NEEDS ASSESSMENT FOR WOMEN, INFANTS, AND CHILDREN (WIC) ON UNIVERSITY CAMPUSES

A graduate thesis submitted in partial fulfillment of the requirements for the degree of Master of Science in Family and Consumer Sciences

by

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DEDICATION

This graduate thesis is dedicated to:

My mom, Emma Oganyan, for supporting me through every step of my education and for always having faith that good will come my way, and my dad Mardin Davoodi, who taught me that taking the easy way out is not always the best and by working hard, I can achieve anything.

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ABSTRACT

NEEDS ASSESSMENT FOR WOMEN, INFANTS, AND CHILDREN (WIC) ON UNIVERSITY CAMPUSES

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The Special Supplemental Program for Women, Infant, and Children (WIC) Program has been shown to reduce complications from pregnancy, reduce the incidence of anemia in pregnant women and children under age 5 years, and influence eating behaviors of low-income women, infants, and children. Although the program poses many benefits, many qualifying participants do not use the program because of lack of accessibility. Having a WIC office on a university campus could increase accessibility for participation amongst college students who are pregnant or who have children under age 5 years. The purpose of this graduate thesis was to examine the need for the WIC on university campuses. Two evaluations were conducted for this study. The first evaluation was distributed to students, faculty, and staff members after outreach presentations on campus. The second evaluation was sent electronically through the American College Health Association survey that was distributed to all CSUN students.
through email. Results from this study showed that most students believed that having WIC on campus would be useful. Data also revealed that there are students who are parents of children under age 5 years and/or already using WIC benefits. Another goal of this study was to evaluate which form of outreach was the most effective. Some methods of outreach included flyers, emails, and presentations. Data showed that most people learned about WIC services on campus through presentations. Further research is suggested to gather data from a larger group of students. This thesis can serve as a tool to facilitate the initiation of WIC offices on other university campuses.
CHAPTER I

INTRODUCTION

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) has been providing nutrition education, breastfeeding education and support, referrals to community resources, and checks for healthy supplemental foods to low-income families for over 40 years [Economic Research Service (ERS), United States Department of Agriculture (USDA), 2016]. In 1972, the WIC Program was piloted in response to poverty-stricken mothers and their children who were experiencing malnutrition (National WIC Association [NWICA], 2015). There was a growing need for health improvement in this population. After the 2-year pilot ended in 1974, the WIC Program was adopted in over 45 states, and in 1975, WIC was established as a permanent program by legislation Public.Law. 94-105 (NWICA, 2015). Initially, WIC had only provided supplemental foods to breastfeeding women and children until age 4 years, but in 1975, eligibility was extended to children until the age of 5 years and non-breastfeeding women up to 6 months post-partum (NWICA, 2015).

The Child Nutrition Amendments of 1978 introduced new elements into the program. First, nutrition education was to be taught to program participants. Second, the supplemental foods that were to be provided were to contain nutrients found lacking in the target population and have relatively low levels of fat, sugar, and salt. Third, the states’ programs needed to coordinate referrals to social service programs, including
immunizations, substance abuse programs, domestic and child abuse counseling, and family planning (NWICA, 2015). In 1992, WIC introduced and tailored a special food package for exclusively breastfeeding women to promote longer breastfeeding rates. The program today provides exclusively breastfeeding women with the largest package of supplemental foods, which they can receive until their child’s first birthday.

Since WIC is funded federally, this makes the eligibility requirements and benefits universal. To be eligible for the WIC Program, a family must be below 185% of the federal poverty level (NWICA, 2015. Parents with families in economic hardship have added stresses, including an increase in food insecurity. Without nutritious food in their cupboards, families, especially women and children, could suffer from nutritional deficiencies and other health disparities.

WIC Program objectives are to reduce complications of pregnancy; reduce iron deficiency in women, infants, and children; decrease the number of infants born with low birth weight; and promote adequate growth and development of infants and young children [USDA Food and Nutrition Services (FNS), 2015]. The program also aims to increase breastfeeding rates in the United States by providing prenatal lactation education to every pregnant participant. The program provides tools like hospital-grade breast pumps, breast pads, and manual breast pumps to increase breastfeeding duration for breastfeeding mothers.

WIC is currently serving more than half of the infants born in the United States
(USDA, 2015) and working to prevent malnutrition in low-income families nationwide. The WIC Program has evolved immensely to fill the needs of today’s participants and is one of the nation’s leading public health programs. The supplemental food packages now include fresh fruits and vegetables and some states even provide vouchers to be used at local farmer’s markets. Nationwide, WIC programs are switching to new electronic benefit transfer cards to eliminate the need for paper checks and paper booklets. These upgrades are helping to better the WIC program and provide services to more people in the United States. Since its conception, WIC services have expanded to all 50 states, 34 Indian Tribal Organizations, American Samoa, Commonwealth of the Northern Mariana Islands, Puerto Rico, and the Virgin Islands. WIC offices are also located on military bases across the globe, including Japan, Korea, Cuba, and Spain (Tricare, 2016), and on a few university campuses in the United States. More locally, California WIC provides services to over 1.3 million participants each month, in over 600 sites, through 84 WIC agencies (California Department of Public Health [CDPH], 2015). In Los Angeles County alone, seven agencies provide WIC services to the people in their communities. In the northeast Los Angeles area, Northeast Valley Health Corporation (NEVHC) has been the local agency providing WIC benefits to the residents of the San Fernando and Santa Clarita Valleys since 1987. Currently NEVHC has 13 offices spreading across Glendale, California, to Santa Clarita, California, and is in the process of openings its fourteenth office.
In association with California State University, Northridge (CSUN) and the Institute for Community Health and Wellbeing, NEVHC is in the process of opening a satellite WIC site on campus. In Fall 2015, a WIC Outreach Center opened its doors to provide information to students, faculty, and staff and referrals to other WIC offices in the area until the office on campus becomes a full-functioning site. Until NEVHC receives approval to offer full services, such as printing vouchers for supplemental foods, the clinic on campus is functioning as an outreach and resource center. Students can go to the outreach office every Thursday from 9:00a.m. to 1:00p.m. to obtain information about the WIC program, get prescreened for program eligibility, and schedule an appointment for a nearby office. The aim of this study is to acknowledge the need for opening a WIC center on CSUN’s campus and to recognize the most efficient ways to promote current WIC services to students, faculty, and staff.

**Statement of the Problem**

Undergraduate college students who have children make up 26% of the population in U.S. schools (Lumina Foundation, 2014). Among undergraduate students, 50% have incomes less than $20,000 (National Center for Education Statistics, 2016 and 21% are food insecure (The California State University, 2016). With such a high number of food insecure students and families, some schools are providing assistance programs like food pantries, application assistance to food stamps, and instructions on how to apply for food stamps online. Another type of food assistance program, WIC, also provides
assistance to participants such as nutrition education, referrals to other community resources, and vouchers for healthy foods. WIC provides nutrition services to pregnant and breastfeeding women, their infants, and children under age 5 years. Participation in WIC reduces food insecurity and improves healthful behaviors (Center on Budget and Policy Priorities [CBPP], 2015). The WIC Program also provides breastfeeding education and support. Studies have also shown that when young women, specifically undergraduate college students, are exposed to breastfeeding information even before they are pregnant, their attitudes and beliefs about the subject change (Kavanaugh et. al 2012). Although WIC and other assistance programs are beneficial, many people do not utilize these services (Children’s Defense Fund, 2015; Murphy, 2013; Rossin-Slater, 2012; Thompson, Smith, & Rees, 2005) because of lack of accessibility. Furthermore, when a WIC office is accessible, participants are more likely to attend their appointments and collect their food instruments (Rossin-Slater, 2012).

Purpose and Significance

The purpose of this thesis was to explore the need for WIC on the CSUN campus by evaluating the benefits of the WIC Program on a national, state, and local level and exploring the need for WIC for the community. A written survey was used to evaluate how many students, staff, and faculty members were familiar with the program, used the program, and thought the program would be useful on campus. The thesis also explored which outreach method would promote the program most effectively. Some methods of
outreach included posting flyers, posting on Facebook and other social media platforms, and presenting to groups of students. Having the WIC program on this university campus could increase accessibility to its students, faculty, and staff, and thus increase program use and provide increased benefits to its participants.

This thesis is significant because there is little information about WIC services being offered on university campuses. The information from this thesis will add to a body of literature on the possible effectiveness of university based WIC services.

**Hypothesis and Research Questions**

It was hypothesized that there is a great need for WIC services on university campuses in the San Fernando Valley, California. In order to evaluate the effectiveness and need for WIC on campuses in the San Fernando Valley, the following research questions were developed to guide this study:

Research Question 1: Is having a WIC center on campus useful?

Research Question 2: Are people aware of WIC and lactation services?

Research Question 3: What is the most effective way to outreach to students, faculty, and staff members about WIC services on campus?

**Definitions**

- WIC: The Special Supplemental Nutrition Program for Women, Infants, and Children. WIC provides nutrition education, breastfeeding education and support, referrals to community resources, and vouchers for healthy foods (USDA, Food

- **WIC agency**: An entity that provides WIC services to a local geographic area.

- **Low birth weight**: When a baby is born weighing less than 5lbs 8oz regardless of gestational age (March of Dimes, 2016)

- **National WIC Association (NWICA)**: Voluntary and non-profit national organization that represents all 90 local WIC agencies in the United States. (NWICA, 2016).

- **Overweight**: Abnormal or excessive fat accumulation that may impair health; a BMI greater than 25 (WHO, 2016).

- **Obesity**: Abnormal or excessive fat accumulation that may impair health; a BMI greater than 30 (WHO, 2016).

- **Body Mass Index (BMI)**: An index of weight-for-height to classify overweight and obesity in adults. Also defined as a person’s weight in kilograms divided by the square of his height in meters (kg/m²).

- **Childhood obesity**: When a child is at or above the 95th percentile for weight (Centers for Disease Control and Prevention [CDC], 2015).

- **World Health Organization (WHO)**: An organization whose primary role is to direct and coordinate international health within the United Nations’ system (WHO, 2016).

- **United Nationals Children’s Emergency Fund (UNICEF)**: Provides long-term
humanitarian and developmental assistance to children and mothers in developing countries (UNICEF, 2015).

Assumptions

The needs assessment for this WIC office on campus thesis was based upon the following assumptions:

- participants are students, faculty, or staff members of CSUN;
- participants can read and fill out surveys in English;
- participants will fill out the survey with honesty;
- participants have the option of not filling out the survey or leave answers blank.

Limitations

This thesis will contribute to increasing WIC participation on the CSUN campus. However, certain limitations exist:

- the survey is only geared towards faculty, staff members, and students;
- the survey is for individuals who read and understand English;
- the sample size may not be representative of the general population.

Conceptual Framework

The theoretical framework used to guide this study was the Human Ecological Model. This framework consists of the macrosystem, exosystem, msosystem, microsystem, and the individual (Bronfenbrenner, 1994). Using the human ecological model, it was hypothesized that there is a need for WIC on university campuses.
The microsystem represents the people and interactions in direct contact with the individual such as the student and the university or a WIC counselor and participant. The mesosystem is the interaction between the different parts of the individual’s microsystem. The mesosystem can include the relationship between the individual conducting an outreach for WIC on campus and a professor receiving the information from the outreach to share. The information collected from the professor could be passed down to a student who needs the program, possibly impacting the student. The exosystem is the environment that the individual could be affected by his surroundings. For example, the approval of a WIC office on campus by CSUN administration could affect all students. If CSUN does not approve WIC services on campus, no student will be able to use its services on campus. The macrosystem is the largest system, through which the individual could be affected by other factors, including the government, policy, and economy. For example, WIC state administration could deny CSUN from providing WIC services on campus. If WIC state administration denies these services on campus, many students who need the program may not be able to access it.

**Overview of Methodology**

In order to find answers to the research questions, quantitative and qualitative data were collected. Quantitative data was collected through the participant surveys after each outreach presentation and also questions from the CSUN National Health Assessment Spring 2016 Health Center Survey, which was sent to all students on campus
through email. Qualitative data was collected through a handful of questions on the survey for participants after each outreach event on campus.
CHAPTER II
REVIEW OF LITERATURE

The purpose of this chapter is to provide review of the existing information and research about the WIC Program to gain a better understanding of the problem. This chapter will examine the current researching regarding the benefits of the WIC Program, the need for WIC nationally and locally, WIC accessibility, innovative WIC offices, college students’ knowledge and behaviors regarding nutrition, current assistance programs in university campuses, and feedback from managers of current innovative WIC offices. The literature review will facilitate the implementation of a full-functioning WIC office on this university campus to serve the need for the students, faculty, and staff.

Need for WIC Services

Need for WIC services in the United States

Over the past 30 years, childhood obesity has more than doubled in children in the United States (CDC, 2015). Studies have shown that childhood obesity has been linked to an increased risk of cardiovascular disease, increased risk of insulin resistance and type 2 diabetes, and asthma (CDC, 2015b; Cole, Bellizzi, Flegal, & Dietz, 2000). Moreover, children who are obese are more likely to be obese during adulthood (CDC, 2015). Some causes that have been attributed to the rise in childhood obesity include the advertisement of less healthy foods to children, variation in licensure regulations among child care centers, limited safe and appealing places in communities for children to play or be
active, easier access to high-energy dense and sugary dense foods, increasing portion sizes, lack of breastfeeding support, and limited access to healthy and affordable foods (CDC, 2015). Infants and toddlers who live in food-insecure families, an estimated 16 million households in the United States, are more likely to be in fair or poor health (AAP, 2015). Because the price of fast food and high-energy dense foods, like soda and chips, is affordable for most, families may rely on these unhealthy foods for their nutrition. Participation in WIC reduces food insecurity and improves healthful behaviors (CBPP, 2015).

Research conducted in Wisconsin WIC clinics in 2013 studied participants’ barriers to their children eating healthy. Analysis of the 14-question survey responses found that 94% of participants reported availability of fresh fruits and vegetables where they shop for food, and 89% of participants reported regularly using their fruit/vegetable voucher. The results also showed that 96% of those participants reported consuming raw, boiled, or steamed vegetables, as opposed to the 14% of participants who were regularly consuming fried or breaded vegetables (Kharofa, et al., 2014), thus supporting the fact that WIC encourages families to each more nutritious foods, like fruits and vegetables. Another study conducted by the USDA, Food and Nutrition Services showed that in 2012, there was a decline in the number of overweight 1-year-old WIC participants, from 16.8% in 2008 to 15.3% in 2012. For children aged 2-4 years, 14% were overweight in 2012 compared to 14.7% in 2008 (USDA, Food and Nutrition Service, 2013).
Conversely, pregnant or breastfeeding women who participate in WIC also have better health outcomes (CBPP, 2015; USDA, Food and Nutrition Service, 2013). Pregnant women who have participated in WIC consumed more key nutrients important for prenatal care, including iron, calcium, vitamins A and C, and protein (AAP, 2016 USDA, Food and Nutrition Service, 2013). Richards, Merrill, Baksh, and McGarry (2011) studied the maternal health behaviors and infant health outcomes among homeless mothers. The results were based on Pregnancy Risk Assessment Monitoring Systems, which included data from 30 states. Pregnant women who were experiencing homelessness and were WIC participants had more prenatal visits with doctors or other healthcare professionals, longer gestation, fewer low birth weight babies, breastfed their child, and had their child sleep on their backs (Richards et al., 2011). The results of the study supported its hypothesis, which stated that WIC participation among homeless women was positively associated with beneficial maternal and infant health behaviors.

Pregnant women on the WIC Program also receive breastfeeding education and support. The AAP (2012) has recommended exclusive breastfeeding for the first 6 months of life and continued throughout the first year of life with complementary solid foods. Breastfed infants have a reduced risk for many health disparities, including risk of infections, asthma, obesity, and SIDS (CDC, 2015; UNICEF, 2010; WHO, 2016). WIC promotes breastfeeding as the best feeding choice for mother and baby by providing breastfeeding peer counselors, lactation consultants, classes and support groups,
educational materials, and resources for questions outside of the WIC office (USDA, Food and Nutrition Service, 2016). Since providing multiple tools and resources to mothers and babies, the percentage of breastfeeding initiation has risen since 1998.

Research has shown that in the United States in 2013, 70% of WIC participants initiated breastfeeding, which has increased from less than 45% in 1998 (NWICA, 2016).

WIC provides breastfeeding education to its participants during prenatal months. Studies have also shown that when young women, specifically undergraduate college students, are exposed to breastfeeding information even before they are pregnant, their attitudes and beliefs about the subject change. Kavanagh et al. (2012) observed the breastfeeding knowledge, attitudes, prior exposure, and intent to breastfeed among undergraduate students at the University of Tennessee, Department of Nutrition. The researchers found an overall positive correlation between knowledge about breastfeeding and attitude scores. Participants with intent to breastfeed scored significantly higher on breastfeeding knowledge and attitudes compared to those who did not intend to breastfeed. According to their study, breastfeeding education and knowledge could increase the likelihood of initiating breastfeeding in women, particularly undergraduate students. Other observations from the study showed strong feelings about public breastfeeding, the perception that breastfeeding is painful, and the concept that formula feeding is more convenient (Kavanagh et al, 2012). The WIC program covers breastfeeding topics prenatally, such as breastfeeding in public, how to properly latch a
baby to avoid nipple pain, and how breastfeeding is actually more convenient than formula feeding.

Overall, WIC has been seen to increase health behaviors amongst women, infants, and children across a national level (CBPP, 2015; Kowaleski-Jones & Duncan, 2002; USDA, Food and Nutrition Service, 2013). The next section will discuss the current research about the benefits of WIC in California and the need for WIC across the state.

**Need for WIC services in California**

California WIC reaches over 1.5 million participants statewide. Over 950,000 California families are enrolled and at least 60% of infants born in California are participating in the WIC Program (CDPH, 2016). Currently there are 82 WIC agencies in California. Each agency has its own administration and multiple offices in its geographic area. Demographically, California WIC participants are 69.2% Latino, 16.3% White, and 14.5% other races, including Black, Asian, and Pacific Islander (Public Policy Institute of California, 2014). Because of the large Hispanic/Latino population, most WIC offices have bilingual staff, education materials in Spanish, and offer many group nutrition classes in Spanish.

Koleilat and Whaley (2013) researched the trends and predictors of weight gain among Hispanic WIC participants in Southern California. They found that 24% of Hispanic women in California gained above the Institute of Medicine’s recommended
weight gain for pregnant women, compared to a previously reported 36-41%. The authors suggested that WIC participation has a positive impact on preventing excessive weight gain for Hispanic women.

Women enrolled in California WIC also receive special prenatal education, developed by Dr. Jane Heinig from University of California, Davis. Her campaign, called the “California Baby Behavior Campaign,” focuses on teaching parents how to understand their infants’ cues, which results in an increase in exclusive breastfeeding and a decrease in formula feeding and overfeeding (CDPH, 2013). All WIC offices in California are required to teach the Baby Behavior curriculum. Research done by California State WIC on the impact of the Baby Behavior Campaign showed significant results. Twenty-nine percent of women who received the Baby Behavior education were exclusively breastfeeding after the first month, compared to 19% who did not receive Baby Behavior education. At baby’s sixth month of age, 13% of women who were Baby Behavior-trained were still exclusively breastfeeding, compared to 11% who were not trained (CalWIC, 2012). California WIC has tailored its program to meet the needs of its participants and has provided resources to all 82 WIC agencies, seven of which are located in Los Angeles County alone. The next section will focus on the need for WIC in the San Fernando and Santa Clarita Valleys, which are located in Los Angeles County.

**Need for WIC services in the San Fernando and Santa Clarita Valleys**

The WIC agencies in Los Angeles County are divided by geographic area, from
Long Beach to the San Fernando and Santa Clarita Valleys. There are currently seven WIC agencies in Los Angeles County, spanning the areas between Long Beach and Santa Clarita (CDPH, 2015). All WIC agencies in California provide the same WIC checks and similar nutrition education topics. The WIC agency that has been serving the San Fernando and Santa Clarita Valleys since 1987 is Northeast Valley Health Corporation (NEVHC). Participants are served throughout 13 offices, spanning from Glendale to Valencia. Currently, NEVHC is serving around 67,000 participants (CDPH, 2016) in both the San Fernando and Santa Clarita Valleys. As of 2014, the population of the San Fernando Valley hit about 1.77 million, composed of 41% non-Hispanic White, 41% Hispanic, 4.6% African American, and 12.7% Asian (U.S. Bureau of the Census, 2014). The San Fernando Valley also has a significant population below the poverty level: about 30% of the population earning less than $35,000 annually and about 10% earning less than $15,000 annually (U.S. Bureau of the Census, 2014). In this area, there are many programs that help the low-income population with assistance, including NEVHC, which also offers services such as medical clinics, dental offices, and pharmacies (NEVHC, 2013), in addition to WIC services.

Conversely, the Santa Clarita Valley is composed of 71.1% White, 3.6% Black, 0.3% American Indian/Alaska Native, 10.5% Asian, 0.1% Hawaiian or other Pacific Islander, and 14.3% other races. Moreover, 28.9% of residents in the Santa Clarita Valley identify themselves as Hispanic of Latino. Almost 25% of the residents in Santa
Clarita Valley have a household income less than $50,000 (Santa Clarita Valley Economic Development Corporation, 2014). Currently, NEVHC operates in three clinics in the Santa Clarita Valley to meet the needs of the participants in that area. The offices are in Santa Clarita, Newhall, and Valencia. NEVHC continues to meet the needs of its participants by offering nutrition education classes online to help save time for participants. In addition, every 2 months, new nutrition education classes are offered to continually educate the participants on important nutrition topics. Seyfhashemi (2012) explored the eating and physical activity habits of Middle Eastern women who were participants of the NEVHC WIC Program, specifically participants in the Glendale, California office. The subjects filled out questionnaires, including one for general information including age and marital status, and another food frequency questionnaire. The results from the study implied that Middle Eastern women who were also WIC participants had a high ingestion of fruits and vegetables (Seyfhashemi, 2012).

**Need for WIC services on university campuses**

In 2013, the California State University of Northridge had over 38,000 students enrolled. Of those students, 37.5% of them were Latino, 11% were Asian, 27% White, and 17% were multi-racial, unknown, or international (CSUN Division of Affairs, 2013). Data from the American College Health Association Survey showed that 3% of CSUN students were raising children under the age of 5. Conversely, research done in 2014 by the Institute for Women’s Policy Research found that 4.8 million college students are
raising children in the United States. Of these students, single mothers made up 43% of all parents and single fathers comprised 11% of the student parent population. The research also showed that students with children had a higher level of debt after graduation than nonparent students. The average debt for student mothers was almost $4000 more. Demographically, nearly half (47%) of all Black women had dependent children and 24% of Black men had children. Students with children were also less likely to finish school, with only 33% of students with children attaining a degree or certificate. Factors included lack of time and significant financial challenges. Student parents were also found to have lower incomes. Among single students in the United States with children, 88% had incomes at or below 200% of poverty (Institute for Women’s Policy Research, 2014).

**Barriers to WIC Participation**

The previous section and the literature reviewed has supported the fact that WIC provides many benefits to its participants and that there is a need for WIC from a national level to a more intimate level (USDA, Food and Nutrition Service, 2016). Inversely, many people who may qualify for the program do not utilize it (Children’s Defense Fund, 2015; Murphy, 2013; Rossin-Slater, 2012; Thompson et al., 2005). This section will focus on those barriers that prevent WIC participation across the United States.

Children’s Defense Fund (2015) found that almost 30% of families that would qualify for the WIC program in the United States are not utilizing its benefits. There are
a number of explanations for the underutilization of the WIC Program. Thompson et al. (2005) examined participants from a local WIC office in El Paso, Texas. Participants reported various reasons for limited attendance to their WIC appointments, including lack of time to be away from work and other obligations at home, confusion about program eligibility requirements, and the stigma associated with being WIC participants. The women who participated in the study suggested to expand hours of operation to after working hours or being open on the weekends when they are usually at home. Women participants also suggested a large social media campaign to publicize WIC for women and families who were unaware of their services (Thompson et al., 2005).

Murphy (2013) focused on identifying and addressing the barriers to WIC participation in the Orange County Health Care Agency in Orange County, California. A few themes emerged regarding underutilization. There was a lack of awareness of the WIC Program, misconception of the WIC Program, limited health literacy, and lack of transportation (Murphy, 2013). Moreover, stigmas regarding the WIC Program and transportation issues were common barriers found in both studies (i.e., Murphy, 2013; Thompson et al., 2005). Rossin-Slater (2012) found evidence about the impact of geographic access to WIC clinics; specifically, in Texas. Rossin-Slater (2012) hypothesized that geographic access to WIC clinics would affect WIC participation. The author used empirical methods to calculate women’s participation in WIC and the zip code in which they lived. Results suggested that zip code level access to WIC services
increased food benefit take up by 2-5%, raised birth weight by 22-32g, and increased the likelihood of breastfeeding at the time of hospital discharge by 4 percentage points (Rossin-Slater, 2012).

**Innovative WIC Offices**

In order to overcome some of the barriers to WIC participation and increase WIC participation, many innovative WIC offices have been propagated. For example, WIC services are offered overseas for military families who qualify for the program. WIC Overseas offices can be found in Turkey, England, Belgium, Japan, and many other countries around the globe where military families have been stationed (Tricare, 2016). WIC has expanded to provide services on military bases in the United States as well, including locations at Camp Pendleton in San Diego, California; and Camp Lejeune in Jacksonville, North Carolina (Tricare, 2016). The American Red Cross WIC Program based in San Diego, California, travels to locations at Camp Pendleton and the Navy Base in San Diego (San Diego WIC, 2016). Another WIC office in Columbus, Ohio, provides services through a mobile clinic, traveling to different areas of the community to better meet the needs of their participants (D, Brown, personal communication, June 22, 2016). A WIC agency in California has also previously offered WIC services at a college campus (Shasta College, 2009). Moreover, in order to increase accessibility to their participants, many WIC agencies have offered late night hours or Saturday appointments to better accommodate their participants who are working or unable to attend WIC.
appointments during regular business hours.

Currently, NEVHC and the Institute of Community Health and Wellbeing are in the process of having a full functioning WIC office at CSUN to fulfill the need for its students, faculty, and staff members. At this time, there is no research that explores the need for WIC on a university campus and its potential benefits. This thesis was completed to add to the literature by showing the need for WIC on university campuses.

**Interview of participating WIC managers**

An interview was conducted with the co-managers of the American Red Cross WIC Program located in Oceanside, California; the manager of the WIC office located in Columbus, Georgia; and the Clinic Coordinator of the Shasta County WIC Agency located in Shasta, California. The interviewees were asked a series of questions regarding the WIC satellite sites they facilitate in unconventional locations. Specifically, they were asked the following questions: “When did you start providing services on base or at the community center?”; “Why was this started?”; “How do participants feel about having WIC on base or at the community center? What feedback have you received from them?”; “Have you seen an increase in WIC participation since you began WIC services on base or at the community center?”; and “Do you think this has benefited the community?” The managers provided feedback on providing WIC services in locations, like marine bases and community centers, and answered all questions. The information provided by the managers of these innovative offices can be used to validate the need for
more innovative offices in different and non-conventional locations.

The following interviews were conducted with supervisors/managers who currently provide or have provided WIC services in non-conventional locations:

May 27, 2016: Email interview with the co-managers of the WIC office in Oceanside, California was conducted. This office travels to Camp Pendleton’s Marine Base multiple times per month and provides WIC services for the families of marines. They also travel to a community center and provide services once per month. About three to four employees will travel to the outside satellite clinic to set up a small clinic with laptops and other materials, to provide WIC services for a couple of hours. The co-managers of the WIC office in Oceanside, California shared that they began providing services at Camp Pendleton’s Marine Base around 1994 and later began providing services at two other locations on base. They started these non-conventional satellite offices to assist marines and their families, who often had only one car and did not feel comfortable going off base. Carol Coil, the co-manager, also stated that the participants really appreciate the WIC offices on campus, especially for those who could walk to the office nearby. When their husbands are deployed or out in the field, they really appreciate being able to go to one of the sites at Camp Pendleton. Since introducing the WIC offices on-base, the American Red Cross WIC Program has seen an increase in WIC participation, but overall WIC participation has declined in the last few years. When asked if opening the WIC offices on base has benefited their community, Manager
#1 shared that having WIC on base is more convenient, as participants are more likely to come to appointments and to use their WIC instruments.

June 22, 2016: Phone interview with the manager of a WIC office in Columbus, Georgia was conducted. This WIC office provides WIC through a mobile service. They travel to different parts of the community, for example, in front of a grocery store, Head Start Program, or public housing building. The manager of this office stated that they only recently began offering this mobile service 18 months ago to provide a more accessible service to parents and families who did not have reliable transportation. She mentioned that in rural parts of Georgia, there is no public transportation, so many participants would skip their WIC appointments and not receive their benefits because of this reason. During this interview, she also mentioned that participants loved this type of service, because many of them were really unable to come to their appointments, and would show up to the mobile clinic. Conversely, only a certain population was allowed to use the mobile service. If participants had reliable transportation, they were expected to honor their WIC appointments at the WIC office. She stated that there was no immediate increase in WIC participation because recently, almost 10,000 soldiers were moved from an army base in Georgia, and for this reason, the WIC program lost many participants. Overall, she does believe that this type of service has absolutely benefited the community, and by providing this type of service, participants are more likely to use their benefits and return to the program.
June 24, 2016: Phone interview with the Clinic Coordinator of the Shasta County WIC Agency located in Shasta, California. This WIC agency previously provided WIC services at Shasta College located in Redding, California. They provided services from 2008-2009. They initially opened the WIC office at school because they had great feedback from students and staff who thought it would be helpful for students and participants who were falling through the cracks. Unfortunately, this office closed after being open for only 1 year. She explained that the reason why they closed was because there was little participation from students. The clinic was open only a few times each month and usually during times when most students were in class. Most students had the same break time, so many students trying to receive their WIC benefits at the same time. The office also did not have access to a scale to weigh mothers and children, and some appointments needed weight measurements, so participants would have to bring medical referral forms from their doctors. Because only one staff member was running the clinic, at times it would take longer to provide services, so participants would not stay. For the participants who did use services on campus, they received excellent feedback but did not have a huge increase in participation that they expected. Although the clinic did not last, this clinic coordinator mentioned that even though they might have helped only a few families, this meant that a few more children had healthy food for a few weeks, and for this reason, it was beneficial to the community at that time.

Overall, the results from the survey and the interviews with the managers and
coordinators of innovative WIC offices provided feedback that could be used for other agencies who are planning to provide WIC services in non-conventional locations.

**Nutrition Knowledge and Health Behaviors of College Students**

Eating healthy foods and maintaining physical activity can greatly reduce the risk of chronic diseases, like heart disease and Type 2 diabetes mellitus (U.S. Department of Health and Human Services, National Institute of Health, 2016). Regardless of this important information, college students are still consuming high fat and low nutrient-dense foods instead of low-fat, nutrient-dense foods (Driskell, 2008). College students’ eating behaviors are influenced by multiple factors, including environment, nutrition knowledge, convenience foods, time, media influence, and food cost (Garcia, Sykes, Matthews, Martin, & Leipert, 2010). Another study published by the *Journal of Nutrition Education and Behavior* (2014) found that over half of college students had high levels of “food insecurity” leading to higher risk of malnutrition.

**Nutrition knowledge**

Dunn, Turner, and Denny (2008) studied the nutrition knowledge and attitudes of college athletes. They used the Nutrition and Knowledge Questionnaire developed by Parameter and Wardle (2000). The questionnaire covered sections on nutrient knowledge, food choices (asking to pick a healthy snack that is low in fat and high in fiber), and the relationship between diet and disease. They found that only 32% of participants knew the correct recommended fruit and vegetable serving. Only 37% of the
participants were able to select the snack that was low in fat and high in fiber, only 35% were aware of a link between reduced intake of fruits and vegetables with disease, and slightly one-third of the athletes knew that some diseases resulted from low fiber intake. The authors concluded that both athletes and non-athletes need guidance and knowledge to select nutrient dense foods (Dunn et al. 2008).

Misra (2007) studied the knowledge, attitudes, and label use among college students. She conducted a cross-sectional study in two Midwestern universities. She assessed nutrition knowledge in college students with a label-reading survey and added four additional questions for a more comprehensive assessment: prior nutrition education, attitude towards food labels, label-reading behavior, and label use. Results showed that 55% of participants had never read, heard, or been taught information about how to use food labels. Only about 11% of participants were able to distinguish between proper serving sizes for foods (Misra, 2007). Evidence from both these studies (i.e., Misra, 2007; Parameter & Wardle, 2000) could determine that college students need more education regarding nutrition knowledge.

**Students’ income and food**

In 2012, the National Postsecondary Student Aid Study found that among dependent undergraduate students, 34% came from families with incomes under $40,000. Among independent undergraduates, 50% had incomes less than $20,000. With incomes so low, some students are skipping out on meals to save money. A 2012 study done at
University of California, Berkeley surveyed undergraduate students, and 23% reported that they skipped meals to save money; 5% did it very often (more than three times per week). Regarding students who do not skip meals, they are spending what little money they have on higher-fat and low nutrient-dense foods like ramen, because they simply cannot afford healthier alternatives.

**Food insecurity**

In February 2015, CSU Chancellor Timothy White propagated a study to learn how CSU campuses were meeting the needs of displaced and food insecure students. The study found that 21% of CSU students were food-insecure, meaning they lacked reliable access to sufficient quantity of nutritious and affordable food. Because of this high number of students lacking affordable and accessible food, many CSU campuses are now developing programs to support the needs of these food insecure students. Examples of such programs include that at CSU Chico, which offers services like food pantries (providing foods to students without requesting verification for their need for food), “Veggie Bucks” to access fresh and local produce, and programs to assist students with applying for CalFresh (SNAP), the food stamp program in California. Another CSU campus, San Bernardino, also offers food pantry services, as well as “Hungry Student Kids,” which are ready to eat bags of microwaveable food and snacks (Cal State, 2016). Although there is food insecurity in the CSUs, campuses are trying to eliminate it by providing services that help their students.
Assistance Programs on University Campuses

As mentioned in the previous section, some CSUs are already providing assistance programs for their students, like food pantries and application assistance to SNAP. Other schools, such as Portland State University and Mount Wachusett Community College in Gardner, Massachusetts, provide detailed instructions on how to apply for SNAP online, but do not provide services on campus. To conclude, more data and research is needed to study the possible effectiveness and benefits of providing other government assistance programs on university campuses.

The literature reviewed in this chapter shows that WIC has been improving health behaviors for low-income women, infants, and children for the last 40 years (Economic Research Services, USDA). Lack of accessibility can lead to decreased participation in WIC services (Rossin-Slater, 2012). Inversely, when WIC offices provide innovative services on military bases or through a mobile service, more participation is seen (C. Coil, personal communication, 2016). Currently, there is no data that supports or rejects the need or possible effectiveness of a WIC program on university campuses.
CHAPTER III

METHODOLOGY

The purpose of this thesis was to evaluate the need for WIC on university campuses, specifically the CSUN campus. This section will discuss methods used to collect data to answer the research questions.

Program Design

To address the research questions, the authors collected quantitative data. Quantitative data is anything that can be expressed as a number (Cortland, 2016). The data can be represented by ordinal, interval, or ratio scales. Quantifying data assisted in answering the research questions, and some qualitative data was collected as well.

Research Sample and Data Sources

Students, staff, and faculty members from the CSUN campus were chosen to participate in this needs assessment. This study had a total of two separate participants and data sources. A total of 60 students, faculty, and staff members filled out a survey (Appendix A) after each outreach presentation for this needs assessment. In addition, a university survey, which included WIC questions that were sent out, was collected from CSUN students (Appendix B). A total of 2584 individuals participated in completing surveys. Of those participants, 60 completed the survey after certain outreach events, and 2,524 students completed the electronic survey sent out by CSUN.
Instruments and Procedures

A flyer promoting the new WIC center on campus was created by the NEVHC administration (Appendix C). Before the flyer was able to be posted/distributed, it required approval by the Matador Involvement Center. An application to post/distribute flyers was filled out every 4 weeks (Appendix D). The flyer was also displayed on a “sandwich board” to be placed on the sidewalks near the student store, which is an area of high food traffic on campus. In order to be able to display the sandwich board, a “Reservation Request to Display Billboard(s) or Booth” form was to be filled out and approved by the Matador Involvement Center (Appendix E). The display board was only approved for 2 weeks at a time and was renewed every 4 weeks. Information regarding the new WIC Center at CSUN was distributed to various entities on campus.

Overall, two instruments were used in this study: a reviewed and approved survey that was distributed to participants after outreach presentations, and an electronic survey that was sent out to all CSUN students.

The first tool used was a self-report voluntary survey (Appendix A). This survey asked students multiple questions, including if they felt that WIC on campus is useful and to circle how likely they are to tell other people are WIC services on campus. Faculty and staff experts evaluated the tool. Experts were chosen to evaluate the survey based upon their knowledge and expertise in the areas of nutrition, education, and the WIC Program. Expert #1 was selected based on his/her knowledge as an educator and
nutrition expert. The expert member has been involved in education and nutrition for many years and has conducted various surveys and evaluations. The expert also has experience evaluating and developing programs and has worked for the WIC Program. Expert #2 was chosen based on his/her knowledge of the WIC Program and as an educator. The expert has been working with the WIC program for over 20 years and has also been an educator.

The second instrument was an electronic survey that was sent by the American College Health Association to all CSUN students. This year, an approved set of questions about WIC were attached to CSUN’s health survey and sent to all students (Appendix B). Questions were reviewed by the WIC director and staff, as well as Dianne Philibosian, the previous director of the Institute for Community Health and Wellbeing. These questions were submitted to the school to be shared with students electronically. The WIC-related questions that were added to the health survey were: “Are you a parent of a child under the age of 5?”; “What is the age of your child?”; “Are you currently pregnant or do you plan to become pregnant in the next year?”; “Are you now or were you recently a breastfeeding and/or pumping mother?”; “Which lactation spaces on campus are you aware of?”; “Which of the following spaces on campus have you used for breastfeeding and/or pumping milk?”; and “How frequently do you access Women, Infants, and Children (WIC) services?”
Procedures for Administering Surveys

Faculty, staff, and students who attended presentations like the “Cooking on a Budget for Kids and Families” (Appendix F) or “Cooking on a Budget” (Appendix G) were asked to complete a written survey (Appendix A). Students who were presented with a presentation (Appendix H) regarding the new WIC services on campus were also asked to complete the written survey. The following presentations were given to students, faculty, and staff members. After these presentations, participants were asked to fill out the survey:

- **October 7, 2015**: Presentation (Appendix H) to the Master of Public Health Student Association: Tatiana Kiesewetter, a dietetic intern, presented to a group of Master of Public Health students during their meeting. She discussed the new WIC center on campus and the services it provides.

- **November 19, 2015**: Cooking on a Budget for Kids and Families: A presentation (Appendix F) event for students, faculty, and staff was conducted regarding how to save money at the grocery store, how to choose the most nutritious foods, and how to involve young children in the kitchen. Flyers advertising this event (Appendix I) were distributed by email and displayed online for faculty members. Attendees also participated in a food demonstration. Recipes were taken from the
NEVHC Let’s Cook with Kids cookbook.

• March 18, 2016: Cooking on a Budget Presentation: A presentation about cooking on a budget for college students (Appendix G). The presentation’s theme was how CSUN students can use services on campus to save money while eating healthy, including Meal Plans on campus, and using special cards for discounts around campus. The presentation also gave tips on how to save money at the grocery store while choosing the most nutritious foods. At the end of the presentation, participants participated in a food demonstration in addition to the survey.

• March 30, 2016: A presentation to the students enrolled in HSCI 434 (Lactation Education Course) regarding the WIC Program on campus (Appendix H).

A total of 60 written surveys were collected through these presentations. Participants were also given the opportunity to decline filling out the survey. The American College Health Association survey was administered through email on February 15, 2016. Students were given about one month to complete it. The survey took 30-45 minutes to complete. It was sent to CSUN students’ email addresses.

To promote and introduce the WIC center on campus, the following locations on campus were provided with flyers, handouts, and other informational materials on the
specified date:

- August 22, 2015: Klotz Health Center: Information about the new WIC office was distributed to the Klotz Health Center. Students visit the health center for general health information and to visit board-certified physicians in family medicine, internal medicine, sports medicine, and gynecology. Services like massage therapy, acupuncture, optometry, dentistry, and women’s and men’s health, are also provided.

- August 22, 2015: Veterans Resource Center: Information about the new WIC office was distributed to the Veterans Resource Center. This on-campus resource assists CSUN students who are transitioning from military service to education.

- August 22, 2015: Women’s Research and Resource Center: Information about the new WIC office was distributed to the Women’s Research and Resource Center. This center provides services and referrals for women.

- August 22, 2015: Marilyn Magaram Center: Information about the new WIC office was distributed to the Marilyn Magaram Center. The Marilyn Magaram Center provides services regarding nutrition and health to students; for example, students can have recipes analyzed for nutritional content and be given nutrition counseling.

- August 22, 2015: Children’s Center: Information about the new WIC
office was distributed to the Children’s Center.

- August 22, 2015: The University Student Union: Information about the new WIC office was distributed to the University Student Union. The University Student Union provides many services, including opportunities to play in intercollegiate sports, activities in student leadership, and access to the career center, to CSUN students.

- September 17, 2015: Oasis Wellness Opening: This event celebrated the opening of the new Oasis Wellness Center on campus. This center provides services, such as therapeutic treatments (e.g., acupuncture and massage), nutrition counseling, and workshops that focus on wellness and stress, to students. Outreach was conducted with Evangelina Madrigal, the outreach coordinator for NEVHC. A booth was set up and information was distributed regarding the new WIC services on campus.

- October 16, 2015: Information regarding the WIC Program on campus was published on the Marilyn Magaram Center website, its Instagram account, the CSUN Dietetic Internship Program Facebook page, and the Nutrition Expert’s Website.

- CSUN Farmer’s Market: Every Tuesday, CSUN hosts a weekly Farmer’s Market that features vendors providing goods like fresh produce, flowers, and freshly prepared foods. Outreach was conducted with Gisrry
Montenegro, a dietetic intern from CSUN. Flyers and literature were distributed.

• Matador Information Network Displays: The flyer promoting the on-campus WIC Program was displayed on televisions throughout the campus, including in the library, the bookstore, and various other buildings.

• May 23, 2016: The flyer promoting the on-campus WIC Program was posted on CSUN’s Lactation Education Website.
CHAPTER IV

RESULTS

This thesis’s purpose was to evaluate the need for the WIC Program on university campuses. The thesis examined the need for WIC on a national, state, municipal, and more local level and examined the benefits of WIC across the nation. The following research questions were developed to help guide this thesis and analyze the need for WIC on university campuses:

Research Question 1: Is having a WIC center on campus useful?

Research Question 2: Are people aware of WIC and lactation services?

Research Question 3: What is the most effective way to outreach to students, faculty, and staff members about WIC services on campus?

Sixty participants turned in a survey. The information was coded and entered into Excel, and analysis was conducted by SPSS, Version 23. SPSS is a computer software program which is designed to conduct analysis for social science statistics.

Results from the Evaluation by Members of the Target Population

Research Question 1

Is having a WIC center on campus useful?

In order to answer this research question, a written survey was developed and administered to determine if students felt that a WIC on campus would be useful. Quantitative data was collected and analyzed with SPSS Version 23. Table 1 shows that
95% of participants who answered the question felt that WIC on campus would be useful. Only one individual felt that WIC services on campus would not be necessary. Two participants declined to answer this question. This result showed that the vast majority of students who answered this question feel that WIC on campus would be useful.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>57</td>
<td>95</td>
</tr>
<tr>
<td>No</td>
<td>1</td>
<td>1.7</td>
</tr>
<tr>
<td>Declined to answer</td>
<td>2</td>
<td>3.3</td>
</tr>
</tbody>
</table>

Table 1: Do participants find WIC on campus useful?

Moreover, the National College Health Association, which emailed a survey to all CSUN students in the spring of 2016, asked questions specific to students with children. Responses revealed that 3.2% of the students who took the survey ($n = 2,536$) were parents of children under age 5 years. Around 24% ($n = 2,536$) of participants with children had more than two children under 5 years old. Out of the students who took the survey, 0.6% ($n = 2,536$) were pregnant at the time and almost 1% ($n = 2,536$) were planning on becoming pregnant within the next year. Results also showed that 3.8% ($n = 2,536$) of the students taking the survey were already WIC participants. This data could suggest that the participants who have children under age 5 years, are pregnant or breastfeeding, or are currently using WIC services elsewhere could potentially benefit from WIC services on CSUN campus and find it useful.

**Research Question 2**

Are people aware of WIC and lactation services on campus?
In order to answer this research question, specific questions pertaining to WIC and lactation services were drafted and approved. Next, the questions were submitted to be distributed by the American College Health Association Survey, which is sent to all college students. About 2,500 students answered the questions from this survey. The first question asked, “Which lactation spaces on campus are you aware of?” 63% \( (n = 2,536) \) students marked that they were not aware of any lactation spaces on campus. About 24% \( (n = 2,536) \) students knew of the lactation space at the Klotz Health Center, about 16% \( (n = 2,536) \) knew about the space at the University Student Union, and only about 4% \( (n = 2,536) \) knew about the space at the Institute for Community Health and Wellbeing located in Santa Susanna Hall. The second question inquired, “How frequently do you access Women, Infants, and Children (WIC) services?” About 28% \( (n = 2,536) \) students answered that they did not know what the WIC program is. Nine students marked that they used WIC services weekly, 37 marked that they used WIC services monthly, 47 students marked that they rarely used WIC services, and around 1,700 students marked that they never used WIC services.

**Research Question 3**

What is the most effective way to outreach to students, faculty, and staff members about WIC services on campus?

In order to find the answer to this question, students, faculty, and staff members who participated in the survey after an outreach presentation were asked to identify
where they learned about WIC services on campus. Table 2 shows the frequency with which individuals who participated in the survey heard about on-campus WIC services. According to these results, half of the participants learned about on-campus WIC services through presentations. This data could be used for future outreach purposes.

<table>
<thead>
<tr>
<th>Source</th>
<th>N</th>
<th>% (n=60)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flyer</td>
<td>5</td>
<td>8%</td>
</tr>
<tr>
<td>Email</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>Online</td>
<td>3</td>
<td>5%</td>
</tr>
<tr>
<td>Presentation</td>
<td>30</td>
<td>30%</td>
</tr>
<tr>
<td>Oasis Wellness Opening</td>
<td>2</td>
<td>3%</td>
</tr>
<tr>
<td>Friend</td>
<td>6</td>
<td>10%</td>
</tr>
<tr>
<td>Current WIC Office</td>
<td>0</td>
<td>75%</td>
</tr>
</tbody>
</table>

Table 2: Where did participants learn about WIC services on campus?

The participants were also asked to rank, using a 5-point Likert scale, whether they *Strongly Agreed* to *Strongly Disagreed* that they would tell other people about on-campus WIC services. Over 50% strongly agreed that they planned to tell others about the on-campus WIC program (Table 3). Only one person strongly disagreed that they would tell anyone about the WIC services on campus.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>n</th>
<th>% (n = 60)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disagree</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Undecided</td>
<td>6</td>
<td>10.0</td>
</tr>
<tr>
<td>Agree</td>
<td>20</td>
<td>33.3</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>31</td>
<td>51.7</td>
</tr>
</tbody>
</table>

Table 3—Participants plan to tell others about WIC services
CHAPTER V
DISCUSSION

The purpose of this thesis was to evaluate the need for the Women, Infants, and Children (WIC) Program on university campuses. The thesis examined the need for WIC on a national, state, municipal, and local level and examined the benefits of WIC across the nation. The research questions were developed to analyze the need for WIC to be placed on a university campus and the best way to outreach WIC services. A study was done on students, faculty, and staff members to evaluate the need for WIC on a university campus in Southern California.

Research has shown that pregnant or breastfeeding women who participate in WIC have better health outcomes (CBPP, 2015; USDA, Food and Nutrition Service, 2013). Pregnant women who have participated in WIC consumed more key nutrients important for prenatal care, including iron, calcium, vitamins A and C, and protein (AAP, 2015; USDA, Food and Nutrition Service, 2013). Children who participate in the WIC Program are less likely to be overweight (USDA, Food and Nutrition Service, 2013), and more likely to be immunized (CBPP, 2015). Studies have also shown that when young women, specifically undergraduate college students, are exposed to breastfeeding information even before they are pregnant, their attitudes and beliefs about the subject change (Kavanaugh et al., 2012).

Studies have also shown that WIC participants have low participation when
services are not so accessible. Participants in Thompson’s (2015) study reported various reasons for limited attendance to their WIC appointments, including lack of time to be away from work and other obligations at home, confusion about program eligibility requirements, and the stigma associated with being WIC participants. Lack of reliable transportation was also a huge barrier to WIC participation among its participants. (Murphy, 2013). Based on this evidence, a more accessible WIC office would encourage more participation. A WIC office on campus would benefit students by providing a more easily accessible location for students who live on campus and do not have reliable transportation, or for students who are at school most of the day and are unable to make it to their WIC office before it closes.

Studies have also shown that college students have little knowledge regarding nutrition and healthy eating behaviors (Dunn et al., 2008). The WIC Program provides nutrition education to its participants by providing classes on different nutrition topics, like how to read a label and how to limit salt intake. Moreover, some college students do not have the funds to eat nutritious foods and sometimes skip meals in order to save money (University of California, Berkeley, 2012). Currently, WIC is providing checks for nutritious foods like milk, eggs, cheese, and fresh fruits and vegetables, to its participants. Having a food assistance program like WIC could benefit many qualifying students who cannot afford nutritious foods for themselves or their families.

Results from this study showed that presentations are the most effective way to
outreach services to students, faculty, and staff members. This particular study provided two presentations to students, faculty, and staff members and also focused on cooking on a budget and how to budget through college. These presentations were informative and provided other information pertinent to students, faculty, and staff members. The other presentations only focused on WIC services being offered on campus. In future WIC outreach, presentations are recommended because they target many people at one time, are inexpensive, and efficient.

**Discussion of the Target Population Evaluation**

Two tools were used to evaluate data from participants. The participant evaluation was used to evaluate the need for WIC on a university campus and to find answers to the research questions. After the surveys were collected, data was imputed into Excel and analyzed with SPSS Version 23. The results showed that many students, faculty, and staff members (95%) thought it would be useful to have WIC services on campus, and 23% would use WIC services on campus in the future. Results from the survey also revealed that almost 85% of participants *Strongly Agreed* that they planned to tell others about on-campus WIC services.

Another tool, the survey from the American College Health Association, was sent out to around 40,000 CSUN students from February to March of 2016. A set of questions pertaining to WIC and lactation services were approved and submitted to this agency. These questions were sent to the students and data was analyzed. The data from this
survey showed that many students are parents of children under age 5 years, some are currently pregnant or planning to become pregnant within the next year, and some students are current WIC participants. This data supports the fact that there are students who may benefit from WIC services on campus. Inversely, only 7% of students actually completed this survey, therefore a generalization cannot be made regarding the whole school.

**Recommendations for Further Research**

Further research is recommended to provide a better understanding of how to efficiently outreach new WIC services on campus to students, staff, and faculty members. Most outreach was conducted in small areas of campus. A recommendation would be to send a mass email to all of the students, faculty, and staff members who go to school or work at CSUN. Most people communicate through email and may be more likely to learn about these types of services through their cell phone, as well as other social media platforms. Another recommendation would be to follow up with different locations of campus which are outreaching WIC services to ensure that they are still promoting WIC services on campus and have enough materials to do so.

Although there is an absence of literature regarding WIC services being offered in university campuses, this does not mean they do not exist. More research should be done to evaluate whether there are WIC services actually being offered on any university campuses. Information can be collected from those agencies and used towards further
research.

Also, in a more recent study done by the California Department of Public Health, most women who did not enroll in WIC never attempted to apply because they thought that they would not qualify (CDPH, 2016). This information could be used to better outreach to students on campus, who could be feeling the same way. The informational flyer about WIC services on campus could include an income chart. Students who don’t think they would qualify for WIC services would be able to compare their incomes with the WIC Income Guidelines and understand that they probably would qualify for the program.

Implications

The main limitation of this thesis was the select population. The study included students, faculty, and staff members from CSUN in Northridge, California. A limitation in this study was the sample size. The sample size was not representative of the CSUN population because only a small number of students, faculty, and staff members participated in this survey.

Conclusion

The Special Supplemental Program from Women, Infants, and Children (WIC) is a beneficial program for qualified low-income women and their families. WIC provides services like nutrition education, breastfeeding education and support, vouchers for healthy foods, and referrals to other community programs. The purpose of this thesis was
to evaluate the need for the WIC Program on a university campus. A goal was to find the best way to outreach current WIC services on campus. Based on the results from the participant survey and feedback from current managers of innovative WIC offices, WIC would be a beneficial addition to a university campus, and the best way to outreach the program would be through presentations on campus. This new type of service would provide increased accessibility to students, faculty, and staff members who spend most time at school and do not have enough time to go to WIC offices.

Although there is no research supporting WIC offices on university campuses, there are many studies that have support initiating WIC services. This thesis can add to the literature that supports WIC services in non-conventional locations and innovative offices. On-campus WIC can provide benefits to low-income students, staff, and faculty members. WIC provides benefits such as higher initiation of breastfeeding and savings in groceries. Moreover, on-campus WIC may provide an accessible office to WIC participants and may increase WIC participation in order to provide benefits to its’ participants, such as reduce iron deficiency in women, infants, and children; decrease the number of infants born with low birth weight; and promote adequate growth and development.
REFERENCES


Murphy, E. (2013). *Reaching out: Identifying and addressing barriers to WIC participation*


APPENDIX A

WIC on Campus

Please answer the following questions:

Circle all that apply:

Gender:___________ Age:___________ Student  Staff  Faculty

Marital Status:___________ Household Income___________ # of people in household

Are you: (Circle all that apply)

a: Pregnant
b: Breastfeeding
c: Parent of children under 5
d: None of the above

1: Prior to today’s event, did you know about the WIC Program?  Yes  No

2: Have you ever used WIC services before?  Yes  No  If yes, where: ________________

3: Do you plan on using WIC services?  Yes  No

4: Do you feel that WIC on campus is useful?  Yes  No

5: How did you hear about WIC services on campus?:

a: Flyer or billboard
b: Email
c: Online
d: Presentations on campus
e: Oasis Wellness Opening on campus
f: Friend
g: At my current WIC office
h: Other: __________________________________________________

6: I plan to tell other people about WIC services on campus

Strongly agree  Agree  Undecided  Disagree  Strongly disagree

7. Who would you tell about WIC services?

A: Friend
B: Family member
C: Students
D: Other __________________________________________
### APPENDIX B

**CSUN National College Health Assessment Spring 2016**

**Additional Questions**

**Are you aware that there is an A.S. Farmers Market on Campus every Tuesday?**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>2,076</td>
<td>81.9%</td>
</tr>
<tr>
<td>No</td>
<td>460</td>
<td>18.1%</td>
</tr>
<tr>
<td>Total</td>
<td>2,536</td>
<td></td>
</tr>
</tbody>
</table>

**Have you visited the A.S. Farmers Market on campus? If yes, what do you normally purchase?**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, I normally purchase produce/flowers</td>
<td>195</td>
<td>9.5%</td>
</tr>
<tr>
<td>Yes, I normally purchase packaged food</td>
<td>174</td>
<td>8.5%</td>
</tr>
<tr>
<td>Yes, I normally purchase prepared food</td>
<td>735</td>
<td>35.7%</td>
</tr>
<tr>
<td>Yes, I normally purchase crafts</td>
<td>20</td>
<td>1.0%</td>
</tr>
<tr>
<td>No, I have not visited the farmers market</td>
<td>933</td>
<td>45.4%</td>
</tr>
<tr>
<td>Total</td>
<td>2,057</td>
<td></td>
</tr>
</tbody>
</table>

**Have you heard about the CSUN Nutrition Expert website?**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>297</td>
<td>11.7%</td>
</tr>
<tr>
<td>No</td>
<td>2,234</td>
<td>88.3%</td>
</tr>
<tr>
<td>Total</td>
<td>2,531</td>
<td></td>
</tr>
</tbody>
</table>

**Have you used the CSUN Nutrition Expert website? If yes, how satisfied are you with the website?**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, I am very satisfied</td>
<td>29</td>
<td>9.9%</td>
</tr>
<tr>
<td>Yes, I am satisfied</td>
<td>59</td>
<td>20.1%</td>
</tr>
<tr>
<td>Yes, I am dissatisfied</td>
<td>5</td>
<td>1.7%</td>
</tr>
<tr>
<td>Yes, I am very dissatisfied</td>
<td>2</td>
<td>.7%</td>
</tr>
<tr>
<td>No, I have not used the CSUN Nutrition Expert website</td>
<td>199</td>
<td>67.7%</td>
</tr>
<tr>
<td>Total</td>
<td>294</td>
<td></td>
</tr>
</tbody>
</table>

**Are you a parent of a child under the age of 5?**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>2,454</td>
<td>96.8%</td>
</tr>
<tr>
<td>Yes</td>
<td>82</td>
<td>3.2%</td>
</tr>
<tr>
<td>Total</td>
<td>2,536</td>
<td></td>
</tr>
</tbody>
</table>
### What is the age of your child?

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1 years</td>
<td>27</td>
<td>32.9%</td>
</tr>
<tr>
<td>2-3 years</td>
<td>19</td>
<td>23.2%</td>
</tr>
<tr>
<td>4-5 years</td>
<td>16</td>
<td>19.5%</td>
</tr>
<tr>
<td>I have more than one child aged 0-5 years</td>
<td>20</td>
<td>24.4%</td>
</tr>
</tbody>
</table>

### Are you currently pregnant or do you plan to become pregnant in the next year?

<table>
<thead>
<tr>
<th>Status</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, I am currently pregnant</td>
<td>16</td>
<td>.6%</td>
</tr>
<tr>
<td>Yes, I plan to become pregnant in the next year</td>
<td>54</td>
<td>2.1%</td>
</tr>
<tr>
<td>No</td>
<td>2,454</td>
<td>97.2%</td>
</tr>
<tr>
<td>Total</td>
<td>2,524</td>
<td></td>
</tr>
</tbody>
</table>

### Are you now or were you recently a breastfeeding and/or pumping mother?

<table>
<thead>
<tr>
<th>Status</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, I am currently breastfeeding and/or pumping</td>
<td>12</td>
<td>.5%</td>
</tr>
<tr>
<td>Yes, I was recently breastfeeding and/or pumping</td>
<td>23</td>
<td>.9%</td>
</tr>
<tr>
<td>No</td>
<td>2,483</td>
<td>98.6%</td>
</tr>
<tr>
<td>Total</td>
<td>2,518</td>
<td></td>
</tr>
</tbody>
</table>

### Which lactation spaces on campus are you aware of? (Select all that apply)

Select all that apply:

- I am not aware of any lactation spaces on campus
- Klotz Student Health Center
- University Student Union (East Conference Center)
- Institute for Community Health and Wellbeing (Santa Susana Hall)

<table>
<thead>
<tr>
<th>Location</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am not aware of any lactation spaces on campus</td>
<td>1,609</td>
</tr>
<tr>
<td>Klotz Student Health Center</td>
<td>586</td>
</tr>
<tr>
<td>University Student Union (East Conference Center)</td>
<td>429</td>
</tr>
<tr>
<td>Institute for Community Health and Wellbeing (Santa Susana Hall)</td>
<td>107</td>
</tr>
</tbody>
</table>

### Which of the following spaces on campus have you used for breastfeeding and/or pumping milk?

Select all that apply:

- I have not used any spaces on campus for breastfeeding and/or pumping milk
- University Student Union (East Conference Center)
- Klotz Student Health Center
- Restroom
- Institute for Community Health and Wellbeing (Santa Susana Hall)

<table>
<thead>
<tr>
<th>Space</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have not used any spaces on campus for breastfeeding and/or pumping milk</td>
<td>26</td>
</tr>
<tr>
<td>University Student Union (East Conference Center)</td>
<td>4</td>
</tr>
<tr>
<td>Klotz Student Health Center</td>
<td>2</td>
</tr>
<tr>
<td>Restroom</td>
<td>2</td>
</tr>
<tr>
<td>Institute for Community Health and Wellbeing (Santa Susana Hall)</td>
<td>1</td>
</tr>
</tbody>
</table>

### How frequently do you access Women, Infants, and Children (WIC) services?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>I don't know what WIC is</td>
<td>668</td>
<td>26.5%</td>
</tr>
<tr>
<td>Weekly</td>
<td>9</td>
<td>.4%</td>
</tr>
<tr>
<td>Monthly</td>
<td>37</td>
<td>1.5%</td>
</tr>
<tr>
<td>Rarely</td>
<td>47</td>
<td>1.9%</td>
</tr>
<tr>
<td>Never</td>
<td>1,756</td>
<td>69.8%</td>
</tr>
<tr>
<td>Total</td>
<td>2,517</td>
<td></td>
</tr>
</tbody>
</table>
**WIC** is a supplemental nutrition program for women who are pregnant or just had a baby, infants and children under 5 years of age.

**WIC Program benefits** include:

- Vouchers to buy healthy foods
- Nutrition education
- Breastfeeding education and support
- Referrals to other community programs

Visit our WIC Office on Campus to see if you qualify:

**Thursdays from 9am-1pm**  
**Room 104 in Santa Susanna Hall**

**WIC** wants to help you keep your shopping cart full during your busy school year.

*This institution is an equal opportunity provider*
APPENDIX D

California State University, Northridge
Office of Student Development and International Programs, Matador Involvement Center

Application to Distribute and/or Post Information

ATTACH COPY OF MATERIAL

Organization Conducting Distribution/Posting: ________________________________

Person Responsible for Distribution/Posting: ________________________________

Name __________________________ Position in Organization __________________________

Street Address __________________________ City __________________________ Zip ____________ Phone ____________

FOR COMMERCIAL LITERATURE ONLY:

Our organization receives a fee or percentage of any profit derived from the distribution of this material: ______Yes ______ No

If yes, amount or percentage: ____________

Attach a copy of the signed contract agreement between your organization and the firm sponsoring the commercial literature.

Sponsoring Firm:

Firm Name __________________________ Phone ____________

Street Address __________________________ City __________________________ Zip ____________

Individuals Designated as Distributors of Commercial Literature:

______________________________ __________________________

Street Address __________________________ City __________________________ Zip ____________

Location of Distribution of Commercial Literature:

______________________________

Purpose of Information (Be Specific):

______________________________

I have read the “Posting Procedures” and agree to all established policies.

☐ I have read the “Policy on Distribution of Literature” and agree to all established policies.

☐ I have read the “Regulations and Procedures on Solicitation of Funds and Commercially Oriented Activities” and agree to all established policies.

NOTE: Signing this form does not imply that CSU, Northridge, the Office of Student Development & International Programs, nor the Matador Involvement Center approved of the content of materials to be distributed/posted. Organizations and individuals are cautioned, they must bear the responsibility for any materials they wish to display on campus. As sponsors they are subject to Title V.

Applicant’s Signature: __________________________ Date: __________________________

☐ The attached has been received by SD& IP in compliance with distribution/posting procedures.

☐ The following revisions are recommended before distributions of these materials: __________________________

☐ Before distribution/posting, the materials shall be forwarded to the Constitutional Affairs Board of the Associated Students, for their consultation and advisement regarding the impact of this material on the campus community. Subsequent to this review, the material may also be forwarded to the Vice President of Student Affairs. Such actions shall take a minimum of two weeks to process.

SD&IP Staff: __________________________ Date: __________________________
**APPENDIX E**

**Reservation Request to Display Billboard(s) or Booth**

Student Development & International Programs Matador Involvement Center

<table>
<thead>
<tr>
<th>Requesting Organization:</th>
<th>Email address:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person Submitting Request:</td>
<td>Position in Organization:</td>
</tr>
<tr>
<td>Address:</td>
<td>City, State &amp; Zip:</td>
</tr>
</tbody>
</table>

**Dates Requested:** Reservation can only be made for two (2) consecutive weeks.

<table>
<thead>
<tr>
<th>From: Month/Day/Year</th>
<th>To: Month/Day/Year</th>
</tr>
</thead>
</table>

Describe Booth or Billboard (include dimensions and a sketch on back):

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

"I have read the Billboard and Booth Procedures and agree to comply with the established policies."

______________________________  ____________________
Applicant's Signature  Date

______________________________  ____________________
Approved by SD&IP M.I.C. Office  Date

White: MIC  Pink: Requestor  Revised: June 2009
What will we cover today?

- What is WIC?
- How do I choose the most nutritious foods in the grocery store?
- How could I spend less at the grocery store?
- What are the benefits of having my kids help in the kitchen?
- How could I engage my kids in the kitchen?

What is WIC?

WIC is a federally funded nutrition education program that provides supplemental food to:

- Pregnant, Breastfeeding and Postpartum Women
- Infants
- Children under 5 years old

WIC Program History

- 1965...Lyndon Johnson’s War on Poverty
- 1972...Legislation for a 2 year pilot program.
- 1974... WIC opened in California
- 1978...The Child Nutrition Act of 1966 was amended to include WIC nationwide

Program Goals

- Reduce the complications of pregnancy.
- Reduce iron-deficiency in women, infants, and children.
- Decrease the number of infants born with low birth weight.
- Promote adequate growth and development of infants and young children.
Who is eligible for WIC?

In order to qualify for WIC benefits, applicants must meet all 4 criteria:

- Must be in one of the following CATEGORIES:
  - Pregnant Women
  - Breastfeeding Women
  - Post Partum Women
  - Infants
  - Children under the age of five

- Must meet WIC INCOME GUIDELINES (185% of the Federal Poverty Level)
- Must LIVE or WORK in the area

What Does WIC Offer?

WIC Benefits

- Personal Nutrition Counseling
  - One-on-one with a WIC Certified Nutrition counselor or Dietitian
- Group Health Education
  - Topics such as "How to Talk to Your Child's Doctor", and "Fruits & Vegetables"
  - On-line education as well @ www.wichealth.org
- Referrals to other services such as:
  - Cal-Fresh,
  - Health care
  - Social services

WIC Benefits

- Nutritious Foods (via vouchers)
  - WIC foods are high in protein, minerals and nutrients to help families stay healthy.
  - Foods include: milk, cheese, eggs, beans, peanut butter, fruits & vegetables, whole grains.

WIC Benefits

- Breastfeeding Promotion & Support: WIC strives to increase breastfeeding incidence and duration by providing the following services:
  - A special food package for exclusively breastfeeding mothers
  - Breastfeeding classes & Support Groups
  - Breastfeeding equipment such as: Nursing pads, Breast Shells, Manual and Electric Breast pumps
  - Certified Lactation Counselors at every NEVHC WIC site.

WIC Comes to CSUN

- Where: Santa Susanna Hall, Room 104
- Hours of Operation: Thursdays 9-1 pm
- Available to students and faculty.

- Services: Program information; prescreening for program eligibility; and scheduling an appointment at an office near you.
- Contact Information: (818) 361-7541
Benefits of Cooking with Kids

- Bonding experience
- Talk about senses
- Self-esteem boost
- Life skills & food safety practices
- Basic math skills
- Science skills
- Following directions
- Encourages creativity
- Patience
- Improves cultural awareness
- Kids are more likely to eat the food they help prepare

Cooking with 2-3 year olds....

- Choosing/sorting ingredients
- Rinsing fruits and vegetables
- Tearing pieces of lettuce
- Stirring
- Pouring with assistance
- Adding ingredients to bowls

Cooking with 4-6 year olds...

- Reading recipes
- Counting and doing simple measurements
- Cutting with plastic or butter knives
- Cracking eggs
- Mixing/pouring
- Setting the table
- Pushing “start” and “stop” button

Cooking with 7-12 year olds....

- Selecting recipes
- Creating their own recipes
- Finding and gathering ingredients
- Reading and following recipes
- Helping create shopping lists
- Cutting with sharper knives (supervised)
- Using zesters, graters, and peelers (supervised)
- Helping wash dishes
How to choose nutritious foods at the grocery store?

Shop the Perimeter!
- Fresh ingredients are located around the perimeter of the grocery store.
- Buy foods that fit within the 5 food groups

Limit Processed Foods
- Processed foods are often high in:
  - Calories
  - Sugar
  - Fat
  - Sodium
- And low in:
  - Fiber
  - Vitamins
  - Minerals

Shopping on a Budget
TIPS for spending less!
- Make a grocery list
- Use WIC coupons first
- Look in newspaper and online for sales
- Use WIC coupons first, then use cash
- Take advantage of buy 1 get 1 free
- Do not go grocery shopping while hungry

Shopping on a Budget Continued...
Markets strategize to earn more by:
- Trying to get us to spend more than what we need. (Buy ten for $20) Do you need ten of these? Do you need to spend $20?
- Placing most expensive items at eye level (especially at kids’ eye level)
- Playing relaxing music
- Placing flowers and bread by the entrance of the store
- Increasing the size of the grocery cart

Recipes of the day....
Mango Salsa

- 1 large mango, diced
- 1 jalapeño, seeds removed, diced
- 1 clove garlic, minced
- ½ large bell pepper, diced
- ½ large red onion, diced
- ½ a lime, juiced
- Salt to taste

Cost per person: $1.79

Nutrition Facts (per serving):
- Calories: 53
- Fat: 0g
- Protein: 0.5g
- Carb: 13g
- Fiber: 1g
- Calcium: 7mg

Green Pasta

- ½ lb whole wheat angel hair pasta
- 1 6oz bag fresh spinach
- 1 cup basil leaves, packed
- 3 cloves garlic, minced
- 1 tbsp olive oil
- ½ cup low fat milk
- ½ cup mozzarella cheese, shredded
- Salt and pepper to taste

Cost per person: $1.53

Nutrition Facts (per serving):
- Calories: 297
- Fat: 8g
- Protein: 15g
- Carb: 47g
- Fiber: 9g
- Calcium: 223mg
- Vitamin A: 497mcg
- Vitamin C: 15mg
- Folate: 122mcg
- Iron: 4mg
**Meatless Meatballs**

- 1 ½ cups water
- 1 cup dry bulgur
- 1 egg, beaten
- ½ cup all purpose flour
- ½ cup cooked garbanzo beans, mashed
- 1 carrot, peeled and grated
- 3 green onions, finely chopped
- 1 tsp soy sauce
- ½ tsp garlic powder
- 1 tbsp. olive oil

**Nutrition Information (per serving):**
- Calories: 175
- Vitamin A: 244mcg
- Fat: 4g
- Vitamin C: 2.4mg
- Protein: 6g
- Folate: 28mcg
- Carb: 30g
- Fiber: 6g
- Calcium: 31mg
- Iron: 1.5mg

**Cost per person:** $1.58

---

**Pumpkin Pudding**

- 1 3.4oz package of instant vanilla pudding mix
- 1 ½ cups cold nonfat milk
- 1 cup canned or mashed pumpkin
- ½ tsp cinnamon

**Nutrition Information (per serving):**
- Calories: 148
- Fat: 0g
- Protein: 4g
- Carb: 33g
- Vitamin A: 913mcg
- Fiber: 2.6g
- Calcium: 110mg
- Vitamin C: 0.5mg
- Iron: 0mg

**Cost per person:** $.18
TOTAL COST PER MEAL

$5.08/ PERSON
FAMILY OF 4: 20.32

In Conclusion...

• The WIC Program coming to CSUN increases awareness of the program and provides a more accessible office to CSUN students
• Cooking with kids can be fun and educational!
• Supermarkets try to sell you more! Go in with a plan to avoid spending more money.
• Eating healthy on a budget is not impossible!

Let’s Get Cooking!!
What will we cover today?

- What is a budget?
- Tips to save money
- How do I choose the most nutritious foods in the grocery store?
- How could I spend less at the grocery store?
- How to manage my food budget
- Not wasting money or food

What is a BUDGET??

An estimate of income and expense for a set period of time

IT'S A PLAN!!

5 Steps to Manage your Budget

1. Know what’s important to you (needs vs. wants)
2. Set some goals
3. Know your income and expenses
4. Make a spending plan
5. Stick to your spending plan!

Examples of Goals

1. Eat out less
2. Cook at least 4 days of the week
3. Ditch the cup of noodles
4. Spend more on veggies instead of candy
5. Stick to your spending plan!

Did you know that CSUN offers many resources to help you with your nutritional needs on a budget?
Farmer’s Market

Every Tuesday from 10am to 2pm

CSA Produce Box

Community Supported Agriculture (CSA) Program is on campus and now available!

We source fruits and vegetables from Underwood Farms in Moorpark and will be delivered to CSUN every Tuesday. Farmers will be present to point out items to participants and answer questions from 10am to 2pm. Participants will be required to sign up for the CSA program and select the level of support. Participants can choose any of the CSA produce boxes and opt for one box every week or every other week.

Small CSA Box

$19.00 / box

Our Small CSA Box will consist of a variety of seasonal produce suitable for two people. It consists of large quantities of fresh produce that may vary from week to week. The Small CSA Box is available every week.

Large CSA Box

$23.00 / box

Our Large CSA Box will consist of a variety of seasonal produce suitable for four people. The Large CSA Box is available every week.

MataMoney Card

Everyone buys food from campus at some point. Why not save some money in the process with MataMoney!

It’s EASY and FREE! (We all love Free)

1. Get and load a MataMoney card at any CSUN Dining location.
2. Load the MataMoney card like a Debit Card at least $5 minimum. You can manage your card online.
3. Save 10% on every purchase using dining locations (It’s Free!) with MataMoney.
4. Bon Appétit!

Meals Plans

For more information, please contact:

http://www.csun.edu/csundining/meal-plan
WIC

Women Infants and Children

Must be in one of the following CATEGORIES:

- Pregnant Women
- Breastfeeding Women
- Post Partum Women
- Infants
- Children under the age of five

Located in Santa Susana Hall

What Does WIC Offer?

- Nutrition Education
- Referrals
- Breastfeeding Promotion & Support

How to choose nutritious foods at the grocery store?

Shop the perimeter!

- Fresh ingredients are located around the perimeter of the grocery store.
- Key foods that fit within the 5 food groups

Limit Processed Foods

- Processed foods are often high in:
  - Calories
  - Sugar
  - Fat
  - Sodium
  - And low in:
  - Fiber
  - Vitamins
  - Minerals

Shop on a Budget

TIPS for spending less!

- Make a grocery list
- Look in newspaper and online for sales
- Have a budget and buy groceries with cash
- Take advantage of buy 1 get 1 free
- Do not go grocery shopping while hungry
Markets strategize to earn more by:
• Trying to get us to spend more than what we need. (Buy ten for $20)
  Do you need ten of these?
  Do you need to spend $20?
• Placing most expensive items at eye level
• Placing candy by check out
• Playing relaxing music
• Placing flowers and bread by the entrance of the store
• Increasing the size of the grocery cart

FOOD WASTE
• Be mindful of how much food you will actually eat.
• Fresh produce tends to go bad before process
DON'T THROW YOUR MONEY AWAY!!

LET'S COOK!!

Mango Salsa
• 1 large mango, diced
• 1 jalapeño, seeds removed, diced
• 1 clove garlic, minced
• 1 large bell pepper, diced
• 1/2 large red onion, diced
• 1 lime, juiced
• Salt to taste

Mango Salsa
Nutrition Facts (per serving):
Calories: 53
Fat: 0g
Protein: .5g
Carb: 13g
Fiber: 1g
Calcium: 7mg
Iron: 0mg
Vitamin A: 167 mcg
Vitamin C: 49mg
Folate: 9mcg
**Mango Salsa**

**Nutrition Tip**
To speed up the ripening of a mango, place in a sealed plastic bag with a ripe banana.

**Budget Tip**
If you are not going to eat the mango right away, buy unripened.

---

**Green Pasta**

- \( \frac{1}{2} \) lb whole wheat angel hair pasta
- 1 oz bag fresh spinach
- 1 cup basil leaves, packed
- 3 cloves garlic, minced
- \( \frac{1}{2} \) tbsp olive oil
- \( \frac{1}{2} \) cup low fat milk
- \( \frac{1}{2} \) cup mozzarella cheese, shredded
- Salt and pepper to taste

---

**Green Pasta**

**Nutrition Facts (per serving):**
- Calories: 297
- Fat: 8 g
- Protein: 15 g
- Carbs: 47 g
- Fiber: 9 g
- Vitamin A: 497 mcg
- Vitamin C: 15 mg
- Calcium: 223 mg
- Folate: 122 mcg
- Iron: 4 mg

---

**Budget Tip**
Low fat 1% milk has less fat and more protein and calcium than whole milk.

---

**Nutrition Pasta (per serving):**
- Calories: 297
- Fat: 8 g
- Protein: 15 g
- Carbs: 47 g
- Fiber: 9 g
- Vitamin A: 497 mcg
- Vitamin C: 15 mg
- Calcium: 223 mg
- Folate: 122 mcg
- Iron: 4 mg

---

**Green Pasta**

**Serves 4**

| Ingredient | Price/Unit | Price per serving | Amount
d|---|---|---|
| Whole Wheat Angel Hair Pasta | $0.39 | $0.78 | 1 lb
| Spinach | $0.39 | $0.78 | 1 oz
| Basil | $0.12 | $0.24 | 1 cup
| Garlic | $0.04 | $0.08 | 3 cloves
| Olive Oil | $0.12 | $0.24 | 1 tbsp
| Low Fat Milk | $0.10 | $0.20 | \( \frac{1}{2} \) cup
| Mozzarella Cheese | $0.10 | $0.20 | \( \frac{1}{2} \) cup
| Salt and Pepper | | | to taste

Total: $8.89

Only 1.47 per serving!!
Meatless Meatballs

• 1 1/2 cups water
• 1 cup dry bulgur
• 1 egg, beaten
• 1 cup all purpose flour
• 1/4 cup cooked garbanzo beans, mashed
• 1 carrot, peeled and grated
• 3 green onions, finely chopped
• 1 tsp soy sauce
• 1 tsp garlic powder
• 1 tbsp. olive oil

Nutrition Information (per serving):
- Calories: 179
- Fat: 4g
- Protein: 9g
- Carb: 30g
- Vitamin A: 244mcg
- Calcium: 31mg
- Iron: 1.5mg
- Folate: 28mcg

Nutrition Tip
Bulgur is high in fiber and protein, and low in fat and calories. It is the ideal choice to add to your soups, salads, pilaf, and stuffing.

Budget Tip
Meatless meals are less expensive. Try to eat more meatless meals per week.

Serves 6

Only 0.61 per serving!!

Peanut Butter French Toast

• 2 slices of whole wheat bread
• 1 tablespoon strawberry preserves
• 1 tablespoon peanut butter
• 1/4 cup Low-Fat milk
• 1 whole egg
• Cooking Spray

Nutrition Information (per serving):
- Calories: 449
- Fat: 15g
- Protein: 23g
- Carb: 68g
- Fiber: 8g
- Vitamin A: 121mcg
- Calcium: 110mg
- Folate: 24mg
Peanut Butter French Toast

Nutrition Tip
When shopping for bread, always look for “100% whole wheat” on the label. These breads are made with whole grains and will have more fiber per serving than multi-grain or plain “wheat” breads.

Budget Tip
If there is a special, you can always freeze bread and use later.

For one meal...
Mango Salsa.........$ 1.24
Green Pasta..........$ 0.98
Meatless Meatballs...$ 0.91
French Toast..........$ 0.98
TOTAL......................$ 4.11

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<th>Ingredients</th>
<th>Price Unit</th>
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<tr>
<td>French Toast</td>
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</table>

TOTAL $ 4.11
Comes to CSUN

What is WIC?
WIC is a federally funded nutrition education program that provides supplemental food to:

• Pregnant, Breastfeeding and Postpartum Women
• Infants
• Children under 5 years old

WIC Program History
• 1965...Lyndon Johnson’s War on Poverty
• 1972...Legislation for a 2 year pilot program.
• 1974... WIC opened in California
• 1978...The Child Nutrition Act of 1966 was amended to include WIC nationwide

Program Goals
• Reduce the complications of pregnancy.
• Reduce iron-deficiency in women, infants, and children.
• Decrease the number of infants born with low birth weight.
• Promote adequate growth and development of infants and young children.

Who is eligible for WIC?
In order to qualify for WIC benefits, applicants must meet all 4 criteria:

✓ Must be in one of the following CATEGORIES:
  — Pregnant Women
  — Breastfeeding Women
  — Post Partum Women
  — Infants
  — Children under the age of five
✓ Must meet WIC INCOME GUIDELINES (185% of the Federal Poverty Level)
✓ Must LIVE or WORK in the area

What Does WIC Offer?
WIC Benefits
• Nutrition Education
• Nutrient-specific foods
• Breastfeeding Promotion & Support
• Referrals
**WIC Benefits**

• Nutritious Foods (via vouchers)
  - WIC foods are high in protein, minerals and nutrients to help families stay healthy.
  - Foods include: milk, cheese, eggs, beans, peanut butter, fruits & vegetables, whole grains.

• Personal Nutrition Counseling
  - One-on-one with a WIC Certified Nutrition counselor or Dietitian

• Group Health Education
  - Topics such as “How to Talk to Your Child’s Doctor”, and “Fruits & Vegetables”
  - On-line education as well @ www.wichealth.org

• Referrals to other services such as:
  - Cal-Fresh,
  - Health care
  - Social services

**WIC Benefits**

• Breastfeeding Promotion & Support: WIC strives to increase breastfeeding incidence and duration by providing the following services:
  - A special food package for exclusively breastfeeding mothers
  - Breastfeeding classes & Support Groups
  - Breastfeeding equipment such as: Nursing pads, Breast Shells, Manual and Electric Breast pumps
  - Certified Lactation Counselors at every NEVHC WIC site.

**WIC Comes to CSUN**

• Where: Santa Susanna Hall, Room 104
• Hours of Operation: Thursdays 9-1 pm
• Available to students and faculty.

• Services: Program information; prescreening for program eligibility; and scheduling an appointment at an office near you.
• Contact Information: (818) 361-7541

Visit us on campus for more information
APPENDIX I

CSUN presents...

Cooking On A Budget for Kids and Families

This exciting session will cover:

- Tips to save money in the supermarket
- How to choose the most nutritious foods for your family
- How to involve your kids in the kitchen
- A delicious food demonstration!

All participants will receive a copy of the NEVHC-WIC Program “Cooking with Kids” cookbook!

This session will take place on
Thursday, November 19 from 10am-12pm
Sequoia Hall Rm. 112

*This institution is an equal opportunity provider
CONSENT TO ACT AS A HUMAN RESEARCH PARTICIPANT

Effective ways to promote the Women, Infants, and Children (WIC) Program on university campuses

You are being asked to participate in a research study. Effective ways to promote the Women, Infants, and Children (WIC) program on university campuses is a study conducted by Nare Davoodi as part of the requirements for the M.S. degree in Nutrition and Dietetics. Participation in this study is completely voluntary. Please read the information below and ask questions about anything that you do not understand before deciding if you want to participate. A researcher listed below will be available to answer your questions.

RESEARCH TEAM
Researcher:
Nare Davoodi
Department of Family and Consumer Sciences
18111 Nordhoff St.
Northridge, CA 91330-8308
818-414-1647
nare.davoodi@yahoo.com

Faculty Advisor: Dr. Annette Besnillian EdD, MPH, RD, CLE, FAND
Department of Family and Consumer Sciences
18111 Nordhoff St.
Northridge, CA 91330-8308
818-677-3102
annetteb@csun.edu

PURPOSE OF STUDY
The purpose of this research study is to explore how many students, faculty, and staff members would qualify for the WIC Program and benefit from its services on campus.

SUBJECTS
Inclusion Requirements
You are eligible to participate in this study if you are a CSUN student, faculty, or staff member.

Time Commitment
This study will involve approximately 5-10 minutes of your time.

PROCEDURES
The following procedures will occur: You will complete this survey after the event you are attending. The event could be from 30 minutes to 2 hours. The survey itself will take 5-10 minutes after the event.

RISKS AND DISCOMFORTS
The possible risks and/or discomforts associated with the procedures described in this study include: discomfort in answering questions about gender, age, marital status, and income. If you feel uncomfortable answering any questions, please skip the question. This study involves no more than minimal risk. There are no known harms or discomforts associated with this study beyond those encountered in normal daily life.

BENEFITS
Subject Benefits
The possible benefits you may experience from the procedures described in this study include learning about the WIC program, learning about healthy recipes to make on a budget, and healthy nutrition tips

Benefits to Others or Society
The addition of a WIC office on campus will be beneficial to its students who already receive WIC by providing easier accessibility to a WIC office. For those students, faculty, and staff members who do not know about the WIC program, this will help them learn about WIC and its services on campus.

ALTERNATIVES TO PARTICIPATION
The only alternative to participation in this study is not to participate.

COMPENSATION, COSTS AND REIMBURSEMENT
Compensation for Participation
You will not be paid for your participation in this research study.

CONFIDENTIALITY
Subject Identifiable Data
All identifiable information that will be collected about you will be removed and replaced with a code. A list linking the code and your identifiable information will be kept separate from the research data.

Data Storage
All research data will be stored electronically on a secure computer with password protection.

Data Access
The researcher and Dr. Annette Besnilian named on the first page of this form will have access to your study records. Any information derived from this research project that personally
identifies you will not be voluntarily released or disclosed without your separate consent, except as specifically required by law. Publications and/or presentations that result from this study will not include identifiable information about you.

**Data Retention**

The researchers intend to keep the research data until analysis of the information is completed and then it will be destroyed.

**IF YOU HAVE QUESTIONS**

If you have any comments, concerns, or questions regarding the conduct of this research please contact the research team listed on the first page of this form.

If you have concerns or complaints about the research study, research team, or questions about your rights as a research participant, please contact Research and Sponsored Projects, 18111 Nordhoff Street, California State University, Northridge, Northridge, CA 91330-8232, or phone 818-677-2901.

**VOLUNTARY PARTICIPATION STATEMENT**

You should not sign this form unless you have read it and been given a copy of it to keep. Participation in this study is voluntary. You may refuse to answer any question or discontinue your involvement at any time without penalty or loss of benefits to which you might otherwise be entitled. Your decision will not affect your relationship with California State University, Northridge. Your signature below indicates that you have read the information in this consent form and have had a chance to ask any questions that you have about the study.

I agree to participate in the study.

___________________________________________________  __________________
Participant Signature                      Date

___________________________________________________
Printed Name of Participant

___________________________________________________  __________________
Researcher Signature                      Date

___________________________________________________
Printed Name of Researcher
APPENDIX K

Student Researcher
HUMAN SUBJECTS PROTOCOL APPROVAL FORM
CALIFORNIA STATE UNIVERSITY, NORTHridge
Effective ways to promote the Women, Infants, and Children (WIC) program on university campuses

2. Principal Investigator: Nare Davoodi, RDN
   Home Address: 2412 Fiorentina Ave. Montrose, CA 91020
   CSUN Email: nare.davoodi45@my.csun.edu
   Mobile: 8184741647
   Major or Department: Nutrition/Dietetics
   Course Name/Number: FCS 696C

3. Co-Investigators: Name and University (if applicable):
   1. 
   2. 

4. Faculty Advisor: Annette Besnilian
   Email: annetteb@csun.edu

5. Recruitment/Data Collection Start Date: 11/19/15
   End Date: 4/30/16

6. Check one: ☐ Unfunded ☐ Funded
   Name of Funding Source: 
   Submission Date: 

7. History of Protocol: ☐ New ☐ Continuing (Previous Approval Date ________)

8. Existing Data: Will this study involve the use of existing data or specimens? ☐ YES ☐ NO
   If YES, attach documentation indicating the authorization to access the data if not publicly available and if accessing from an agency outside of CSUN.

9. Subjects to be recruited (check all that apply): specify in Section 2.
   a. ☐ Adults (18+ years) ☐ CSUN students
   b. ☐ Minors, specify age: ☐ Other, specify: CSUN faculty/staff
   c. ☐ Cognitively or emotionally impaired ☐ Existing data

10. Data will include (check all that apply): specify all checked items in the Project Information Form.
    a. ☐ Names of people ☐ Gender ☐ Income ☐ Children
    b. ☐ Email address ☐ Ethnicity ☐ Physical health report
    c. ☐ Street address ☐ Marital status ☐ Physical health report
    d. ☐ Phone numbers ☐ Income ☐ Other, specify:
    e. ☐ Age ☐ Social security

11. Will subjects be identified by a coding system (i.e., other than by name)? ☐ YES ☐ NO

12. Is compensation offered? ☐ YES ☐ NO If yes, describe:

13. Projected number of subjects: 25-50

14. Method of recruiting subjects (elaborate in Section 2):
   Campus outreach

15. Will there be any deception (not telling subjects exactly what is being tested)? ☐ YES ☐ NO
    Provide justification for deception and explain how subjects are debriefed in Section 2.

16. Potential Risk Exposure: ☐ Physical ☐ Psychological ☐ Economic ☐ Legal ☐ Social
    ☐ Other, specify: 
    Risk must be specified and elaborated in Section 4.
17. **Data Collection Instruments** (check all that apply)
   
   a. ☐ Standardized tests  
   b. ☑ Questionnaire  
   c. ☐ Interview  
   d. ☐ Existing data  
   e. ☐ Other, specify: ____________________

18. **Recorded by** (check all that apply)
   
   a. ☑ Written notes  
   b. ☐ Audio tape  
   c. ☐ Video tape/film  
   d. ☐ Photography  
   e. ☐ Observation  
   f. ☐ Existing data

19. **Administered by** (check all that apply)
   
   a. ☑ In person (group/individual)  
   b. ☐ Telephone  
   c. ☐ Text message  
   d. ☑ Email/website  
   e. ☐ Mail  
   f. ☐ Existing data  
   g. ☐ Other, specify: ____________________

20. **Findings used for** (check all that apply)
   
   a. ☑ Publication/presentation  
   b. ☐ Evaluation  
   c. ☐ Needs assessment  
   d. ☐ Thesis/dissertation  
   e. ☐ Other, specify: ____________________

21. Are drugs or radioactive materials used in this study? ☐ YES ☑ NO  
   *If yes, list the drugs or radioactive materials used in Section 1 and provide a detailed description of each, with justification for its use.*

22. Are any medical devices or other equipment to be used in this study? ☐ YES ☐ NO  
   *If yes, describe in detail the medical devices or equipment to be used in Section 2.*

23. Did you attach a copy of any questionnaire(s), survey instrument(s) and/or interview schedule(s) referred to in this protocol? ☑ YES ☐ NO

24. Is a letter of permission for subject recruitment attached (if recruiting from an agency outside of CSUN)? ☐ YES ☑ NO ☐ N/A

25. Does your research require international travel? ☐ YES ☑ NO  
   *If yes, your travel must be approved by the Office of Insurance and Risk Management. Please visit [http://www.admn.csun.edu/risk/](http://www.admn.csun.edu/risk/) for procedures and guidelines.*

26. **SIGNATURES:** All signatures must be obtained prior to submission. Faculty signature on this Protocol Approval Form indicates that:

   You and your student are familiar with the regulations for human subject research as defined by California State University, Northridge's Standing Advisory Committee for the Protection of Human Subjects (SACPHS) and you and your student intend to follow those regulations when conducting this study. You have reviewed and approve of this Protocol Approval Form and accompanying documentation. You approve of the manner in which human subjects will be involved in this study.

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**FOR SACPHS AND RESEARCH OFFICE USE ONLY**

☐ Noted, Exempt  ☐ Approved, Minimal Risk  ☐ Approved, Greater than Minimal Risk  ☐ Approved, Expedited Review

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CSUN Office of Research and Sponsored Projects | Committee for the Protection of Human Subjects

Revised 10/13