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Non-Medical Prescription Sedative Use Among Adult Latina Mothers and Daughters

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Abstract

This study examines correlates of non-medical prescription sedative, tranquilizer, and hypnotics use (hereafter NPSU) among a non-clinical, community-based sample of adult Latina mother-daughter dyads. Participants were 316 Latina mothers and daughters enrolled in a study of intergenerational transmission of drug abuse and HIV/AIDS risk behaviors in South Florida. Interviewers administered a questionnaire containing study variables such as age, education, time in the U.S., Spanish language proficiency, health insurance status, wellness behaviors, perceived health condition, alcohol use, NPSU, and other drug use. Correlates of NPSU across mothers and daughters were determined using a dyadic model analysis. Daughters' health status, age, wellness, and illicit drug use were associated with mothers' NPSU. Mothers who reported being uninsured, having higher levels of education, and indicating poorer health statuses reported more NPSU. Daughters' wellness behaviors, age, illicit drug use, and insurance status were associated with their NPSU. Insured mothers and mothers who engaged in illicit drug use had daughters who reported more NPSU. The study's findings provide a modest understanding of family dynamics surrounding NPSU, and it suggests that as women age and their perceived health status worsens, their NPSU may increase.

Keywords

Latinos; mothers and daughters; non-medical prescription drug use; sedatives; women

Non-medical use of prescription drugs is defined as the use of medications without a prescription, self-medicating beyond the prescribed dosage, or use of medications for recreational purposes (Substance Abuse and Mental Health Services Administration [SAMHSA] 2009). According to a national 2009 SAMHSA report, non-medical use of

prescription pain medicine decreased among young users (ages 12–17) but increased among adults aged 26 and older (from 1.3% to 1.6%); prevalence rates of non-medical prescription drug use have escalated, especially among adults ages 18 to 25 (SAMHSA 2009). In 2010, 2.6 million individuals initiated the use of psychotropic drugs (tranquilizers, sedatives, and stimulants) with an average age of 25, 24, and 21, respectively (SAMHSA 2011). Regarding Latinos, non-medical use of sedatives, tranquilizers, and hypnotics has been reported to be more common among adults who reported abuse of other drugs (Becker, Fiellin & Desai 2007). The present study examines non-medical prescription sedative, tranquilizer, and hypnotics use (NPSU; e.g., Xanax, Temazepam, Diazepam, and other types of benzodiazepines) among a unique non-clinical, community-based sample of adult Latina mother-daughter dyads in South Florida.

Few studies have examined differences in prevalence rates of non-medical use of prescription drugs by ethnic minorities across age groups by gender. Latinos represent the largest and fastest growing ethnic/racial minority in the U.S. (Bernstein & Edwards 2008), better understanding of their drug use/abuse is a critical public health concern, and thus, they are the focus of this investigation. Furthermore, Hispanic and White prescription drug users in South Florida reported greater likelihood to abuse prescription drugs due to anxiety and stress than African-American participants (Rigg & Ibanez 2010). Due to the prevalent diversion of prescription medications in South Florida's illegal market and the likelihood of abuse among Latinos in this area, it is imperative to elucidate culturally relevant risk factors associated with NPSU among Latino women. Due to the importance found in the mother-daughter relationship and its correlation with substance abuse among young women (Schinke, Fang & Cole 2009; Valdez, Mikow & Cepeda 2006), the current study examined those risk factors in the context of intergenerational dyadic concordance of their NPSU (benzodiazepines such as Temazepam, Xanax, and Diazepam). Doing so is especially important because the misuse or abuse of prescription drugs is perceived as less dangerous than illicit drug use (Inciardi et al. 2009a).

U.S. LATINOS AND NON-MEDICAL PRESCRIPTION SEDATIVE USE

Among young adults, Latino women report a lower rate of NPSU compared to non-Latino Whites (Herman-Stahl et al. 2006), but higher NPSU than Black females (Becker, Fiellin & Desai 2007; Herman-Stahl et al. 2007). Reasons for this disparity remain unknown, but non-medical use of prescription drugs among young adult Latinos varies from general experimentation to use as a sleeping aid (Kelly & Parsons 2007). Among the U.S. adult population, people who reported prescription medication abuse were more likely to continue this behavior and report it in subsequent follow-up interviews (Boyd et al. 2009). Among women of reproductive age (18–44 years) who participated in a large national study, Latinas were more likely to borrow or share medications with family members and friends than their White counterparts, but less likely than African Americans (Petersen et al. 2008). Inciardi and colleagues (2009a) found that a large number of adult users obtain the prescription medications from their family members and friends (62%). The city of Miami in South Florida has been noted as a place where large amounts of prescription drugs are channeled into illegal markets (Inciardi et al. 2009b), hence a location where the study of prescription drug abuse would be particularly important. In various studies, demographic factors such as

gender, low education attainment, and low socioeconomic status have been associated with higher levels of non-medical prescription drug use among adult Latinos (Simoni-Wastila, Ritter & Strickler 2004). However, in other studies high educational attainment has been associated with non-medical use of prescription medications. Abuse of prescription medication has been related to adults who report abuse of and dependence on other drugs, particularly alcohol use (McCabe, Cranford & West 2008; Becker, Fiellin & Desai 2007).

Among Latinos, acculturation-related stress induced by poverty, unemployment, and inadequate educational opportunities augments the likelihood of using medications without prescriptions (Carrasco-Garrido et al. 2009). As such, gender, low educational attainment, low socio-economic status, and being uninsured predict higher non-medical prescription drug use among Latinos (Becker, Fiellin & Desai 2007; Hung-En et al. 2005; Simoni-Wastila, Ritter & Strickler 2004). Cultural beliefs about self-medication, open-mindedness, self-diagnosis, and health status perceptions have been well-established correlates of non-medical use of prescription medications among Latinos for decades (e.g., Coffman, Shobe & O'Connell 2008; Gabe & Thorogood 1986; Matteo 1988). Abuse of prescription medications has been associated with many factors, including the belief that the prescription medications are safe to use without a prescription (Rigg & Ibanez 2010). Furthermore, Latino women turn to their families and friends for prescription remedies to perceived health problems before consulting health care providers (Pylypa 2001). Some Latino immigrants use medications without prescriptions because it is customary in their country of origin to buy medications directly from pharmacies without first consulting with a doctor (Carrasco-Garrido et al. 2009; Coffman, Shobe & O'Connell 2008; Hunter 2006). Other Latinos believe medications from their country of origin are stronger and more effective than medications obtained from physician-ordered prescriptions filled by U.S. pharmacies (Carrasco-Garrido et al. 2009; Coffman, Shobe & O'Connell 2008; Pylypa 2001; Flakerud & Nyamathi 1996).

ALCOHOL, ILLICIT SUBSTANCE, AND NON-MEDICAL PRESCRIPTION SEDATIVE USE

Results from the Committee on Epidemiology Work Group (CEWG) report that non-medical use of prescription medications is increasingly being reported among the drugs identified in deceased persons (U.S. Department of Health and Human Services [U.S. DHHS] 2011). In Florida, prescription medications have been found in 59 % of the heroin-related death cases in 2010 (U.S.DHHS 2011). In Miami-Dade, approximately 50% of the benzodiazepine-related death cases reported in 2008 were Hispanic females, and 84% of all deaths involved a mix of different drugs, such as prescription medications (opioids and benzodiazepines), alcohol, and cocaine (U.S. DHHS 2011). Multiple drug abuse is common among deceased persons who had abused prescription medications (National Institute on Drug Abuse [NIDA] 2011). Therefore, research that elucidates the correlates of NPSU may have an impact on its prevention.

In general, Hurwitz (2005) examined the number of instances that prescription pain relievers were involved in drug-abuse-related emergency room visits between 1997 and 2002 and

found a greater increase in NPSU compared to reported marijuana, cocaine, and heroin use. Although marijuana use is still more common than NPSU among middle-aged adults, young adult females consume marijuana and non-medical prescription drugs at similar rates (SAMHSA 2009). NPSU is common among adults who report abuse of other drugs (Becker et al. 2008; Becker, Fiellin & Desai 2007).

Individuals with poor health often misuse prescription drugs for symptomatic relief from undiagnosed conditions (Carrasco-Garrido et al. 2009; NIDA 2009; Simoni-Wastila & Strickler 2004). Latino immigrants may use medications without prescriptions because they cannot afford professional medical care (Ford & Rivera 2008). A related concern is that Latinos who consume medications without prescriptions do not receive counseling about the appropriate use and side-effects of medications, nor do they receive other pertinent information including contraindications for use (McCabe, Teter & Boyd 2006).

LATINO MOTHER-DAUGHTER RELATIONSHIP AND NPSU

Mother and daughter relations are pivotal in the development of women (Johnson & Young 2002). Substance-abusing daughters report receiving pressure from nonabusing mothers to quit using drugs and seek treatment while substance-abusing mothers felt that their drug use prevented them from gaining their daughters' respect and from bonding with their grandchildren (Sterk, Elifson & Theall 2000). In the Latino culture, mothers are expected to sacrifice self for the benefit of their family; in turn, daughters are expected to show high regard for their mothers and not shame their family by engaging in behaviors such as promiscuous sexual activity, consumption of illicit drugs, or excessive alcohol use (Valdez, Mikow & Cepeda 2006). Moreover, the quality of the mother-daughter relationship significantly influences the extent to which daughters engage in those risk behaviors (Valdez, Mikow & Cepeda 2006). The mother-daughter relationship has been found to be an important external factor in ameliorating drug use between them (Sterk, Elifson & Theall 2000). Family context, and particularly the mother and daughter relationship and the early socialization process, has been associated with substance use and other health-risky behavior (Johnson & Young 2002). Similar to Johnson and Young (2002), Rojas et al. (2010) found that women reporting early sexual experience (before the age of 15) were more likely to exhibit substance use and psychological problems. It can be hypothesized that family function and experiences of neglect due to substance use in the family will facilitate NPSU among women as a form of self-medication. De La Rosa et al. (2010a) also found that mothers and daughters who were both substance abusers had a lower level of attachment when compared to dyads in which only the mother or the daughter was an abuser. Because mothers have been generally identified as providers of support and help to the family with different coping mechanisms (Valdez, Mikow & Cepeda 2006), the mother-daughter relationship may prove to be a critical factor in the use of NPSU. Only recently have studies begun to disaggregate the effects of the Latina mother-daughter relationship on daughters' sexual-risk behaviors and substance abuse in the context of their acculturation to the U.S. (De La Rosa et al. 2010b).

Disaggregating the influence of the mother-daughter relationship on their respective non-medical use of prescription drugs is complex. Studies on adolescent women, their mothers,

and family members have highlighted the protective factor of family relations, and particularly the mother-daughter positive relationship, in preventing young women's substance abuse behavior (Schinke, Fang & Cole 2009; Valdez, Mikow & Cepeda 2006; Johnson & Young 2002). In a small study, adult daughters stated the importance of experiences with their parents' substance abuse, and particularly the lack of connection with their mother, as an important factor for their substance abuse and selfmedication behavior (Johnson & Young 2002). Previous studies have found a relationship between mothers' substance abuse and their daughters' use of substances and risky sexual behavior (Rojas et al. 2010). Hence, this preliminary descriptive cross-sectional study examines the reciprocal influence of mothers' and daughters' NPSU in the U.S.

Specifically, we hypothesize that: (1) mothers and daughters with higher levels of acculturation (as indexed by time in the U.S. and Spanish language proficiency) will report more NPSU; (2) Latino women without health insurance will report more NPSU; (3) mothers and daughters who consume more alcohol and illicit drugs and have poor perceived health will report more NPSU; and that (4) mothers and daughters who engage in fewer wellness behaviors will report more NPSU.

METHOD

Data were obtained from a study of intergenerational drug use and related health behavior problems among Latina mother-daughter dyads residing in Miami-Dade County, Florida (De La Rosa et al. 2010a). The secondary analysis of the data was approved by, and conducted in compliance with, the institutional review board at a large southeastern university.

Procedures

A non-clinical, convenience sample of substance using and non-using participants were recruited via the snowball sampling (chain referral) method (McCracken et al. 1997). There were similar numbers of drug-using and non-using mothers and daughters. Participants were recruited using announcements at the following local venues: community health fairs, health clinics, drug court programs, Alcoholics Anonymous (AA) and Narcotics Anonymous (NA) meetings, Spanish radio stations and television channels, and a local newspaper. Individuals were approached in all the venues and asked to participate or refer people that could be eligible. Participants were screened for eligibility and current drug use was assessed using a screening instrument that asked questions regarding the frequency and quantity of legal and illegal drug use in the past three months and past 12 months. Participants whose substance abuse occurred during the past 12 months were labeled as drug users. Inclusion criteria were: (a) consenting to be interviewed for at least 2–3 hours; (b) being 18 years of age or older; (c) self-identifying as Latina; (c) living in Miami-Dade County, Florida; (d) reporting substance use for the drug-using mothers and daughters in the drug-using dyads; and (e) being willing to provide two telephone numbers to researchers for correspondence during participation in the study.

All consenting study participants were administered a single, face-to-face interview. The assessment took 2–3 hours to complete and participants received a \$40.00 stipend for their time. The majority of interviews took place in participants' homes (69%) or at the

researchers' university offices (19%). Interviews were conducted in the participants' chosen language, either Spanish (65%) or English (35%), by 11 bilingual trained and supervised female assessors. Eight interviewers were Master's-level graduate students, and three were Bachelor's-level students. Interviewer training and supervision included more than four hours of didactic training using a manual to instruct interviewers about each of the measures used in the study. Interviewers received intensive supervision by the study's director to ensure data quality. Interviews were audio-recorded and reviewed by the study director to determine the completeness and accuracy of data collection.

Actor-Partner Interdependence Model

We examined mothers' and daughters' predictors of NPSU frequency using the Actor-Partner Interdependence Model (APIM; Kashy & Kenny 2000; Kenny & Cook 1999; Kenny 1996). The APIM is a dyadic data analytic approach that simultaneously estimates the effect that a respondent's independent variable has on both his or her own dependent variable (i.e., actor effect) and on another respondent's dependent variable (i.e., partner effect; Campbell et al. 2001). These two effects can be measured while appropriate statistical allowances are made for non-independence in the dyad members' responses. APIMs have been used to examine actor and partner effects in parent and child dyads (Pesonen et al. 2006), romantic partners (Ramirez 2008; Simpson, Oriña & Ickes 2003), and siblings (Kenny & Cook 1999).

There are four types of APIM patterns: the actor-only, the partner-only, the couple, and the contrast patterns (Kenny & Cook 1999). The actor-only pattern is indicated by a significant actor effect, while the partner effect is non-significant. That is, a dyad member's predictor variable has an effect on her outcome variable but not on the other dyad member's (partner) outcome variable. The partner-only pattern occurs if the partner effect is significant, but the actor effect is non-significant. The couple's pattern is indicated if actor and partner effects are significant and equal. That is, a dyad member's outcome variable is equally affected by her causal variable and by the causal variable of the dyad partner. Finally, the contrast pattern occurs if actor and partner effects are significant and equal in size but have opposite signs. For example, a dyad member's outcome variable is positively affected by her causal variable and negatively affected by the dyad partner's causal variable.

We used a structural equation modeling framework to examine actor and partner effects in the APIM (see Figure 1) for mothers' and daughters' predictors of NPSU frequency following the guidelines presented in Cook and Kenny (2005). The APIM was fit using Mplus (Muthén & Muthén 2008). Traditional model-fit statistics are not presented because APIMs are recursive or saturated (just-identified) models (Cook & Kenny 2005). Just-identified models have zero degrees of freedom because all model parameters are estimated. Therefore, APIM has noninterpretable traditional model fit indices. As illustrated in Figure 1, APIMs consist of (a) the predictor variables for each dyad member; (b) the dependent variables for each dyad member; (c) actor effects, represented by paths (single headed arrow) between a dyad member's predictor and her dependent variable; and (d) partner effects, represented by paths (single headed arrow) between a dyad member's predictor and the other dyad member's dependent variable. APIMs also model (a) the covariance between the two predictor variables (double-headed arrow between predictor variables); and (b) the

correlated residual parameters (i.e., error terms), as indicated by a bidirectional arrow between the error terms of the dependent variables.

Measures

Demographics—Participants reported age in years, education level (1 = less than high school, 2 = high school diploma or equivalent, 3 = post high school training, 4 = bachelor's degree, 5 = graduate degree), personal income in 11 categories (1 = \$0 to 4,999; 2 = \$5,000 to 9,999; 3 = \$10,000 to 14,999; 4 = \$15,000 to 19,999; 5 = \$20,000 to 24,999; 6 = \$25,000 to 29,999; 7 = \$30,000 to 34,999; 8 = \$35,000 to 39,999; 9 = \$40,000 to 49,999; 10 = \$45,000 to 49,999; 11 = \$50,000 or more), and time in the U.S. in years. Several other variables were also collected from participants using a demographics form.

Spanish Language Proficiency—The Spanish Language Proficiency scale of the *Multidimensional Measure of Cultural Identity Scales for Latinos* (MMCISL; Félix-Ortiz, Newcomb & Myers 1994) was administered. The items ask respondents to rate their agreement with statements on a four-point Likert scale (1 = not at all, 2 = fair, 3 = good, 4 = excellent), with a total scale range of 3 to 12. Items asked how well a participant speaks, reads, and writes Spanish. High scores indicate more proficiency in the Spanish language. The alpha reliability coefficient for the Spanish Language Proficiency scale has been reported as satisfactory (Dillon et al. 2009; Félix-Ortiz et al. 1994). In the present study, Cronbach's alpha values were .90 for mothers and .91 for daughters. Criterion validity has been evidenced by correlations between the Spanish Language Proficiency scale and (a) an existing acculturation scale (Marin et al. 1987); (b) participant generation status; (c) number of years educated in the U.S.; and (d) length of time in the U.S. (Dillon et al. 2009; Félix-Ortiz et al. 1994).

Health Insurance Status—Participants were asked a single question to determine their health insurance status during the 12 months prior to assessment (1 = yes or 0 = no).

Alcohol Use Frequency—The alcohol consumption items from the *Health and Daily Living Form* (HDLF; Billings, Cronkite & Moos 1983) were used to assess participant alcohol use frequency during the 12 months prior to assessment. Three questions assessed how frequently participants consumed beer, liquor, and/or wine during the 12 months prior to assessment using an 8-point Likert scale ranging from 1 (never uses) to 8 (uses every day). A 12-month alcohol use index score was calculated by averaging participants' responses across beer, liquor, and wine frequency use items.

Drug Use Frequency—The *Drug Use Frequency* measure (DUF; O'Farrell, Fals-Stewart & Murphy 2003) was used to assess the frequency of illicit drug use and non-medical use of prescription drugs (e.g., sedatives) during the 12 months prior to assessment. The DUF measure assesses frequency of use for each separate illicit and prescription drug (sedatives, hypnotics or tranquilizers, cannabis, stimulants, heroin, opioids, cocaine, PCP, hallucinogens, inhalants) using an eight-point Likert scale ranging from 1 (never uses) to 8 (uses every day). Items included questions such as, "How often did you use sedatives (e.g., Valium, Xanax) during the past 12 months?" If participant reported use of sedatives at least

once, they were asked if the sedative was prescribed and if it was taken in greater amount than prescribed or for a longer period of time. When reported, mothers and daughters were classified as abusers of marijuana, cocaine, heroin, ecstasy, and/or prescription drugs. Illicit drug abusers were defined as participants who reported at least three days per week of marijuana use, two days per week of cocaine use, one or more occasions of heroin use per week, and/or at least three ecstasy use occasions per month during the 12 months prior to assessment. Abuse of prescription medication was measured by asking participants whether they had taken medicine without a doctor's authorization, in larger amounts than prescribed, or for longer periods than prescribed, in the 12 months prior to assessment (adapted from Turner et al. 2001). Past research indicates that DUF scores correlate closely with collateral reports of drug use frequency and with self-reports on other drug and alcohol use measures, indicating evidence of convergent validity (O'Farrell, Fals-Stewart & Murphy 2003).

Perceived Health Status—A single question from the Addiction Severity Index (McLellan et al. 1992; How would you rate your health status? 5 = Excellent, 4 = Very Good, 3 = Good, 2 = Fair, 1 = Poor) was used to assess perceived health status at the time of the study.

Wellness—The Wellness scale (adapted from Bensoussan 2004) consists of a seven-item scale measuring behaviors a participant engages in to maintain her wellbeing. Items were summed to create a total wellness scale score for each participant. The seven items ask respondents to rate the frequency in which they engage in each behavior on a five-point Likert scale (1 = never, 2 = rarely [1 to 12 times/year], 3 = occasionally [2 to 4 times/month], 4 = frequently [2 to 4 times/week], 5 = Yes, always). High scores indicate more engagement in wellness behaviors. Sample items include, "Do you take the time to let your hair down and relax, or make time for enjoyable activities?" and "I read the labels of the foods I buy." Cronbach's alpha reliability estimates were .71 for mothers and .67 for daughters.

RESULTS

Participants

Participants were 316 Latino women (158 mothers and 158 daughters). The average participant age was 52.3 years ($SD = 9.86$, range of 33 to 88 years) for mothers, and 27.4 years ($SD = 8.89$, range of 18 to 48 years) for daughters. Sixty-nine percent of the overall sample was born outside of the United States. Most mothers emigrated from Cuba ($n = 49$, 31%) and Colombia ($n = 29$, 18.4%). Forty-six percent of daughters ($n = 72$) were U.S.-born. About 15% of daughters ($n = 24$) were born in Cuba, and 9.5% of daughters ($n = 15$) were born in Colombia. In the sample, overall, 30% of the participants were from Cuba, 20% from Colombia, 7% from Peru, 6% from Nicaragua, 6% from Dominican Republic, 5% from Honduras, 5% from Puerto Rico, and 21% from other Latin-American countries, predominantly South American countries. On average the foreign-born had spent 56.0% of their lifetime in the U.S. (64.8% of lifetime for mothers, and 47.2% for daughters). Approximately 32.1% reported education beyond high school, and 28% reported less than

high school education. Approximately half of the participants reported personal incomes of less than \$10,000 per year.

Analyses

Continuous variables were analyzed to determine whether they violated the assumption of normality. Kline (2005) suggests cutoff of absolute values of 3.0 and 8.0 for skewness and kurtosis, respectively. Alcohol use frequency and NPSU frequency among mothers and daughters evidenced acceptably normal distributions for analyses. Illicit drug use rates tended to be positively skewed. Therefore, illicit drug use was operationally defined by a dichotomous variable indicating engagement in illicit drug use (other than NPSU) or not during 12 months prior to assessment. The percentage of daughters who used alcohol and illicit drugs, and reported sedative use, during 12 months prior to assessment was 89.3%, 39.2%, and 15.8%, respectively. The percentage of mothers who used alcohol and illicit drugs, and reported sedative use, was 68.7%, 14.6%, and 25.9%, respectively. Additional descriptive statistics for all variables are presented in Table 1. The correspondence between mother's and daughter's NPSU in the last twelve months was not significant ($r = .14$).

Correlations Between Mother and Daughter Predictor Variables

Mothers who reported more alcohol use tended to have daughters who also reported more alcohol use ($r = .25$). As expected, older mothers had older daughters ($r = .72$), and mothers who spent more time in the U.S. had daughters who spent more time in the U.S. ($r = .80$). More-educated mothers had more-educated daughters ($r = .39$), and mother and daughter levels of Spanish language proficiency were also significantly correlated ($r = .39$). Finally, mothers' and daughters' frequency of wellness behaviors were significantly correlated ($r = .25$). All correlations were significant at $p < .01$.

Actor-Partner Interdependence Model Findings

Daughters' Non-Medical Use of Prescription Sedatives—The predictors in the APIM accounted for approximately 31% of the variability in daughters' NPSU (see Figure 1). Daughters' reported wellness behaviors, age, illicit drug use, and insurance status were all associated (actor effects) with the frequency of NPSU. Daughters who reported less wellness behaviors, or were older, or used illicit drugs, or did not have health insurance reported more NPSU (see Figure 1). In terms of mother-reported predictors (partner effects) of daughters' NPSU frequency, insured mothers and those who engaged in illicit drug use had daughters who reported more NPSU.

Mothers' Non-Medical Use of Prescription Sedatives—The predictors in the APIM accounted for approximately 35% of the variability in mothers' NPSU frequency. Insurance status, perceived health condition, and education were actor effects in the APIM. Mothers who reported being uninsured, or indicating worse health status, reported more NPSU. Mothers with higher education also reported more NPSU. Mothers' perception of their health status was the variable that explained most of the variance in their NPSU, followed by their educational level (higher education). Several daughters' predictors (partner effects) of mothers' NPSU frequency were indicated in the APIM model. These predictors included daughters' health status, age, wellness, and illicit drug use. Older daughters had mothers

with more frequent NPSU. Interestingly, daughters who reported more wellness behaviors and better health status also had mothers with more frequent NPSU. Lastly, daughters who frequently used illicit drugs also had mothers who more frequently engaged in NPSU.

DISCUSSION

This study examined the dyadic concordance and reciprocal influence of a variety of social determinants on non-medical prescription sedative use among Latina mothers and daughters. We applied an SEM framework to actor-partner independence models (APIM) to elucidate the relationships among the selected indicators as they pertain to both mothers' and daughters' NPSU scores.

With respect to daughters, the results show that daughters' age, wellness behaviors, and alcohol use accounted for 16% of the variance in their NPSU scores. Similar to other studies, alcohol consumption explained less than 3% of the variance associated with daughters' NPSU (Becker, Fiellin & Desai 2007; McCabe, Cranford & West 2008). In the current study, the use of each individual illicit drug (e.g., heroin, cocaine, hallucinogens, and inhalants) was infrequent among participants. For daughters, however, the association between the use of multiple types of illegal drugs and NPSU in general suggests that their NPSU may be a manifestation of poly-substance abuse. Furthermore, daughters' age was the most salient correlate of their NPSU, followed by their use of illicit drugs. In that context, older daughters may have a greater propensity for NPSU in dyadic concordance with their mothers, which is consistent with mother-daughter norms related to perceived health concerns (Schinke, Fang & Cole 2009; Gabe & Thorogood 1986); this may be due to daughters' having fewer health concerns due to younger age compared to their mothers. Although not hypothesized, the results show that mothers' use of illicit drugs (partner effects) was associated with daughters' NPSU. That finding is supported by previous studies; it may be due to daughters' exposure to drug use behaviors and poor attachment experience within their mother-daughter relationship (De La Rosa et al. 2010a; Schinke, Fang & Cole 2009). Further studies with larger and more representative samples, including clinical samples, will help elucidate this finding. The findings that point to mothers' NPSU association on daughters' increased frequency of illicit drug use behavior may suggest a difference induced by a generational preference for self-medication using different illicit drugs recreationally (Coffman, Shobe & O'Connell 2008; Matteo 1988; Gabe & Thorogood 1986).

Regarding mothers' NPSU, we found significant actor-partner effects. Specifically, mothers' NPSU was associated with daughters' illicit use, which accounted for 6% of the variance in mothers' NPSU. As previously mentioned, daughters may be using illicit drugs as a self-medication mechanism. Alternatively, this result may be a consequence of our sampling strategy: we recruited some mothers and daughters who were substance users. Notwithstanding, daughters' higher wellness behaviors and better perceived health status were associated with mothers' greater NPSU, albeit each accounting for less than 3% of the variance in mothers' NPSU. We speculate that daughters of mothers who engage in NPSU may have observed the poor health behaviors of their mothers and are adopting more proactive health behaviors. Additionally, it is noteworthy to remember that younger

participants have been found to have a more positive perception of their health (DeSalvo & Munter 2011). Finally, daughters' age accounted for about 7% of the variance in mothers' NPSU, which is consistent with age-related acculturation issues as it pertains to NPSU.

With respect to mothers' actor effects, their perceived health status accounted for 18% of the variance in their NPSU, followed by their higher education levels. Different than past studies on mostly Mexican Americans, this suggests that better-educated Latino women are self-medicating with NPSU for their perceived health care issues (Simoni-Wastila, Ritter & Strickler 2004). However, the current study's findings support the findings of a study done in Miami with mostly Cuban participants (Gonzalez & Page, 1981). A possible explanation for these results is that although these women report relatively high level of education, their income is not correlated to it. Hence, they may not have the resources to buy these medications. Lack of health insurance may be why they opt to self-medicate and to share and provide family members with their prescription drugs rather than to seek appropriate medical care and physician-prescribed medications. Although our study supports a past study of prescription medication use among adult Latinas (Becker, Fiellin & Desai 2007), exploring NPSU will require future longitudinal studies which take into account a more comprehensive assessment of access to health care resources and healthseeking behaviors (Carrasco-Garrido et al. 2009), as well as other social determinants not included in the current study. Clearly, their insurance status alone, which accounted for less than 3% of the variance in their NPSU, is not the key determinant. This is especially true in Miami-Dade County, where health insurance is available to residents regardless of immigration status or income.

Although the clinical significance of being uninsured cannot be concluded, the results suggest that Latino women with poor health conditions may be more likely to engage in NPSU. Consistent with the findings obtained from others (Carrasco-Garrido et al. 2009; NIDA 2009; Simoni-Wastila & Strickler 2004), perceived health status was significantly related to NPSU for both mothers and daughters. Furthermore, older Latino women with higher levels of education may have more access to media information about medicines, which they can acquire either in their country of origin or in the local pharmacies within the Latino enclaves where they live. Hence, the findings presented herein may have implications for augmenting educational outreach services to Latino women, which may require cultural competency training for health care providers so they can assess self-treatment factors in Latina patients abusing illicit drugs (McCabe, Cranford & Morales 2006). Clinical practitioners may solicit information regarding the frequency of NPSU from Latina patients. Such information may provide health providers and nurses with an awareness of the likelihood of other health-risk behaviors associated with NPSU (e.g., illicit drugs). Although modest, the findings have valuable implications for health practitioners who may be screening women who are poly-substance users and may not be screened for the abuse of prescription medications. Culturally relevant and culturally sensitive trainings on Latina immigrants' views, beliefs, and norms regarding NPSU may be helpful for nurses and health care providers so that they can make more informed decisions regarding these patients' clinical intervention plans. This is especially important because women's NPSU during their reproductive years may also have serious negative health consequences for their offspring.

The continuous education of researchers and health practitioners on the abuse of prescription medications among Latinos is vital to assessing and addressing this issue among a large minority group in the United States. The Latino population is the fastest-growing and largest minority group in the United States; their abuse of prescription medications should be a public health concern for practitioners and researchers due to its public health impact. In terms of the community, pharmaceutical companies may consider creating effective materials to increase the awareness of prescription drug abuse. Media campaigns may be used to educate the Latino community and increase awareness of the dangers of prescription drug misuse.

The NPSU among women has several implications. Benzodiazepines, which are frequently used among participants, may be used to ameliorate anxiety and overcome mental health stress (Office of National Drug Control Policy [ONDCP] 2011; Gonzalez & Page 1981), but the misuse of such medication could create other serious health issues. Future research may include approaches on related health issues among participants as well as how to eliminate or diminish drug abuse. There are no dyadic prevention programs targeting Latino mothers and daughters' NPSU, but similar research should be done to inform prevention programs for Latino women. Moreover, these results suggest that future interventions and research will benefit from specifically targeting the mother-daughter relationship and family dynamics. Since the majority of prescription drug abusers obtain the drug from a family member (ONDCP 2011), in order to address this issue, community education programs targeting the proper management, storage, and disposal of sedatives may be implemented in communities with high rates of abuse of prescription medications. Pharmaceutical companies may be able to work with community organizations to educate Latino women on the dangers of the misuse of prescription medications. Future research directions include a longitudinal analysis of NPSU among this sample and examining if participants' NPSU changes with time in the U.S. The current study suggests modest correlates of NPSU among a small, non-clinical sample of Latino women. The complex issue of NPSU among Latino women must continue to be addressed from a multi-faceted public health, public safety, environmental, and social work approach in the community and among treatment-seeking Latina women.

LIMITATIONS

Since the study involved a non-clinical sample of Latino women, the average frequency rate of NPSU was relatively low. Future research is needed involving clinical samples of Latino women to expand on this community-based study. Second, although efforts were undertaken to include participants from major Latino subgroups in the U.S., some groups (e.g., Mexican and Puerto Rican) were not well represented due to their underrepresentation in the Miami-Dade County area. Future longitudinal studies are needed with nationally representative clinical and non-clinical samples to ensure generalizability of the results. Third, substance use behaviors are stigmatizing among Latinas, which often inhibits discussion, and disclosure, of such personal information with others, including family (Larkey et al. 2002). Fourth, although general self-rated health status has been correlated with many objective measures such as high hypertension and diabetes (DeSalvo & Munter 2011), the single question measuring health status is limiting. Fifth, although interviewers were trained to detect inconsistencies in participants' responses and to address such inconsistencies during

the interview, socially desirable responding may have occurred. Finally, this is a preliminary cross-sectional study which only illuminates correlations among the respective measures. Notwithstanding the limitations of the current study, the Actor-Partner Interdependence Model provides innovative information about Latino mother-daughter dyadic influence on NPSU, which is a fertile area for further research involving community-based and clinical samples.

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FIGURE 1.
Predictors of Mother and Daughter Non-Medical Prescription Sedative Use

TABLE 1

Descriptive Statistics and Internal Consistency Estimates of Predictor and Dependent Variables (N = 316)

Variables	Mother	M (SD)or % Daughter	Total
Non-Medical Sedative Use	2.35 (2.55)	1.53 (1.62)	1.94 (2.17)
Age (in years)	52.30 (9.87)	27.71 (9.21)	40.01 (15.57)
Personal Income	2.94 (2.21)	3.46 (2.62)	3.19 (2.13)
Education Level	2.41 (1.21)	2.53 (1.10)	2.47 (1.16)
Percentage of Time in U.S.	47.29(34.14)	64.87(36.79)	56.08(36.51)
Health Insurance Status	Yes = 47.5	Yes = 59.5	Yes = 53.5
	No = 52.5	No = 39.9	No = 46.20
Illicit Drug Use	Yes = 14.6	Yes = 39.2	Yes = 26.9
	No = 85.4	No = 60.8	No = 73.1
Alcohol Use Frequency	2.13 (1.20)	2.47 (1.01)	2.30 (1.11)
Perceived Health Status	3.05 (1.13)	3.59 (1.10)	3.32 (1.15)
Spanish Language Proficiency	9.98 (2.17)	9.32 (2.46)	9.65 (2.34)
Wellness ^g	21.81 (6.76)	20.64 (6.18)	21.20 (6.49)