**1- Abstract**

A pre-doctoral fellowship application to the National Institute of Drug Abuse (NIDA) was submitted as part of a grant writing training course for doctoral students. The proposed study for this application is complemented by a training plan for the student that includes specific courses and learning activities. These were chosen with the mentor and sponsor of the application to develop the knowledge and skills needed to conduct the proposed study and guide future investigations in the area of substance abuse and nutrition.

**2- Proposed Study: The Problem**

- In 2002, the US Hispanic population represented 13.3% of the total population. Forty percent of Hispanics in the US are foreign-born (Ramírez, 2002).
- Acculturation or an individuals’ adaptation to another culture, has been identified as a factor in the onset of Hispanic adolescents’ substance use behaviors (De La Rosa, 2002) and, as a predictive factor of patterns and frequency of alcohol use (Black, 1993).
- Hispanics have been consistently identified with lower past year prevalence rates than Hispanic males while similar prevalence rates have been reported for substance abuse or dependence from national survey data (Kandel, 1997).
- Nutrient deficiencies such as Vitamin A, E, calcium, protein, and caloric malnutrition and zinc have been identified in individuals with reported substance abuse (Smith, Graham et al. 1996; Nazrul Islam, Jahangir Hossain et al., 2001).
- Increased toxicity of cocaine has been associated to protein caloric malnutrition in animal models (Loebens & Barros, 2003).
- Nutrition education is not often part of substance abuse treatment programs even though programs that offer nutrition services have been associated with better treatment outcomes (Grant, 2004).

**3- Rationale**

- Poor dietary intake that may lead to nutritional deficiencies, may worsen concomitant illnesses and, according to animal studies, may increase toxicity of certain drugs (Loebens & Barros, 2003).
- The proposed study aims to identify the influence of varying levels of substance use on dietary intake which may lead to other health consequences.

**4- Research Questions**

1. Are there observable differences between the dietary patterns reported among Hispanic women with substance use and those of Hispanic women who do not report substance use (alcohol, illicit drugs and non-medical use of prescription drugs)?
2. To what extent is dietary quality affected by the varying levels of reported substance use?
3. What is the most influential predictor of dietary quality by assessing Hispanic women’s income, education, employment, level of acculturation, existing chronic disease and level of substance use?

**5- Methods**

**Design:** Cross-sectional study  
**Population:** Hispanic women 18 years and older

<table>
<thead>
<tr>
<th>Recruitment areas</th>
<th>Sample size (n=150)</th>
<th>Measures and Scales</th>
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</thead>
<tbody>
<tr>
<td>1. Little Havana</td>
<td>80 Substance using cohort</td>
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<tr>
<td>2. Allapattah</td>
<td>Non-substance using cohort</td>
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<td>3. Hialeah</td>
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**Dietary quality** will be measured by Healthy Eating Index (CNP, 1995).

**Dietary patterns** will be derived from 24-hour diet recall data using 5-Step Multiple Pass Method.

**Substance use data** (alcohol, illicit drugs and non-medical use of prescription drugs) using the Drug Use Frequency (O’Farrell, 2003) and Addiction Severity Index (McLellan, 1992).

**Acculturation** will be measured by Cultural Identity Scale (Félix-Ortiz, 1994).

**Non-substance using cohort**

**Statistics analysis:**

- Dietary patterns will be derived using cluster analysis.
- Comparison between the dietary patterns observed in both groups (substance using and non-using) will be assessed using chi-square (χ2) analysis.
- Stepwise multiple regression analysis will be used to identify the relationship of dietary quality according to the varying levels of substance use and other confounding variables.

**6- Training Plan**

As part of the proposed study the following training plan was designed for the researcher with the help of the mentor to complement and tailor the doctoral program to this particular research area.

**Didactic courses:**  
Nutritional epidemiology; Substance abuse and eating disorders; Cluster analysis.

**Research:**  
The applicant will serve as one of the interviewers for the parent study providing hands-on experience during protocol development, recruitment and data collection. Also performing secondary data analysis of the national survey NHANES data set will permit the trainee to become familiarized with substance abuse and nutritional data.

**Conferences and seminars: **  
Participate and attend national conferences such as American Dietetic Association, National Hispanic Science Network and American Association of Public Health.

**Mentorship:**  
Dr. M. De La Rosa and major professor Dr. D. Weddle, both from Florida International University, will have weekly and monthly meetings respectively to discuss and provide guidance and advice on the research progress.

**7- Conclusion and Long Term Goals**

As the baby boom cohort ages, there will be an increase in all health services including substance abuse treatment (Griewer, Penne et al., 2003). Substance abuse research can be complemented with nutrition research as it relates to drug effects, treatment and withdrawal of substance abuse.

The long term goals of this proposed research is to explore potential associations between foods and drug using behaviors that can be used to help target interventions to individuals with substance abuse.

Identifying a relationship with the varying levels of substance use will help indicate the need for nutrition interventions that may help reduce the health consequences of substance abuse. Future research can also build on the proposed study’s findings to explore associations between addiction and foods/nutrients.

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