler S, Edwards CL. Perceived racial/ethnic harassment and tobacco use among African American young adults. *American Journal of Public Health*. 2005; 95(2):238–240. <http://doi.org/10.2105/AJPH.2004.037812>. [PubMed: 15671457]
- Booker C, Gallaher P, Unger J, Ritt-Olson A, Johnson A. Stressful life events, smoking behavior, and intentions to smoke among a multiethnic sample of sixth graders. *Ethnicity & Health*. 2004; 9(4): 369–397. <http://doi.org/10.1080/1355785042000285384>. [PubMed: 15570681]
- Brugha TS, Cragg D. The List of Threatening Experiences: the reliability and validity of a brief life events questionnaire. *Acta Psychiatrica Scandinavica*. 1990; 82(1):77–81. [PubMed: 2399824]

- Byrne DG, Mazanov J. Sources of adolescent stress, smoking and the use of other drugs. *Stress Medicine*. 1999; 15(4):215–227. [http://doi.org/10.1002/\(SICI\)1099-1700\(199910\)15:4<215::AID-SMI817>3.0.CO;2-1](http://doi.org/10.1002/(SICI)1099-1700(199910)15:4<215::AID-SMI817>3.0.CO;2-1).
- C'deBacá J, Lapham SC, Skipper BJ, Watkins ML. Use of Computer Interview Data to Test Associations between Risk Factors and Pregnancy Outcomes. *Computers and Biomedical Research*. 1997; 30(3):232–243. <http://doi.org/10.1006/cbmr.1997.1449>. [PubMed: 9281330]
- Cohen S. Social Relationships and Health. *American Psychologist*. 2004; 59(8):676–684. <http://doi.org/10.1037/0003-066x.59.8.676>. [PubMed: 15554821]
- Compas BE, Connor-Smith JK, Saltzman H, Thomsen AH, Wadsworth ME. Coping with stress during childhood and adolescence: problems, progress, and potential in theory and research. *Psychological Bulletin*. 2001; 127(1):87–127. [PubMed: 11271757]
- Cutrona CE, Hessling RM, Bacon PL, Russell DW. Predictors and correlates of continuing involvement with the baby's father among adolescent mothers. *Journal of Family Psychology*. 1998; 12(3):369–387. <http://doi.org/10.1037/0893-3200.12.3.369>.
- Des Jarlais, D.; Turner, C. Audio-CASI versus interviewer obtained survey from participants in syringe exchange programs. Paper presented at: North American Syringe Exchange Convention 1998; Baltimore, MD. 1998.
- Dunkel Schetter, C.; Lobel, M. Pregnancy and Birth Outcomes: A Multilevel Analysis of Prenatal Maternal Stress and Birth Weight. In: Baum, A.; Revenson, T.; Singer, J., editors. *Handbook of Health Psychology*. 2nd. New York: Springer; 2012. p. 431-464.
- Ellaway A, Macintyre S, Kearns A. Perceptions of Place and Health in Socially Contrasting Neighbourhoods. *Urban Studies*. 2001; 38(12):2299–2316. <http://doi.org/10.1080/00420980120087171>.
- Feldman PJ, Dunkel-Schetter C, Sandman CA, Wadhwa PD. Maternal Social Support Predicts Birth Weight and Fetal Growth in Human Pregnancy. *Psychosomatic Medicine*. 2000; 62(5):715–725. [PubMed: 11020102]
- Fleming CB, White HR, Oesterle S, Haggerty KP, Catalano RF. Romantic Relationship Status Changes and Substance Use Among 18- to 20-Year-Olds. *Journal of Studies on Alcohol and Drugs*. 2010; 71(6):847–856. [PubMed: 20946741]
- Florsheim P, Sumida E, McCann C, Winstanley M, Fukui R, Seefeldt T, Moore D. The transition to parenthood among young African American and Latino couples: relational predictors of risk for parental dysfunction. *J Fam Psychol*. 2003; 17(1):65–79. [PubMed: 12666464]
- Folkman S, Chesney MA, Pollack L, Phillips C. Stress, coping, and high-risk sexual behavior. *Health Psychology: Official Journal of the Division of Health Psychology, American Psychological Association*. 1992; 11(4):218–222.
- Folkman S, Lazarus RS. An analysis of coping in a middle-aged community sample. *Journal of Health and Social Behavior*. 1980; 21(3):219–239. [PubMed: 7410799]
- Furman W, Wehner EA. Adolescent romantic relationships: A developmental perspective. *New Directions for Child and Adolescent Development*. 1997; 1997(78):21–36.
- Geller PA. CNS Spectrums: Pregnancy as a Stressful Life Event. *CNS Spectrums*. 2004; 9(3) Retrieved from <http://www.cnsspectrums.com/asp/articleDetail.aspx?articleid=2741>.
- Giordano PC. Relationships in Adolescence. *Annual Review of Sociology*. 2003; 29:257–281.
- Gunlicks-Stoessel ML, Powers SI. Romantic Partners' coping strategies and patterns of cortisol reactivity and recovery in response to relationship conflict. *Journal of Social and Clinical Psychology*. 2009; 28(5):630–649. <http://doi.org/10.1521/jscp.2009.28.5.630>. [PubMed: 22563141]
- Halkitis PN, Parsons JT. Recreational Drug Use and HIV-Risk Sexual Behavior Among Men Frequenting Gay Social Venues. *Journal of Gay & Lesbian Social Services*. 2003; 14(4):19–38. http://doi.org/10.1300/J041v14n04_02.
- Hamilton, BE.; Martin, JA.; Osterman, M.; Curtis, S. National Vital Statistics Reports 63:2. National Center for Health Statistics; 2014. Births: Preliminary Data for 2013. Retrieved from http://www.cdc.gov/nchs/data/nvsr/nvsr63/nvsr63_02.pdf
- Harrell S, Merchant M, Young S. Psychometric properties of the racism and life experience scales. Unpublished Manuscript. 1997

- He K, Kramer E, Houser RF, Chomitz VR, Hacker KA. Defining and understanding healthy lifestyles choices for adolescents. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine*. 2004; 35(1):26–33. <http://doi.org/10.1016/j.jadohealth.2003.09.004>. [PubMed: 15193571]
- Hoffman S, Hatch MC. Stress, social support and pregnancy outcome: a reassessment based on recent research. *Paediatric and Perinatal Epidemiology*. 1996; 10(4):380–405. <http://doi.org/10.1111/j.1365-3016.1996.tb00063.x>. [PubMed: 8931053]
- Kenny, DA.; Kashy, DA.; Cook, WL. *Dyadic Data Analysis*. 1st. The Guilford Press; 2006.
- Kershaw T, Arnold A, Gordon D, Magriples U, Niccolai L. In the Heart or in the Head: Relationship and Cognitive Influences on Sexual Risk Among Young Couples. *AIDS and Behavior*. 2012; 16(6):1522–1531. <http://doi.org/10.1007/s10461-011-0049-1>. [PubMed: 21983692]
- Kershaw T, Murphy A, Divney A, Magriples U, Niccolai L, Gordon D. What's Love Got to Do with It: Relationship Functioning and Mental and Physical Quality of Life Among Pregnant Adolescent Couples. *American Journal of Community Psychology*. 2013; 52(3-4):288–301. <http://doi.org/10.1007/s10464-013-9594-2>. [PubMed: 24091562]
- Kershaw TS, Magriples U, Westdahl C, Rising SS, Ickovics J. Pregnancy as a Window of Opportunity for HIV Prevention: Effects of an HIV Intervention Delivered Within Prenatal Care. *American Journal of Public Health*. 2009; 99(11):2079–2086. <http://doi.org/10.2105/AJPH.2008.154476>. [PubMed: 19762662]
- Kessler RC, McGonagle KA, Swartz M, Blazer DG, Nelson CB. Sex and depression in the National Comorbidity Survey. I: Lifetime prevalence, chronicity and recurrence. *Journal of Affective Disorders*. 1993; 29(2-3):85–96. [PubMed: 8300981]
- Kessler RC, McLeod JD. Sex Differences in Vulnerability to Undesirable Life Events. *American Sociological Review*. 1984; 49(5):620–631. <http://doi.org/10.2307/2095420>.
- Kim KJ, Conger RD, Elder GH Jr, Lorenz FO. Reciprocal influences between stressful life events and adolescent internalizing and externalizing problems. *Child Development*. 2003; 74(1):127–143. [PubMed: 12625440]
- Kowaleski-Jones L. Staying Out of Trouble: Community Resources and Problem Behavior Among High-Risk Adolescents. *Journal of Marriage and Family*. 2004; 62(2):449–464. <http://doi.org/10.1111/j.1741-3737.2000.00449.x>.
- Lancôt N, Smith CA. Sexual Activity, Pregnancy, and Deviance in a Representative Urban Sample of African American Girls. *Journal of Youth and Adolescence*. 2001; 30(3):349–372. <http://doi.org/10.1023/A:1010496229445>.
- Latkin CA, Vlahov D, Anthony JC. Socially desirable responding and self-reported HIV infection risk behaviors among intravenous drug users. *Addiction*. 1993; 88(4):517–526. <http://doi.org/10.1111/j.1360-0443.1993.tb02058.x>. [PubMed: 8485429]
- Letourneau NL, Stewart MJ, Barnfather AK. Adolescent mothers: Support needs, resources, and support-education interventions. *Journal of Adolescent Health*. 2004; 35(6):509–525. <http://doi.org/10.1016/j.jadohealth.2004.01.007>. [PubMed: 15581532]
- Lobel M, Hamilton JG, Cannella DT. Psychosocial Perspectives on Pregnancy: Prenatal Maternal Stress and Coping. *Social and Personality Psychology Compass*. 2008; 2(4):1600–1623. <http://doi.org/10.1111/j.1751-9004.2008.00119.x>.
- Martin, JA.; Hamilton, BE.; Osterman, M.; Curtin, S.; Mathews, TJ. National Vital Statistics Reports 64:1. National Center for Health Statistics; 2015. Births: Final Data for 2013. Retrieved from http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_01.pdf
- Martin JK, Tuch SA, Roman PM. Problem drinking patterns among African Americans: the impacts of reports of discrimination, perceptions of prejudice, and “risky” coping strategies. *Journal of Health and Social Behavior*. 2003; 44(3):408–425. [PubMed: 14582316]
- Martin LT, McNamara MJ, Milot AS, Halle T, Hair EC. The effects of father involvement during pregnancy on receipt of prenatal care and maternal smoking. *Maternal and Child Health Journal*. 2007; 11(6):595–602. <http://doi.org/10.1007/s10995-007-0209-0>. [PubMed: 17557201]
- Matud MP. Gender differences in stress and coping styles. *Personality and Individual Differences*. 2004; 37(7):1401–1415. <http://doi.org/10.1016/j.paid.2004.01.010>.

- Milan S, Ickovics JR, Kershaw T, Lewis J, Meade C, Ethier K. Prevalence, Course, and Predictors of Emotional Distress in Pregnant and Parenting Adolescents. *Journal of Consulting and Clinical Psychology*. 2004; 72(2):328–340. <http://doi.org/10.1037/0022-006X.72.2.328>. [PubMed: 15065965]
- Nelson JA, O'Brien M, Blankson AN, Calkins SD, Keane SP. Family Stress and Parental Responses to Children's Negative Emotions: Tests of the Spillover, Crossover, and Compensatory Hypotheses. *Journal of Family Psychology*. 2009; 23(5):671–679. <http://doi.org/10.1037/a0015977>. [PubMed: 19803603]
- Paschal AM, Lewis-Moss RK, Hsiao T. Perceived Fatherhood Roles and Parenting Behaviors Among African American Teen Fathers. *Journal of Adolescent Research*. 2011; 26(1):61–83. <http://doi.org/10.1177/0743558410384733>.
- Radloff LS. The CES-D Scale. *Applied Psychological Measurement*. 1977; 1(3):385–401. <http://doi.org/10.1177/014662167700100306>.
- Rosario M, Salzinger S, Feldman RS, Ng-Mak DS. Community violence exposure and delinquent behaviors among youth: The moderating role of coping. *Journal of Community Psychology*. 2003; 31(5):489–512. <http://doi.org/10.1002/jcop.10066>.
- Rose AJ, Rudolph KD. A Review of Sex Differences in Peer Relationship Processes: Potential Trade-offs for the Emotional and Behavioral Development of Girls and Boys. *Psychological Bulletin*. 2006; 132(1):98–131. <http://doi.org/10.1037/0033-2909.132.1.98>. [PubMed: 16435959]
- Ross CE, Mirowsky J. Disorder and Decay The Concept and Measurement of Perceived Neighborhood Disorder. *Urban Affairs Review*. 1999; 34(3):412–432. <http://doi.org/10.1177/107808749903400304>.
- Rotheram-Borus MJ, Rosario M, Van Rossem R, Reid H, Gillis R. Prevalence, course, and predictors of multiple problem behaviors among gay and bisexual male adolescents. *Developmental Psychology*. 1995; 31(1):75–85. <http://doi.org/10.1037/0012-1649.31.1.75>.
- Rubin, KH.; Bukowski, WM.; Laursen, B. *Handbook of Peer Interactions, Relationships, and Groups*. Guilford Press; 2011.
- Sampson RJ, Morenoff JD, Gannon-Rowley T. Assessing “Neighborhood Effects”: Social Processes and New Directions in Research. *Annual Review of Sociology*. 2002; 28:443–478.
- Schneider S, Huy C, Schütz J, Diehl K. Smoking cessation during pregnancy: A systematic literature review. *Drug & Alcohol Review*. 2010; 29(1):81–90. [PubMed: 20078687]
- Seaton EK, Caldwell CH, Sellers RM, Jackson JS. The Prevalence of Perceived Discrimination among African American and Caribbean Black Youth. *Developmental Psychology*. 2008; 44(5):1288–1297. <http://doi.org/10.1037/a0012747>. [PubMed: 18793063]
- Siqueira L, Diab M, Bodian C, Rolnitzky L. Adolescents becoming smokers: The roles of stress and coping methods. *Journal of Adolescent Health*. 2000; 27(6):399–408. [PubMed: 11090742]
- Skinner EA, Edge K, Altman J, Sherwood H. Searching for the structure of coping: a review and critique of category systems for classifying ways of coping. *Psychological Bulletin*. 2003; 129(2): 216–269. [PubMed: 12696840]
- Smith RL, Rose AJ. The “Cost of Caring” in Youths' Friendships: Considering Associations Among Social Perspective-Taking, Co-Rumination, and Empathetic Distress. *Developmental Psychology*. 2011; 47(6):1792–1803. <http://doi.org/10.1037/a0025309>. [PubMed: 21895362]
- Taylor SE, Klein LC, Lewis BP, Gruenewald TL, R A, Updegraff JA. Biobehavioral responses to stress in females: Tend-and-befriend, not fight-or-flight. *Psychological Review*. 2000; 107(3):411–429. <http://doi.org/10.1037/0033-295X.107.3.411>. [PubMed: 10941275]
- Taylor, S.; Master, S. Social responses to Stress: The Tend-and-Befriend Model. In: RJ, C.; A, B., editors. *The Handbook of Stress Science: Biology, Psychology, and Health*. New York: Springer Publishing Company; 2011.
- Tolan P, Grant K. How social and cultural contexts shape the development of coping: Youth in the inner city as an example. *New Directions for Child and Adolescent Development*. 2009; 2009(124):61–74. <http://doi.org/10.1002/cd.243>.
- Turner, RJ.; Wheaton, B. Checklist measurement of stressful life events. In: Cohen, S.; Kessler, RC.; Gordon, LU., editors. *Measuring stress: A guide for health and social scientists*. Oxford University Press; 1997. p. 29–58.

- Umberson D, Montez JK. Social Relationships and Health. *Journal of Health and Social Behavior*. 2010; 51(1 suppl):S54–S66. <http://doi.org/10.1177/0022146510383501>. [PubMed: 20943583]
- Weaver K, Campbell R, Mermelstein R, Wakschlag L. Pregnancy Smoking in Context: The Influence of Multiple Levels of Stress. *Nicotine & Tobacco Research*. 2008; 10(6):1065–1073. <http://doi.org/10.1080/14622200802087564>. [PubMed: 18584470]
- Westman M. Unraveling the Relationship of Distress Levels Within Couples: Common Stressors, Empathic Reactions, or Crossover via Social Interaction? *Human Relations*. 1998; 51(2):137–156. <http://doi.org/10.1177/001872679805100202>.
- Westman M. Stress and Strain Crossover. *Human Relations*. 2001; 54(6):717–751. <http://doi.org/10.1177/0018726701546002>.
- Williams K, McGillicuddy-De Lisi A. Coping Strategies in Adolescents. *Journal of Applied Developmental Psychology*. 1999; 20(4):537–549. [http://doi.org/10.1016/S0193-3973\(99\)00025-8](http://doi.org/10.1016/S0193-3973(99)00025-8).
- Williamson DE, Birmaher B, Ryan ND, Shiffrin TP, Lusk JA, Protopapa J, et al. Brent DA. The stressful life events schedule for children and adolescents: development and validation. *Psychiatry Research*. 2003; 119(3):225–241. [PubMed: 12914894]
- Wills TA. Stress and coping in early adolescence: relationships to substance use in urban school samples. *Health Psychology: Official Journal of the Division of Health Psychology, American Psychological Association*. 1986; 5(6):503–529.
- Zahn-Waxler C, Radke-Yarrow M. The origins of empathic concern. *Motivation and Emotion*. 1990; 14(2):107–130. <http://doi.org/10.1007/BF00991639>.
- Zimmer-Gembeck, M.; Skinner, E. Adolescents Coping with Stress: Development and Diversity. *The Prevention Researcher* No 15(4). 2008. Retrieved from <https://www.pdx.edu/sites/www.pdx.edu/psy/files/15-4-Zimmer-Gembeck-E.pdf>

Table 1

Demographic characteristics, stressors and outcomes.

	Women		Men		McNemar's Test p	
	%	(N)	%	(N)		
Demographics						
Race/Ethnicity	Employed	28.20	(83)	60.50	(178)	<0.001
	In School	39.80	(117)	26.90	(79)	<.001
	First Child	78.8	(231)	75.5	(219)	NS
	Black	39.50	(117)	48.60	(144)	<.001
	Hispanic	39.50	(117)	36.50	(108)	
	White	16.90	(50)	10.50	(31)	
	Other	4.10	(12)	4.40	(13)	
	Mean	(SD)	Mean	(SD)	Paired T-Test	
	Age	18.71	(1.63)	21.33	(4.06)	<.001
	Years School	11.75	(1.82)	11.84	(1.89)	NS
Personal Income (USD)	5846	(7458)	10927	(11878)	<.001	
Stressors						
Personal Hardship Stressors (out of 7)	1.46	(1.34)	1.66	(1.63)	0.07	
Close Relationship Stressors (out of 4)	0.63	(0.94)	0.66	(0.93)	NS	
Neighborhood Problems (on scale from 15-25)	22.41	(7.54)	24.39	(8.35)	<0.001	
General Discrimination (on scale from 0 to 5)	0.85	(0.81)	1.02	(1.01)	0.02	
Outcomes						
Substance Use Past 3 months (0=never to 4=every day)						
Smoking (on scale from 0-4)	0.36	(0.95)	1.13	(1.47)	<.001	
Drinking (on scale from 0-4)	0.05	(0.24)	0.85	(0.98)	<.001	
Marijuana Use (on scale from 0-4)	0.07	(0.38)	0.81	(1.28)	<.001	
Hard Drug Use (on scale from 0-16)	--	--	0.25	(1.25)	--	
Conduct Problems (on a scale 7-28)	24.03	(3.50)	24.77	(3.56)	.005	
Depressive Symptoms (on a scale from 0 to 45)	10.53	(7.38)	8.88	(6.62)	.002	

Table 2

Frequencies of individual life event stressors in past 6 months among men and women.

	Women	Men	McNemar's Test
Life Event Stressors by Category	%	%	p
Personal Hardship Stressors			
Money Problems	44.6	45.2	.92
Being Unemployed	26.0	33.3	.04
Moving	35.8	29.3	.07
Having something lost or stolen	16.6	22.4	.09
Problems at work or school	13.2	12.2	.80
Problems with police	4.7	13.9	<.001
Suffered illness, injury, assault	4.7	9.2	.05
Close Relationship Stressors			
Broke off steady relationship ²	26.0	7.1	.06
Relative suffered illness, injury assault	17.6	16.7	.81
Family member or close friend died	24.0	26.2	.49
Serious problem with friend, neighbor, relative	17.2	16.3	.82

²This item refers to any relationship, including the current relationship. Each individual provided his/her own response. Discrepancy in the couples percentages here indicate that participants may have had other relationships in the previous six months and/or may not perceive a "break-up" the same way.

Table 3

Pearson product moment correlation coefficients (r) between parental predictor and outcome variables measuring the non-independence of maternal and paternal reports within couples.

	r	p
Personal Hardship Stressors	.20	<.001
Close Relationship Stressors	.07	.09
Neighborhood Problems	.29	<.004
General Discrimination	.09	.04
Smoking	.05	.27
Drinking	-.22	<.001
Marijuana Use	-.08	.04
Hard Drug Use	-.02	.62
Conduct Problems	.20	<.001
Depressive Symptoms	.17	<.001

Table 4

Multi-level linear regression models examining association between stressors (own and partner's) and behavioral risk and depressive symptoms. All models control for age, education, income, race/ethnicity, parity and employment status.

Stress Exposures	Smoking			Drinking			Marijuana Use			Hard Drug Use ^d			Conduct Problems			Depressive Symptoms		
	B	SE	t	B	SE	t	B	SE	t	B	SE	t	B	SE	t	B	SE	t
Personal Hardship Stressors																		
Actor	0.08*	0.04	2.09	0.02	0.01	1.37	0.04[‡]	0.02	1.90	-0.02	0.06	-0.34	0.45***	0.11	4.26	0.45*	0.22	2.01
Partner	-0.04	0.04	-1.11	-0.02	0.01	-1.58	-0.02	0.02	-0.98	-0.02	0.07	-0.24	0.09	0.10	0.84	0.34	0.23	1.52
Close Relationship Stressors																		
Actor	0.00	0.05	-0.01	0.02	0.02	1.27	0.04	0.03	1.75	0.34***	0.09	3.81	0.26	0.15	1.68	0.49	0.33	1.49
Partner	-0.01	0.06	-0.12	0.00	0.02	-0.24	0.02	0.03	0.94	-0.08	0.09	-0.96	0.23	0.15	1.48	0.50	0.33	1.54
Neighborhood Problems																		
Actor	0.02***	0.01	2.94	0.00	0.00	0.27	0.01	0.00	1.63	0.00	0.01	-0.20	0.02	0.02	1.24	0.07*	0.04	2.00
Partner	0.00	0.01	-0.34	0.00	0.00	-1.50	0.00	0.00	-0.92	0.00	0.01	-0.34	-0.01	0.02	-0.37	-0.04	0.04	-1.06
General Discrimination																		
Actor	-0.01	0.06	-0.09	0.02	0.02	0.94	0.03	0.03	0.91	0.22**	0.08	2.82	1.17***	0.16	7.35	1.39***	0.33	4.21
Partner	0.06	0.05	1.17	-0.01	0.02	-0.83	-0.01	0.02	-0.60	0.07	0.11	0.66	0.10	0.16	0.61	-0.16	0.35	-0.47

* p<.05

** p 0.01

*** p 0.001

[‡] p=.06^a Only reported for men

Table 5Descriptive table of significant associations between stressors and behavioral risk among couples.^a

Stressor		Women	Men
↑ Personal Hardship Stressors	Own	↑ conduct problems ↑ smoking ↑ depressive symptoms	↑ conduct problems ↑ smoking ↑ drinking ↑ marijuana use ↑ depressive symptoms
	Partner's		↓ marijuana use ↑ depressive symptoms
↑ Close Relationship Stressors	Own		↑ smoking ↑ marijuana use ↑ hard drug use
	Partner's	↑ conduct problems	
↑ Neighborhood problems	Own	↑ depressive symptoms	↑ smoking ↑ drinking ↑ marijuana use
	Partner's		↓ smoking
↑ General Discrimination	Own	↑ conduct problems ↑ depressive symptoms	↑ conduct problems ↑ drinking ↑ hard drug use ↑ depressive symptoms
	Partner's		

^aExamples of how to read this table: Greater frequency of partner's personal hardship stressors associated with greater depressive symptoms among men. Greater frequency of one's own experiences of discrimination associated with own depressive symptoms among men and women.