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Social Support, Attachment, and Chronic Stress as Correlates of Latina Mother and Daughter Drug Use Behaviors

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Abstract

This cross-sectional study examined three social determinants (sociodemographics, chronic stress, and social support) and the quality of attachment among a community-based sample of Latina mother–daughter dyads (N = 158 dyads) to document the relationship between those factors and their respective drug use. Hypotheses were: (a) the quality of mother–daughter attachment will mediate the relationship between their social support and drug use and (b) the effects of mothers’ and daughters’ chronic stress on their drug use is mediated by their social support which, in turn, is also mediated by the quality of their attachment after taking into account socio-demographic variables. Structural equation modeling was used with dyads as the units of analyses. Our preliminary results show: (a) transgenerational dyadic concordance among the variables, (b) mothers’ higher quality of attachment scores mediated the relationship between their chronic stress and social support scores on their lower drug use scores, and (c) daughters’ attachment scores mediated the relationship between their social support scores and their lower drug use scores. Limitations are discussed. Our preliminary results provide a useful first step towards understanding the processes linking stress, social support, and attachment with drug use behaviors among Latina mothers and daughters from a culturally relevant and transgenerational perspective.

INTRODUCTION

Most prospective studies that elucidate social determinants of liability which predict developmental trajectories to substance abuse from childhood to adulthood are conducted

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Declaration of Interest

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with non-Latino samples (eg, Refs.^{1, 2, and 3}) or include too few Latinos to detect statistically significant ethnic effects.^{3–5} As such, little is known about the interplay of social determinants and how they converge to influence developmental trajectories among Latinos as it pertains to the transition from substance use to substance abuse in adulthood. Furthermore, it is exceedingly rare to find studies which take into account transgenerational perspectives on how social determinants reciprocally influence Latino parents and their adult children's use of licit and illicit substances in context of their respective acculturation to U.S. norms.^{6–9} This is especially true among Latina mother–daughter dyads which are the focus of this preliminary cross-sectional study.

Here, we examine three key social determinants (sociodemographics, chronic stress, and social support) along with the quality of attachment among Latina mother–daughter dyads to document the relationship between those factors and the magnitude of their respective substance use severity (SUS). More specifically, we hypothesize that: (a) the quality of mother–daughter attachment will mediate the relationship between their levels of social support and SUS and (b) the effects of mothers' and daughters' chronic stress on their SUS is mediated by their social support which, in turn, is also mediated by the quality of their attachment after taking into account sociodemographic variables (eg, age, education, employment, birthplace, immigration status, length of stay in the United States). Taken together, we also expect to observe reciprocal influences between the quality of mother–daughter attachment and their respective SUS. What follows is a brief literature review of the social determinant and attachment constructs of interest as depicted in the conceptual framework shown in Fig. 1.

Social Determinants, Attachment, and Drug Use

Impoverished socioeconomic conditions commonly co-occur with substance abuse among Latina women.¹⁰ Specifically, the lack of a formal education, unemployment, inadequate, or no health insurance, limited access to high-quality health care and prevention services increase Latina women's propensity to use licit and illicit substance to cope with the effects of poverty and inadequate resources.¹¹ Although impoverished socioeconomic conditions impinge on the well-being of both Latina mothers and daughters, an additional burden on their relationship emerges as they acclimate to U.S. norms. In that regard, a generation gap of acculturative induced stress transpires as Latina offspring of immigrant mothers experience more of their lives under U.S. cultural influences compared to their foreign born mothers. For example, one manifestation of that generation gap is language proficiencies and preferences. As Latina daughters spend a greater proportion of their lives in the United States compared to their foreign born mothers, they prefer English to Spanish in their everyday nonfamily interactions.^{12,13} Conversely, immigrant mothers are slower to acquire English language competencies and do so as a correlate of their time spent in the United States.¹⁴ Notwithstanding the generation gap in the acculturative processes, Latinas do adopt U.S. norms as they experience changes in a variety of socioeconomic factors (eg, marital status, education, employment, and income) albeit differentially experienced by mothers and daughters.^{12,15}

Frequently co-occurring with acculturative related stress is chronic stress experienced by Latinas induced by negative life events which is a well-known precursor to substance abuse.¹⁶ Chronic stress is associated with negative reactions that include psychological/emotional and social behaviors such as withdrawal (eg, from family, faith, and/or friends support networks) as well as difficulty giving and/or receiving support from others.¹⁷ Thus, Latina women enduring persistent stress may self-isolate and perceive themselves as a burden to their families.¹⁷ Consequently, they may turn to alcohol and drugs for stress reduction.^{18–20}

Juxtaposed to the differential acculturative experiences across the lifespan of each mother–daughter dyad is the extent to which each dyadic member has the adaptive capacity to accommodate both traditional Latino family values (eg, familismo, gender roles, marianismo, machismo) and U.S. cultural norms as well as cope with the chronic stress related to negative life events.^{12,13} Significantly influencing their adaptive capacity for acculturative integration and the subsequent acquisition of a bicultural identity while rolling with the punches of everyday life is the quality of the mother–daughter relationship vis-à-vis attachment.^{21,22} In essence, attachment is a reciprocal affectionate bond between two people.²³ More specifically, *acoplamiento* (attachment) among family members is characterized by mutual trust, communication, and closeness²⁴ and plays a powerful role in the lives of Latinas.²¹ Moreover, attachment is associated with healthy adult Latina functioning and resiliency to psychological distress.²⁵ However, only a few studies have begun to explore the reciprocal influence of the quality of mother–daughter attachment on their respective use of licit and illicit drugs.²⁶ In that context, the quality of the Latina mother–daughter attachment may reciprocally influence both the quantity and frequency of their substance use.²⁷

In addition to the quality of mother–daughter attachment as a protective mechanism against social determinant liabilities, positive social support has been repeatedly shown to attenuate the adverse effects of chronic stress on substance use behaviors.^{1,2} For example, recent studies demonstrated that positive social support enhanced feelings of well-being among Latinos^{11,28} and reduced drug use behaviors during adolescence and early adulthood.²⁹ Furthermore, high levels of social support were shown to be inversely related to psychological distress among college students: its effects on distress were mediated by attachment.²⁸ Among adolescents, the relationship between stressful life events and drug use is moderated by the level of social support they receive from family and friends.²⁹ Hence, it is not surprising that both high levels of social support and good quality of attachment relationships are inversely associated with the lifetime use of illicit substances.²⁶ However, once again, there is a lacuna of research on the quality of attachment and levels of social support as it pertains to buffering the adverse effects of chronic stress on substance use among Latina women.

In summary, this preliminary cross-sectional study was conducted to elucidate the extent to which mother–daughter attachment mediates the relationship between their levels of chronic stress and social support on the magnitude of their SUS and to document the reciprocal dyadic effects among the respective measures.

METHODS

Participants and Procedure

This cross-sectional study was conducted with a community-based sample of Latino mothers and daughters living in South Florida between 2004 and 2006.³⁰ The study was approved by, and conducted in compliance with, the Institutional Review Board at a large southeastern university. Inclusion criteria for mothers and daughters were: (a) consent to be interviewed for at least 2–3 hours; (b) 18 years of age or older; (c) self-identifying as Latina; (d) living in Miami-Dade County, Florida; (e) willing to provide two telephone numbers to researchers during their participation in the study.

Participants were 158 self-identified Latina mother–daughter dyads (total sample, $n = 316$ women). Mothers were between the ages of 33 and 88 years ($M = 52.8$, $SD = 9.9$), and daughters' age ranged from 18 to 55 years ($M = 27.7$, $SD = 9.2$). Mothers were mostly foreign born (83.5%), generally Caribbean (41.1%), or from South America (30.4%). Most of them were unemployed (65.7%). Among mothers, 21.5% had a college degree or more education and 31.0% had less than a high school level of education. Daughters were mostly U.S. born (46.2%), and more often employed (58.9%) compared to mothers (34.3%). Daughters had high school or post high school training (38.0%) and 18.0% had a college degree or more education. Finally, daughters spent on average 64.9% of their lifetime in the United States compared to 47.3% of mothers lifetime in the United States.

All participants were recruited for a one time face-to-face interview. Women were recruited mostly through community health fairs and health clinics. They were also recruited using announcements on local Spanish radio stations, newspapers, or advertisements on local television channels. Some women were recruited through substance use support groups (eg, Narcotics and Alcoholics Anonymous) and via announcements at a citywide drug court program. A monetary incentive of \$80 was given to each dyad that participated in the study.

Dyad members were interviewed separately. Interviews were conducted in Spanish or English per participant's preference. The protocol consisted of questionnaires, which assessed demographic information, chronic stress, social support, mother–daughter attachment, and drug use behaviors. These assessment instruments have been widely used in previous studies. They were pilot-tested to ensure that they were culturally and linguistically sensitive to Latino culture and Latina women. Instruments not available in Spanish were translated into Spanish.³⁰

Measures: Outcome and Independent Variables

Demographics: Demographic data included variables such as participants' age, birthplace, length of stay in the United States (expressed as a percentage of years lived in the United States with respect to woman's age), immigration status, education level, employment status, and daughter separation status (indicating if the daughter has been separated from her mother at any point in time).³⁰

Chronic Stress: A modified version of the chronic stress scale from a survey designed to assess health risk behaviors among young adults was used to measure chronic stressors in

participants' lives.^{31,32} Items from this scale included: "You are trying to take on too many things at once" and "The place you live is too noisy or too polluted." Respondents rated their agreement with each item on a 3-point Likert scale. A total scale score was computed with high scores indicating high level of stress. Cronbach alpha coefficients were .82 for daughters and .82 for mothers.³⁰

Social Support: The Interpersonal Support Evaluation List scale measured participants' support from mother, daughter, other family members, and friends.³³ Respondents rated their agreement with each item on a 4-point Likert scale (range 20–80). Items from this scale included: "I often meet or talk with family or friends" and "If I were sick I could easily find someone to help me with my daily chores." A total scale score was computed with high scores indicating more social support. Reliability estimates were .86 for mothers and .88 for daughters.³⁰

Attachment: Mother–daughter attachment was assessed using a 25-item version of the Inventory of Parent and Peer Attachment scale.³⁴ Mothers and daughters were asked to indicate their agreement with each item using a 5-point Likert scale ranging from "Almost never or never true" to "Almost always or always true." Items in this scale included: "I feel my mother does a good job as a mother" and "I get upset easily around my mother." A total scale score was computed with higher scores indicating higher quality of attachment. Reliability estimates were .93 and .92 for daughters and mothers, respectively.³⁰

Illicit Drug Use: The Drug Use Frequency (DUF) scale was employed to assess each participant's frequency of illicit drug use and nonmedical use of prescription drugs (eg, sedatives) in the past 3–12 months prior to the interview.³⁵ The DUF scale assessed frequency of use for each illicit and prescription drug (eg, sedatives and hypnotics or tranquilizers) using an 8-point Likert scale ranging from "never uses" to "uses every day."³⁰ This study utilized drug use in the past 3 months prior to the interview because "past 12 months" measures are more prone to have recall bias comparatively. Drug use indicators were dummy coded as "1" if the participant used at least once in the past 3 months and "0" if she never used.

Data Analysis Plan

Dyad as the Unit of Analysis: Dyads constitute a special case of hierarchically structured data with interdependence between mothers' and their daughters' variables within dyads.³⁶ One way to handle the non-independence of dyadic data is to analyze data by taking the dyad as the unit of analysis in multivariate models and allowing responses from each woman to be represented by separate variables.³⁷

Drug Use Measurement Models: In the conceptual model (Fig. 1), the outcome variables were mothers' and daughters' drug use. Instead of analyzing drug use items separately, a single latent variable was assumed to underlie all the drug-related indicators. It was created and used for mothers' and daughters' drug use. One advantage of using latent variables is that it reduces the dimensionality of data by allowing a large number of observable variables to be aggregated into a single measurement model representing an underlying concept,

making it easier for researchers to interpret the data results. Drug use indicators included “sedatives,” “cannabis,” “cocaine,” “others” for both mothers and daughters, and “stimulants” for daughters only. Therefore, both mothers’ and daughters’ drug use latent variables led to a confirmatory factor model with two correlated measurement models.³⁸ A confirmatory factor analysis was performed to evaluate the adequacy of that drug use confirmatory factor model prior to examining relationships involved in the research questions.^{38,39}

Structural Equation of Models: The structural equation modeling approach was used to test the proposed conceptual model.^{38,39} Within-dyad dependence was addressed in the multivariate analysis approach³⁷ in which mother’s variables (drug use, attachment, and social support variables) were allowed to be correlated with the corresponding daughter’s variables. The analysis also included paths between variables and latent factors in the model.

The first set of analyses involved models to determine the associations between drug use and attachment, social support, and chronic stress for both mothers and daughters. Then, we tested the mediation hypotheses summarized in the conceptual framework (see Fig. 1) focusing on the mediation processes by which attachment, social support, and chronic stress were associated to drug use. Individual-level characteristics (eg, age, education, and employment) were treated as covariates in the models. Direct effects of the covariates on substance use, attachment, and social support were tested. Covariates were retained in the models if they were found to be significantly associated with the drug use latent variables, attachment, social support, or chronic stress.

Reported path coefficients were standardized coefficients. For all models, the following goodness-of-fit indices were reported: (a) chi-square test along with its *p*-value; (b) comparative fit index (CFI) and Tucker-Lewis index (TLI); (c) root mean square error of approximation (RMSEA); and (d) coefficient of determination or *R*-square for latent variable. The specific criteria of acceptable goodness of fit were: (a) for chi-square values to be small and nonsignificant, (b) CFI/TLI to be .95, and (c) RM-SEA to be .05.³⁸ Mediation processes were tested using the criteria set forth by Baron and Kenny.⁴⁰ Competing models were derived from the conceptual model. To test for model parsimony, comparisons of models were performed following Sattora-Bentler’s approach.^{39,41}

RESULTS

Descriptive Statistics: Drug Use, Attachment, Social Support, and Chronic Stress

Drug Use Behaviors—Overall, daughters were more often drug users compared to mothers (57.6% versus 37.3%, $p < .001$). Mothers used mostly sedatives (32.5% vs. 13.3%) and daughters consumed mostly cannabis (27.2% vs. 5.7%). Daughters were also more likely to consume cocaine (7.6% vs. 3.8%) while mothers were more likely to use other forms of illicit drugs (10.8% vs. 7.0%). Cocaine and cannabis were the most significant drug use indicators defining drug use latent variables for both mothers and daughters despite their observed low counts. As expected, mothers’ and daughters’ drug use latent variables were significantly correlated (Intra-class correlation, ICC = .636, $p < .01$) as were all their drug use indicators (item related correlations not shown).

Attachment, Social Support, and Chronic Stress—Between mother–daughter dyadic scores were not statistically significant for attachment ($M = 92.48$, $SD = 17.7$ for mothers; $M = 89.96$, $SD = 19.1$ for daughters), social support ($M = 65.75$, $SD = 10.4$ for mothers; $M = 67.39$, $SD = 10.4$ for daughters), or chronic stress ($M = 40.64$, $SD = 9.1$ for mothers; $M = 39.19$, $SD = 9.0$ for daughters).

Table 1 summarizes the correlations of all variables with each other. As shown, there are significant associations between drug use, attachment, and social support for mothers and daughters. However, the correlation between chronic stress and drug use was only significant for mothers documenting the cumulative effects of stress on their drug use. The length of stay in the United States and the immigration status were also significantly associated with drug use. As expected, attachment, social support, and chronic stress were all significantly correlated.

Analysis of Models

Direct Relationships: Attachment, Social Support, and Chronic Stress as Correlates of Drug Use—We used direct relationship models for attachment, social support, and chronic stress as correlates of drug use which had adequate model fit indices as shown in Table 2 below.

Attachment explained 30.1% of mothers' and 18.8% of daughters' total variance in their drug use latent variables indicating that high quality of dyadic attachment is inversely related to the magnitude of their drug use ($p < .001$). High levels of social support were also associated with lower levels of drug use for mothers and daughters explaining 26.6% and 8.8% of the variance, respectively in their drug use scores ($p < .001$). Chronic stress was the least important variable in the association with drug use behaviors explaining 9.5% of the variance in mothers' drug use scores but only .7% ($p > .05$) of the variance in daughters' drug use scores.

Complete Mediation Model—Attachment was modeled as the mediator between drug use and social support. In this complete mediation model, chronic stress, and demographics (eg, age, education, employment) were treated as covariates. The mediation model provided adequate fit indices ($\chi^2 = 44.426$, $p = .454$, RMSEA = .008, CFI/TLI = .998) as shown in Fig. 2. The model explained 41.1% of mothers' and 19.4% of daughters' variance respectively in their latent drug use scores.

For both mothers and daughters, observed direct path coefficients increased in magnitude compared to the coefficients observed in the previous direct relationship models. These comparisons of coefficients show that social support strengthened the effect of attachment on drug use. The associations between attachment and social support variables were positive and statistically significant for both mothers and daughters. However, the coefficients were small in magnitude compared to the path coefficients from the direct models. Results of adjustment for covariates showed negative effects of chronic stress on social support. Higher levels of chronic stress were related to less social support for both mothers and daughters. Mother's and daughter's employment status were positively and significantly associated

with mother's social support while daughter's social support was significantly and positively related to her education levels (Fig. 2).

Mediating Drug Use-Social Support Relationships—As part of the process of documenting that attachment mediates the relationship between social support and drug use, a model with direct pathways from social support to drug use along with all indirect pathways was performed (Fig. 3). With this model, slight improvement was observed in terms of model fit indices. However, a chi-square test for difference between nested models revealed that the observed improvement was nonsignificant ($\chi^2 = 2.520$, $p = .640$). This implies that the model with complete mediation is the parsimonious model fitting the data (Fig. 2). Social support remained negatively related to drug use (direct path coefficients: $-.173$ and $-.116$ for mother and daughter, respectively), but these associations were statistically nonsignificant after adding the mediation paths. Path coefficients were smaller in magnitude compared to those obtained from direct relationship models (Table 2). Thus, a comparison of path coefficients confirmed that relationships between high levels of social support and drug use may be completely mediated by the quality of dyadic attachment.

Mediating Drug Use-Chronic Stress, and Attachment-Chronic Stress

Relationships—To document the partial mediation between drug use and chronic stress, as well as between attachment and chronic stress, a model with direct pathways from chronic stress to drug use, and chronic stress to attachment along with all indirect pathways was performed (Fig. 4). This model provided model fit indices nearly identical to those in the first model (see Fig. 2), which has fewer pathways. The chi-square test for difference between nested models was not significant ($\chi^2 = 3.007$, $p = .699$). This shows that the improvement was statistically nonsignificant and that the proposed model in Fig. 2 is the parsimonious model for the data. Chronic stress associations with drug use and attachment were positive and statistically nonsignificant for mothers, but negative and nonsignificant for daughters (Fig. 4). Path coefficients were smaller in magnitude compared to those observed previously for chronic stress as a correlate of drug use and chronic stress as a correlate of attachment which indicates: (a) for chronic stress as a correlate of attachment, relationships were likely completely mediated by social support and (b) for chronic stress as a correlate of drug use, relationships were likely completely mediated by both social support and attachment. Moreover, based on the principle of model parsimony, the complete mediation model in Fig. 2 appeared best when compared to models obtained from the two model modifications cited above (Figs. 3 and 4).

DISCUSSION

This cross-sectional study of Latina women examined the extent to which mother–daughter attachment mediated the relationship between their chronic stress and social support on their drug use. Our preliminary results show that attachment, social support, and chronic stress uniquely affected mothers' and daughters' drug use scores albeit chronic stress was not a significant correlate to daughters' drug use scores. The obtained results also indicate that higher levels of dyadic attachment were associated with lower levels of illicit drug consumption by Latina mothers and daughters. More specifically, mothers' higher quality of attachment scores mediated the relationship between their higher levels of chronic stress and

higher levels of social support scores on their lower drug use scores. With respect to daughters, their higher quality of attachment scores mediated the relationship between their higher support scores and their lower drug use scores. As previously noted, daughters' chronic stress scores were not significantly correlated with their drug use scores: hence, no mediation was possible.

The dyadic concordance in mother–daughter attachment highlights the significance of mother–daughter relationships in Latino culture. Clearly, the quality of mother–daughter attachment attenuated the adverse effects of social determinant liabilities on their drug use, respectively. As such, these findings contribute to the emerging body of literature on adult Latina women's drug use. Moreover, trans-generational dyadic effects were observed by the magnitude of (a) mother–daughter variable correlations and (b) the significant dyadic cross-effects of their social support scores on their attachment scores.

The differential effects of chronic stress on drug use for mothers versus daughters may be due to the lower levels of chronic stress for daughters given their younger age. It may also be indicative of extra-familial social support networks developed by daughters as they spend a greater portion of their lives in the United States. Notwithstanding that issue, chronic stress was also negatively associated with social support levels for both mothers and daughters. This negative association has been termed the “support deterioration effect”: high levels of stress lead to diminished support rather than low levels of social support increasing stress.¹¹ Moreover, stressful life events may reduce confidence in obtaining support despite receiving support from significant others on prior occasions.¹¹ As such, stressed women may self-isolate as they perceive themselves as a burden to their families.¹⁷ Speculatively, they may also experience rejection by their social support network consequent to their dysfunctional stress-coping behaviors such as mood swings, irritability, and mistrustfulness.

Our preliminary findings are consistent with other studies^{26,29} and those which show that the availability of social support systems increases the likelihood of practicing protective health behaviors including reduced or non-drug use.^{2,42} For example, greater social support predicted better mental health status and less heroin and cocaine use among individuals with co-occurring substance use and psychiatric disorders.⁴² In terms of attachment and drug use relationships, adolescent girls with high levels of attachment insecurity were more likely to engage in risky behaviors than women with more attachment security.²⁵ Also, the quality of the mother–daughter relationship was a protective factor for daughter's recurrent alcohol and tobacco use.⁶

Furthermore, social support effects decreased when attachment contributions were partialled out supporting the assertion that attachment may mediate the social support–drug use relationships. Similar results were observed in another study which examined the effects of social support and attachment on distress.²⁸ Hence, strong attachment between mothers and daughters may be one of the pathways through which social support operates across generations among Latinas who may share some of the same social support networks. The observed mediation between drug use and chronic stress was also supported by results of previous studies. Indeed, social support reduces the effects of stressful life events on health behaviors.¹ Social support is protective because it effectively limits the stress exposure

among family members⁴³ and enhances their coping which buffers the relation between stress and drug use.¹ Finally, analyses of the demographic covariates revealed that more employment and education were related to more social support. Those results are consistent with previous findings which concluded that higher levels of education coexist with higher levels of social support and that employment increases an individual's sense of social support and personal control.¹⁰

Although this study documents interrelationships among social determinants of liability and attachment relationships between Latina mothers and daughters, it is limited by its cross-sectional nature. Several of the limitations are: (a) longitudinal studies are needed to elucidate causal and mediational pathways involved in the relationships between chronic stress, social support, attachment, and intergenerational drug use among Latina women; (b) the drug use latent variables were computed using drug use during the past 3 months: longer time-intervals may yield different results; (c) other studies using other measures of chronic stress and types of social support may obtain different outcomes; and (d) other well-known correlates of illicit substance use such as acculturation, abuse, neglect, and maltreatment, which were not considered in the analyses, may have profound effects on drug use behaviors. Also, the limited sample size did not allow for further exploration of associations between all correlates and drug use behaviors. Thus, the focus of the study was on illicit drug use only as a health risk behavior. Future research is needed to explore the proposed associations with other risky health behaviors affecting Latinas in the United States (eg, HIV risk behaviors, binge, and heavy drinking behaviors).

In summary, the preliminary findings from this cross-sectional study preclude definitive statements about causal directions. Instead, it is a useful first step towards a more comprehensive understanding of the processes linking stress, social support, and attachment with drug use behaviors among Latina mothers and daughters from a culturally relevant and trans-generational perspective.

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FIGURE 1.

Conceptual models for drug use: Direct and indirect associations.

Notes: Attachment to one another; social support from family and friends, including mother and daughter. The model shows associations between drug use, attachment, social support, and chronic stress. Attachment, social support, and chronic stress are important correlates of drug use behaviors. The influence of social support on drug use goes through attachment, while the impact of chronic stress on drug use goes through social support and attachment. Other variables such as demographics, nativity, immigration status, length of stay in the United States, will be taken into consideration. Figure 1 shows as well the direct paths that were tested in the nested models.

FIGURE 2.

Structural equations model 1 for drug use: Direct and indirect relationships.

Notes: Model fit indices are as follows. Chi-square = 44.426 (df = 44, $p = .454$); CFI = .998; TLI = .998; RMSEA = .008 (df, degrees of freedom; CFI, comparative fit index; TLI, Tucker-Lewis index; RMSEA, root mean square error of approximation). Path coefficients are standardized coefficients. Only significant paths are reported (level of significance: $\alpha = 5\%$).

FIGURE 3.

Structural equations model 2 for drug use: Direct and mediation effects.

Notes: Model fit indices are as follows. Chi-square = 44.102 (df = 43, $p = .425$); CFI = .994; TLI = .994; RMSEA = .013 (df, degrees of freedom; CFI, comparative fit index; TLI, Tucker-Lewis index; RMSEA, root mean square error of approximation). Path coefficients are standardized coefficients. Nonsignificant paths are marked with "NS" (alpha = 5%).

FIGURE 4.

Structural equations model 3 for drug use: Direct and mediation effects.

Notes: Model fit indices are as follows. Chi-square = 44.503 (df = 43, $p = .408$); CFI = .992; TLI = .991; RMSEA = .015 (df, degrees of freedom; CFI, comparative fit index; TLI, Tucker-Lewis index; RMSEA, root mean square error of approximation). Path coefficients are standardized coefficients. Nonsignificant paths are marked with "NS" ($\alpha = 5\%$).

TABLE 1

Correlations of all variables with each other

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Drug use-M	–																	
2. Social support-M	–.452 [†]	–																
3. Attachment-M	–.380 [*]	.493 [†]	–															
4. Chronic stress-M	.261 [*]	–.378 [†]	–.180 [*]	–														
5. Age-M	–.595 [†]	.078	.057	–.162	–													
6. Education-M	.166	.129	.025	–.232 [†]	.106	–												
7. Employment-M	–.074	.269 [†]	.249 [*]	–.111	–.120	.275 [†]	–											
8. Immigration status-M	–.568 [†]	.069	.056	–.144	.322 [†]	.399 [†]	.099	–										
9. Length of stay in U.S.-M	.468 [†]	–.062	–.051	.084	–.303 [†]	–.264 [†]	–.013	–.923 [†]	–									
10. Drug use-D	.636 [†]	–.089	–.268 [*]	.077	–.008	–.108	–.098	–.381 [†]	.325 [†]	–								
11. Social support-D	–.050	.103	.191 [*]	–.219 [†]	–.066	.164 [*]	.102	.192	–.056	–.249 [†]	–							
12. Attachment-D	–.333 [*]	.266 [†]	.504 [†]	–.142	.004	.056	.252 [†]	.301 [†]	–.175 [*]	–.269 [*]	.465 [†]	–						
13. Chronic stress-D	–.198	–.051	–.072	.266 [†]	.197 [*]	–.088	–.154	–.087	–.010	.022	–.405 [†]	–.274 [†]	–					
14. Age-D	–.781 [†]	.058	.014	–.115	.789 [†]	–.091	–.155	.174	–.231 [†]	.039	–.099	–.076	.247 [†]	–				
15. Education-D	–.344	.293 [†]	.142 [†]	–.411 [†]	.209 [†]	.417 [†]	.263 [†]	.487 [†]	–.221 [*]	–.132	.310 [†]	.285 [†]	–.099	.068	–			
16. Employment-D	.006	.261 [†]	.336 [†]	–.001	–.023	.149	.238 [†]	.212 [*]	–.040	–.216	.027	.158	.106	–.124	.269 [†]	–		
17. Immigration status-D	–.557 [†]	.151	.103	–.109	.287 [†]	.186	.014	.825 [†]	–.863 [†]	–.447 [†]	.085	.177	–.018	.364 [†]	.114 ^d	–.083	–	
18. Length of stay in U.S.-D	.399 [†]	–.108	–.093	.117	–.248 [†]	–.154	–.065	–.860 [†]	.793 [†]	.350 [†]	–.031	–.162 [*]	–.013	–.259 [†]	–.197 [*]	–.037	–.866 [†]	–

M, Mother; D, Daughter.

^{*} *p*-value < .05.[†] *p*-value < .01.

TABLE 2

Direct effects models: drug use and attachment; drug use and social support; drug use and chronic stress; adjusting for other covariates

		Drug use mother	Drug use daughter
Model with attachment	Estimate (<i>p</i> -value)	-.549 (<.001)	-.434 (<.001)
	R-square (%)	30.1	18.8
	Model fit indices	Chi-square (<i>p</i> -value)	14.572 (.691)
		Comparative fit index	1.000
		Tucker-Lewis index	1.038
		RMSEA	<.001
Model with social support	Estimate (<i>p</i> -value)	-.510 (<.001)	-.297 (.001)
	R-square (%)	26.0	8.8
	Model fit indices	Chi-square (<i>p</i> -value)	13.745 (.746)
		Comparative fit index	1.000
		Tucker-Lewis index	1.066
		RMSEA	<.001
Model with chronic stress	Estimate (<i>p</i> -value)	.308 (.014)	.085 (.425)
	R-square (%)	9.5	.7
	Model fit indices	Chi-square (<i>p</i> -value)	19.187 (.380)
		Comparative fit index	.981
		Tucker-Lewis index	.980
		RMSEA	.020

RMSEA: Root mean square error of approximation.