



Dietary intake of pregnant farmworkers : patterns among migrant workers in Montana
by Candace Kaye Stearns

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Nursing
Montana State University

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Abstract:

The purpose of this research study was to describe the dietary habits of pregnant Hispanic migrant women in Montana. A secondary goal was to compare nutrition information with the national recommended daily allowances (RDA) of the United States Department of Agriculture (USDA) standards for nutrition in pregnant women.

The study utilized a descriptive design to examine the dietary practices of pregnant Hispanic migrant women in Montana. A convenience sample was obtained after identification of potential subjects by health care workers providing services to these women. The study occurred in the south central and western areas of the state of Montana. A 214 item food questionnaire and a 24 hour dietary recall were utilized to collect data. The food questionnaire was translated into Spanish before data collection began to facilitate data collection.

The diets of the pregnant Hispanic migrant woman in the state of Montana was found to be largely lacking in nutrients. Diets were high in fats and sugars. Barriers were identified among these women for the receipt of governmental assistance programs. The educational level of this population was found to be low in comparison to that of the Anglo population.

The research results can be used by health care professionals providing services to this population. Nutritional education provided to this patient population should be culturally sound. Written materials utilized by health care professionals must consider the educational level of the patient. The consumption of an adequate diet every day is an important message to convey to all patients. Health care providers must be skilled at working with translation services for patients who are non English speaking.

Dietary Intake of Pregnant Farmworkers:
Patterns Among Migrant Workers In Montana

by
Candace Kaye Stearns

A thesis submitted in partial fulfillment
of the requirements for the degree

of
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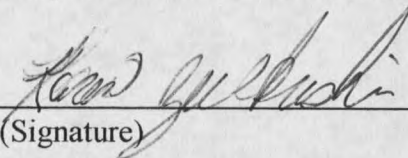
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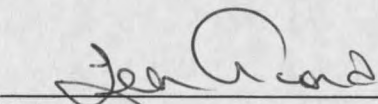
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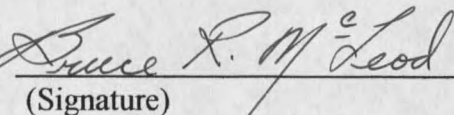
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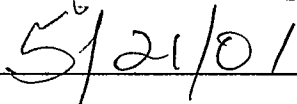
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TABLE OF CONTENTS

APPROVAL PAGE.....	ii
PERMISSION TO USE.....	iii
ACKNOWLEDGMENTS.....	iv
LIST OF TABLES.....	viii
ABSTRACT.....	ix
1. INTRODUCTION.....	1
Background and Significance of Study.....	1
Research Problem.....	2
Statement of Purpose.....	2
Conceptual Foundation of Study.....	3
2. REVIEW OF LITERATURE.....	5
Culture of Farmworkers.....	5
Income.....	10
Nutrition.....	10
Family.....	13
Education.....	14
Motivation.....	15
Health.....	16
Summary of Literature.....	20
Conceptual and Operational Definitions.....	22
Culture.....	22
Hispanic.....	22
Migrant Farmworker.....	22
Income.....	23
Nutrition.....	23
Family.....	23
Education.....	23
Motivation.....	24
Health.....	24
Pregnancy.....	24
Significance for Nursing.....	24

TABLE OF CONTENTS-CONTINUED

3.	METHODOLOGY.....	26
	Purpose.....	26
	Design.....	26
	Sample.....	27
	Inclusion Criteria.....	27
	Exclusion Criteria	27
	Instrumentation.....	28
	Demographics.....	28
	Food Frequency Questionnaire.....	28
	Twenty Four Hour Dietary Recall	29
	Procedures.....	29
	Steps of Data Collection.....	29
	Internal and External Validity.....	31
	Internal Validity	31
	External Validity	32
	Limitations/Assumptions.....	32
	Pilot Study.....	33
	Data Analysis.....	34
	Demographics.....	34
	Protection of Human Subjects.....	34
4	OUTCOME.....	36
	Research Findings.....	36
	Demographic Characteristics.....	36
	Components of Conceptual Model.....	37
	Income.....	37
	Family.....	38
	Education.....	38
	Health.....	39
	Nutrition.....	40
	Dietary Intake.....	42
	24 Hour Dietary Recall Analysis.....	43
	214 Food Item Questionnaire Analysis.....	46
5.	CONCLUSIONS.....	48
	LIMITATIONS.....	50
	IMPLICATIONS FOR NURSING.....	51
	RECOMMENDATIONS.....	53

TABLE OF CONTENTS-CONTINUED

REFERENCES.....	55
APPENDICES.....	61
APPENDIX A	
Permission to Use Model.....	63
APPENDIX B	
Permission to Conduct.....	65
APPENDIX C	
Demographic Cover Sheet English/Spanish.....	67
APPENDIX D	
Food Frequency Questionnaire English/Spanish.....	72
APPENDIX E	
Informed Consent English/Spanish.....	100
APPENDIX F	
Human Subjects Approval.....	105

LIST OF TABLES

Table

1.	Age of Subjects in Sample (N=9).....	36
2.	Length of Time in the United States(N=9).....	37
3.	Type of Work and Hours per Week (N=7).....	37
4.	Income Receipt of WIC/Food Stamps (N=9).....	37
5.	Education for Sample (N=9).....	39
6.	Spanish/English Language Skills (N=9).....	39
7.	Body Mass Index for Sample (N=9).....	43
8.	Vitamins/Minerals per Subject (N=9).....	45
9.	Nutrients per Pregnancy Trimester and/or Age.....	46
10.	Serving Sizes per Food Group.....	47

ABSTRACT

The purpose of this research study was to describe the dietary habits of pregnant Hispanic migrant women in Montana. A secondary goal was to compare nutrition information with the national recommended daily allowances (RDA) of the United States Department of Agriculture (USDA) standards for nutrition in pregnant women.

The study utilized a descriptive design to examine the dietary practices of pregnant Hispanic migrant women in Montana. A convenience sample was obtained after identification of potential subjects by health care workers providing services to these women. The study occurred in the south central and western areas of the state of Montana. A 214 item food questionnaire and a 24 hour dietary recall were utilized to collect data. The food questionnaire was translated into Spanish before data collection began to facilitate data collection.

The diets of the pregnant Hispanic migrant woman in the state of Montana was found to be largely lacking in nutrients. Diets were high in fats and sugars. Barriers were identified among these women for the receipt of governmental assistance programs. The educational level of this population was found to be low in comparison to that of the Anglo population.

The research results can be used by health care professionals providing services to this population. Nutritional education provided to this patient population should be culturally sound. Written materials utilized by health care professionals must consider the educational level of the patient. The consumption of an adequate diet every day is an important message to convey to all patients. Health care providers must be skilled at working with translation services for patients who are non English speaking.

CHAPTER 1

INTRODUCTION

Background and Significance of Study

The Hispanic population is the second largest and fastest growing minority group in the United States (Castillo & Torres, 1995). This population has distinct cultural values, beliefs, and day to day living experiences. The Hispanic population also has distinct subgroups which exist within the larger ethnic group. These subgroups include Mexicans, Puerto Ricans, Cubans, and South and Central Americans. While each subgroup has distinct cultural values, there are common themes which exist among the groups.

The largest subgroup of the Hispanic population in the United States is Mexican Americans. Mexican Americans comprise 65% of the Hispanic population in the United States (Census Bureau, 2000). Approximately 33% of the Mexican American population has less than a ninth grade education (Census Bureau, 2000). Lack of formal education has been proposed as a reason many members of this minority group secure low paying jobs. These jobs include migrant farm work.

Three to five million migrant and seasonal farmworkers are estimated to be in the United States. Approximately 16% of these migrant workers are women (U.S. Dept. of Health and Human Services, 1990; Bureau of Primary Health Care, 1995). However, these numbers may not accurately reflect the true numbers of migrant and seasonal

farmworkers in the United States. This population is transient in nature, may not be in the country legally, and face barriers such as social and cultural isolation. It is estimated that approximately 77% of these migrant farmworkers are of Mexican descent (National Agricultural Workers Survey, 2000).

Little research has been conducted regarding the health status of the many migrant workers in the United States. Less has been done for the Hispanic migrant woman. Studies which include the pregnant Hispanic migrant farm worker women have not been published.

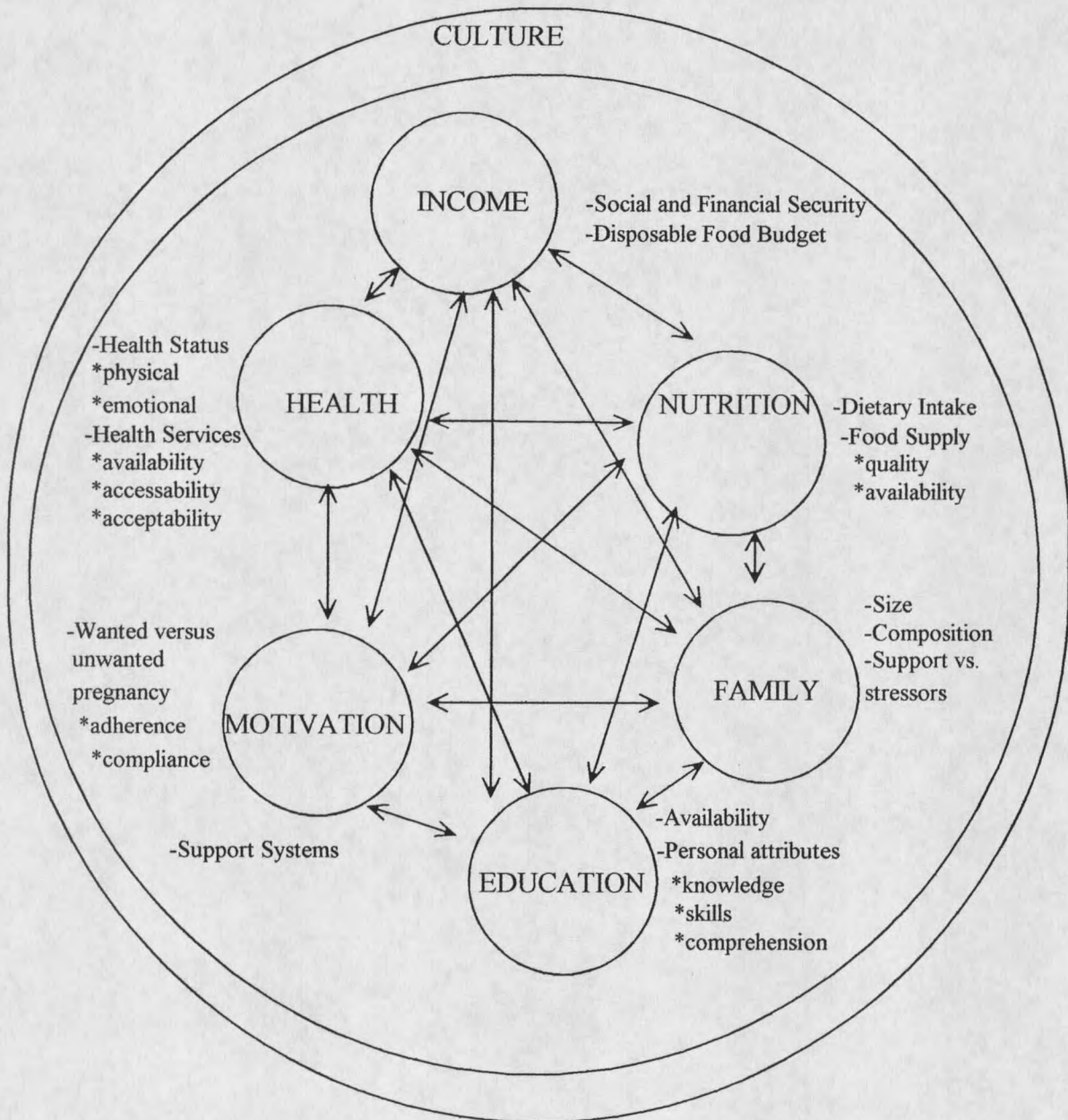
Problem

Due to the transitory nature of their life, little is known about the nutritional patterns and problems of pregnant Hispanic migrant women. Even less is known about the nutritional patterns and problems of the pregnant migrant Hispanic woman who reside in Montana.

Purpose

The purpose of this study was to describe the dietary habits of pregnant Hispanic migrant women in Montana. A secondary goal was to compare nutrition information with the national recommended daily allowances(RDA) of the United States Department of Agriculture (USDA) standards for nutrition in pregnant women.

Conceptual Foundation of Study



An adaptation of the web of influences model was used as the conceptual foundation of this study(Moore in Lowdermilk, Perry, & Bobak, 2000). Permission to use the model was obtained (Appendix A).

The model encompasses factors which relate to the nutrition of pregnant women. These factors include income, health, nutrition, motivation, family, and education. Culture is placed at the top of the model and surrounds the entire web of influences. Culture is central as it may affect the individual's view of all of the factors which influence nutritional status. All of the model's factors interact and include multiple components. Listed next to each factor is the operational information which was collected and considered for each individual factor of the model.

CHAPTER 2

REVIEW OF LITERATURE

Culture

The Hispanic population is the fastest growing minority population in the United States (Caudle, 1993; Reinert, 1986; Castillo & Torres, 1995; Delgado, Metzger, & Falcon, 1995). It is estimated that the Hispanic population will be the largest minority population in the United States by 2010 (Caudle, 1993; Delgado et al, 1995). The Hispanic population is younger and less formally educated than the non-Hispanic population of the United States. The median age for the total population of non-Hispanic origin is 37.5 years, while the median age for the Hispanic population is 26.1 years. (Census Bureau, 2000).

The Hispanic population has distinct cultural values, beliefs, language, and day to day living experiences. While the subgroups of the Hispanic population, (Mexican, Puerto Rican, Cuban, South and Central Americans) do have a distinct set of cultural values, there are common themes which arise within these groups.

Modesty is highly valued and individuals may have a difficult time discussing their bodies or body functions (Stewart, 1994; Delgado et. al, 1995). The population as a whole values agreement, respect and courtesy. Criticism is not as accepted by members of this group as it is by the dominant American culture of today, even if the criticism is considered constructive and given in an effort to encourage improvement or make

changes (Friedman, 1998; Delgado et. al., 1995; Stewart, 1995).

The use of folk remedies in this population is a common practice (Keegan, 1995; Risser & Mazur, 1995; DePacheco & Hutti, 1998; Skaer, Robinson, Sclar, & Harding, 1996). Some folk remedies may actually cause harm to the individual using these substances. Individuals may use baking soda or alarcon for upset stomach. Alarcon is lead based product and may be harmful to both the mother and the fetus (DePacheco & Hutti, 1998). The consultation of currenderos and spiritualistas may be common in this population (Reinert, 1986; Keegan, 1996; Berger, 1998; Risser & Mazur, 1995).

Currenderos are folk healers or the local elder who by virtue of experience and some training in the use of herbs are able to assist in health care matters. Spiritualistas are those who can communicate with spirits and may have the ability to foresee the future.

Many Hispanic families continue to use Spanish as the primary language in their home for generations after migrating to the United States. This language barrier may isolate the Hispanic from the Anglo community and increase the time to acculturate to the larger society. In addition, the Hispanic population often resides in areas such as California, Arizona, and Texas whereby a trip to the "old country", Mexico, is not difficult and serves to reinforce maintenance of traditional cultural aspects, such as the use of Spanish as the primary language, and other cultural practices. This population also is largely of the Roman Catholic faith (Villarruel, 1998).

Hispanic adolescents seek information more from family members, such as mothers and older siblings than from peer groups (Rew, Resnick, & Blum, 1997).

Women are essentially in charge of the health care of the family and will seek health care

only when remedies implemented at home do not work (DePacheco & Hutti, 1998). The Hispanic population views time from a different perspective than the general population of the United States. As a group, the population is present oriented and views time in a more flexible aspect. Planning for the future may be seen as unnecessary (Friedman, 1998).

While these factors have been identified as common threads of cultural maintenance in the Hispanic culture, it is important to remember that there exist specific and separate subgroups within the Hispanic population. These specific subgroups include Mexicans, Cuban, Puerto Ricans, Spaniards, and South and Central Americans (Friedman, 1998, Caudle, 1993).

The largest subgroup is the Mexican population which makes up 65% of the Hispanic population in the United States (Census Bureau, 2000). The Central and South American subgroup is the second largest Hispanic subgroup and approximates 14% of the Hispanic population in the United States (Census Bureau, 2000). Three to five million migrant and seasonal farmworkers are estimated to be in the United States (U.S. Dept. of Health and Human Services, 1990; Bureau of Primary Health Care, 1995). Approximately 20% of farmworkers are women and 77% of all farmworkers are of Mexican descent (U.S. Department of Labor, 2000).

The Mexican individual maintains many of the same cultural values and orientations of the larger Hispanic group. Some variations exist and may contain some degree of acculturation to the dominant culture of the United States. The degree of acculturation may depend on the amount of time the individual has been in the United

States (Gonzalez-Swafford & Gutierrez, 1983).

Migrant farmworkers have a third world health status, although they work in one of the richest nations on earth (Deaver, 1991). The problems of immigration status has been identified as an additional barrier these individuals must face (Artemis, 1996; Farr, 1997). However, the Bureau of Primary Health Care ensures that immigration status is not an issue in serving the migrant population. Care is to be provided regardless of immigration status by those agencies designated as Migrant Health Programs or Migrant Health Centers.

The Montana Migrant Council, Inc. (MMC), is the primary health care provider for migrant farmworkers in the state of Montana. MMC estimates 10,400 farmworkers are in the state of Montana, although Montana is not identified in the literature as a place to which farm workers migrate. This number includes both seasonal and migrant farmworkers. MMC identifies that 90% of the farmworker population in Montana is Hispanic, primarily of Mexican descent (Montana Migrant Council, Inc. 2000).

Approximately 1 percent of Montana's population is migrant farmworkers, depending on the time of year. The highest influx of migrant farmworkers occurs during the summer months (Census Bureau, 2000). The majority of farmworkers are in states with higher productions of fruits and vegetables, such as California, Washington, Oregon, and Texas. The migrant farmworker generally travels within three distinct migrant streams. The streams include the eastern, western, and midwestern streams. Migrant farmworkers in the eastern stream, travel along the eastern seaboard in states such as, Florida, Mississippi, Alabama, Georgia, North and South Carolina, and Maine.

Those in the Western stream travel primarily in states along the western seaboard, including California, Oregon, Washington, Nevada, and occasionally Montana. The migrant farmworkers in the midwestern stream travel mostly from Texas, Colorado, and Montana (National Center for Farmworker Health, 1995). The majority of migrant workers in the state of Montana are primarily members of the midwestern stream, although the state does encounter some migrant farm workers from the western migrant stream in the western part of the state. The farmworker population works primarily with the sugar beet crops in eastern and south-central Montana, additional crops include the cherry crops in western Montana (National Center for Farmworker Health, 1995; Montana Migrant Council, 2000).

An understanding of the client's culture alone is not enough to provide culturally competent health care. The providers must also take into account their own cultural beliefs, and the cultural context of the agency in which they are providing care. Only then can there be true merging of client and provider perspectives to provide culturally competent care (Burk, Wieser, Keegan, 1995). The provision of culturally appropriate health is important for all health care providers working with members of a different cultural group. The consideration of culture is as vital as is the consideration of developmental levels of patients. Health care providers would not consider providing care to an elderly woman in the same way as they would a child (Jones, Bond, and Cason, 1998). The plan of care must be adjusted to the developmental level of the patient. By the same token an individual's culture must be taken into account when providing health care. One consideration of this culture includes typical roles and

functions assumed by members of a cultural group based on sex. Normal roles and functions of a woman, in the migrant stream, may vary from Mexico to the United States. Expected roles and functions in the United States in comparison to those in Mexico may be in direct opposition to each other (Keilich and Miller, 1996).

Income

A greater proportion of Hispanics live at or below the poverty level than the general population of the United States (Census Bureau, 2000). Half of farmworkers earn less than \$7,500.00 per year. This income level would make them eligible for assistance of social service programs. However, many Hispanics do not receive or apply for social service programs (National Advisory Council on Migrant Health, 1993, U.S. Department of Labor, 2000). Low income and lack of any health insurance have serious implications for health care professionals that treat this population. Health care providers must not only develop culturally appropriate and proper interventions, but also provide needed services in a cost effective manner (Delgado et al, 1995).

Nutrition

Nutritional research conducted has not routinely included pregnant Hispanic migrant women. Research has been conducted regarding the nutrient intakes of Mexican-American and Hispanic women of child bearing age using data from the Hispanic Health and Nutrition Survey (HHANES) and the nutrition education needs of the Hispanic population (Abrams & Guendelman, 1995; Guendelman & Abrams, 1994; Palmeri et al, 1998; Clark & Hoffman, 1998). One half or more of Mexican women in Chicago have been found to be at high risk of nutritional deficiencies. Particularly folate,

iron, zinc and calcium intake was deficient for these women (Ballew & Sugerman, 1995).

Questioning the length of time in the United States to help identify acculturation status and lend clues to eating habits has been identified as important to include when studying nutritional patterns of Hispanic families (Clark & Hoffman, 1998; Chavez et al, 1994). There are conflicting reports provided of actual intakes of nutrient rich food intake. There is an inverse relationship between length of time in the United States and the dietary intake of vitamin-A and vitamin-C rich foods. Hispanic women often consume less fruits, vegetables, and, milk products, than non-Hispanic women (Abrams & Guendelman, 1994). Mexican-American women have not shown significant differences in fruit and vegetable intakes in comparison with non-Hispanic white women (Abrams & Guendelman, 1995). Differences in food consumption patterns exist among groups of Hispanic origin (Cuban, Puerto Rican, and Mexican). Those of Mexican American origin, have the highest rates of being over weight, high cholesterol, and gallbladder disease (Kuczmarski et al, 1998).

Concern of the mother for the well being of the baby, the role of motherhood, and family support systems contribute to healthy food practices during pregnancy in Mexican-American adolescents. With acculturation, traditional cultural beliefs of Mexican heritage pertaining to pregnancy are lost and with this attitudes regarding weight gain became more negative, although diet continues to be adequate during pregnancy. Pregnant Mexican-American adolescents tend to chose foods thought most nutritionally sound by family for the benefits of the baby, while the individual knowledge

of adolescents regarding nutrition is minimal (Gutierrez, 1999).

Individuals with low literacy skills turn to family members and friends for health information prior to obtaining medical care from health care providers. The ready access of family members and friends and the limited amount of time available for health care providers to spend with clients in individualizing nutrition information were factors identified by individuals for turning to family and friends before contacting their health care provider (Macario, et al, 1998).

Nutrition has long been tied to birth outcomes. Even though Hispanic women are found to be poorer, have less education, and often receive less prenatal care, these women have low birth weight babies at a similar rate of the non-Hispanic population (Abrams & Guendelman, 1995). One third of farmworkers surveyed in 1989 reported running out of food or not having enough to eat in the last year (National Center for Farmworker Health, 1996).

Current recommendations indicate that all pregnant women should consume an additional 300 calories during the second and third trimester. No need for increased calories is indicated during the first trimester (Whitney, Cataldo, & Rolfes, 1998; Duyff, 1996). The pregnant woman is also to consume extra protein and the fat-soluble vitamin E (Whitney, Cataldo, Rolfes, 1998; Duyff, 1996). Other increases needed are, vitamins such as C, B12, B6, folate, niacin, riboflavin, thiamin, iodine, zinc, and selenium. All pregnant women also need increases in protein and calcium during pregnancy to maintain health. Phosphorous, and vitamin D needs remain the same for pregnant women as for those who are not pregnant. Vitamin A requirements are the same for

pregnant and for non-pregnant women. (Whitney, Cataldo, Rolfes, 1998; Duyff, 1996).

Weight gain must be individualized for the patient, based on pre-pregnancy weights. The patient may be under weight or over weight, or be at a proper weight (Whitney et al, 1998). The use of body mass index is identified as an acceptable technique for assessing nutritional status of patients (Bailey & Ferro-Luizzi, 1995).

Family

Hispanics identify the family as the central unit of focus, rather than the expression of individualism (Friedman, 1998; Berger, 1998; Stewart, 1994; Castillo & Torres, 1995; Delgado, Metzger, & Falcon, 1995). The Hispanic family is close knit, and extended family plays an important role (Friedman, 1998; Berger, 1998; Castillo & Torres, 1995). Individuals such as the grandparents, godparents, aunts and uncles are involved in the child rearing and day to day lives of family members. The Hispanic family is often patriarchal and the oldest male is highly regarded. Machismo is a common theme, although reports of this are conflicting (Friedman, 1998; Caudle, 1993). The eldest male usually is the decision maker of the family (Friedman, 1998; Stewart, 1994).

Migrant farmworkers may travel with extended family members or as singles. Those migrant farmworkers in the Midwestern stream generally tend to maintain the family unit, rather than traveling as single individuals (Montana Migrant Council, Inc. 2000; National center for Farmworker Health, 1993). The fact that those migrant farmworkers traveling to the state of Montana are traveling as a family unit affects the delivery of health care to these individuals. The family is the unit of focus rather than

the individual, maintaining the traditional Hispanic culture. Extended family members, such as grandmothers accompany the migrant farmworker family to care for children and provide household chores, such as cooking (O'Brien, 1982).

Education

The Hispanic minority group has less formal education as a whole, then the general population (Caudle, 1993; Friedman, 1998; Delgado et. al., 1995; Census Bureau, 2000). Approximately 32% of the Hispanic population in the United States has less than a ninth grade education compared to only 5% of the non-Hispanic population. The Mexican-American subgroup is even higher with approximately 33% of the individuals having less than a ninth grade education (Census Bureau, 2000). Farmworkers traditionally have a lower level of education than that observed in the non farmworker population. Approximately 58% of farmworkers surveyed were determined to have less than an eighth grade education. Only 15% were found to have a high school education or higher (U.S. Department of Labor, 2000).

Education is valued by those of Hispanic origin. However, education may be largely unavailable to this population due to socioeconomic factors. In addition, there may be difficulty in accessing educational programs because of the fear of loss of employment due to the need for educational class attendance and interference with work hours or job duties. Language barriers may serve to prevent the attainment of a high level of education for this population if Spanish is the primary language spoken.

Motivation

Migrant farmworkers can be stereotyped by members of the health care team as lacking motivation or being uncommitted to their health because of the inability to keep scheduled appointments due to the erratic lifestyle they must lead. Leaving the field results in a direct loss of pay as the farmworkers are paid based on the amount of crops picked. Farmworkers will therefore abstain from receiving health care services unless illness interferes with work. This loss of pay may also affect the motivation of the farmworker to comply with prescribed treatment regimens or the need for follow up (Bechtel, Shepherd, and Rogers, 1995).

Women are held responsible for care of the family and the home. The financial need to work outside the home leads to feelings of frustration for families. Lack of time to complete needed tasks, including meal preparation is particularly frustrating for the women. The quality of meals prepared can often be viewed in proportion to the amount of time spent working outside the home. The quality of food prepared decreases with the amount of time spent outside the home in work activities (Devault, 1987). The motivation to prepare quality meals exists, but extenuating circumstances may prevent individuals from preparing high quality meals. Rather, they may opt for more convenience foods which are faster and easier to prepare.

The Hispanic migrant farmworker may have support systems available in the form of extended family members. They also may have difficulty in complying with typical westernized medical offerings. Factors which have been identified as impediments include those issues which are intrinsic to the life of the migrant

farmworker such as poverty, cultural barriers, linguistic barriers, work constraints, isolation, and transience (Fishman et al, 1993).

Health

The Hispanic population's cultural values and beliefs may shape their beliefs regarding illness and its causes, treatments and preventions (Stewart, 1994). The Hispanic population may view the cause of illness from a humoral perspective or the hot/cold theory of illness causation (Gonzales-Swafford & Gutierrez, 1983; DePacheco & Hutti, 1998). This is an important aspect the health care provider must take into consideration when working with members of this cultural group. The health care provider must take into account the specific foods which are hot and cannot be eaten with a hot illness, but instead should have a cold treatment or food substance used and vice versa (DePacheco & Hutti, 1998). Once acculturated, the traditional belief of the hot/cold theory is not maintained for the Hispanic individual (Gutierrez, 1999).

The Mexican-American views the health care provider as the expert, but does expect to be treated with respect by the health care provider. This subgroup has also been found to utilize folk healers and subscribe to folk remedies (Reinert, 1986; Gonzalez-Swafford & Gutierrez, 1983). The Mexican-American individual also classifies emotional illnesses into two separate classes, those which are mental and those which are moral. Mental illnesses are frequently viewed as outside the responsibility of the individual and the will of God. Moral illnesses are viewed as a weakness on the part of the individual. Moral illnesses include sexually transmitted diseases and other disorders which were contracted due to actions of the individual. Family members must

be involved in the treatment process for effective treatment to be initiated (Gonzalez-Swafford & Gutierrez, 1983). Fatalism is a common theme within the Hispanic population. Individuals will resign themselves to what they see as their lot in life. Illness may be viewed as a punishment from God (Friedman, 1998, Castillo & Torres, 1995).

Migrant and seasonal farmworkers are an under served population with many health care needs and barriers which impede their ability to meet these needs. Barriers facing this population include poverty, linguistic and cultural barriers, clinic hours not conducive to hours worked by farmworkers, and transportation costs (Stein, 1993; Farr, 1997; Artemis, 1996). Farmworkers may risk the loss of employment even if health care services are available, because the crops will not wait until an individual is well, nor will the employers. Preventive health care services are often pushed to the way-side for this group as health is tied to the ability to work. An individual will only seek health care once there is an interference with the ability to work (O'Brien 1982).

Most often the migrant worker, particularly males will not seek health care until the illness or condition interferes with their ability to perform normal roles or function. Migrant farmworker women tend to identify their illnesses as more emotional in origin. The migrant population is often difficult to serve due to their transitory nature. Providers must be culturally sensitive and must develop a rapport with individuals in the migrant streams rather quickly (Martaus, 1986).

Health care issues surrounding this population include a higher incidence of diabetes, hypertension, infectious diseases, and pesticide exposure (Farr, 1997; Stein, 1993). In addition, stress and depressive disorders were also identified as common

health care issues surrounding this population (National Center for Farmworker Health, 1993). Migrant farmworker women are at higher risk for falls and musculoskeletal injuries related to working in the fields. In addition, these women who are pregnant may be at even greater risk due to a shift in their center of gravity. Exposure to pesticides, may also pose a significant risk to the unborn child and mother (Lambert, 1995).

Hispanic pregnant women often receive inadequate prenatal care because care is initiated late or not at all (Stewart, 1995; Goss et al, 1997; Pearce et al, 1996; Albrecht et al, 1996; Conrad et al, 1998; Byrd et al, 1996; Sculphome et al, 1991; Zaid et al, 1996; Gardner et al, 1996; Mayer, 1997). Culture provides an impact on prenatal care within the Hispanic population. Early prenatal care has been determined to be of little value within this culture because pregnancy is considered a natural process and not a condition for which medical care should be sought. Women most often sought advice from their mothers or other female relatives instead of seeking early prenatal health care services (Warrick et al, 1992).

Although the Hispanic population has a lack of prenatal care, they have more positive birth outcomes than negative. The Hispanic population also has low birth weights similar to that of the dominant culture of the United States (Gardner et al, 1996; Balcazar et al, 1997; Zaid et al, 1996; Byrd et al, 1996; Albrecht et al, 1996, Pearce et al, 1996; Goss et al, 1997). Multiple hypothesis have been expressed to denote why this phenomenon of more positive birth outcomes than negative and low birth weights comparable to the dominant culture occurs. This phenomenon had been called an "epidemiologic paradox". Accepted risk factors for pregnancy outcomes may not cross

ethnic lines (Fuentes-Afflick & Lurie, 1997). The retention of traditional culture and family cohesiveness, serve to protect the women from negative birth outcomes (Balcazar et al, 1997).

This "epidemiological paradox" may be tied to religious beliefs of Hispanic women. Women of Hispanic origin identify strongly with the Virgin of Guadalupe and their religion which provides an explanation of positive pregnancy outcomes. In addition, acculturation has been demonstrated to have a negative influence on positive pregnancy outcomes (Magaña & Clark 1995). The low rate of low birth weight infants born to women of Hispanic origin does not continue into the second generation. Once the woman becomes acculturated, the rate of low birth weight infants is similar to that of the general population (Jiménez, 1995).

The overall birth defect rate was lower for the low income Hispanic population in comparison to the low income Black population in south-central Los Angeles. Certain types of birth defects were tied to each group. Cardiac and genital defects were more prevalent among the Black group, while the Hispanic group had more chromosomal, orofacial, and central nervous system defects. The birth defects experienced by the Black group were determined to be more compatible with survival of the infant than were the birth defects experienced by the Hispanic group (Ogunyemi et al, 1993). These findings suggest that other environmental factors, such as nutrition and pre conceptual variables may be important to consider in the possibility of birth defects.

Psycho social factors associated with poor weight gain during pregnancy of Hispanic women include physical abuse suffered at the hands of the baby's father,

depression, being single, being younger than twenty years of age, or older than twenty-nine years of age, being multiparous, and having a lower pre-pregnancy body mass index (BMI). Those who had positive weight gain, were most often primiparous at any age, born in the United States, and divorced. The height of the mother and the death of a family member while being pregnant also played a factor in positive weight gain (Siegariz & Hobel, 1997; Torres, 1993).

The lifestyle of the migrant farmworker is challenging, for those women who are pregnant, the lifestyle of a migrant worker adds a further challenge. Prenatal care may be received late, if at all. The National Center for Farmworker Health (1996) reports that the infant mortality rate for farm workers is 25% higher than the national average. The pregnant Hispanic migrant woman may gain less than the optimal expected weight gain during her pregnancy (Morbidity & Mortality Weekly Report, 1997). This inadequate weight gain may be a sign that adequate nutrition for these women is not being received. Yet, these women do not have a rate of low birth weight infants or delivery complications, as one would expect (Morbidity & Mortality Weekly Report, 1997). While no studies have linked nutrition as a direct cause for low birth weight babies, there is a call for assessing nutritional factors of pregnant Hispanic women (Fuentes-Afflick & Lurie, 1997).

Summary of Literature

The Hispanic population is the second largest and fastest growing minority group in the United States. This population has distinct cultural values and beliefs. Health care providers have a responsibility to modify the provision of health care to ensure cultural

sensitivity. To gain insight into the true needs of the Hispanic population, those of Hispanic origin must be included in the research.

Migrant farmworkers experience multiple barriers in receiving health care in the United States. The majority of migrant farmworkers are of Hispanic descent in the United States. A gap in the literature was identified regarding the Hispanic migrant pregnant woman in the state of Montana. There was also a gap in the literature regarding the migrant population throughout the state of Montana. The Hispanic migrant farmworker woman may be highly motivated to care for herself and her family, however, due to a multitude of factors, preventive health care needs may go unmet. This may have serious implications for this population.

Assumptions could be made regarding the health problems affecting this population, however, those assumptions may be incorrect. One author determined incorporation of incorrect assumptions into the delivery of health care services has been the case for far too long. The indication is to determine from the population, what are actually their needs, only then can culturally appropriate health care be provided.

Proper nutrition before, during, and after pregnancy has long been identified as an important aspect of good perinatal care and care of self. While, proper nutrition, is tied indirectly to birth outcomes, it is only one of many factors to be assessed. Positive birth outcomes are influenced by many factors other than nutrition. These factors include socioeconomic status, support systems, and overall health of the woman. Nutrition as a whole will affect the individual throughout his/her lifetime. The assessment of dietary consumption patterns can prove to be a helpful tool in developing culturally sound and

appropriate nutritional advice for individuals of differing cultures and carry over into the next generation.

Conceptual and Operational Definitions

Terms used in this study are included in the following section. Each factor in the operational model used to guide this study is defined, as are pregnancy, Hispanic ethnicity identification, and migrant farm worker. Definitions for this study are derived from the literature review.

Culture

Culture is the unique beliefs, thoughts, and behaviors within a group which may lend clues to that individual's life ways and health status (American Heritage Dictionary, 1994). For this study the cultural group was those of Hispanic origin, who were also migrant farm workers.

Hispanic

Hispanic Americans are those individuals of Spanish origin who identify themselves as Mexican, Puerto Rican, Cuban, and or South or Central American (Friedman, 1998). For this study, a Hispanic individual was defined as anyone who identified themselves as Hispanic or as a member of one of the subgroups of the larger Hispanic group.

Migrant Farmworker

A migratory agricultural worker or migrant farmworker is an individual who temporarily resides in an area, is chiefly employed in agriculture seasonally, and has been

for the previous two year period (Health Centers Consolidation Act, 1996). For this study a migrant farmworker was an individual whose employment was in agriculture and who traveled for this work on a seasonal basis, and established a temporary home for work purposes in Montana.

Income

Income is money provided for services rendered (The American Heritage Dictionary, 1994). For this study income was defined based on self report of the individual participating in the study and a ranged scale of monetary values.

Nutrition

Nutrition is the consumption, utilization, bodily assimilation, and metabolism of food products including liquids and solids (Taber's Cyclopedic Medical Dictionary, 1985). For this study nutrition was defined as the total daily intake identified by study participants as recorded utilizing a twenty four hour dietary recall and a food frequency questionnaire.

Family

A Family is two or more persons who describe themselves as part of a family and are attached by affection (Friedman, 1998). For this study, the family was defined based on number and composition through a question on the demographic cover sheet.

Education

Education is attainment of knowledge (American Heritage Dictionary, 1994). For this study, education was measured by the subject's identification of educational attainment, and where this was completed.

Motivation

Motivation is the desire to act (The American Heritage Dictionary, 1994). For this study motivation was identified by the utilization of health care services for prenatal care.

Health

Health is holistic state of being including all aspects of an individual (Taber's Cyclopedic Medical Dictionary, 1985). For this study, health was defined by the individual subject participating in the study, through a qualitative statement and rating of health status on a Likert Scale with 1 being low level health and 10 being high level health.

Pregnancy

Pregnancy is the status of bearing an embryo in the uterus (Taber's Cyclopedic Medical Dictionary, 1985). For this study, a woman was considered pregnant if she had a positive urine or blood pregnancy test.

Significance for Nursing

Nursing as a whole has a responsibility to ensure competency in the provision of culturally appropriate care. Nurses noted that working with culturally diverse clients was complex and challenging although nursing has attempted to provide education regarding cultural sensitivity (Kirkham, 1998). Only through studying the unique aspect of different cultural groups can nursing progress to true understanding of a particular group of which the nurse is not a member. One such group is the Hispanic migrant farm

worker.

Little is known about the nutritional practices of pregnant Hispanic migrant women. Even less is known about the dietary practices of this population in the state of Montana. Nutrition has been identified as one factor affecting pregnancy outcomes. Without knowledge regarding the dietary practices of these women, culturally appropriate and sound nutritional advice cannot be provided by nurses or other health care providers.

CHAPTER 3

METHODOLOGY

Purpose

The purpose of this study was to describe the dietary habits of pregnant Hispanic migrant women in Montana. In addition this study included an individual comparison of nutrition information of subjects to the national recommended daily allowances (RDA) of the United States Department of Agriculture (USDA) standards for nutrition in pregnant women.

Design

A descriptive design was used to examine the dietary practices of pregnant Hispanic migrant women in Montana. Further, this study compared the dietary intake of these women with the recommended daily allowance of the United States Department of Agriculture. Data was collected from women who obtained health care from the Montana Migrant Council, Inc., throughout the south central and western areas of the state of Montana. Permission to conduct the study was obtained from the Montana Migrant Council, Inc. (Appendix B). Statistical analysis used descriptive statistics and

comparison of nutritional intake to the RDA of the USDA. A pilot study was conducted prior to data collection to identify issues regarding the instrument utilized to obtain data.

Sample

A sample of subjects for this study was obtained from identification by health care providers working with this population in Montana from May through August, 2000. The sample was a convenience sample of Hispanic women meeting the inclusion and exclusion criteria. The sample size was nine subjects (N=9).

Inclusion Criteria

Inclusion criteria included:

1. Having a positive pregnancy test (urine or blood).
2. Hispanic identification by potential subject.
3. Over 18 years of age.
4. Migratory farmworker woman.

Exclusion Criteria

Exclusion criteria included:

1. Non-Hispanic ethnicity.
2. Under 18 years of age.
3. Over 35 years of age.
4. Seasonal farm worker women.

Instrumentation

Demographics

A demographic data form was included with the data collection packet to gain information pertaining to the individual participating in the study. The demographic sheet (Appendix C) collected information regarding the subjects' age, estimated date of confinement, pre-pregnancy weight, current weight, height, number of pregnancies, number of children, and income. In addition, information regarding the ability to store food items, availability of transportation, availability of hot/cold running water, and availability of cooking facilities was collected. Information was also obtained regarding the subjects' length of time in the United States, country of origin, home base location, ability to read, write, and speak English and/ or Spanish, and the frequency of working in the fields or orchards.

Food Frequency Questionnaire

The food frequency questionnaire (Appendix D) was to be used by the researcher to question the frequency of food consumption patterns, perceived by the individual subject regarding specific food groups. The food survey assessed the frequency of the consumption of food items daily, weekly, and monthly. The survey also allowed for the expression of inclusion or exclusion of food items listed on the questionnaire.

Twenty Four Hour Dietary Recall

A twenty four-hour diet recall was obtained from the subject after completion of the demographic cover sheet. The form consisted of a sheet of paper on which a unique identifier was entered and then information was obtained regarding food consumption patterns for the previous twenty-four hours. This was designed to capture all food items and amounts consumed by the subject over the last twenty four hours. The researcher and the subject had the opportunity to clarify and ask questions as needed.

Procedures

Steps of Data Collection

1. Potential subjects were identified by health care providers working with these women. Women were contacted who met the inclusion criteria.
2. The potential subject was contacted and the purpose of the study was explained. The possible benefits and risks for the subjects was included. In addition, a description of the type of subject participation, the length of time needed to participate, and the subject's rights regarding participation and termination was provided to the subject. Methods used to protect confidentiality and a list of possible referrals as needed were provided. This information was provided verbally and in writing to the subjects, in their native language. The researcher did have Spanish/English language skills, however, an interpreter was utilized as needed and was used only at the agreement of the potential subject.

3. The written informed consent was provided to the subject (Appendix E). A copy of this was provided to the subject for their records.
4. The demographic data sheet (Appendix C) was completed with the subject at a private location of the subject's choosing. The demographic data sheet was coded to match the diet survey and the twenty four hour dietary recall sheet. To maintain confidentiality only initials of the subject were used and the data collected was maintained in a locked file cabinet.
5. The twenty four hour diet recall was completed with the subject. All of the food and liquid consumed in the last twenty four hours based on the subject's verbal statements were included. This twenty four hour dietary recall sheet was coded with a unique identifier to maintain confidentiality of data and to ensure proper instruments were grouped together.
6. The food frequency questionnaire was then completed with the subject. The food frequency questionnaire obtained information regarding intake of specific food items on a daily, weekly, and monthly basis.
7. Each subject was given a pamphlet regarding proper nutrition during pregnancy, printed by the March of Dimes, entitled "Eating for Two". Pamphlets were available in English and Spanish and distributed according to the language most comfortable to the subject.

Internal and External Validity

Internal Validity

There was no pre test of knowledge of those subjects who participated in the study. Study participants may have provided information to the researcher which was based on previous knowledge regarding nutritional expectations during pregnancy, rather than actual consumption patterns of foods. Those subjects who have had prior pregnancies may have previous experiences related to nutrition during pregnancy. Those subjects who have had prior pregnancies may have responded differently to questions asked by the researcher because of their prior teaching.

The study utilized a convenience sampling method. The use of this sampling method may have inhibited inclusion of all potentially eligible participants. Some potential subjects may have elected not to participate due to a variety of issues, such as time constraints, fear of participation because of immigration status, or other issues.

Questions contained on the tool may not have been completely understood by the subjects. There are many regional variations in the Spanish language and words may have not been familiar to all individuals who originated in different Latin American countries. The tool utilized was translated into Spanish, however, due to regional variations words used may not have allowed understanding of expectations.

External Validity

This study was conducted only for those individuals in the migrant stream in the state of Montana. This study may not be generalized to the entire migrant population in the United States. In fact, due to the transitory nature of this population, this study may be generalized only to this population at the point in time the study was conducted. All items used to obtain information in this study were translated into Spanish by one native Spanish speaker and an individual who lived in Spain for fifteen years and was a Spanish Professor. The Spanish version of the instrumentation was back translated into English to ensure there were no difficulties or translation errors. In addition, a pilot application of the study was performed with three English speaking individuals and concurrently with three Spanish speaking individuals to determine difficulties/issues with the instrumentation prior to the beginning of the study.

Limitation/Assumptions

It was an underlying assumption that the pregnancies of the migrant women in this study were wanted. It was also assumed that prior health care teaching regarding nutrition affected responses to questions and/or eating patterns. It was also an assumption that individuals of Hispanic descent, had varying levels of acculturation into the larger American culture. The measure of the degree of acculturation of the participants was not within the scope of this project. Language differences and difficulties may have limited this study. The researcher had Spanish language skills, in reading, writing, speaking, and understanding Spanish. In addition, an interpreter who

was familiar with the migrant population and was a native Spanish speaker was also available to the researcher.

Pilot Study

A pilot study was conducted with three, Spanish speaking individuals to determine any difficulties in the use of the instrumentation, or the data collection. These three individuals were identified from the Montana Migrant Council, Inc. Two of the individuals had been farmworkers in the past, but were settled out of the migrant stream and working in the service industry. One of these individuals had served as an interpreter for the Montana Migrant Council, Inc. Both had been clients of the agency and were born in Mexico. The third individual was an employee of the Montana Migrant Council, Inc., as an interpreter for clients of this agency and had never been a farmworker. The only modifications made were spellings of words in Spanish. The Spanish word for peach is "durazno" which was inaccurately listed as "durango".

A second pilot study was implemented concurrently with English speaking individuals to assess any difficulties in the use of the instrumentation or the data collection. These three individuals were also found at the Montana Migrant Council, Inc. These individuals were of Mexican ethnicity and had been involved in farmwork in the past. There was also one change made to the instrument based on this pilot study. The item on the food frequency questionnaire, "lamb roast" was listed as "lamp roast".

Data Analysis

Demographics

Analysis was descriptive for the demographics of study participants. The SPSS 10.0 program was utilized to analyze the demographic data. Analysis included the age, length of time in the United States, country of origin, and home base. The amount of time subjects spent working in the fields and/or working in other jobs was also included.

The second objective of the study consisted of a comparison of percentages of the woman's intake and the recommended daily allowances suggested by the United States Department of Agriculture (USDA). The analysis of the 24 hour dietary recall was performed with the use of the computerized diet analysis program provided by West/Wadsworth Publishing. The Program was Diet Analysis Plus Version 3.0 for Windows.

Protection of Human Subjects

Every effort was made to protect the rights of the human subjects participating in this study. The study was approved by the Human Subject Review Committee of the College of Nursing (Appendix F). Approval was also obtained from the Montana Migrant Council, Inc. to located subjects at their facility.

Each subject was provided a consent form in their native language (Appendix E). Study participants gave written permission to participate and were provided a copy of the signed consent for their records. Study participants had the opportunity to withdraw at any time. There were no direct benefits to be derived from study participation. However, the subjects did have an opportunity to learn about and improve their diets for their health and the health of their baby. Subjects also were informed they could help improve health care for other women in the future.

Risks of the study included distress over learning dietary habits were inadequate and loss of time for the subjects. Each study participant was informed she would be referred appropriately if there were problems identified with her diet. Subjects were also afforded the opportunity to withdraw if they did not wish to relinquish some of their time to participate in the study.

CHAPTER 4

OUTCOME

Research Findings

Each component of the model web of influences used to guide this study is analyzed in the following section. Demographics of the sample are included first to allow the reader to appreciate the sample characteristics. Results are presented within the context of the web of influences used as the conceptual framework for this study.

Demographic Characteristics

A total of nine subjects elected to participate in the study. Ages ranged from 18 to 27 years of age. The number of subjects for each age category are shown in Table 1. All subjects identified themselves as Mexican. One participant stated she was Mexican-American. All subjects identified themselves as Catholic.

Table 1. Age of Subjects in Sample (N=9)

Ages	<u>n</u>
20 years and younger	4
21-25 years	4
over 25 years	1

The length of time in the United States ranged from two months to those who were born and raised in the United States. Seven of the nine study participants had origins in Mexico. Two participants were born and raised in the United States in Texas and Washington respectively. Table 2 provides the length of time in the United States.

Table 2. Length of Time in the United States ($N = 9$).

Time in United States	n
Under 1 Year	4
Under 10 Years	2
Under 20 Years	1
Lifetime	2

Arizona, California, Texas, and Washington, and the country of Mexico were listed as the women's homebase. Seven of the nine subjects indicated they worked outside the home, either doing field work or working in non-farm work employment settings. Two subjects did not work outside the home and are therefore not included in the hours spent in work analysis see (Table 3).

Table 3. Type of Work and Number of Hours per Week of Sample ($N = 7$).

Hours per Week	n	Hours of Work per Week	n
Field Work		Non Field Work	
20-70	5	5-40	2

Income

The income of the subjects participating in this study ranged from less than \$5,000.00 to \$17,500.00 annually. The supplemental food program service, Women

Infants and Children (WIC), was received by seven of the subjects in the study. Four of the subjects indicated they were receiving food stamp services at the time of the interview. Immigration status was given as the reason for non-receipt of these programs. The receipt of WIC and food stamp services are included in income because these programs may help off-set monies which could be used for other items. The number of family members being supported on the annual income ranged from two to seven individuals (Table 4).

Table 4. Income/Receipt of WIC/Food Stamps/Family Size of Sample (N=9).

Annual Income	<u>n</u>	Family Size	WIC <u>n</u>	Food Stamps <u>n</u>
<\$5,000.00	4	2-7	2	2
\$5,000.00-\$10,000.00	4	3-4	4	1
>\$10,000.00	1	3	1	1

Family

Number of family members ranged from two to seven members. Family members and sources of support identified were husbands, parents, children, brothers and sisters and extended family members. All subjects identified they had multiple sources of support available to them when needed. All subjects indicated a female source of support.

Education

Education ranged from fourth grade to a college degree. Five of the nine subject participants were educated in Mexico. The remaining four subjects were

educated in the United States. Three of the four subjects educated in the United States received a twelfth grade education. Only four subjects completed twelfth grade or higher (Table 5).

Table 5. Education in Number of Years for Sample (N=9)

Years of Schooling	<u>n</u>
0-6 Years	1
7-9 Years	4
12 + Years	4
Total	9

All individuals participating in this study were able to speak Spanish. The majority of subjects used only the Spanish language. One subject had reading and writing skills limited to English only. Reading and writing levels were not evaluated for study participants (Table 6).

Table 6. Spanish/English Language Skills(Speaking, Reading, Writing) for Sample N=9)

Language	Spoken Word	Reading	Writing
English Only	0	1	1
Spanish Only	5	5	5
Both Spanish/English	4	3	3
Neither Spanish/English	0	0	0

Health

The women who participated in this study indicated they made health care decisions on their own or with the input of their husband. Four of the subjects indicated

they alone made the health care decisions in their households. The remaining five subjects indicated they made health care decisions in conjunction with their spouses.

All subjects indicated they received health care services at Montana Migrant Council, Inc., while in the state of Montana. All but one of the subjects were receiving health care services at their home base sites. Areas of health care services identified as being used across the nation included: Mexico, Washington, Arizona, California, and Texas. Two of the study participants indicated health care services were difficult to obtain at other agencies due to immigration status and expenses. No one used non-traditional forms of health care services.

Subjects identified health as being physical. Four study participants included references to mental or emotional well being. Health carried a positive connotation for all study participants. All subjects indicated they felt healthy. High level health was identified by seven of the study participants. The remaining subjects indicated mid range level health. None of the study participants smoked.

Study participants overwhelmingly defined illness as a differentness or variation from the usual. One study participant indicated an infectious process as the culprit of illnesses. All subjects indicated a negative connotation regarding illness.

Nutrition

Transportation to obtain food supplies was not an issue for the study participants. All subjects indicated they had transportation to the supermarket. One subject identified she only had transportation if she went with her parents. Three subjects indicated they

were unable to read labels on food items in the area grocery stores. All study participants had access to refrigeration for food item which needed to be kept cold and an available stove or something with which to cook. All subjects had access to hot and cold running water.

Food preparation was the sole responsibility of the majority of subjects. One study participant identified her mother as assisting with food purchases and preparation. Food purchasing was the sole responsibility of three of the nine subjects. Two of the study participants indicated spouses helped purchase food items for the family. The remaining three subjects indicated someone other than themselves purchased food. The individuals who purchased the food were spouses and the mother of the study participant.

None of the study participants indicated they consumed breakfast on a daily basis. The noon meal was the largest meal of the day. The women did not snack between meals and after the evening meal.

Five participants indicated red meats were usually included in their meals. Three study participants indicated meals usually included fish or chicken, but not red meats. One respondent indicated her meals were vegetarian, but included milk, eggs, and cheese products. Only two participants indicated they consumed six or more cups of water daily.

The majority of study participants used salt on their food moderately to freely. Likewise the majority of study participants indicated the use of butter/margarine in their

diets. Frying of foods was the most common method of preparation and vegetable oil was used for cooking most frequently.

All subjects indicated their daily work activities consisted of walking or other active exercise. The majority of study participants did not exercise more than twice weekly outside of their usual work activities. Only one participant indicated she exercised six or more times weekly outside of her work schedule. The typical day commenced as early as five in the morning to as late as nine in the morning.

Dietary Intake

Body Mass Index (BMI) scores ranged from 19 to 35. Those women with a Body Mass Index at the lower end of normal should be counseled by the nurse to gain between twenty eight to forty pounds during the pregnancy. Women with a normal BMI are expected to gain between twenty five to thirty five pounds during their pregnancy and those women with a high BMI are expected to gain between fifteen to twenty five pounds during their pregnancy. Those who are obese based on the BMI should gain at least fifteen pounds (Lowdermilk et al, 2000). Four of the women in this study were less than five feet and two inches in height and therefore should be encouraged to gain weight toward the lower end of the range of recommendations (Lowdermilk et al, 2000). The individual BMI for subjects are included in Table 7.

Table 7. Body Mass Indexes for Sample (N=9)

Body Mass Index (BMI)	<u>n</u>
Underweight (<19.8)	1
Normal (19.8 - 26)	4
Overweight (26 - 29)	0
Obese (> 29)	4

24 Hour Dietary Recall Analysis

The analysis of the information supplied through the twenty four hour dietary recall by the study participants was completed using the Diet Analysis Plus Version 3.0 for Windows. Food items were entered by subject. This computer program calculates the individual's consumption of recommended daily allowances of vitamins and minerals.

All study participants indicated they were consuming prenatal vitamins on a daily basis. The fact that the vitamins were being utilized by participants will serve to increase the amounts of recommended daily allowances. Only one study participant was taking an iron supplement. The remaining eight study participants did not derive additional iron intake from a vitamin supplement.

Prenatal vitamin supplements are available over the counter for all women in the United States. The Montana Migrant Council, Inc. provided prenatal vitamins for these women as a customary part of health care services. The researcher was able to obtain the prenatal vitamin supplement from the agency. The supplement provided vitamin A, vitamin C, vitamin D, vitamin E, thiamin, riboflavin, niacin, vitamin B6, , folic acid,

vitamin B12, calcium and zinc. Those items which did not meet the recommended daily allowances (RDA), but rather a portion of the RDA were: vitamin A , of which 50% was provided; vitamin E, of which 37% of the RDA was provided; riboflavin, of which 85% was provided; niacin, of which 90% of the RDA was provided; vitamin B 12, of which 50% of the RDA was met; and calcium, of which 15% of the RDA was provided.

Table 8 contains the individual vitamins and minerals for each subject based on the 24 hour diet recall. These items are expected intakes of vitamins and minerals regardless of trimester of pregnancy. The analysis in this table is based completely on nutrients from food sources. Prenatal vitamins are not included in this analysis.

Table 8. Vitamins/Minerals per Subject

Vitamin Minerals	Expected	Mean Consumed	% Low	% Normal	% High
Vitamin A	800 µg	867 µg	44.4%	11.1%	44.4%
Vitamin E	10 mg α- TE	10 mg α-TE	44.4%	11.1%	44.4%
Vitamin C	70 mg	271 mg	22%	0	78%
Thiamin	1.5 mg	2.3 mg	33%	0	67%
Riboflavin	1.6 mg	2.9 mg	22%	0	78%
Niacin	17 mg NE	26.5 mg NE	22%	22%	56%
Vitamin B6	2.2 mg	2.9 mg	33%	11%	56%
Folate	400 µg	514 µg	56%	0	44%
Vitamin B 12	2.2 µg	3.6 µg	11%	11%	78%
Vitamin D	5 µg	8 µg	22%	11%	67%
Protein	60 g	92 g	11%	0	89%
Iron	30 mg	23 mg	78%	0	22%
Zinc	15 mg	15 mg	67%	0	33%
Potassium	3, 500 mg	4, 682 mg	44%	0	56%
Sodium	2, 400 mg	3, 636 mg	11%	0	89%

Expected Values from Whitney et al, 1998.

The expected nutrient intake for subjects according to pregnancy requirements based on age and/or trimester is included in Table 9. Prenatal vitamins were not included in this analysis. The information was obtained from the 24 hour diet recall.

Table 9. Nutrients per Pregnancy Trimester and/or Age

Nutrient	Expected	Mean Consumed	% Low	% Normal	% High
Calories	2, 500 Kcal	2, 627 Kcal	60%	0%	40%
Calories	2,200 Kcal	2, 475 Kcal	25%	0%	75%
Calcium	1, 300 mg	894 mg	100%	0%	0%
Calcium	1, 000 mg	1, 452 mg	29%	0%	71%
Phosphorous	1, 250 mg	1, 112 mg	50%	0%	50%
Phosphorous	700 mg	1, 985 mg	0%	0%	100%
Magnesium	400 mg	216 mg	100%	0%	0%
Magnesium	350 mg	506 mg	29%	0%	71%

Expected Values from Whitney et al, 1998.

The 214 item questionnaire was utilized to determine individual food items eaten on a daily, weekly and monthly basis. Consumption patterns of food items included on the questionnaire were analyzed on a daily, weekly, and monthly basis. A total of 39 food items included on the tool were identified as not being consumed at all by study participants. These items were not included in the analysis.

Information provided by subjects indicated that vegetables were largely lacking on a daily basis from the diets of study participants. Daily intakes for dairy products were also lacking. The consumption of grain products was the most consistent for study participants. The study participants also consumed a large amount of fats and sweets. Subjects' intakes based on the 214 item food questionnaire is included in Table 10.

Table 10. Serving Sizes per Food Group for Sample (N=9)

Food Group	Expected	Low	Average	High
Grains	6 to 11	11%	56%	33%
Fruits	2 to 4	33%	11%	56%
Vegetables	3 to 5	78%	22%	0%
Dairy	4 to 6	78%	11%	11%
Meat	3 to 4	56%	22%	22%
Fats/Sweets	Minimal	0%	11%	89%

CHAPTER 5

CONCLUSIONS

The women who participated in this study were all Mexican migrant farmworker women. The mean age of the of the subjects was 21 years. The typical farmworker is younger than the average population of the United States (Census Bureau, 2000) The findings of this study show that 77% of the study participants were foreign born which is consistent with statistics of the United States. Only one of the subjects in this study were unmarried. The majority of the women in this study worked outside the home with hours spent in work activities ranging from 5 - 70 hours per week.

All of the women and their families in this study were well below the poverty levels (U.S. Code of Federal Regulation, 2001). Over half of the women in this study were not receiving food stamps, although they would qualify based solely on income. This is a higher rate of non-receipt of government services than reported by the U.S. Department of Labor (2000). A deterrent to applying for government programs was immigration status. Two of the study participants were not receiving services from the supplemental food program, Women, Infants, and Children (WIC).

The women who participated in this study limited their definitions of family to their spouse and children unless they were residing with extended family members.

These women did not count the unborn child as part of the family at the time this study was conducted. Families were not extremely large and sizes ranged from two to seven members. Extended family members were not identified by the women in this study as being part of the family. Nationally farm workers may travel with extended family members or as singles (O'Brien, 1982).

Five of the study participants were able to communicate in Spanish only, which serves to limit nutritional education which could be provided to these women by health care providers if they are not bilingual. The majority of these women had less than a high school education which is consistent with national findings. If written materials are to be used for nutritional education purposes for these women, this must be taken into account.

Overall subjects felt themselves to be healthy as identified by the patient's own determination of health. Of particular interest is that the subject who indicated she had the worst health, also had the worst nutritional habits.

The diets of the Hispanic migrant farm worker women are largely lacking in nutrients, but are high in fats and sweets. The food group consumed least by the study participants was the vegetable group. This food group is essential for proper fetal development and the health of the mother. Vegetables are good sources of vitamins A and B and also iron. Intake of dairy products was also low. Calcium has implication for bone and teeth development in the unborn fetus. The majority of the subjects indicated salt was used freely with their foods. Sodium intake was high in the diets of these

women based on the twenty-four hour diet recall. Iron intake was also low for the majority of the women who participated in this study. In addition, zinc intake was low for the majority of subjects. Folate intake was low for approximately one half of the subjects. There has been an active campaign to ensure all women have adequate folate intake before and during pregnancy. In light of the findings of this study, the advertisements may need to be expanded to include bilingual ad campaigns. Dietary intake of protein was high for the majority of study participants.

The women who participated in this study were physically active, either through work or other physical exercise. The fact that the subjects were physically active indicates they had a higher caloric intake need. Physical activity is essential for health. The majority of those women who required 2,500 calories, consumed less than the daily requirement of caloric intake. Those women who were to have caloric intake of 2,200 calories consumed more than expected intakes.

Limitations

This study has a small sample size which serves to limit the ability to generalize the study. The migrant farmworker life is highly erratic and therefore the ability to generalize this study to other populations is highly limited. In addition, the women who participated in the study may have provided information which they felt was what was wanted regarding dietary patterns. The tool utilized may not have included other food sources which subjects commonly consumed, although an opportunity to include items was presented to all subjects.

The language barrier may also have played a factor in data collection. The use of a translator was necessary for five of the interviews conducted and may limit translation of information.

Implications for Nursing

Nurses who are working with the pregnant Hispanic migrant farm worker women need to take the educational level of the patient into account when planning care. These women have limited English skills and educations. Health care services should be delivered based on the culture of the patient and the educational level. Written materials are often used to enhance verbal education by health care professionals and should be a low literacy level and in the language understood by the patient.

Nurses should include the culture of the individual in the health care plan. The pregnant Hispanic migrant farm worker women encompasses a culture within a culture. The culture of these women was brought out in the diet of these women. An understanding of the typical staple foods of the culture will allow for nutrition education to be provided which is culturally sensitive and sound. In addition, it is not possible for nurses to know all there is to know about a cultural group, without being a member of that particular group. However, nurses who are not a member of a cultural group with whom they are working, can provide high quality care if they become educated regarding a particular group's culture. This can be accomplished by talking to knowledgeable individuals within the culture, reading and studying about the culture of the group. Nurses must take into account that a Hispanic is not a Hispanic. There are many

different subgroups within the larger Hispanic ethnic group and those from different countries, may have specific cultural differences from other countries. The most important thing to consider is that assumptions should not be made regarding individuals of a specific cultural group.

Nurses should stress the importance of an adequate diet every day, when providing nutritional education to this population. This education should include information about the use of prenatal vitamins as a supplement only, not as a mainstay in achieving adequate nutrition. Adequate nutrition should be acquired from food intake whenever possible. Ideally, education regarding nutrition should take place before the woman becomes pregnant to ensure appropriate nutrition for the benefit of the fetus. Adequate nutrition before, during, and after pregnancy provides the best environment for the fetus.

Nurses must not fail to take into account, the health of the individual regarding nutrition. Those who are not well, may not have the best eating habits. Likewise, the individual who is not eating well may be unhealthy as a result of poor nutritional habits. The nurse may have to provide nutritional education to the individual to overcome the illness or achieve the highest level of wellness possible and then ask the individual to return to provide further education.

Nurses who are working with this population are placed in an awkward position regarding the immigration status of these women. All nurses are obligated to do no harm to the client being served. Those women who are potentially eligible for governmental

assistance programs such as WIC and food stamps should be referred as appropriate. The nurse who is providing services to this population must also take into account the immigration status of these women. Women who are not legally in the country and their families could potentially be deported if referred for governmental programs. This also may limit the nutritional and health services the woman is eligible for.

Over half of the women in this study were Spanish speaking only. Those nurses who are working with this population and are not bilingual, must be able to effectively work with interpreters. The interpreter must be trained and there must be a trust developed between the interpreter and the nurse. This trust must be in place to ensure information is relayed correctly, between the nurse and the patient. To ensure this is accomplished, the nurse must be able to effectively communicate with the interpreter as well. The interpreter is to act as a conduit for language only.

Recommendations

Further research focusing on the nutrition of the Hispanic migrant farm worker population should be conducted. This research should have a larger sample size to increase accuracy of data obtained. An inclusion of a pretest of nutrition information is essential. The use of a pretest would allow health care professionals to determine knowledge levels of subjects in order to focus more carefully on client needs. The study could be replicated with other Hispanic migrant farm worker women in Montana as well as in other states to allow for comparison of information with other cohorts.

General nutrition education classes, in the individuals native language, should be conducted. These classes should focus on the positives within the culture and be culturally sensitive. These classes should include the adult family members throughout the life cycles, not simply the pregnant woman. The pregnant woman may not be the individual who is preparing or purchasing the food in the family, so it is important to include the food purchasers and preparers in the family. Important to consider would be the barriers to the consumption of vegetables within this population. A special focus could also be placed on ways to decrease the consumption of fats and sweets in the diet as well.

Further research should allow subjects to keep diet diaries for a longer period of time than twenty four hours. Subjects should keep track of their diets for seven days. Results should then be analyzed for nutrient content. This would allow for the further identification of differences in food consumption patterns. In addition, cultural variations could then also be delineated.

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APPENDICES

APPENDIX A

PERMISSION TO USE MODEL

RECEIVED 63

MAR - 2 2001

February 22, 2001 PERMISSIONS

Julie Lawley
W.B. Saunders Company
Curtis Center
Suite 300 Independence Sq. W.
Philadelphia, PA 19106-3399

Dear Ms. Lawley:

I am a graduate student at the University of Montana, Bozeman, Family Nurse Practitioner option. For partial fulfillment of my graduate degree, I am required to complete a Master's Thesis.

I have elected to complete a study regarding the nutrition of the pregnant Hispanic migrant woman. To guide my study I am requesting to utilize the web of influences that can affect pregnancy outcomes as described in chapter sixteen of Maternity and Women's Health Care 7th ed. page 354. Mary Courtney Moore is included as the author of chapter sixteen entitled "Maternal and Fetal Nutrition".

*Lowdermilk
Mosby*

Please send permission in writing to me at the following address:

Candace Stearns, R.N.
55 Prince of Wales Drive
Billings, MT 59105

or fax the permission to me at (406) 245-6636.

I was also hoping you would let me know if I am required to get permission from Ms. Moore. If so, I was hoping you could provide me with the information to contact her for permission.

You may contact me at (406) 248-4517 (Home) or (406) 248-3149 (Work). My e-mail address is cstearns@mcn.net. Thank you for your attention to this matter.

Sincerely,
Candace Stearns
Candace Stearns, B.S.N., R.N.
F.N.P. Student

ok

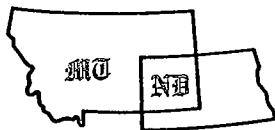
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Julie Gray 3/19/01
Mosby Date

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APPENDIX B

PERMISSION TO CONDUCT



**Montana Migrant and Seasonal
Farmworker Council, Inc.**

*Montana Migrant Health Project
Rehabilitation Service Project*

3318 3rd Ave. N., Suite 100 • Billings, MT 59101 • (406) 248-3149

February 18, 1999

Candace Stearns BSN, RN
P.O. Box 50604
Billings, MT 59105

Dear Candace,

It is my understanding that you wish to conduct a study of the Nutritional Status of Pregnant Hispanic Migrant Women. I am aware that there will be no invasive procedures involved in the data collection process. I understand the data collection process will consist of interviews with women identified for inclusion in the study, augmented by interviews with staff. I understand that procedures are in place to maintain the strictest standards of confidentiality regarding participants. I also understand that this is in partial fulfillment of the requirements for a Master of Nursing degree from Montana State University.

I do grant your request to conduct this study regarding the Nutritional Status of Pregnant Hispanic Migrant Women at the Montana Migrant Council, Inc.

Sincerely,

A handwritten signature in cursive script that reads 'Maria Stephens'. The signature is written in dark ink and is positioned above the typed name.

Maria Stephens
Executive Director

APPENDIX C

DEMOGRAPHIC SHEET
ENGLISH AND SPANISH VERSIONS

Demographic Cover Sheet

Initials_____ Age_____ Due Date_____

Pre-pregnancy weight_____ Current Weight_____ Height_____

Trimester of pregnancy_____ Number of pregnancies_____

Number of children_____ Number in family and who is in your family_____

Family Income (Circle One of the following):

<\$5,000.00	\$15,100.00 to \$ 17,500.00
\$5,000.00 to \$7,500.00	\$17,600.00 to \$ 20,000.00
\$7,600.00 to \$10,000.00	\$20,100.00 to \$ 22,500.00
\$10,100.00 to \$12,500.00	\$22,600.00 to \$ 25,000.00
\$12,600.00 to \$15,000.00	>\$ 25,000.00

1. Do you have transportation to get to the grocery store? YES NO
2. Are you able to read labels on food items in area grocery stores? YES NO
3. Do you have a way to keep your food cold? YES NO
4. Do you have a stove or something to cook with? YES NO
5. Do you have hot/cold running water? YES NO
6. Who prepares the food in your house? _____
7. Who buys the food in your house? _____
8. Do you get WIC? YES NO
9. Do you get food stamps? YES NO
10. How long have you been in the United States? _____
11. What is your country of origin? _____
12. Where is your homebase? _____

13. Do you speak: Spanish English Both
14. Do you read: Spanish English Both Neither
15. Do you write: Spanish English Both Neither
16. Last grade of school completed and where? _____
17. Do you work in the fields? YES NO If YES, how many hours per day _____
 _____ How many days per week? _____ Do you work outside the home?
 YES NO
 If YES, where and how many hours per week? _____
18. Who makes the decisions about your health care in your family? _____

19. Where do you usually receive your health care? _____

20. Do you feel you can get health care when you need it? YES NO
 Why or Why not _____

21. Do you utilize the services of a currendero or currendera or any other services
 other than a medical doctor or nurse? _____
22. How do you identify yourself, from what group (i.e.... Mexican, Hispanic, etc..)?

23. What does illness mean to you? _____

24. What does health mean to you? _____

25. Do you feel you are healthy? YES NO 1 2 3 4 5 6 7 8 9 10 1 is low level
 health and 10 is high level health.
26. Do you have friends or family to help you when you need help? YES NO
 If YES, who helps you? _____
27. What is your religion? _____

Informe Demografico

Iniciales _____ Edad _____ Fecha prevista para el alumbramiento _____

Peso antes del embarazo en el estado _____ Peso actual _____ Altura _____

Trimestre el embarazo _____ Numero de embarazos _____

Numero de niños _____ Numero de miembros de la familia y quien es en su familia _____

¿Cuanto gana en un año?

Menos de \$ 5,000.00	De \$ 15,100.00- a- \$ 17,500.00
De \$ 5,000.00- a- \$ 7,500.00	De \$ 17,600.00- a- \$ 20,000.00
De \$ 7,600.00- a- \$ 10,000.00	De \$ 20,100.00- a- \$ 22,500.00
De \$ 10,100.00- a- \$ 12,500.00	De \$ 22,600.00- a- \$ 25,000.00
De \$ 12,600.00- a- \$ 15,000.00	Mas de \$ 25,000.00

1. ¿Tiene transporte para ir al supermercado? SI NO
2. ¿Puede leer las etiquetas que llevan los artículos comestibles en el supermercado? SI NO
3. ¿Tiene alguna manera de mantener refrigerados los comestibles? SI NO
4. ¿Tiene estufa/cocina u otra forma de cocinar? SI NO
5. ¿Tiene agua corriente? Tiene agua caliente? SI. NO
6. ¿En su casa, quién prepara la comida? _____
7. ¿Quién compra la comida en sus casa? _____
8. ¿Recibe servicios de WIC? SI NO
9. ¿Recibe estampillas para alimento? SI NO
10. ¿Cuánto tiempo tiene en los Estados Unidos? _____
11. ¿Cuál es su país de origen? _____

12. ¿Cuál es su lugar de residencia permanente? _____
13. ¿Habla Ud. El español? El inglés? Ambos?
14. ¿Lee Ud. El español? El inglés? Ambos? Ninguno?
15. ¿Escribe Ud. El español? El inglés? Ambos? Ninguno?
16. ¿Cuál fue el último curso que Ud pudo completar en el colegio? _____
¿Dónde? _____
17. ¿Trabaja Ud. en el campo? SI NO ¿Cuántas horas al día? _____
¿Cuántos días por semana? _____ ¿Trabaja Ud. fuera de su hogar? SI NO
Si trabaja, cuantas horas a la semana? _____
18. ¿Quien hace las decisiones acerca de la salud en su familia? _____

19. ¿Donde recibe servicios médicos? _____
20. ¿Siente usted que recibe cuidados cuando lo necesita? SI NO
Porqué ó Porqué no _____
21. ¿Utiliza usted los servicios de un curandero ó curandera y otros servicios diferentes de un medico ó enfermera? SI NO ¿Quien? _____
22. ¿Como se identifica usted, de que grupo etnico? (Hispano, Mejicano, etc..) _____

23. ¿Que significa "Enfermedad" para usted? _____

24. ¿Que significa "Salud" para usted? _____

25. ¿Se siente usted saludable? SI NO 1 2 3 4 5 6 7 8 9 10 1 es malo salud y 10 es buena salud.
26. ¿Tiene usted amigos ó familia que le ayuda cuando necesita ayuda? SI NO Si tiene, quien ayuda. _____
27. ¿Cual es su religion? _____

APPENDIX D

FOOD FREQUENCY QUESTIONNAIRE

ENGLISH AND SPANISH VERSIONS

1. How many days a week do you eat breakfast?
 6-7 days 3-5 days
 1-2 days None
2. How often do you eat between meals or after the evening meal?
 Daily Several times a week
 Once a week or less Seldom eat in the evening
3. What is your usual pattern for the evening meal?
 This is the biggest meal Medium size meal
 Light meal Seldom eat in the evening
4. Do the meals you eat usually in the following?
 Red meats
 Fish or chicken but no red meats
 Vegetarian meals with milk, cheese or eggs
 Completely vegetarian meals-no animal foods
5. How much water do you drink a day?
 Rarely drink water 1 to 2 cups
 3 to 5 cups 6 or more cups
6. When salting your foods do you usually salt it:
 Freely Moderately
 Sparingly Not at all
7. What kind of spread do you use most often?
 Butter Stick margarine
 Soft tub margarine None of these
8. What other kinds of fat do you use most often?
 Shortenings and or lard or animal fat
 Vegetable oils
 Use each of the above about the same
 None of these
9. How do you prepare your foods when you cook them most often?
 Fried
 Boiled
 Baked
 Grilled

10. Do you take any vitamin supplements or herbal supplements?
List: _____

11. Does your work or daily activity involve primarily the following (pick one)

_____ Sitting _____ Standing
_____ Walking or other active exercise _____ Heavy labor such as lifting

12. Outside of your work or daily responsibilities, how often do you engage in exercise of 20 minutes or more which markedly increases your breathing (such as vigorous walking, cycling, running, swimming)?

_____ Seldom or never _____ Less than once a week
_____ 1 to 2 times a week _____ 3 to 5 times a week
_____ 6 or more times a week

13. What time do you usually get up in the morning? _____

14. What time do you usually go to work? _____

15. Do you smoke? YES NO If YES, How much _____

Please give me some examples of when you usually eat meals and/or snacks and what you usually eat or drink for these meals or snacks.

Time of day Kinds of food/Beverage Meal or snack

5-11 AM

11 AM-4 PM

4-9 PM

9 PM -5 AM

Now let's talk about specific food you eat. For each food you need to decide how often you have it. You can have servings per day, per week, per month, or not at all. For example, you might have 1 flour tortilla every day, a mango 2 times a week or tomato juice 3 times a month. To help you determine how much, I brought examples of a serving size. Let's start with the whole wheat bread. How many slices do you have a day, etc.....

	DAY	WEEK	MONTH	SERVING SIZE	FOOD NAME
BREADS, CEREALS, GRAIN PRODUCTS					
1				1 Slice	Whole wheat bread
2				1 Slice bread or 1 roll	Sourdough or French bread or roll
3				1 Slice bread ½ bun	White bread Hamburger or hotdog bun
4				4 to 6 crackers	Whole grain crackers Triscuits, Wheat Thins, or Ry Krisp
5				4 to 6 crackers	Saltines, cheese, Ritz
6				40 each	Oyster crackers
7				2 each	Graham Crackers
8				7 each	Animal Crackers
9				1 each	Corn Tortilla 6"
10				1 each	Flour Tortilla-medium
11				1 each	Muffin corn, blueberry, or bran
12				½ each	English muffin, bagel or pita bread
13				3 each	Pancakes
14				1 each	Waffles 7"

	DAY	WEEK	MONTH	SERVING SIZE	FOOD NAME
15				½ cup	Whole grain hot cereal (Rolled oats or wheat, Roman meal)
16				½ cup or 1 package	Instant Hot Cereal
17				½ cup	Refined hot cereal (Cream of wheat or cream of rice)
18				¾ cup	Cold cereal (Shredded Wheat, Nutrigrain)
19				¼ cup	Cold Cereal (Grapenuts)
20				¾ cup	Bran type cold cereals (Raisin Bran, Bran Flakes, All Bran)
21				¾ cup	Sweetened cold cereals (Frosted Flakes or Sugar Snacks)
22				½ cup	Granola
23				½ cup	Cooked Brown Rice
24				½ cup	Cooked White Rice
25				½ cup	Cooked Pasta (macaroni, spaghetti, or noodles)
FRUITS					
26				1 each	Apple, fresh, medium
27				1 each	Banana, medium

	DAY	WEEK	MONTH	SERVING SIZE	FOOD NAME
28				1 each	Orange
29				1 each	Lemon
30				1 each	Lime
31				½ each	Grapefruit
32				1 each	Nectarines
33				3 each	Apricots
34				2 each	Plums
35				1 each	Peaches
36				10 each	Cherries
37				¾ cup	Berries
38				¼ cup	Cantaloupe, medium
39				1 cup	Watermelon
40				1 cup	Honeydew
41				1 cup	Casaba
42				1 each	Pears, fresh, medium
43				½ cup	Fresh Pineapple
44				1 cup	Fresh Grapes
45				1 each	Mango, fresh, medium
46				2 Tbsp	Raisins
47				2 each	Dates
48				2 each	Prunes
49				4 each	Dried Apricots
50				½ cup	Canned or frozen unsweetened fruit

	DAY	WEEK	MONTH	SERVING SIZE	FOOD NAME
51				½ cup	Canned or frozen sweetened fruit
JUICES					
52				3 ½ cup	Orange unsweetened
53				3 ½ cup	Grapefruit unsweetened
54				½ cup	Tomato
55				½ cup	V-8
56				½ cup	Apple, unsweetened
57				½ cup	Grape, unsweetened
58				½ cup	Pineapple, unsweetened
59				½ cup	Sweetened orange
60				½ cup	Sweetened grapefruit
61				½ cup	Sweetened apple
62				½ cup	Sweetened grape
63				½ cup	Sweetened pineapple
64				½ cup	Other sweetened juices
FATS AND OILS					
65				1 Tbsp	Vegetable oils (corn, safflower, soy)
66				1 Tbsp	Olive oil
67				1 Tbsp	Shortening, vegetable
68				1 Tbsp	Lard

	DAY	WEEK	MONTH	SERVING SIZE	FOOD NAME
69				1 tsp	Margarine
70				1 tsp	Butter
71				5 each	Olives
72				1/8 each	Avocado
73				1 Tbsp	Mayonnaise
74				1 Tbsp	Regular Salad dressing
75				1 Tbsp	Low-calorie dressing
76				1 Tbsp	Sour cream
77				1 Tbsp	Cream cheese
78				1 Tbsp	Half & Half
79				1 Tbsp	Whipping Cream
80				1 Tbsp	Imitation Creamer
81				2 slices	Bacon
MILK & YOGURT					
82				1 cup	Nonfat milk
83				1 cup	Lowfat milk 2%
84				1 cup	Whole Milk
85				1 cup	Chocolate lowfat milk
86				1 cup	Buttermilk
87				1 cup	Goat's Milk
88				1 cup	Yogurt, lowfat plain
89				1 cup	Yogurt, lowfat with fruit

	DAY	WEEK	MONTH	SERVING SIZE	FOOD NAME
90				1 Cup	Yogurt Nonfat, Plain
VEGETABLES					
91				1 to 1 ½ cups	Salad (lettuce, celery, green peppers, onions)
92				½ cup	Dark green leafy vegetables
93				1 each	Raw carrots
94				½ cup	Cooked Carrot
95				1 each	Fresh tomato,medium
96				½ cup	cooked corn
97				½ cup	cooked peas
98				½ cup	cooked mixed vegetables
99				½ cup	cooked hominy
100				½ cup	cooked green beans
101				½ cup	cooked cauliflower
102				½ cup	cooked beets
103				½ cup	cooked asparagus
104				½ cup	cooked summer squash
105				1 each	White potato baked
106				1 each	White potato boiled
107				1 each	White potato mashed
108				1 each	White potato fried

	DAY	WEEK	MONTH	SERVING SIZE	FOOD NAME
109				½ cup	sweet potato or yams
110				½ cup	Winter squash acorn, butternut, or hubbard
BEVERAGES					
111				1 cup	Lemonade, punch, Koolaid
112				12 fl. oz.	Coke, Pepsi, or RC cola drinks
113				12 fl. oz.	Diet cola drinks
114				12 fl. oz.	Non-cola drinks with sugar 7-up, Sprite, Slice
115				12 fl. oz.	Diet non0cola drinks 7-up, Sprite, Slice
116				1 cup	Regular Coffee
117				1 cup	decaffeinated coffee
118				1 cup	Tea
119				1 cup	Decaffeinated tea
120				1 cup	hot chocolate or cocoa
121				12 fl. oz.	Beer
122				12 fl. oz.	Light beer
123				4 fl. oz.	Wine
124				1 ½ fl. oz.	Liquor(Vodka, tequila, gin, rum)

	DAY	WEEK	MONTH	SERVING SIZE	FOOD NAME
					PROTEIN FOODS
125				1 cup	Cooked pinto beans
126				1 cup	Cooked lentils
127				1 cup	Cooked navy beans
128				1 cup	Cooked kidney beans
129				1/4 cup	Peanuts
130				1/4 cup	Cashews
131				1/4 cup	Almonds
132				1/4 cup	Sunflower seeds
133				1/4 cup	Other nuts
134				1/4 cup	Other seeds
135				1 Tbsp	Peanut butter or nut butters
136				3 ounces	Beef Rib Roast
137				3 ounces	Beef steak
138				3 ounces	Beef Pot Roast
139				3 ounces	Veal
140				3 ounces	Carne asada
141				3 ounces	Chorizo
142				3 ounces	Cooked ground beef
143				3 ounces	Pork chops
144				3 ounces	Pork Roast
145				3 ounces	Ham
146				3 ounces	Lamb chops

	DAY	WEEK	MONTH	SERVING SIZE	FOOD NAME
147				3 ounces	Lamb roast
148				3 ounces	Chicken
149				3 ounces	Turkey
150				3 ounces	Duck
151				3 ounces	Fish no breading fresh or frozen trout, halibut, sole, cod
152				3 ounces	Tuna with oil
153				3 ounces	Sardines in oil
154				3 ounces	Tuna packed in water
155				3 ounces	Shellfish Shrimp, scallops, lobster, clams
156				1 each	Egg whole large
157				2 each	Egg whites only
158				1 ounce	Cheese (cheddar, colby, american, or monterey jack)
159				1 ounce	Cheese lowfat swiss, mozzarella, ricotta, string
160				½ cup	Cottage Cheese
161				½ cup	Cottage Cheese, lowfat
162				1 ounce	Lunch meats (Bologna, salami)

	DAY	WEEK	MONTH	SERVING SIZE	FOOD NAME
163				1 each	Hotdog or frankfurters
164				2 each	Sausage links
DESSERTS AND SWEETS					
165				2 each	Cookies Chocolate Chip, oatmeal, peanut butter
166				1 each	Brownies 1 ½ inch by 1 inch
167				1 each	Donut or sweetroll
168				1 each	Cake without icing 3 inches by 2 inches
169				1 each	Cake with icing 3 inches by 2 inches
170				1 each	Granola bar
171				1 slice	Pie 1/8 of whole pie
172				½ cup	Jello, regular
173				½ cup	Jello, diet
174				½ cup	Pudding
175				½ cup	Custard
176				½ cup	Ice Cream
177				½ cup	Ice Milk
178				½ cup	Sherbert
179				½ cup	Sorbet
180				1 each	Popsicles

	DAY	WEEK	MONTH	SERVING SIZE	FOOD NAME
181				1 each	Sopapillas
182				1 each	Rico
183				1 each	Bunuelos
184				1 ½ ounces	Candy bar, chocolate, or M&Ms
185				12 fl. oz.	Milkshake
186				1 ½ ounces	Hard Candy, gum drops, or Lifesavers
MISCELLANEOUS					
187				1 slice	Pizza
188				1 each	Ground Beef Taco
189				1 each	Chicken Taco
190				1 each	Beef or pork burrito with potatoes
191				1 each	Beef Tamale
192				1 each	Pork Tamale
193				1 each	Cheese Enchilada
194				1 each	Beef Enchilada
195				1 each	Pork Enchilada
196				1 each	Chicken Enchilada
197				2 cups	Popcorn, popped with oil
198				2 cups	Popcorn, popped without oil

	DAY	WEEK	MONTH	SERVING SIZE	FOOD NAME
199				1 ounce or 10 to 15 chips each	Potato chips, corn chips, or tortilla chips
200				1 Tbsp	Ketchup
201				½ cup	Salsa
202				5 slices	Pickles
203				1 Tbsp	Pickle relish
204				1 stick	Chewing gum
205				1 Tbsp	Soy Sauce
206				1 Tbsp	Barbeque Sauce
207				1 Tbsp	Steak Sauces (A-1, Heintz 57)
208				1 cup	Soups-vegetable or noodle type
209				1 cup	Soups-Cream Type
210				1 each	Fastfood hamburgers
211				1 each	Fastfood burrito
212				1 each	Fastfood taco
213				1 each	Peppers (jalapenos, habenero)
214				1 Tbsp	Sugar, honey, jam, jelly, or syrup

1. ¿Cuántos días a la semana come desayuno?
 6-7 días 3-5 días
 1-2 días Nunca
2. ¿Qué tan frecuente come entre tiempos, ó despues de la cena?
 Diario varias veces a la semana
 una vez a la semana ó menos raro que coma en la noche
3. ¿Cual es su norma ó patrón para la comida de noche?
 Es la comida más grande comida mediana
 comida ligera raramente come en la noche
4. ¿Los alimentos qué come incluye lo siguiente?
 Carnes rojas
 Pollo ó pescado, pero no carne roja
 alimentos vegetarianos con leche, queso ó huevos.
 Completamente alimentos vegetales- no alimentos de animales
5. ¿Cuanta agua bebe en un día?
 raramente bebo agua 1-2 tazas
 3-5 tazas 6 ó mas tazas
6. ¿Cuando le echa sal a los alimentos, lo hace?
 libremente moderadamente
 escasamente nada
7. ¿Qué clase de untados usa?
 mantequilla barra de margarina
 margarina suave ninguna
8. ¿Qué otros tipos de grasa utiliza?
 manteca vegetal ó animal
 aceite vegetal
 usa igual cantidad lo mencionado arriba
 ninguna
9. ¿Como prepara los alimentos cuando los cocina?
 frito
 cocido
 horneado
 azado

10. ¿Toma suplementos de vitaminas, ó hierbas?
mencione _____

11. ¿Es su trabajo ó actividad diaria uno de los siguiente?
____sentada _____de pie
____caminando u otra actividad física _____trabajo pesado como levantar
objetos
12. ¿Fuera de su trabajo, ó responsabilidades diarias, qué tan frecuente hace ejercicio
de 20 minutos ó más con aumento en la respiración (como caminar rápido, correr,
nadar, andar en bicicleta)?
____raramente ó nunca _____ menos de una vez por semana
____1-2 veces por semana _____3-5 veces por semana
____6 ó más veces por semana
13. ¿A qué hora se levanta por la mañana? _____
14. ¿A qué hora va al trabajo? _____
15. ¿Fuma usted? SI NO ¿Si fuma, cuanto fuma? _____

Por favor dé ejemplos de cuando come sus alimentos/ bocadillos, y qué come y bebe con estos alimentos.

Hora del día	Tipo de alimento/bebida	almuerzo ó bocadillo
5-11 A.M		
11 A.M-4P.M		
4-9 P.M.		
9P.M.-5A.M.		

Ahora hablaremos de alimentos especificos qué usted come. Por cada alimento debe usted decidir que tan frecuente lo come. Puede tener servicios diario, semanal, mensual, ó nada. Por ejemplo, es posible qué coma una tortilla diario, un mango dos veces por semana, ó jugo de tomate tres veces al mes. Para ayudarle a determinar la cantidad qué come, les hice muestras de cada servicio. Comenzaremos con pan de trigo. Cuantas rodajas come en un día, etc...

	Día	Semana	Mes	Medida Servicio	Nombre de Alimento
Cereales, Pan, Productos de granos					
1				1 rodaja	pan de trigo total
2				1 rodaja ó rollo	pan frances ó de levadura
3				1 rodaja ó medio bollo	pan blanco de hamburguesa o perro caliente
4				4-6 galletas	galletas de trigo, triscuits, wheat thins, Ry krisp
5				4-6 galletas	galletas saladas, queso, Rits
6				40	galletas oyster
7				2	graham
8				7	galletitas dulce de animalitos
9				1	tortilla de maiz 6 pulgadas
10				1	tortilla de harina mediana
11				1	bollo de maiz, mora azul, ó afrecho
12				mitad	bollo ingles, bagel ó pita
13				3	panqueques
14				1	barquillo
15				media taza	cereal caliente (avena, ó trigo)

	Día	Semana	Mes	Medida Servicio	Nombre de Alimento
16				½ taza o 1 paquete	cereal caliente instantaneo
17				media taza	cereal refinado (crema de trigo ó de arroz)
18				3/4 taza	cereal frio (nutrigrain, trigo desmenuzado)
19				1/4 taza	cereal frio (grapenuts)
20				3/4 taza	cereal frio tipo afrecho (Raisin bran, bran flakes, All bran)
21				3/4 taza	Cereal frio azucarado (Frosted flakes, ó sugar Snacks)
22				media taza	granola
23				media taza	arroz café cocido
24				media taza	arroz blanco cocido
25				media taza	pasta cocida(macaroni, espageti, tallarines)
FRUTAS					
26				1	manzana fresca mediana
27				1	banano mediano
28				1	naranja
29				1	limon
30				1	lima
31				mitad	toronja
32				1	melocotón
33				3 piezas	albaricoque
34				2	ciruelas frescas

	Día	Semana	Mes	Medida Servicio	Nombre de Alimentos
35				1	durazno
36				10	cerezas
37				3/4 taza	moras
38				1/4 taza	melon, mediano
39				1 taza	sandía
40				1 taza	melon dulce (Honeydew)
41				1 taza	casaba
42				1	pera fresca mediana
43				½ taza	piña fresca
44				1 taza	uvas frescas
45				1	mango fresco, mediano
46				2 cucharadas	pasas
47				2	datiles
48				2	ciruelas
49				4	albaricoques
50				(½) media taza	fruta congelada ó enlatada sin azucar
51				½ taza	fruta congelada ó enlatada dulce
JUGOS					
52				3 ½ taza	naranja sin azucar
53				3 ½ taza	toronja sin azucar
54				½ taza	tomate
55				½ taza	V-8
56				½ taza	manzana, sin azucar
57				½ taza	uvas, sin azucar

