



Gender Differences in the Salience of Psychosocial Mediators of the Impact of Acculturation on Substance Abuse among Hispanic Youth in Florida

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Drug Use: A Growing Problem

- Substance abuse: America's leading health problem, costing annually 100 billion dollars (Horgan, Skwara, Strickler and Anderson, 2001)
- Marijuana is one of the preferred drugs used by teenagers (Newcomb, Maddahian, Skager et al, 1987).
- Adverse effects may be cardiovascular, mental, and cancerous.

Conceptualization of Drug Use

- Recently, better understanding of factors involved in etiology and antecedents of substance use.
- Risk and Protective Factors theory of juvenile substance use by Hawkins and Catalano has formed the basis for the Social Development Strategy framework (Channing Bete Company, 2001) .
- Five conceptual domains:
 - *Community*
 - *Family*
 - *Peer Group*
 - *Individual and Interpersonal*
 - *School*

No. of Immigrant Adolescents Increasing

- By 2030 ethnic minorities: $\frac{1}{2}$ of US grade school (Day, 2001).
- Immigrants and their offspring: $\frac{2}{3}$ of the US population growth.
- Hispanics fastest growing minority group, 25% of the U.S. population by year 2050.
- Different drug-using behavior of immigrant and non immigrant youth (Amaro, Whitaker, Coffman and Heeren, 1990) .
- In general, foreign born Hispanics have lower rates of drug abuse than U.S. born (Kyriakos, Ray, Stroup-Benham et al, 1990) .



Impact of Acculturation on Drug Use

- Risk of drug abuse of immigrant youth seems to increase with degree of acculturation (Gfroerer and Tan, 2003).
- Acculturation: process of change from original to a new culture.
- Influence of acculturation process on drug use behavior not well understood (Vega, Gil, and Zimmermann, 1993):
 - Adoption of behavioral features of new culture?
 - Stress theory?



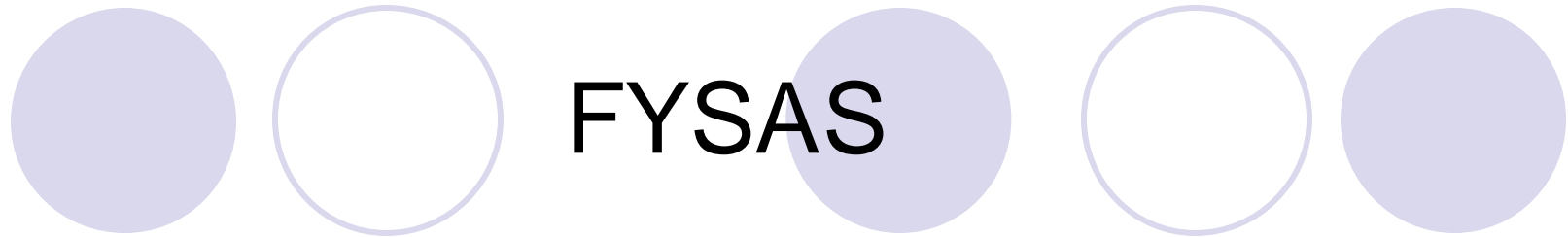
Gender Differences

- Men and women differ in rates of substance abuse, preference for drug use, consequences of drug addiction, age of initiation, and risk factors for substance abuse (NIDA, 2000).
- Women are more likely than men to be addicted to or dependent on sedatives or drugs designed to treat anxiety or sleeplessness, and less likely to abuse alcohol or marijuana (NIDA, 2000).
- Women with cocaine or heroin use disorders tend to take these drugs during a shorter period of time than men, experience more family disruption, and are less likely to be employed (NIDA, 2000).
- Women progress faster from initial use to addiction when using the same or higher dosages of substances (NIDA, 2000).
- Adolescence particularly stressful for girls as they must adopt new behaviors in order to comply with gender expectations inherent to their culture (Varga C, 2003).



Objective and Data Source

- Study Objective: To examine differences in pathways through which acculturation impacts drug use behaviors of male and female adolescents of Hispanic origin.
- Data from 2004 Florida Youth Substance Abuse Survey (FYSAS).
- FYSAS conducted annually by Florida since 2000.
- FYSAS helps plan and assess impact of adolescent drug prevention programs.



- **Multistage cluster sampling:**
 - State (64 Florida counties) divided into 7 geographic regions
 - 580 public middle and high schools randomly selected
 - Within each selected school, classrooms selected
 - All students from selected classrooms
 - Data from 8,200 students self-described as Hispanic and speak English or Spanish at home.



Data Collection

- Survey questionnaire similar to Communities That Care Survey:
 - Socio-demographics
 - Items on tobacco, alcohol, and illicit substance use, and
 - perceptions and attitudes toward drug use.
- Items organized into 32 composite scales considered risk and protective factors by Social Development Strategy Theoretical Framework.
- Factors further assembled into five domains: community, family, school, individual and peer.



Variables Used

- Dependant variable: Past 30 day use of marijuana (yes/no)
- Key independent variable: Language spoken at home (English/Spanish).
- Covariates: socio-demographic items, and 32 R/P factors employed as continuous variables.



Statistical Analysis

- Sample divided into male and female and analyzed separately
- Bivariate analysis with graph display
- T-tests compare mean scores of each of the R/P factors between categories of language used at home and marijuana use.
- 6 logistic models
 - Basic model: socio-demographic variables + dependent variable + key independent variable.
 - Each of next 5 models: Basic model + covariates from one of five R/P domains.
 - Non significant variables ($\alpha = 0.05$) removed through stepwise backward iterative process.

Table I. Characteristics of Study Sample

Variable	Category	Male		Female		p
		Frequency	%	Frequency	%	
Total		3511	44.4	4388	55.6	-
Age in years	10-11	156	4.5	216	4.9	0.13
	12-14	1831	52.5	2292	52.6	
	15-17	1341	37.6	1639	38.6	
	18	150	5.0	217	4.3	
Self-Identity/Country of Origin	Central American	250	7.2	292	6.8	0.57
	Cuban	500	14.5	573	13.3	
	Dominican	126	3.6	179	4.1	
	Mexican	848	24.5	1089	20.2	
	Puerto Rican	844	24.4	1097	25.4	
	Other Hispanics	892	25.8	1084	25.1	
Family Arrangements	Living With Father	2659	60.6	2123	60.5	0.91
	Living with Mother	2753	78.4	3587	81.7	0.00
Parent Education	Father Completed High School	1713	50.2	2018	46.9	0.00
	Mother Completed High School	1968	57.1	2445	56.6	0.00
Location of Residence	In a Farm	72	2.1	82	1.9	0.80
	In the country, not in a farm	415	12.0	509	11.8	
	In a City, Town, or Suburb	2968	85.9	3723	86.3	
Language Spoken at Home	English	1838	52.3	2373	54.1	0.13
	Spanish	1673	47.7	2015	45.9	
Drug Use	Used Marijuana/Hashish during past 30 days	324	10.7	388	8.8	0.00

Figure 1: Differences in Marijuana Use by Age and Language Spoken at Home

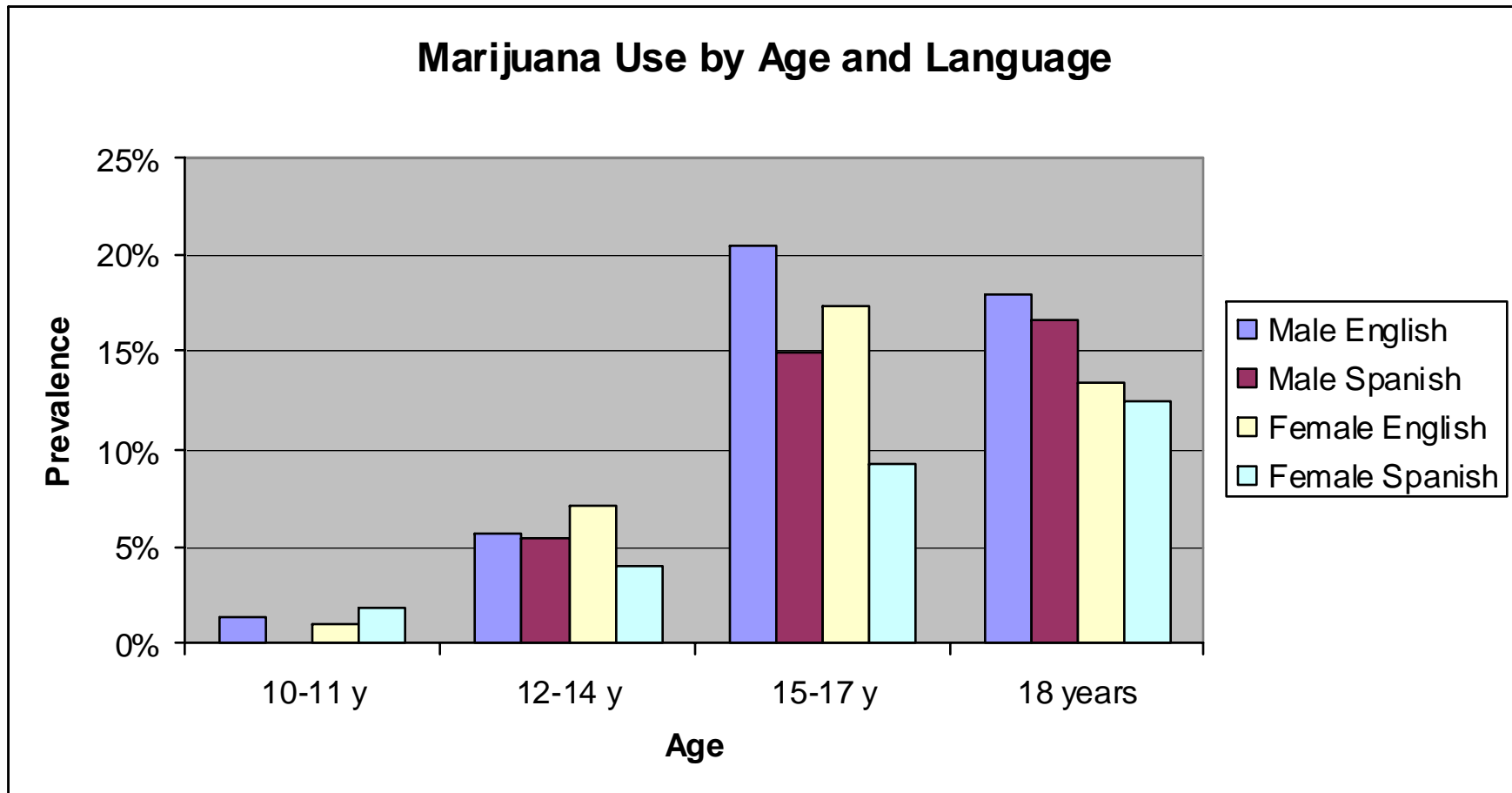


Table II: Mean Scores of Socio-Psychological Factors by Illicit Drug Use Status and Language Used at Home

	Socio-Psychological Factors	Male			Female		
		English Mean Score (SE)	Spanish Mean Score (SE)	Total	English Mean Score (SE)	Spanish Mean Score (SE)	Total
COMMUNITY	Community Rewards for Prosocial Involvement ¹	1.15 (0.02)	1.21(0.02)	1.17 (0.01)	1.12 (0.02)	1.16 (0.02)	1.14 (0.01)
	Low Neighborhood Attachment ²	1.10 (0.02)	1.16 (0.02) *	1.13 (0.01)	1.22 (0.02)	1.19 (0.02)	1.21 (0.01) ****
	Community Disorganization ²	0.59 (0.01)	0.63 (0.01)	0.61 (0.01)	0.62 (0.01)	0.59 (0.01)	0.60 (0.01)
	Personal Transitions and Mobility ²	1.58 (0.02)	1.52 (0.03)	1.55 (0.02)	1.67 (0.02)	1.61 (0.02)	1.64 (0.02) ****
	Laws and Norms Favorable to ATOD ²	1.14 (0.01)	1.05 (0.01) **	1.10 (0.64)	1.15 (0.01)	1.02 (0.01) **	1.09 (0.01)
	Perceived Availability of ATOD and Firearms ²	1.06 (0.02)	0.92 (0.02) **	1.00 (0.02)	1.14 (0.02)	0.89 (0.02) **	1.02 (0.01)
	Family Attachment ¹	1.85 (0.02)	1.94 (0.02) **	1.89 (0.01)	1.70 (0.02)	1.79 (0.02) **	1.74 (0.01) ****
FAMILY	Family Opportunities for Prosocial Involvement ¹	1.87 (0.02)	1.98 (0.02) **	1.92 (0.01)	1.82 (0.02)	1.89 (0.02) *	1.86 (0.01) ****
	Family Rewards for Prosocial Involvement 1	1.97 (0.02)	2.02 (0.02)	1.99 (0.01)	1.93 (0.02)	1.99 (0.02) *	1.96 (0.01) ***
	Poor Family Supervision ²	0.85 (0.02)	0.83 (0.02)	0.84 (0.01)	0.77 (0.01)	0.70 (0.01)*	0.74 (0.01) ****
	Poor Family Discipline ²	1.32 (0.02)	1.33 (0.03)	1.32 (0.02)	1.10 (0.02)	1.07 (0.02)	1.09 (0.01) ****
	Family Conflict ²	1.16 (0.02)	0.98 (0.02) **	1.07 (0.01)	1.40 (0.02)	1.24 (0.02) **	1.33 (0.01) ****
	Family History of Antisocial Behavior ²	1.10 (0.02)	0.90 (0.02) **	1.01 (0.02)	1.29 (0.02)	1.02 (0.02) **	1.17 (0.02) ****
	Parental Attitudes Favorable to ATOD use ²	0.31 (0.01)	0.25 (0.01) **	0.28 (0.01)	0.31 (0.01)	0.23 (0.01) **	0.27 (0.01)
	Parental Attitudes Favorable to Antisocial Behavior	0.42 (0.01)	0.41 (0.01)	0.41 (0.01)	0.36 (0.01)	0.31 (0.01) **	0.34 (0.01) ****

1 Protective Factor 2 Risk Factor

* p < 0.05 and ** p < 0.01 for differences English/Spanish
 *** p < 0.05 and **** p < 0.01 for differences male/female

Table III. Mean Score Differences of Socio-Psychological Factors

	Socio-Psychological Factors	Male		Total	Female		Total
		English Mean Score (SE)	Spanish Mean Score (SE)		English Mean Score (SE)	Spanish Mean Score (SE)	
S C H O O L	School Opportunities for Prosocial Involvement ¹	1.68 (0.01)	1.70 (0.01)	1.69 (0.01)	1.72 (0.01)	1.72 (0.01)	1.72 (0.01) ****
	School Rewards for Prosocial involvement ¹	1.43 (0.01)	1.53 (0.02)**	1.48 (0.01)	1.47 (0.01)	1.57 (0.01)**	1.52 (0.01)***
	Poor Academic Performance ²	1.18 (0.02)	1.20 (0.02)	1.19 (0.01)	1.07 (0.01)	1.06 (0.01)	1.06 (0.01) ****
	Lack of School Commitment ²	1.59 (0.02)	1.38 (0.02)**	1.49 (0.01)	1.45 (0.01)	1.25 (0.01)**	1.36 (0.01) ****
	Religiosity ¹	1.63 (0.02)	1.67 (0.03)	1.65 (0.02)	1.70 (0.02)	1.80 (0.02)**	1.74 (0.02) ****
P E E R /I N D I V I D U A L	Social Skills ¹	1.82 (0.02)	1.86 (0.02)	1.84 (0.01)	2.02 (0.01)	2.12 (0.01)**	2.07 (0.01) ****
	Belief in Moral Order ¹	1.74 (0.01)	1.79 (0.01) *	1.77 (0.01)	1.85 (0.01)	1.93 (0.01)**	1.89 (0.01) ****
	Rebelliousness ²	1.03 (0.02)	0.94 (0.02) **	0.99 (0.01)	1.03 (0.01)	0.93 (0.02)**	0.98 (0.01)
	Friends' Delinquent Behavior ²	0.45 (0.01)	0.46 (0.01)	0.45 (0.01)	0.38 (0.01)	0.31 (0.01)**	0.34 (0.01) ****
	Friends' Use of Drugs ²	0.93 (0.02)	0.85 (0.02) *	0.89 (0.02)	1.04 (0.02)	0.77 (0.02)**	0.91 (0.01)
	Peer Rewards for Antisocial Behavior ²	0.62 (0.02)	0.54 (0.02) **	0.58 (0.01)	0.59 (0.02)	0.51 (0.02) *	0.56 (0.01)
	Favorable Attitudes to Antisocial Behavior ²	0.81 (0.01)	0.74 (0.01) **	0.78 (0.01)	0.72 (0.01)	0.63 (0.01)**	0.68 (0.01) ****
	Favorable Attitudes to ATOD Use ²	0.71 (0.02)	0.61 (0.02) **	0.65 (0.01)	0.69 (0.01)	0.54 (0.01)**	0.62 (0.01) ***
	Low Perceived Risks of Drug Use ²	0.96 (0.02)	0.94 (0.02)	0.95 (0.01)	0.81 (0.01)	0.79 (0.02)	0.80 (0.01) ****
	Early Initiation of Drug Use ²	1.62 (0.04)	1.46 (0.03) **	1.54 (0.02)	1.38 (0.03)	1.06 (0.03)**	1.23 (0.02) ***
Sensation Seeking ²	1.77 (0.03)	1.45 (0.03) **	1.62 (0.02)	1.40 (0.03)	1.12 (0.03)**	1.25 (0.02) ****	

1 Protective Factor 2 Risk Factor

* p < 0.05 and ** p < 0.01 for differences English/Spanish

*** p < 0.05 and **** p < 0.01 for differences male/female

Table IV. Logistic Model for ‘Use of marijuana during past 30 days’

	<i>Model 1*</i>		<i>Model 2*</i>		<i>Model 3*</i>		<i>Model 4*</i>		<i>Model 5*</i>		<i>Model 6*</i>	
	OR	p	OR	p	OR	p	OR	p	OR	p	OR	p
<i>For the Overall Group - Gender as Independent Variable</i>												
All (Male/Female)	1.28	<i>0.00</i>	1.31	<i>0.00</i>	1.54	<i>0.00</i>	0.80	<i>0.04</i>	1.33	<i>0.00</i>	1.04	<i>0.69</i>
<i>Within Groups – Language as Independent Variable</i>												
Male (Spanish/English)	0.72	<i>0.01</i>	0.94	<i>0.68</i>	1.03	<i>0.84</i>	1.05	<i>0.76</i>	0.86	<i>0.29</i>	0.86	<i>0.23</i>
Female (Spanish/English)	0.52	<i>0.00</i>	0.67	<i>0.00</i>	0.69	<i>0.01</i>	0.83	<i>0.22</i>	0.65	<i>0.00</i>	0.67	<i>0.00</i>

Model 1: Controlled for socio-economic (SEC) factors

Model 2: Mod 1 + **Community Domain**

Model 3: Mod 1 + **Family Domain**

Model 4: Mod 1 + **Individual Domain**

Model 5: Mod 1 + **Peer Domain**

Model 6: Mod 1+ **School Domain**



Discussion

- Acculturation as measured by language spoken at home is strong predictor of drug use among boys as well as girls of Hispanic background
- Among boys all the R/P domains may play a role on the impact of acculturation on substance abuse,
- But among girls only the individual domain factors may have such a role.

Findings for Boys

- Most risk factor mean scores were significantly higher and most protective factor scores were significantly lower for boys than for girls.
- For boys, the O.R. associated with language changed significantly with the addition of any of the R/P factors to their basic model.
- Boys that speak English at home may be more easily influenced by deviant peers, to live in families with higher tolerance for delinquent behaviors, and to reside in communities with greater access to drugs
- These in turn put them at higher risk for drug use.
- Interventions that target any or all of the R/P factors may positively alter the drug using behaviors of male adolescents of Hispanic background.

Findings for Girls



- For Girls, only the addition of the Individual domain factors to their basic logistic model have significantly changed the O.R. associated with language.
- The acquisition of the English language did not modify significantly their community and family values so as to lead them to initiate the use of drugs; it may even reinforce their sense of family or community.
- It has been shown for instance that the "gendering" process teaches males and females what behavior is culturally appropriate for their gender and reinforces specific gender values (Varga, 2003).

Findings for Girls (Cont')

- The stress-inducing action of the acculturation process may be of particular concern for female adolescents who must adopt new behaviors in order to comply with gender expectations inherent to their culture.
- Risks associated with low self-esteem and loss of "voice" that some girls experience when they are conditioned to suppress expression of their identity as a means of maintaining important relationships (Spira, Grossman, and Wolff-Bensdorf, 2004).
- Scores for Religiosity, Belief in moral order, and Social skills, three leading Individual factors, were significantly higher for girls than for boys , and additionally, were associated with language for female but not for male participants
- Interventions that reinforce girls' innate strengths may be able to help them stay away from drugs.

Study Strengths



- Large n representative of Florida school age population.
- Inform an important issue among important group.
- Help in prevention of drug use among newly arrived Hispanic adolescents and other immigrants.
- Contribution to keeping under control the high costs of drug treatment and problems.

Study Limitations



- Self-report data:
 - Truthfulness of respondents
 - Influence of acculturation
- Cross-sectional data
 - Temporality
 - Causality