

## Gender Difference in Schizotypy and Loneliness

**Shauntia D. White**

Mentor: Dr. Blanchard, Professor, Department of Psychology  
University of Maryland, College Park

### Abstract

Loneliness is described as a multifaceted set of feelings that is driven by social isolation and disconnectedness.<sup>1</sup> Its characteristics are also correlated with other psychopathology such as depression but not schizotypy. Schizotypy personality-spectrum disorder is described as the aversion of social learning upon schizophrenic individuals.<sup>2</sup> Studies have shown that individuals with schizotypy have high elevated levels of social isolation and social withdrawal. The intent of this study is to examine the loneliness and schizotypy personality of older adults over 50 years of age. Findings suggest men had higher levels of loneliness and schizotypy than women, while women had higher levels of depression. There are no studies that correlate schizotypy and loneliness. In this present study, we found a correlation between loneliness and schizotypy. Both gender scored high on loneliness and poor interpersonal relationships. Results show that men scored high levels of schizotypy (Interpersonal and Disorganization) than women (Cognitive-Perceptual). Data suggests that men have more negative social outcome than women in older populations. Depression was also found to have a strong correlation to stress and loneliness.

<sup>1</sup> (Capciollo et al., 2000).

<sup>2</sup> (Meehl, 1962).

## The Correlation Between the Elimination of Nutritional Risks and Food Insecurity and Cultural Food Preferences Among WIC Program Recipients in Fairfax County, Virginia

**Rashida Ali-Mubarak**

Mentor: Dr. Kevin Roy, Associate Professor, Family Sciences  
University of Maryland, College Park

### Abstract

This was an exploratory research study in which adult WIC program recipients were interviewed to determine their cultural food preferences. Four daily appointment schedule sheets were chosen at random and evaluated to determine how many persons were being served on an average day at two of Fairfax County's busiest WIC offices. Data revealed how many adults and how many children were being served per day. Data also indicated if a mother had multiple children who were receiving WIC services. Preliminary results indicate that WIC recipients in Fairfax County do have firm cultural food preferences. Through information gained via direct interviews this study also revealed that some of the WIC-recipient families are also food insecure, have disordered eating habits/behaviors.

### Statement of Problem

This study will evaluate the culturally preferred foods of WIC program participants. The goal is to identify the more familiar foods that participants actually consume which have a high nutrient density. A comparison will be made between foods the WIC program currently provides and those actually consumed by the participants. Culturally preferred foods should be made available to WIC participants.

The supplemental foods currently offered to participants in the Women, Infant, and Child (WIC) food supplementation program are not always culturally-preferred foods, which means that the potential to maximize the nutritional intake and decrease the incidence of food insecurity of WIC participants is not being fully realized.

Each adult WIC, participant is required to complete food preference survey sheets which reflect their culturally-specific dietary needs, but the food supplementation vouchers that are currently being issued by the WIC program do not permit women to select more culturally-preferred foods. Based on cultural food preferences, and a lack of WIC food options, recipient's are unlikely to eliminate/decrease the degree of food insecurity and/or nutritional risk to themselves or their minor children. The

target population of this study is first-generation immigrants with limited English language proficiency residing in Fairfax County, Virginia.

### Purpose of Study

This study will examine the nutrient density of culturally preferred foods of WIC program participants as compared to standard foods made available by WIC. The goal is to eliminate nutritional risks and food insecurity by modifying the current food voucher program for WIC in Fairfax County to include culturally familiar foods that are of high nutrient value.

### Research Questions

1. How do the national WIC demographics compare to the local demographics of the study population? Who are WIC's clients in Fairfax County, VA and which supplemental foods are available to them? Are there any special needs/considerations necessary for target group: nutritional risks or food insecurity?
2. How do WIC recipients make use of the foods that they receive from WIC? What survival strategies do they employ after the vouchers are used for the month? Are recipients experiencing food insecurity? Were there any preliminary indications that WIC recipients do appear to prefer more culturally diverse foods, than they are currently being supplemented with by the WIC program?
3. How do the results of this study indicate that Fairfax County's WIC recipients would prefer to consume more culturally diverse foods, than they are currently being supplemented with, will County officials be prompted to offer WIC clients more diverse food supplementation choices? How will the adaptations eliminate nutritional risk and/or food insecurity for the target group?
4. The future of WIC:
  - a. How can WIC evolve to address the needs of its growing diverse population in Fairfax County?
  - b. How much control over foods available for WIC clients do local-level WIC nutritionists/personnel have?
  - c. Is WIC/FNS obligated to consider cultural diversity when selecting foods for WIC's food voucher program?
  - d. How far is USDA/FNS willing to go with establishing cultural competency in voucher program?

### Summary of Theoretical Framework

Bronfenbrenner's Ecological Systems Theory (Cherlin, 2008) and the Theory of Planned Behavior (Brannon and Feist, 2007) are the frameworks utilized in this research project. Ecological Systems Theory was selected because it best describes the overall benefit to be realized by Fairfax County. The County has compelling interests to identify cultural food preferences of WIC recipients especially if the County's goals are to eliminate and prevent nutritional risks, and eliminate food

insecurity among its WIC eligible county residents. Without going into the politics of the immigration debate, the Theory of Planned Behavior (Brannon and Feist, 2007) is but one vehicle to explain why parents of WIC eligible children have emigrated to America.

The Theory of Planned Behavior will also be explored to demonstrate that the virtual act of emigrating from another country to the United States is in itself a planned act with the all-encompassing goal of improving one's status in life. These parents will do whatever it takes to improve the lives of their children and will utilize whatever resources are available to them.

### Review of the Literature

The Economic Research Service of the United States Department of Agriculture in its work *The WIC Program: Background, Trends, Issues* (ERS, 2006) gives a detailed overview of the WIC program and eligibility criteria for client participation. The WIC program was designed to subsidize and support American agribusiness and to provide supplemental foods to eligible individuals and families with demonstrated nutritional risks.

The WIC program administers a basic means test to all applicants. Applicants must meet categorical, residential, income, and have a verified nutritional risk(s) to qualify for WIC services (*Economic Research Service/USDA, 2006*). Categorical eligibility is defined as: a pregnant or up to six week postpartum mother; a lactating mother and infant pair from the child's birth until age one year; children from age one until age five. Applicants must reside in the state in which an application is filed in order to determine residential eligibility. Applicants with a total household income at 185% of the poverty line or \$32,653 for a family of four (*Economic Research Service/USDA, 2006*) income eligible. Those who meet federal income guidelines for federally funded programs like food stamps, TANF, and Medicaid programs are automatically eligible for WIC services if they choose to apply. The determination of nutritional risks must be verified by a practicing physician, or other qualified health care professional. Risks factors can be either multivariate or specific in nature and can include conditions like: anemia, Rickettes, gestational diabetes, low-birth weight and/or premature birth, low maternal gestational weight gain, improper or inadequate food consumption, failure-to-thrive in infants, delayed growth in toddlers, etc.

After eligibility has been determined, food voucher "checks" are issued in the name of each eligible family member. All identifying information on the voucher "check" is typed from data collected by WIC clerks and nutritionists. The exact amount of each individual food item that each recipient is eligible to receive is listed prominently on the front of the voucher. Each voucher check also contains an exact dollar amount. That dollar amount establishes a limitation on the dollar value of the food voucher, i.e. the WIC recipient is not able to "purchase" WIC eligible foods above the amount established on the voucher. In addition to identifying information, and an establishing voucher values, each voucher also contains a "value

termination date”. “Value termination dates” refer to the fact that the vouchers are only “good” in thirty-day increments. Vouchers are issued in ninety-day increments, or three months at a time, each WIC eligible family member is also means tested every ninety-days to determine continued WIC eligibility.

In situations where an applicant for WIC services is an Undocumented Immigrant (UI) affidavits verifying identity, residency, and income must be completed and witnessed by a WIC staff member. The affidavits are then maintained in the client’s permanent file. Specifically in Fairfax County, UI individuals are disproportionately of Hispanic and/or Latino origin, have extremely low or unstable incomes, lack proficiency in English, and have poor dietary habits. Due to their lack of legal status, the only assistance that these families qualify for is—WIC, because citizenship is not a criterion for participation in this federal program.

## WIC Demographics

### Program Participation

According to findings from the USDA, Food and Nutrition Service, Office of Research, Nutrition and Analysis, *WIC Participation And Program Characteristics 2006: Summary (PC 2006)*, as reported in April 2006, WIC served or assisted approximately 8,772,218 eligible persons. This figure represents an overall 22% increase in the total number of eligible persons enrolled in the WIC program. Approximately 8 million or 49% of WIC’s total population was eligible children, 26 % eligible infants (0 – 12 months), and 25 % eligible women.

The Program Characteristics 2006: Summary also details information as to the racial composition of WIC program recipients. For example, when evaluating WIC participants by “race”: Whites comprise 55.3% of the total population, non-immigrant African-Americans 19.6%, Native Americans 15.3 %, Asian/ Pacific Islanders 3.7 %. When evaluating program participation by ethnicity Hispanic/ Latinos comprise the single largest ethnic minority group representing 41.2 % of the ethnic minority WIC population.

## Fairfax County Program Participation

### WOMEN INFANT AND CHILDREN PROGRAM (WIC) Special Supplemental Nutrition Program for Women Infants and Children WIC STATISTICS for Fairfax County, Virginia 2007

Number of Women, Infants and Children served in six offices every month.

Month	Pregnant Women	Breast Feeding Women	Post-partum Women	Infants	Children	TOTALS
Jan	1679	2038	611	3500	5956	13784
Feb	1713	2017	603	3561	5961	13855
Mar	1873	2036	604	3629	5972	14114
Apr	1941	2061	601	3673	6010	14286
May	2033	2053	592	3745	6253	14676
Jun	2071	2036	599	3720	6017	14443
Jul	2107	2036	627	3863	6322	15012
Aug	2100	2116	646	3834	6401	15097
Sep	2100	2116	646	3837	6521	15220
Oct	2109	2125	675	3938	6521	15368
Nov	2051	2212	722	4002	6533	15520
Dec	2056	2237	734	4050	6579	15656

(source: Virginia Department of Health, WIC Statistics)

## The Standard WIC Food Package

The above illustration represents the standard WIC food package. Of the food items identified here, they predominate the variation that one will notice across the nation is in the name of the local “store brand” foods that WIC recipients are able to select. This food package represents a national standard which does not take into account the cultural food preferences of the WIC recipients.

### Variation in the Food Package

The predominate variation in the WIC food package is in the costs incurred at both the local and state level to purchase the foods. In Fairfax County, Virginia there are no obvious variations in the food package offered when compared to the national standard WIC food package with the exception of the preference by the WIC program for regionally specific “store brand products”. There has been a state-wide change in the type and size of juice currently available to/for WIC

recipients. The change from offering WIC recipients a choice between 64 oz unchilled and 12 oz frozen juice to offering 12 oz unsweetened apple or orange as the only options available to WIC recipients was determined to be in the “best interests of Commonwealth of Virginia” not necessarily in the best interests of the Commonwealth’s WIC recipients. The average 12 oz frozen juice can costs the Commonwealth of Virginia an average of \$ 0.89. On average, recipients can purchase two to four cans of frozen juice per food voucher at an average cost of \$ 1.78 to 3.56 per food voucher. This portion of juice will/can serve as the nutritional beverage of choice a single meal because after adding the concentrated juice and three cans of water inside of the average juice container the recipient only has one-half to three-quarter of a gallon of juice. The state has supplemented the family for a single meal with a non-soda, low sugar, all-natural beverage. The WIC recipient, however, must decide for the duration of the week between nutritious juice and cheaper “other” beverages for herself and/or her children. Currently, the average price for a half gallon of orange juice can be as expensive as \$4.00 per half gallon.

## **The Problems with WIC**

### ***Farmer’s Market Nutrition Program***

The Farmer’s Market is an addendum to the standard WIC food package offered to some WIC recipients. This portion of the food supplementation program is only made available to WIC recipients from 1 July until 31 October. The Farmer’s Market food voucher permits WIC recipients to purchase fresh fruits and vegetables from designated farmer’s markets throughout Fairfax County. Recipients can only purchase foods from vendors who have been “WIC-approved” and who only sell locally-grown produce. The cultural preference is not taken into account for this portion of the WIC program as its primary focus is to provide a guaranteed market for local farmers and their small harvests. The most obvious limitation of the Farmer’s Market program is that it is only available from July until October and does not have a component available to WIC recipients during the late Fall, Winter or early Spring months. Since the products made available are only locally grown products, highly nutritious foods like: plantains, papaya, guava, bananas, watercress, and snow peas, which are culturally preferred by large numbers of Fairfax County’s WIC recipients, are not options for consumption and purchase.

### ***Cultural Food Preferences***

In addition to the Farmer’s Market program, the more standard food voucher program also does not take cultural food preferences into account when determining which foods to make available to WIC recipients. In other words, despite the knowledge that 85% of the County’s WIC clientele is non-native Hispanic/ Latino the County does not offer them more culturally specific foods.

## ***Eliminating Nutritional Risks and Food Insecurity***

Studies conducted by researchers like Kropf et al in 2007 indicate that women and children enrolled and participating in WIC may be at an increased risk for experiencing food insecurity. Food insecurity as defined by Bellows and Hamm (2002) is a profound lack of and an inability “to provide food supplies to adequately [satisfy] consumption needs”. According to Kropf, households with children under the age of six years are more likely to experience food insecurity than households without children. Both the prevalence and incidence of food insecurity increase as the average total household income decreases (Kropf, 2002). This is a stark reality of many of the Hispanic/Latino households in Fairfax County because many of the fathers/husbands/head-of-household is seasonal and/or day laborers. Their work is often more steady during warmer months and sporadic during much colder winter months. This causes the total household income to fluctuate greatly. The result is that the supplemental foods provided by WIC have a double importance because during periods of little or no work the food received from WIC becomes the basis of the entire family’s subsistence. Studies like Casey et al 2001 and Kaiser et al 2003 indicate that when household income become extremely limited the parents are more likely to forgo eating in favor of their children. Parents are also more likely to stop attempting to purchase more nutrient dense foods from markets and grocery stores, because fast foods options like McDonalds are cheaper and more expedient.

Dr. Kumanyika and Grier in the work *Targeting Interventions for Ethnic Minority and Low-Income Populations* (Kumanyika and Grier, 2006) investigated how best to design and implement an intervention within ethnic minority groups and low-income populations. Families were evaluated to determine how decisions are made about food consumption with the family structure. The researchers noted that children in low-income and ethnic minority household had a greater tendency to prefer to consume less dense foods that they saw on television during commercials. The parents also had a greater tendency to use food, especially less nutrient dense foods, to reward and entice their children to behave than their counterparts in higher socioeconomic status neighborhoods. The researchers also noted that more fast food restaurants were operating in or in extremely close proximity to low-income, more urban neighborhoods than in more affluent neighborhoods. Children in low-income household also have a greater likelihood of watching several uninterrupted hours of television after school and during their early pre-school years than their more affluent counter parts as well.

The lower the socioeconomic status and education level of adults the greater the tendency for their children to experience periods of disordered eating, exhibit nutritional risks, and endure periods of food insecurity. These situations are occurring despite the participation in “safety net” food assistance programs like: WIC, school lunch, and summer community lunch programs (Kumanyika, 2006; Kaiser et al, 2003; Casey, 2001; Kropf, 2007; and Bellows, 2002).

## Research Methodology

### Sample Data

Roughly 85% of the WIC clients in Fairfax County Virginia are either Latino or Hispanic, first-generation, lower-income, underemployed, less educated mothers. These women are not always literate in their native language(s) and are even less likely to be literate in English. The same is true for another 10% of the County's WIC clients who are first-generation immigrants from North Africa, the Middle East, and Asia to include Afghanistan, Pakistan, and India.

The informant populations for this exploratory study were selected from the two busiest WIC field offices in Fairfax County located in Falls Church and in Springfield at The Cary Building. At the onset of this study it was decided that the re-certification date for WIC recipients would be the optimal time during which to determine, via direct interviews and reviewing data collected by WIC nutritionists on 24 hour food pyramid diet recall sheets, which foods recipients preferred to consume versus the foods that their diets were being supplemented with by WIC. During the course of direct detailed interviews many recipients, especially pregnant and lactating recipients revealed that they did not have enough food to eat on a consistent basis. Several also revealed that they only consumed the foods provided by WIC because they could not afford to consume other foods. Several of the teen mothers also revealed that because of extreme financial situations they could not afford to purchase food for themselves and/or their children.

Approximately 10 men were present with their family members in the WIC office during the recertification process. Of these men three participated in direct interviews primarily as translators for their adult family members.

### Quantitative Data

Quantitative data was gathered from several different sources including peer reviewed scholarly articles. Figures to determine exactly how many clients were served during a specific year; statistical data was gathered from the website maintained by the Virginia Department of Health. Information was also gathered utilizing the 24-hour food pyramid consumption quantity sheets. WIC recipients are required to complete these sheets as a part of their initial application and again every three months during a re-certification process. Re-certification is a process through which eligibility is re-verified; modifications and/or additions/deletions are made.

### Qualitative Data

Qualitative data was obtained via direct interviews with WIC clients, in the waiting area of the WIC office, on the specific re-certification day for each WIC office participating in the research study. Before each interview was conducted each WIC client was brief about the research study and asked to participate on a voluntary basis. Each client was then asked specific questions about all foods and drink consumed in the previous 24-hour time period for the mother and each of her

WIC eligible children. Basic demographic data was also collected like: marital status; age of all WIC-eligible members of her household; ethnicity of mother, father/partner and each child; native language; feeding method for all babies newborn through age one year.

### Data Collection Instruments

A basic "picture booklet" was created of some common foods that the initial fifty interviewees revealed that they preferred to consume, with the addition of a few basic "general staple foods". Pictures of the most common foods were downloaded from the internet, printed in color, on the front and back of paper which was then labeled in Spanish and laminated. The booklet gave WIC clients who were less proficient in English the opportunity to participate in the research study by self-identifying foods that they preferred to eat either by touching the appropriate picture or circling the appropriate pix with a dry-erase maker. The food preferences were then recorded on a 24-hour total food consumption sheet for each meal and snack for one day.

### Data Analysis

In gathering quantitative data for this study, four daily schedule sheets were chosen at random from the beginning, middle, and end of the data collection phase for evaluation to determine the adult-to-child ratio and an average number of persons served per day. In all, the data for 172 appointments for both initial certification and re-certification were evaluated. Of this number 31 were adults and 141 were children. Adults ranged in age from 17 years to 38 years. Children were aged 10 days to five years, with births dates from May 2003 thru June 2008. Of the 141 children there was one set of non-immigrant African-American twin boys, and nine other sibling non-twin sets. With the exception of the single set of twins, the indication of multiple sibling sets seems to indicate that mothers are repeat WIC recipients. In other words, the findings would appear to indicate that mothers are willing to utilize WIC services on a repeat basis.

Direct interviews were also conducted during the data collection phase of this project. Permission for direct interviews was obtained before the start of this project from Mrs. Anna Kianthra of the Fairfax Department of Health, WIC Nutrition Services. An application is also on file with University of Maryland's Institutional Review Board (IRB).

During three weeks of data collection more than 300 individuals were scheduled for both certification and re-certification appointments. Interviews were conducted at both the Springfield and Falls Church, Virginia WIC offices by a single individual; access arrangements had also been for the Herndon/Reston, Virginia WIC office but were cancelled due to construction at the office. Potential interviewees were approached randomly while they waited for their scheduled appointment times. Each was approached individually and invited to answer a few

demographic questions as to: their age, self-reported “race”, number of children, marital status. Each was also asked to reveal exactly what they and their child/children consumed for the entire twenty-four hours prior to the interview.

A total of seventy-eight individuals were contacted for detailed interviews. Of the seventy-eight, thirty were adults aged seventeen to thirty-five, forty-one were children aged ten days to four years of age. Of the adults 15 were married while another 15 were single mothers. Seven of the interviews were incomplete because the mothers had to leave for their scheduled appointments. The mothers were asked to self-identify their race which revealed that Hispanic/Latinos are in fact the largest single ethnic group among WIC recipients in Fairfax County; Asians are the second largest demographic group. (See figure 8). During the interview session mothers were asked not to explain which food groups that the food that they had consumed came from but rather exactly which food and drink they consumed and how much of all food and drinks were consumed in twenty-four hours. There were three established goals: 1. to determine if the mothers and children were consuming the WIC supplemental foods; 2. to determine if the recipients actually had cultural food preferences; and 3. to learn what WIC recipients consume after they spend their food voucher.

## Findings, Conclusions and Recommendations for Future Research

### Findings

#### RESEARCH QUESTION 1:

How do the national WIC demographics compare to the local demographics of the study population? Who are WIC’s clients in Fairfax County, VA and which supplemental foods are available to them? Are there any special needs/considerations necessary for target group: nutritional risks or food insecurity?

#### FINDINGS:

WIC foods include iron-fortified infant formula and infant cereal, iron-fortified adult cereal, vitamin C-rich fruit or vegetable juice, eggs, milk, cheese, peanut butter, dried beans/peas, tuna fish and carrots. Special therapeutic infant formulas and medical foods may be provided when prescribed by a physician for a specified medical condition ([www.fns.usda.gov/WIC-Fact-Sheet](http://www.fns.usda.gov/WIC-Fact-Sheet)).

WIC’s clients in Fairfax County, Virginia are predominately undocumented Hispanic/Latino immigrants or 85% of the total population; 70 % of the total population are immigrant West Asians from Pakistan, Afghanistan, India; roughly 10% of the total population are East Asian from Vietnam, Cambodia, Thailand; 10% of the total population are White American; 20 % of the total population is non-immigrant African-American; 40 % of the total population is North African from Somalia, Ethiopia, and The Sudan. Nationally, the WIC population is not as diverse with these specific ethnic and cultural groups, however, as Fairfax County, but the

national WIC population is evolving. By “race” Whites comprise 53.5% of the total WIC population while Hispanic/Latinos represent 43% of the total population. Whites represent the largest racial group while Hispanic/Latinos represent the largest cultural/ethnic group.

#### RESEARCH QUESTION 2:

How do WIC recipients make use of the foods that they receive from WIC? What survival strategies do they employ after the vouchers are used for the month? Are recipients experiencing food insecurity? Were there any preliminary indications that WIC recipients do appear to prefer more culturally diverse foods, than they are currently being supplemented with by the WIC program?

#### FINDINGS:

This exploratory study was small but did reveal that overall WIC recipients are consuming the supplemental foods that they receive. Many mothers actually revealed that they shared the supplemental foods with other non-WIC recipient members of their households. This means that the nutritional risks that WIC nutritionists have identified will take longer to correct because the food packages tailored do not include provisions for extra consumers of the food or other family members. When asked about food consumption after the food voucher is spent many younger mothers revealed that they found it easier to feed themselves and their children at McDonald’s and/or other more cultural fast food restaurants because they could not afford to shop at local grocery stores on a regular basis because the food prices were so high. During the interviews several mothers were feeding their children Chicken Nuggets and milk from McDonalds each of which costs \$1.00 from McDonalds. This might also indicate that many WIC recipients in Fairfax County live in households where food insecurity is a reality.

During this study it was revealed that the adults were more likely to consume culturally preferred foods than were their children. Some of the children attended daycare or Early Head Start programs and did not have an option of consuming more culturally familiar foods. The most preferred food among Hispanic/Latino mothers was the tortilla served with cheese, rice, and/or chicken. Among Asians the most commonly preferred foods were rice and fresh fruits, the majority of which are not offered by WIC’s Farmer’s Market nutritional program because they are not grown locally.

Of those that had at least one child present with them, all had toddlers who appeared to be 10 LBS or more overweight. The majority of the overweight toddlers were little girls. According to Bellows and Hamm (2002) one of the indicators that a family is food insecure is the presentation of overweight or obese children. The reasoning is that all of the food resources of the family will be expended to feed the child/children rather than the parents because the appearance of “fat” children is, in some cultures an indicator of wealth, good health for the offspring, and status. That “fat” child hides the fact that the family is poor and that the parents only consume a large meal once a day, usually at night. Many of the Hispanic/Latino children in particular did, upon observation, appear to be overweight. Studies by researchers

like Kumanyika, and Grier (2006) indicate that when low-income immigrants are able to afford to purchase culturally preferred foods they do so and report that they believe that their diets are better without the addition of fast food. The work by Drs. Jonnalagadda and Diwan (2002) also indicate that changes in the culturally normal diets of some immigrant groups can lead to negative health effects.

Although sample size of the study population was relatively small (78 persons interviewed, and 172 appointment records evaluated) in relation to the average total population, the sample did reveal some cultural food preferences. For example, a cross section of all persons interviewed indicated that all have cultural preferences for fresh produce on a daily or almost daily basis. This is fairly significant because Fairfax County does participate in the Farmers' Market Nutrition program and issues special supplemental food vouchers to some recipient which are "good" or active from 1 July until 31 October. The drawbacks to the program are: the cultural preferences of recipients are not accounted for; the supplement only provides \$20 worth of fresh fruits and vegetables for a month; recipients are only allowed to select produce from specific vendors; the markets are not necessarily accessible via mass transit; and the markets do not operate during convenient hours for working adults. In addition to a clear preference for fresh fruits and vegetables on a daily basis, other cultural food preferences do exist. Asians, for instance, indicated a high preference for rice and fresh vegetables. Western Asians and the North African also showed a clear preference for home-made bread and plain yogurt, and Basmati rice. Hispanic/Latino respondents also showed a strong preference for tortilla, cheese, plain yogurt.

Issues related to food insecurity were "discovered accidentally" during the initial few interviews conducted at the Springfield, Virginia WIC office. Several pregnant or lactating women revealed that in twenty-four hours they had only consumed two plain bagels with either butter or cream cheese, two cups of soda, and tortilla with cheese and chicken for supper. After asking the pregnant mothers if they were suffering with Morning Sickness, and learning that none of them were, a few of them confessed that they were eating what was available; one said that she did not want to get fat.

#### RESEARCH QUESTION 3:

How do the results of this study indicate that Fairfax County's WIC recipients would prefer to consume more culturally diverse foods, than they are currently being supplemented with, will County officials be prompted to offer WIC clients more diverse food supplementation choices? How will the adaptations eliminate nutritional risk and/or food insecurity for the target group?

#### FINDINGS:

During the data collection phase of this research project county nutritionists indicated that Fairfax County is in the process of phasing in a new food voucher, as mandated by USDA/FNS in 2006, which was created to address some of the issues related to cultural food preferences. For example, the new food voucher will offer whole wheat tortillas, brown rice, and more vegetables than the current

food voucher. Less formula will also be given to lactating mothers after the new voucher is phased in to help promote breastfeeding. All children and adults will be issued 2% whole milk, instead of whole milk, and low fat cheeses instead of regular milk because the overuse of whole milk has been negatively linked to increased obesity in both adults and children. Children and adults with specific nutritional risks which can be further mitigated with the consumption of whole milk will receive voucher for whole milk only if the IWC nutritionist receive verification of the nutritional need from a qualified physician or other designated health care professional. According to interviews conducted among WIC nutritionists Fairfax County does not plan to have the revised food voucher program implemented throughout the county until the Fall of 2009 some three years after the initial USDA FNS mandate to for all local-level WIC offices to adapt and utilize a more culturally sensitive food voucher.

#### RESEARCH QUESTION 4:

The future of WIC:

- a. How can WIC evolve to address the needs of its growing diverse population in Fairfax County?
- b. How much control over foods available for WIC clients do local-level WIC nutritionists/personnel have?
- c. Is WIC/FNS obligated to consider cultural diversity when selecting foods for WIC's food voucher program?
- d. How far is USDA/FNS willing to go with establishing cultural competency in voucher program?

#### FINDINGS:

According to the USDA, states do have some degree of local control over foods made available to their WIC recipients. However, while collecting data for this study, it was learned that the foods made available to WIC recipient are determined more by factors other than the actual cultural, financial, or nutritional needs of WIC recipients. For example, the agribusiness lobbies the USDA, at the federal level, for the exclusive right to provide certain foods to WIC recipients. Additionally, all major formula manufacturers have lobbied the USDA for exclusive and highly lucrative contracts to provide formula to WIC recipients. The USDA receives substantial financial benefits from formula companies which it then uses to fund its breastfeeding promotion efforts among low-income mothers who are WIC recipients. States do have some limited

control over quantities of specific foods and alternative foods to accommodate specific food allergies. Demographics and cultural food preferences are not true part of the formula utilized when determining which foods will be made available to WIC recipients.

#### Conclusions

##### CONCLUSION 1:

WIC's efforts to eliminate nutrition risks and food insecurity

This is an exploratory study in nature; therefore we did not expect to produce concrete solutions. The preliminary results, some of which were provided by WIC, indicate that some of the nutritional needs of WIC clients are adequately being addressed by the current supplemental foods. However, interviews with pregnant women, teens, and younger mothers who are active WIC recipients did reveal that many of them are not consuming adequate amounts of food to remain healthy long-term.

Also, after conducting certain interviews which seemed to reveal food insecurity and/or disordered eating, nutritionists were asked about the findings and facts that the mothers revealed but failed each time to act. Part of the failure to act was that WIC personnel are trained to rely on the responses that mothers make on the 24 hour food pyramid consumption sheets to determine nutritional risks. Food insecurity is a reality for some WIC recipients but WIC personnel can only make referrals to other agencies, i.e. the mission of the WIC program is to eliminate nutritional risks, it does not have a clear mandate to intervene in cases of food insecurity. The issue of disordered eating is addressed by mandating that all adult WIC recipients attend periodic nutrition classes during which short films are shown or a nutritionist attempts to explain how to prepare a balanced meal to her clients utilizing USDA approved plastic food.

#### CONCLUSION 2:

Nutritional risks and food insecurity in Fairfax County Virginia

From observations and findings related to this study, WIC in Fairfax County is not, and cannot, address the food insecurity of the population that it serves. Individual nutritionists are aware of the food insecurity issues but cannot act to address them because of the mission of WIC.

#### ***Recommendations for Future Research***

##### RECOMMENDATION 1:

Creation of a special County Food Stamp pilot program to address food insecurity suffered by American citizen being raised by undocumented immigrant parents

Food insecurity suffered by American-citizen children being reared in the homes of undocumented Hispanic/Latino parents may be more pronounced than with other groups of children. Both the increased incidence and prevalence of food insecurity and nutritional risks can be linked directly to the status of the parents. Therefore, as a result of this exploratory study, officials in Fairfax County should devise a legal method to separate parental legal status from the rights of American citizens to eat.

The WIC program should serve as the vehicle through which to offer a special County sponsored and funded "County Food Stamp Program" primarily targeting undocumented WIC recipients. The County Food Stamp Program should function much like the federally funded Food Stamp program. The singular goal would be to further supplement the diets of the County's poorest citizens/residents and totally

eliminate food insecurity and nutritional risks. The WIC program is the ideal vehicle from which to operate such a pilot program because citizenship and legal status are not criteria for eligibility.

Implementing a pilot program of this nature is in the best interests of Fairfax County. The costs incurred by the County to operate this pilot program, would, overtime, cost less than the salaries of special education teachers, less than the salaries of teachers to teach remedial SOL courses, less than the medical expenses to offer medical services to children with preventable health conditions, etc. By actively eliminating nutritional risks and food insecurity the County would boost the overall health, and academic performance of these children which would give them a better opportunity to succeed.

##### RECOMMENDATION 2:

All nutrition programs should be placed under the authority and control of the U.S. Department of Health and Human Services (DHHS)

The primary goal of the USDA is—to support and protect agribusiness; therefore, all functions of Food and Nutrition Services should be removed from the USDA. All food and nutrition programs should be placed under the direct purview of the Department of Health and Human Services (HHS). The primary mission of HHS is the "prevention of disease and infirmity"—the elimination of nutritional risks and food insecurity are essential to the efforts of disease prevention. The primary mission of Public Health is not the protection or support of business, or industry; therefore, removing money from the formula should refocus food and nutrition programs on the needs of the people that they serve. That refocusing of attention would allow government officials to better understand the evolving WIC population. That enhanced understanding should cause innovators within the HHS to seek redress and acknowledgement of the importance of recognizing role of cultural food preferences in the efforts to eliminate nutritional risks and food insecurity.

Despite the fact that this an exploratory study, it does appear that in order for the federal government, to properly address issues like food insecurity and nutritional risks cultural food preferences should be taken into consideration when attempting to offer low-income, poor families direct food assistance. Following this logic necessitates a complete paradigm shift which would remove of the focus of American nutrition programs away from agribusiness and on to the poor and needy. Agribusiness will suffer the loss of guaranteed pricing and guaranteed markets for their products if "it" is removed from the center of the both national and local efforts to assist people in their efforts to eliminate their own nutritional risks and food insecurity. But, the poor should, in theory realize more benefit from nutrition program that are directed by more preventive health focused agencies. Interviews with several nutritionists revealed that there is a strong desire, among them to enhance the mission of WIC.

## RECOMMENDATION 3:

## Expansion of the Farmers' Market Nutrition Program

This exploratory study revealed that among the immigrant WIC recipients in Fairfax County fresh fruits and vegetables are a major component of their culturally preferred diets. For example, the majority of Asian mothers reported that they preferred to consume fresh fruit for breakfast instead of the hot and cold cereals their diets were supplemented with by WIC. Large numbers of the mothers also revealed that they would prefer to offer their children fresh fruit and vegetables for snacks, but cannot do so at home because they could afford to purchase fresh fruits and vegetables from local grocery stores. Several mothers stated that they often purchased fresh fruit from McDonald's because it was available on the Dollar Menu. These mothers also stated that they regularly substituted the French fries in their child's Happy Meal with apple slices.

Taking these facts into consideration, expanding the Farmers' Market Nutrition Program would serve the best interests of both WIC recipients and Fairfax County. Currently, the Farmers' Market option is only avail from 1 July until 31 October, which serves the best interests of small local farmers. Expanding the program would serve the long term interests of all parties—the WIC recipients, Fairfax County, and small farmers. WIC recipients would benefit because they would be able to consume fresh fruits and vegetables. Raw fruits and vegetables are rich in necessary vitamins, aid in bile elimination by adding fiber to the diet, and have a higher antioxidant content than many other foods. Fairfax County, and ostensibly the Commonwealth of Virginia, would benefit because the consumption of fresh fruits and vegetables has been positively linked to numerous positive health benefits. Local farmers would also realize a benefit because the contracts that they have with the County as WIC-approved vendors would garner more income for them as the demand for fresh fruits and vegetables increased. Therefore, expanding the Farmers' Market program offers a possibility of garnering immediate tangible benefits for all parties involved.

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## WEBSITES

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[www.fns.usda.gov/WIC-Fact-Sheet](http://www.fns.usda.gov/WIC-Fact-Sheet)  
[www.vdh.virginia.gov](http://www.vdh.virginia.gov)