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# REPRODUCTIVE HEALTH CARE SERVICES UTILIZATION AMONG LATINA MIGRANT AND SEASONAL FARMWORKERS IN A MIDWESTERN STATE

By

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ABSTRACT

REPRODUCTIVE HEALTH CARE SERVICES UTILIZATION AMONG LATINA MIGRANT AND SEASONAL FARMWORKERS IN A MIDWESTERN STATE

By

Omara Rivera-Vázquez

Latina reproductive health has rarely been studied in female migrant and/or seasonal farmworkers. The present study investigated the utilization of reproductive health care services by female migrant and seasonal farmworkers using an ecological framework and more specifically adopting the behavioral model of health services utilization (Andersen, 1968, 1995).

Data were originally collected by the Oceana Farmworker Health Needs Assessment (Rosenbaum et. al., 2006). The sample size for this study is 183 Latina farmworkers. Predisposing variables included in the analyses were respondents' agricultural work status (migrant vs. seasonal), primary language, marital status, and highest educational level. The study includes health insurance, family income, current work status, number of years working in MI, and available community resources (use of local migrant clinic) as important enabling factors for utilization of reproductive health services. Health need factors include respondent's perceived health status, reports of any unmet treatment, diagnosed pregnancy diabetes, and physical exam results (normal/abnormal). Reproductive health care utilization measures considered in this study include ever having a PAP smear, ever having a mammogram, ever having a clinical breast exam, seeking early prenatal care, using sexual disease protection, and practicing pregnancy prevention. In addition, composite

measures indicating scores for predisposing, enabling, need, and reproductive health care utilization were created.

The analyses demonstrated that migrant and seasonal farmworker women in the sample have low to moderate use of the reproductive health care services included in the analyses. Latina migrant and seasonal farmworkers are likely to report not using any methods to protect themselves from sexually transmitted diseases or pregnancy prevention. In addition, both migrant and seasonal farmworker women have low rates of mammogram screenings.

Seasonal farmworkers in the sample were more likely to use prenatal care and pregnancy prevention at higher rates than migrant women. The analysis demonstrated a relationship between ever having a mammogram and migrant status. Migrant farmworker women access mammogram screenings at higher rates than seasonal farmworker women. The predisposing variables age and migrant status are predictors of ever having a mammogram. The number of years working in the state is an enabling factor predictive of ever having a mammogram. In addition, higher income levels predict use of prevention methods for sexually transmitted diseases. The need factors models were not statistically significant. These results contradict prior findings of studies utilizing the Andersen model indicating that need is one of the most pressing indicators of health care utilization (Andersen, 1968; 1995). It seems that considered together both predisposing and enabling factors may, in fact be stronger predictors of reproductive health care utilization than the need for care in this specific subpopulation.

## DEDICATION

This dissertation is dedicated to my baby girl Mara Nicole Criollo-Herrera, the driving force in my life; and to the memory of my father, Nicolas A. Rivera-Negrón who instilled in me the importance of education.

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# CHAPTER 1

## Statement of the Problem

The United States has witnessed remarkable growth in the Latino population across the nation. There are approximately 37 million Latinos residing in the U.S. (US Census, 2001). Between the years 1990 and 2000, there was a 58 percent increase in the Latino population, and it is predicted that by the year 2050, Latinos will account for approximately 25 percent of the population. It is further estimated that by the year 2050, one out of every four women in the United States will be a Latina (US Census, 2000).

Despite growing in numbers, Latinas continue to face serious health care access barriers and consequently higher incidences of disease and poorer health outcomes, especially in areas associated with reproductive health (National Latina Institute for Reproductive Health, 2005). Overall, Latinas are faring far worse than other ethnic groups in areas of reproductive health. Studies have shown that more than 25 percent of Latinas do not receive prenatal care during the first trimester (Scott Collins, Hall & Neuhaus, 1999). Furthermore, Latinas account for more than 20 percent of the AIDS cases among women, and the HIV infection rate among Latinas is 7 times higher than for white women (Giachello, 2001). Among Mexican-American and Puerto Rican women, the cervical cancer incidence rate is two to three times higher than for White women (Intercultural Cancer Council, 2000). The unintended pregnancy rate for Latinas is nearly two times the rate for white women (Naral Foundation, 2000).

The rate of maternal mortality among Latinas is 1.7 times higher than for White women, the Latina teen pregnancy rate is more than twice the rate of white women and the rate of Chlamydia among Latinas is more than 3.5 times higher than for White women (Naral, 2000). In addition to having the highest uninsured rate, Latinas able to access healthcare are often dissatisfied with the care received. For example a study by Forest and Frost, 1996 found that only 51.5 percent of Latinas reported feeling "comfortable" at the family planning clinic they last visited, and only 47.4 percent of Latinas reported that the family planning staff "made an effort to find out their needs."

Poverty, lack of insurance, inadequate access to health care, language barriers, discriminatory treatment and limited awareness of health risks contribute to poorer health outcomes for Latinas. Lack of health insurance is reportedly the primary barrier for access to reproductive health care by Latinas (National Latina Health Network, 2005). Latinas have the highest uninsured rate among women (42 percent) as the number of uninsured continues to rise and shows no signs of reduction. For example, in 1994, 46 percent of low-income Latinas reported having no health insurance; by 1998, the number of Latinas without health insurance had risen to 51 percent (Henry J. Kaiser Family Foundation, 2001). Without the benefit of health insurance, many Latinas delay or miss out on necessary reproductive and general health care services. Only 38 percent of Latinas ages 40 and older have regular mammograms that could detect cancer at its earliest stages before clinical symptoms develop (ICC, 2000). One out of every three Latinas reported that they failed to get a Pap test in the preceding

three years compared with one-quarter of all American women (College of American Pathologists, 2001).

Reports on the health status of Latinas in the U.S. generally miss out on approximately 4.2 million migrant and seasonal farmworkers and their families who work in the United States (Poss & Pierce, 2003). Migrant farmworkers are known to have more health problems than the general Latino population in the U.S. Moreover, they lack reliable access to health care services. Migrant farmworkers confront many illnesses that are caused by poor nutrition, lack of resources to seek care early in the disease process, and infectious diseases from overcrowding and poor sanitation. Consequently, farm labor exposes migrant and seasonal farmworker women, to prolonged standing and bending, dehydration, poor nutrition, pesticide and chemical exposures that contribute to an increased risk of spontaneous abortions, premature delivery, and fetal abnormalities (Hansen & Donohoe, 2003). The general health problems as well as the specific reproductive health challenges suffered by migrant and seasonal farmworkers women are exacerbated by their low-income status, unfamiliarity with the culture, a migratory lifestyle, and the inherent dangers and health risks involved in farm work.

### *Purpose of the Study*

Although Latina reproductive health is a growing area of research interest, it has rarely been studied in female migrant and/or seasonal farmworkers. The present study investigated the utilization of reproductive health care services by female migrant and seasonal farmworkers using the behavioral model of health services utilization (Andersen, 1968, 1995). Several culture-specific variables will be included in the model of Latina reproductive health care utilization.

### *Research Questions*

The following research questions were developed to accomplish the identified objectives and to achieve the purpose of the study. The study was modeled using the Andersen behavioral model of health care utilization (1968, 1995). This model describes access to health care as "actual use of personal health services and everything that facilitates or impedes the use of personal health services" (Andersen, 1969). The Andersen model incorporates predisposing, enabling and need factors that impact access to health care. Using this model as a framework, the present study addresses the following questions for a sample of migrant and seasonal farmworkers in Oceana County, Michigan.

- What is the overall self-reported reproductive health services utilization of female migrant and seasonal famworkers?
- Are predisposing, enabling, and need factors associated with reproductive health care utilization?
- Do migrant and seasonal farmworker women differ in their reproductive health care utilization?

*Study Definitions*

It is important to understand that this study refers to Latinas as those included in the sample, the majority being Mexican American migrant and seasonal farmworker women. The term migrant farmworker refers to "individuals who stay away from home overnight to do temporary farmwork" (Rosenbaum, 2003). They can be either hired or contract workers. Seasonal farmworkers are "workers who are permanent residents of the communities where they do agricultural work" (Rosenbaum, 2003).

Since the study uses Andersen (1968, 1995) model of health services utilization as a framework, it is also important to understand the definitions of predisposing, enabling, and need factors. Predisposing characteristics exist prior to the perception of illness, the presence of enabling resources facilitates the use of health services, and their absence impedes utilization. Health need related variables pertain to physical illness as perceived by people and evaluated by professionals.

For the purposes of the present study, predisposing factors are operationalized by respondents' agricultural work status (migrant vs. seasonal), marital status, primary language, and highest education level. The study includes health insurance, family income, current work status, number of years working in MI, and available community resources (use of local migrant clinic) as important enabling factors for utilization of reproductive health services. Lastly, need factors reflecting physical health status are measured by respondent's

perceived health status, reports of any unmet treatment, diagnosed pregnancy diabetes, and physical exam results (normal/abnormal).

Reproductive health care utilization measures considered in this study include ever having a PAP smear, ever having a mammogram, ever having a clinical breast exam, seeking early prenatal care, using sexually transmitted disease protection, and practicing pregnancy prevention. A detailed discussion of all variables included in the analysis and their respective levels of measurements will be discussed in the methods chapter.

### *Overview of Subsequent Chapters*

Chapter 1 provides specific information on the relevance, purpose and research questions for this study. Chapter 2 provides a review of the relevant literature on Latina reproductive health outcomes. Additionally, the Andersen model of health services utilization will be discussed in more detail in its relationship to reproductive health outcomes. Human ecology theory also provides a framework to understanding how the factors outlined in Andersen's model impact the reproductive health outcomes of female migrant and seasonal farmworkers in the sample. Thus, a discussion on human ecology theory will also be included in this chapter. Chapter 3 delineates the specific methodology to be used to achieve the objectives previously identified. Chapter 4 describes the major findings for each research question. A discussion of the findings, limitations of the research, and implications for future research is presented in Chapter 5.

# CHAPTER 2

## Literature Review

### *Introduction*

The present chapter provides a delineation of the theoretical frameworks of human ecology theory and the Andersen model, namely the behavioral model of health services utilization is discussed. Moreover, this chapter discusses relevant literature outlining the existing body of research on the status of Latina reproductive health, migrant farmworker health, and health services utilization by migrant and seasonal farmworkers.

### *Scope of the Problem*

Latinas account for approximately one in every seven U.S. women of reproductive age (U.S. Census, 2000). Significant gaps exist in the breadth and depth of information available on Latina sexual and reproductive health. Analyses from national and small-scale studies usually compare Latinas with other groups on only one or two sexual and reproductive health indicators.

There is also limited research on the specific disparities facing migrant and seasonal farmworker women. Many of the studies about this subpopulation do not focus on female farmworkers, much less on their utilization of reproductive health services. The evident lack of research and interest in migrant and seasonal farm worker women is representative of the marginalization that these women experience as immigrant women. Their invisibility is partly due to their legal status in the United States. The present study thus responds to this void in

the literature by analyzing the reproductive health status of migrant and seasonal farmworkers in a midwestern state.

## *Human Ecology Theory and the Behavioral Model of Service Utilization*

### Human Ecology Theory

Human ecology theory is a way of looking at the interactions of humans with their environments and considering this relationship as a system (Griffore & Phenice, 2001). The ecological perspective calls for an interdependent, multidimensional, multilevel, interactional view of the etiology of individual or community health. Grzywacz & Fugua (2000) defined the ecological perspective of health as characterized by the following principles:

1. Different dimensions of well-being are reciprocally related and linked to diverse conditions in the sociophysical environment;
2. Individual and community well-being are contingent upon multiple aspects of the person/population, as well as multiple dimensions of the environment;
3. Health is an outcome of the quality of the person-environment fit;
4. Certain individual or environmental conditions exert a disproportionate amount of influence on health and well-being;
5. The physical and social environments are interdependent;
6. A comprehensive understanding of health results from multidisciplinary approaches.

The Human ecological approach is fundamentally concerned with specifying the individual and environmental conditions necessary for better health

outcomes, such as care-seeking behavior or utilization of services as is the concern of the present study. Both individual and environmental conditions are of great importance. As a result, human ecological theory views an individual woman and her health and development in the context of physical, psychological, social, and cultural environments (Williams, 2005). Interactions with environments thus affect the potential for health and positive growth and development. Human ecologists call attention to the relationships between individuals, their families, and communities, and examine the transactions amongst them. These transactions are dynamic and develop and change over time. Thus, based on this theoretical framework, access to reproductive health care services by Latina migrant and seasonal farmworkers must be analyzed in light of the individual, family, and community factors that influence cultural and lifestyle practices that relate to utilization of reproductive health services. Consequently, an ecological approach to examining migrant farmworker women supports attention to predisposing, enabling, and need factors related to health service utilization as portrayed in the Andersen Behavioral Model of Health Services Utilization.

Ecological factors such as income inequality, education, working and living arrangements markedly affect physical health outcomes of migrant farmworkers. Research has shown that poverty and inequality are better predictors of health outcomes than risk behaviors.

In the case of migrant farmworker families who live in extreme poverty, this leads to suffering major inequalities in health, and more specifically related to this project, inequalities in reproductive health care.

Although the ecological perspective provides a comprehensive view on the perspective of health, it does not provide a parsimonious set of explanations that can be used to predict and ultimately change health care utilization. Several ecological models of health promotion have incorporated concepts from different theoretical perspectives (Green & Potvin, 1996; McLeroy, et. al., 1988). The present study uses the Andersen Behavioral Model of Health Services Utilization to guide the study on factors that influence reproductive health service utilization and/or outcomes by female migrant farmworkers. Using this model, migrant farmworkers' demand for health services can be characterized and analyzed. Thus, while human ecology theory provides the general orientation, the Andersen model will provide a more specific model for analysis.

### *The Behavioral Model of Health Services Utilization*

The behavioral model proposed by Andersen *et al.* (Andersen & Newman, 1973; Aday & Andersen, 1978; Andersen, 1995) suggests that there are three main types of variables predicting utilization of health care services. These variables include predisposing, enabling and need factors. Predisposing variables describe the inclination of individuals to utilize services. These variables exist prior to the onset of illness. They include sociodemographic variables such as age and sex.

Enabling variables provide the means to utilize health care services for individuals. Structural factors such as income, health insurance, and health care facilities are considered enabling variables. Need factors are typically considered the stronger predictors of health care utilization and include such variables as symptoms experienced, disability, and/or chronic diseases (Andersen, 1968, 1995).

Andersen's behavioral model has been described as a framework for analysis rather than a mathematical model, and therefore it does not dictate the precise variables and methods that must be used (Phillips, 1998). Most research studies adopting full or revised versions of this model have demonstrated the importance of illness on health services utilization (Bice *et al.* 1972; Hershey *et al.* 1975; Berki & Kobashigawa, 1976; Wolinsky, 1976; Andersen & Aday, 1978; Kronenfeld, 1978; Vazquez- Barquero *et al.* 1992; Adler *et al.* 1993; Feinstein, 1993; Goldberg, 1995, Himmelstein & Woolhandler 1995). Positive associations between medical visits and income have also been highlighted (Wolinsky, 1976; Andersen & Adey, 1978; Hennelley & Boxerman, 1979), while increased patient cost sharing has resulted in a reported reduction in use of services (Lefcowitz, 1973). Having health insurance either through private or public means (Rabin *et al.* 1974; Hershey *et al.* 1975; Ferguson *et al.*1976; Aday & Andersen, 1978; Andersen & Aday, 1978; Weissman & Epstein, 1993) and income and insurance coverage (Brown, 1990; Freeman *et al.* 1990; Saver & Peterfreund, 1993; Weissman & Epstein, 1993; Bashsur *et al.* 1994; Hahn, 1994; Monheit, 1994) are also known to influence health services utilization.

Additional research using the health services utilization model has examined the impact of social factors. Social factors explain utilization of health services (Link & Phelan, 1995, 1996; Andersen, 1963). Specifically, gender in that women have higher rates of health services utilization than males (Hershey *et al.* 1975; Andersen & Aday, 1978). Individuals with more education (Wolinsky, 1976; Andersen, 1963) have higher rates of medical care utilization. In some other studies, age has also been considered an important variable in health services utilization in that utilization increases with age (Roos & Shapiro, 1981; Jeffries, 1996). Andersen's analyses have also demonstrated higher use of services at extreme ends of the life cycle (Andersen, 1963) even after controlling for need.

Various studies have reported a positive association between need for medical care and health services utilization (Berki, 1979; Starfield, et. al., 1985; Diaz, et. al., 1986; Leaf, et. al., 1988; Connelly, et. al., 1989; Weinreb, et. al., 1998; Ryan, et. al., 2001). Repeated applications of the Andersen Behavioral Model of Health Services (Andersen, 1968, 1995) have shown that need for care accounts for most of the explained variability in utilization, almost all of the variability in usage of hospital services, and approximately two thirds of the variability in use of physician services (Aday & Awe, 1997; Wolinsky, 1978).

Over time, the behavioral model of health services utilization has undergone revisions and updates by including measures of health services use specific to particular conditions and episodes of illness and consumer satisfaction (Aday & Awe, 1997; Andersen, 1995).

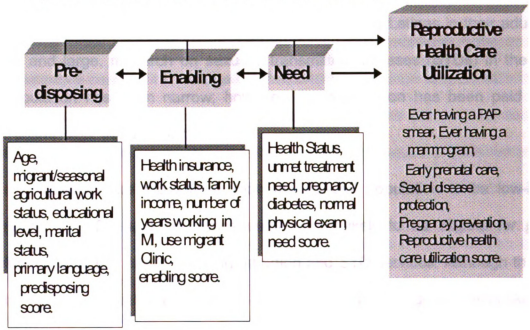
The model has also been expanded by recognizing its dynamic nature and that changes in personal practices and the maintenance and improvement of health status are explicit outcomes and goals of health services delivery. Furthermore, a revised and expanded model specific to vulnerable populations has been adapted (Gelberg, et. al., 2000). As in the original behavioral model, predisposing, enabling, and need factors predict personal health practices, including the use of health services. A major addition was the examination at the impact of utilization on health status outcomes.

This recently revised model for vulnerable populations has been applied to homeless populations (Gelberg, et. al., 2000), underserved populations (Bazargan et. al, 2004), and veterans (Dessai, et. al., 2003). There are gaps, however, in our knowledge of the association of predisposing, enabling and need for care with health services utilization for certain vulnerable populations such as migrant and seasonal farmworker women.

It is important to note that the model proposed in this study assumes that cultural factors impact the usage of reproductive health services, thus, culture-specific variables such as primary language, agricultural work status, and number of years working in Michigan are incorporated into the framework as

enabling and predisposing factors for migrant and seasonal farmworker women. Figure 1 portrays the conceptual model of utilization of reproductive health services for a sample of Latina migrant and seasonal farmworkers.

Figure 1. Conceptual Model of Utilization of Reproductive Health Services



*Reproductive Health of Latinas and Health Care*

The Department of Health and Human Services recognizes in its Healthy People 2010 objectives the elimination of health disparities among different segments of the U.S. population as one of the country's most significant goals. While the high rate of pregnancy and births among Latina teenagers has received attention, a relatively limited amount of research has examined unintended pregnancy and contraceptive use among Latinas in their adult lives. By and large, research on sexually transmitted diseases (STDs) in the Latina population has been narrow; however, some attention has been paid to HIV transmission, in particular.

Latinas are more likely than the general population to be low-income (Census, 2000) and are consequently more likely to be eligible for publicly funded prenatal, family planning, abortion and STD services. Although they may be eligible for public services, low-income Latinas are in general less likely than low-income Whites or Blacks to have health insurance; 43 percent of low-income Latinos were uninsured in 2002, in contrast with 25 percent of low-income Whites and 26 percent of low-income Blacks (Mills & Bhandari, 2003). Many Latinas without health insurance mainly depend on publicly funded clinics for their sexual and reproductive health care needs. Conversely, public funding has not kept pace with increases in the costs of many reproductive care services such as contraceptives. Thus, these clinics have an increasingly difficult time offering uninsured women the most effective contraceptive methods (Dailard, 2001). In addition, 40 percent of Latinos are immigrants who may not understand their right

to free or low-cost services or may fear that their immigration status could be endangered if they seek any type of health care (Ramirez & De la Cruz, 2003).

Welfare laws that have been attached to immigration status also have an effect on the reproductive health of immigrant Latinas by restraining access to health care programs. Under federal law, legal immigrants who have arrived after 1996 do not have access to federal public health care programs for their first five years in the United States. Undocumented immigrants only have access to emergency care, which excludes prenatal care. Language barriers also create a major problem in accessing reproductive health care services for the many immigrant and non-immigrant Latinas with limited English proficiency (Hooton, 2004).

Moreover, Latinas are more likely than Black and White women to delay health care appointments because of transportation or child care difficulties or an inability to pay for health care services (Kaiser Family Foundation, 2004). Even if Latinas can access sexual and reproductive health care services, they must contend with a lack of culturally and linguistically competent services. Only 5 percent of U.S. physicians (Pasko & Smart, 2003) and 2 percent of nurses (Smedley et al., 2003) are Latino; yet Latinos comprise almost 14 percent of the U.S. population (Census, 2004). Many health care providers do not speak Spanish and do not have trained, on-site interpreters; as a result, mothers must often use their children as translators.

This situation may compromise the quality of information women receive, the services they use, and the extent to which they feel their concerns are adequately and/or sensitively addressed. These reasons may explain why Latinas often report being dissatisfied with their visits to sexual and reproductive health care providers (Forrest & Frost, 1996).

Although nearly half of adult Latinas (46 percent) have not completed high school and may therefore lack basic health education (Census, 2000) there is a shortage of community health education programs designed to improve Latinas' understanding of the health care system and help them play a more active role in their own health care. Such programs are crucial because some Latinas may not use available services as a result of concerns about the medical examination, the gender of their potential clinician or distrust of medical providers.

Factors such as fatalism and sexual silence also impact the reproductive health of Latinas. Fatalism can be described as the general outlook on life that is associated with the belief that destiny is out of our hands and that events are inevitable (Chavez et al, 1997). Sexual silence is a cultural characteristic that affects the behavior of the individuals in Latino families. Sexuality is perceived to be personal and is not to be talked about openly. Sexual silence leads to a lack of communication among family members and between sexual partners. (Chavez, 1997).

A study of the sexual and reproductive health of Latinas in the state of North Carolina (Talmi, 2005) found that women's shyness and the existence of cultural taboos limit discussion about sexuality. When Latina women were asked to discuss unusual beliefs regarding reproductive health held by Latinas, most respondents referred to misconceptions about contraceptive use and pregnancy prevention. Respondents also mentioned the fear of consequences of using contraceptives, in terms of risks to both physical and spiritual well-being. (Talmi, 2005).

Religious beliefs, social customs, and the lack of accurate and comprehensive sexual education at home and in school affect how well Latinas are able to utilize reproductive health care services and access the services and information they need to make healthy decisions.

Latinas and Prenatal Care

Latinas have the highest fertility rate of any group and account for 18 percent of all births yet 50 percent of all pregnancies are unintended and of these unintended pregnancies, one half result in an abortion (Naral Foundation, 2003). The 1995 National Survey of Growth indicated that only 32 percent of Latinas aged 15-44 reported visiting a family planning provider within the last 12-month period. More than 25 percent of Latinas do not receive prenatal care during the first trimester (National Latina Institute for Reproductive Health, 2002).

Early prenatal care can encourage healthy behaviors during pregnancy, help discover potential medical problems, and facilitate involvement with support, and other educational resources. The Naral ProChoice America Foundation (2002) reported that African American women and Latinas were over twice as likely as White women to obtain delayed or no prenatal care. The majority of women with late or no prenatal care wanted to enter care earlier; however, they cited various factors that prevented them from doing so, including: they did not know they were pregnant; they lacked the money or insurance to pay for their visits; and were unable to obtain an appointment.

Pregnancy Prevention Among Latinas

The rate of unintended pregnancies for Latinas at the national level (69 per 1000 women) is close to twice the rate of non-Hispanic White women (36 per 1000 women) (Naral, 2000). Female sterilization remains the most popular method of birth control for Latinas, an estimated 37 percent use this method. Only 59 percent of Latinas between the ages of 22 and 44 reported using some form of contraception as compared to 66 percent of White women and 62 percent of African American women (National Survey of Growth, 1995).

Various factors affect the use of contraception by Latinas. Latinas are less likely than blacks or whites to report feeling comfortable talking with their partners about sex or condom use, though they were more likely to report that use of birth control was a joint decision.

A number of studies have reported on barriers to contraceptive use among Latinas. These barriers include those related to personal and relationship characteristics (Kerns, et al. 2003); barriers related to women's experiences with side effects from methods or their perceptions of method safety; and structural barriers such as cost, lack of insurance, service unavailability and language difficulties (Guendelman, 2000). These studies have generally found that access to services is diminished among Latinas. On one hand, Latinas may face barriers due to lack of information and education about services that might actually be available to them. For example, Latinas were much more likely than blacks or whites to report that a reason for non-contraceptive use prior to an accidental pregnancy was due to not knowing about contraception or where to get it (Frost & Driscoll, 2006).

Breast Cancer in Latinas

Although legislation has been passed that increases the availability of cancer detection services for low-income, monolingual women, this does not mean that women will routinely access the services available to them. Latinas have consistently lower breast and cervical cancer screening rates compared with non-Hispanic white women, regardless of risk status (Ramirez et al., 2002). The incidence of breast cancer among Latinas is lower than for white females; however, Latinas are more likely to be diagnosed at later stages when the cancer is harder to fight (Washington, 1993).

Studies conducted by Borrayo (2000) indicated that in the past decade many Latinas were not aware of breast cancer risks, symptoms, screening methods, and mammography financing options. Valdez (2002) also observed that Latina women believed that mammograms were harmful and painful to their health and might detect cancer, a fear-provoking aspect. Moreover, the participants of this study believed that receiving a mammogram was not as important as other priorities in life, and they believed breast cancer could only be cured if detected early.

Although the American Cancer Society (2002) indicates that there is an increase in breast cancer screening among women in general, there are still women within the Latino community who do not get regular mammograms, particularly those women with lower education and income levels. This trend continues despite that in recent years there has been an increase in available information sources for underserved women about mammography information and resources (Ackerson et al., 2001). In Frazier's (1996) study, the reasons for underutilization of breast cancer screening procedures included factors such as lack of access to preventive health care services, an inaccurate perception of the risk of breast cancer, and the belief that breast cancer screening examinations are essential only if a lump has been detected.

Cervical Cancer in Latinas

Cervical cancer is the third most common cancer amongst Latinas (Ramirez et al., 2002). Moreover, According to the National Cancer Institute (1999) the incidence rate of cervical cancer among Latinas is 15.8 per 100,000 compared to 7.1 per 100,000 among white women and the mortality rate of cervical cancer is 40 percent higher than among white women. Latinas of reproductive age have been found to have lower rates of Pap smear and pelvic examination than white and African American women (Elder et. al., 1991; Jennings-Dozier & Lawrence, 2000). Although the percentage of women who have received cervical cancer screening has increased from 91.1 percent in 1991 to 93.1 percent in 1997, the disparities between Latinas and non-Latinas prevailed (Blackman, 1999). Blackman (1999) reported that in 1991, 84 percent of Latinas reported participating in cervical cancer screening compared to 91.9 percent of non-Latinas. These percentages were 86.7 and 93.8 percent, respectively in 1997 (Blackman, 1999). When comparing these rates Latina immigrants (68%) have even lower rates compared to U.S.-born Latinas (94%) and whites (98%) (Hubbell, et. al.,1996). As a result, there is a considerable need to increase the percentage of Latinas who engage in cervical cancer screening, particularly Latina immigrants (Scarinci, et.al., 2003).

Several studies have explored the factors associated with cervical cancer screening among Latinas. Some of these variables include income (Skaer, et. al., 1999), education (Skaer, et. al., Chavez, et. al., 1995), health insurance (Chavez, et. al., 1995), regular source of health care (Zambrana, et. al., 1999), prior cancer

prevention screening (Zambrana, et. al., 1999), social networks (Suarez, et. al. 2000), and acculturation (Suarez, et. al., Perez-Stable, et.al., 1992).

Research has also evidenced that Latinas tend to be less aware about cancer signs, causes, and treatment effectiveness when compared to white women (Elder, et. al., 1991). Latinas are also more likely to display fatalistic beliefs regarding cancer than white women (Chavez, et. al., 1995). When comparing the knowledge and attitudes regarding cervical cancer among Latina immigrants, U.S.-born Latinas, and whites; Latina immigrants were less likely to identify family history as a contributing factor for cervical cancer than U.S.-born Latinas and whites(Hubbell, et. al., 1996). On the other hand, they were more likely to identify early sexual intercourse and having multiple partners as contributors to cervical cancer than U.S.-born Latinas and whites. With regard to cancer related beliefs, Latinas were more likely to believe that factors such as poor hygiene, abortion, vaginal trauma, antibiotics, and having sexual intercourse during their menses contributed to development of cervical cancer than the other two comparison groups. In addition, Latina immigrants were more likely than U.S.-born Latinas and whites to believe that fate played a role in the development of cervical cancer and preferred to not know if they had cervical cancer. Latinas were also more likely than their counterparts to believe that they had good chances of developing cervical cancer in their lifetime (Hubbell, et. al., 1996).

Sexually Transmitted Infections (STDs) and Latinas

According to the National Latina Institute for Reproductive Health (2005), Latina women report the second highest number of cases of gonorrhea. Latinas have the highest rate of cervical cancer caused by human papilloma virus. The rate of recently reported cases of young Latinas – between the ages of 10-19 – with Chlamydia is more than double that of young white females (National Latina Institute for Reproductive Health, 2005). Latinas have higher rates of syphilis than non-Hispanic white women. HIV/AIDS is the leading cause of death among Latinos aged 25-44. For Latinas, the HIV rate was 12.9 per 100,000 contrasted to 2.4 for White women. Nationally, Latinas have been disproportionately affected by HIV/AIDS, compared with non-Hispanic white women, and they are making up an increasingly greater share of all AIDS cases reported among Latinos. Among Latinas with AIDS, the majority of cases are due to heterosexual contact with an infected male (63 percent). This is slightly higher than the percentage of cases among white women due to heterosexual contact (56 percent). The bulk of the remaining AIDS cases are due to exposure through injection drug use (35 percent for Latinas and 41 percent for white women) (National Latina Institute for Reproductive Health, 2005).

*Migrant Farmworker Health*

Migrant farmworkers are known to have more health problems than the general Latino population, and they lack access to health care services. Early research on the impact of health needs, enabling and predisposing variables on health care utilization considered Latino health care behavior to be a

consequence of cultural beliefs and demographic traits (Abril, 1977, & Adelman, 1983). More recently, an emphasis has been placed on variables such as low socioeconomic status, lack of or insufficient health insurance and barriers to care placed by the health delivery system (Guendelman & Wagner, 2000).

Other studies have focused exclusively on the determinants of farmworker health. Sakala (1987) considered the multitude of health problems suffered by hired migrant and seasonal agricultural workers a consequence of primary and secondary occupational hazards of farm labor, coupled with extreme poverty and migrancy status. Primary occupational hazards included pesticide exposure, sun exposure, injuries, and poor field sanitation. Secondary occupational hazards resulted from structural and institutional barriers such as difficulties in accessing health care services, exclusion from traditional worker health benefits, lack of enforcement of health and safety standards, lack of adequate housing, the lack of access to clean water, and other social determinants of health such education.

Studies on the social determinants of health (Ward, 2002, 2003) have concluded that farmworker health issues are complex and extend beyond the delivery of health services to farmworker populations. According to Ward, the farmworker population lags behind other disadvantaged groups in securing access to essential health care services, in part because migrant health must include social determinants of health, such as housing, work conditions, transportation, sanitation, water supply, and education (Ward, 2003). This study further concluded that male gender, following the crops, poor working conditions,

higher native language literacy levels, and more access barriers decreased the likelihood that farmworkers would receive U.S. medical care. On the other hand, use of Medicaid, WIC, or government clinics increased the likelihood that farmworkers would receive such care (Ward, 2002).

There is a difference between migrant farmworkers who are in the community for only a few weeks and those who stay in the area longer (Chapa, 1999). Farmworkers that stay in the community for a short time are less likely to be involved in community events because they spend most of their time working. Workers that remain longer frequently have children in school and use other community and health resources more often. Reasonable access to community services, such as doctors' offices, social and health related services, are important to the migrant farmworkers.

Access to services such as health care should be considered as an extension of migrant and seasonal farmworkers' investment in labor. However, studies have reported that community members sometimes express a different opinion with a documented perception of the migrant farmworker population as "using" the system in order to benefit from the social services offered (Chapa, 1999). Furthermore, many farming communities have fragile economies and fear that an influx of farmworkers can strain resources.

*Migrant Health Programs*

The recognition that there is indeed a migrant farmworker health problem has prompted federal initiatives to address it. The decade of the 1960's saw the Bracero program come to an end with documentation of migrant hardships, including working in the fields without drinking water or toilets, exposure to harmful pesticides, and limited access to child care facilities and healthcare. These conditions became national concerns, prompting some protection under various federal laws, regulations, and programs (Martin & Martin, 1994).

Due to these circumstances the federal government enacted numerous programs to specifically assist migrant workers and their families. The result was the institutionalization within various Federal departments of several programs specifically committed to serving migrant farmworker and their families. The first of these programs was the Migrant Health Act enacted in 1962, which provided for the Migrant Health Program through grants to states, local governments, and nonprofits agencies for clinics and visiting health services for migrant families. The Migrant Education and Migrant Head Start programs were formed as part of the Economic Opportunity Act two years later. During the 1970s and 1980s the number of Federal programs for migrant farmworkers increased. Today, many of these programs have expanded their target population to include seasonal farmworkers, however this is not always the case (Martin & Martin, 1994).

In spite the introduction of ameliorating measures to address migrant health concerns, challenges impacting farmworker health status have continued to exist. More recent assessments of migrant health status report major health concerns such as infectious diseases, chemical-and pesticide relate illnesses, dermatitis, heat stress respiratory conditions, musculoskeletal disorders and traumatic injuries, reproductive health problems, dental diseases, cancer, poor child health, obesity, inadequate preventive care, and social and mental health problems (Hansen & Donohoe, 2003; Villarejo & Lighthall, 2000).

*Migrant Farmworkers and Health Services Utilization*

Nearly three million workers earn their living through migrant or seasonal farm labor. Migrant and seasonal farmworkers and their families confront health challenges stemming from the nature of their work, their extreme poverty and mobility, and living and working arrangements that impede access to health coverage and care. Reports of poor health status among migratory agricultural workers and their families are widely recognized (Leone & Johnston, 1954; Goldsmith, 1989; Dever, 1991). Despite this, there is little health services usage research directed to this population (Council on Migrant Health, 1993).

According to the most recent reports by the National Agricultural Workers Survey (NAWS, 2005). Almost all migrant and seasonal farmworkers are foreign-born; only 6 percent reported being born in the United States. The majority (70 percent) permanently reside in the United States.

Although concentrated in certain areas of the country, migrant and seasonal farmworkers reside in all states. They travel frequently between "migrant streams" for their employment. As a group, migrant and seasonal farmworkers face significant language barriers—about 9 in 10 say they read and speak little or no English. They are predominantly male (88 percent), over half are married (52 percent), and over four in ten have children (44 percent). Even though migrant and seasonal farmworkers report working five to six days a week, they live in extreme poverty. In year 2000, the median income for migrant and seasonal farmworkers was $6,250, compared to $42,000 for U.S. workers overall.

The great majority of migrant and seasonal farmworkers and their families are uninsured. The Keiser Commission on Medicaid and the Uninsured reported that in year 2000, 85 percent of the migrant and seasonal farmworkers were uninsured as compared to 37 percent of low-income adults nationally. Migrant and seasonal farmworkers thus have very low rates on health care compared to other low-income groups. In 2000, only 20 percent of the migrant and seasonal farmworkers reported using any healthcare services in the preceding two years.

Studies demonstrating the reproductive health status and utilization of reproductive health services amongst Latina migrant and seasonal farmworkers are scarce. The National Latina Institute for Reproductive Health (2005) has been an advocate on behalf of this specific subpopulation because of their limited access to preventive screenings, family planning, and prenatal care among other

services. There are many challenges to addressing the reproductive health concerns of Latina migrant and seasonal farmworkers. One of the main issues is the high mobility of this population, which makes it difficult to reach them to provide essential care as well as educational information. Most studies focusing on migrant and seasonal farmworkers do not focus on female farmworkers much less on their utilization of reproductive health services.

One study found that only 42 percent of women in farmworker families reported seeking early prenatal care compared to 76 percent nationally (Rosenbaum, et al, 2006). A review of maternal health care services to migrant farmworker women conducted by WIC and the Pregnancy Prevention System, examined prenatal care, weight gain during pregnancy, and birth outcomes, they concluded that the national goals for the year 2000 were not being met (CDC, 1997).

To further complicate this situation, it has been reported that most farmworkers appear to access health care services "only when absolutely necessary" (Villarejo & Lighthall, 2000). Thus, many farmworkers only seek care when it is absolutely essential, visiting hospital emergency rooms or community clinics. The most common form of payment for health care visits being out-of-pocket. Lack of insurance and fear of deportation discourages many farmworkers from utilizing the health care system (Villarejo & Lighthall, 2000; Hansen & Donohoe, 2003).

Summarizing, migrant and seasonal farmworkers are considered to be one of the most underprivileged groups in the United States. The majority live in extreme poverty, most are uninsured, monolingual individuals who endure significant health disparities. In fact, the health status of farm workers in the United States is among the worst when compared to any other Latino sub-populations as well as US population in general (National Latina Institute for Reproductive Health, 2005).

*Michigan Latinos Utilization of Health Services*

Similar to the nation-wide trend, under-utilization of health services is a significant problem for Latinos in Michigan (Coupe, et al, 1999). Reportedly, since 1991, Michigan is one of the thirteen states where health insurance coverage rates have significantly decreased over time (US Census, 1993). According to the 1989 Health Insurance Survey of Michigan, 5 percent of Latinos did not have health insurance and 4 percent were underinsured as compared to less than 9 percent of Whites who were uninsured during that same time period (Johnson, 1994).

Data indicating the exact numbers of migrant and seasonal farmworkers in the state of Michigan is not currently available. Best estimates provided by Rosenbaum (2002) placed migrant agricultural labor force at 45,000 in 1997. It is estimated that with a workforce of 45,000 and an average family size of 3.4 the migrant population in Michigan ranges around 153,000-160,000 (Rosenbaum, 2002).

Michigan is fourth in the nation in migrant labor utilization with 95 percent of farmworkers being of Mexican descent. The majority of these workers come from Texas, and the remaining typically come from Florida and other southern states. Michigan migrant farmworkers average annual income falling below the federal poverty line; average is $7,200 for a family of four (Coupe, et al., 1999). Michigan migrant farmworkers' educational levels also fall below national and state averages, with the average grade completed being 6$^{th}$ grade (Coupe, et al., 1999).

*Conclusion*

Chapter two has reviewed the theories guiding the research, demonstrating that reproductive health services utilization amongst Latina migrant and seasonal farmworkers can be analyzed within an ecological framework and more specifically adopting the behavioral model of health services utilization.

In addition, this chapter discussed relevant literature regarding Latinas' reproductive health care status and utilization of services; migrant farmworker health; migrant farmworker health services utilization; migrant programs put in place to alleviate the health hazards among this population; and challenges impacting migrant farmworkers utilization of health services.

Studies on migrant and seasonal farmworker women and their utilization of reproductive health care services are scant. Reviewing the literature on US Latinas demonstrates that as a whole Latinas in the United States share poor reproductive health status when compared to other ethnic groups.

This is important to know when studying migrant and seasonal farmworker women as a Latina subgroup. Being Latina places women at risk for more reproductive health care problems as well as less utilization of these services. Being a migrant and/or seasonal farmworker further complicates this relationship as issues attached to the migratory lifestyle limit women's access to preventive screenings and reproductive health care overall. Thus, being both Latina and migrant or seasonal farmworker compounds the issue and places women at even lower likelihood to utilize the reproductive health care services they need. This study addresses deficits in the literature concerning migrant and seasonal farmworkers and contributes to research on predisposing, enabling, and need factors associated with their reproductive health services utilization. The following chapter will delineate the research methodology specific to this study.

# CHAPTER 3

# Methodology

## *Introduction*

The study used data originally collected by the Oceana Farmworker Health Study (OFHS, 2006). Thus, this chapter highlights the specific methodology employed by the original OFHS study. This discussion is followed by information regarding specific variables, their respective levels of measurement and suggested analysis for the purposes of the present study.

## *Research Design of the Oceana Farmworker Health Study*

The OFHS study (Rosenbaum, Lahousse, Babladelis, & Rivera-Vázquez, 2006) adopted the research design and survey methodology employed in the California Agricultural Worker Health Survey (CAWHS), which was developed by the California Institute for Rural Studies (CIRS) in 1990, to conduct a health needs assessment of the agricultural worker population in that state. The assessment procedures included a household-based cross-sectional health and risk behavior survey of migrant and seasonal farmworkers in the area. Moreover, the assessment included a free physical examination for those who agreed to participate in the survey. The survey instrument was developed following both the CAWHS survey framework and the Behavioral Risk Factor Surveillance System (BRFSS), an annual health risk survey of the Nation developed by the Centers for Disease Control and Prevention. In addition, Andersen's (1968) model of health services utilization was used to examine the factors that influence access and utilization of health services among this population.

A thirty-five dollar incentive and a ten-dollar gas stipend were provided to each participant after completion of the interview and physical exam phases of the project.

The study was guided by a multidisciplinary, participatory research approach. Informants of services available to the farmworker population were involved at all stages of the research, including developing instrumentation, collecting data, processing and analyzing data, and disseminating the results. The project design and planning was steered by the project's advisory panel. This advisory panel met monthly to advice and assist on the design and implementation of the project. Panel members represented seasonal farmworker health service providers and representatives from the local Extension office, human services agency, mental health clinic, migrant Head Start, and farm labor specialists.

*Research Setting*

Data were collected in Oceana County, from summer 2002 to summer 2004. Oceana County, in northwest Michigan is an "upstream" community in the Midwest that relies on migrant workers to meet its farm labor needs. Over the course of nearly a century of serving as a seasonal agricultural labor market area to the migrant population, some migrants have become permanent residents of the area, and many continue to work in seasonal agriculture (Rosenbaum, et al., 2006). The century old migration pattern has produced a large resident Hispanic population in the area that still works in agriculture.

In year 2000, 11.6 percent of the County's population was Hispanic. By contrast, the percentage of Hispanics in the state was 3.3 percent (U.S. Census Bureau, 2005). Oceana county represents an important fruit and vegetable agricultural area in the state with a large demand for migrant and seasonal labor. Oceana County ranks number one in the nation for its production of asparagus and has over 15,000 acres in vegetable production, 15,000 acres in fruit production and 6,000 acres in Christmas tree production. This acreage helps to make Oceana Michigan's largest vegetable growing county in the state. It is also the state's 4$^{th}$ largest fruit producing county, and its third largest Christmas tree producer (Myers, 2003).

Migrant numbers peak in Oceana County in July after asparagus season is over due to a jump in jobs available at food processing plants during the cherry season. In the post cherry harvest season in August, workers are employed in the harvest of summer squashes and peaches, pruning of Christmas trees or weeding of carrots. In September, the summer squash and peach harvests come to an end. Some families return to Texas or Florida, but others stay to harvest apples during the late September period. Apple harvest continues through October and some workers move into harvesting Christmas trees. The harvest season finishes up with the end of the Christmas tree harvest around Thanksgiving, after which many of the migrants return to their home base community in Texas and Florida (Myers, 2003). It is estimated that 2500 workers are used during the asparagus harvest in May and June. (Martinez, 2003).

Thus, in a typical year, an estimated 5,000 (Rosenbaum, et. al., 2006) migrant farmworkers and their dependents leave their homes in Texas, Mexico or Florida to come to the area for an average of six months to perform agricultural work.

As far as health services available to migrant and seasonal farmworker women in Oceana County, even though migrant camps are scattered throughout the County, a single health care provider offers bilingual services from reception to examination. Thus, migrant and seasonal farmworker women are largely constrained to the use of this specific health care provider in the County. A clinic outreach program was in place in prior years but was eliminated due to lack of funding (Rosenbaum, et. al., 2006).

*Study Sample*

The original sample included a total of 300 adult (18 years old and older) migrant and seasonal farmworkers comprising 180 migrant and 120 seasonal agricultural workers. A total of 183 (61 percent) of the survey participants were women and the rest, (39 percent), were men. The mean ages were 35 and 34 years old for migrant and seasonal farmworkers respectively. Additional data on work and gender status were collected on 1,231 household members living with the primary respondents at the time of the interview.

For the purposes of the present study, only female farmworker (primary respondent) data were used. Thus, the sample size for this study is 183 participants. Female migrant farmworkers comprised 56 percent of the sample,

while the remaining 42 percent were female seasonal farmworkers. Further sample descriptives are discussed later on this chapter.

*Procedures*

In order to identify migrant farmworkers, a list of randomly selected licensed migrant housing units was created from the 2002-licensed migrant labor housing sites (camps) report produced by the Michigan Department of Agriculture. Postcards with prepaid postage and information about the project and soliciting volunteers were used to identify seasonal farmworker participants for the study. The postcard asked for work and residential status, name, and contact information. They were distributed at the local migrant clinic, the local social service agency, churches, laundry mats, and other public places often visited by the farmworker community.

Community migrant service and migrant health workers were hired and trained to select predetermined housing units and to conduct a structured interview in the participants' preferred language, mostly Spanish, which required approximately 2-2.5 hours to complete.

A description of the study's research procedures and copies of the research instrument were approved by the University Committee on Research Involving Human Subjects at Michigan State University (MSU UCRIHS). As part of these procedures, participants were informed about the project and their rights as participants. Once the individual agreed to participate, a consent form was presented and signed before proceeding with the interview. Numeric identifiers

were used instead of participants' names. Additional approval from MSU UCRIHS was obtained for the purposes of the secondary data analyses involved in the present study (see Appendix C).

*Instruments*

A main survey instrument and a clinical exam served as the two principal components of the study. The survey was administered in a structured interview format to be able to account for any participants' literacy issues. English and Spanish and male and female specific versions of the questionnaire were developed. Male and female field interviewers were all Hispanic and proficient in both Spanish and English. In some cases, interviewers themselves were farmworkers in the past. The survey required about 2-2.5 hours to complete.

The survey instrument inquired about household composition and household member access and utilization to health care services. Other variables included demographics, health services utilization data, self-reported health conditions, doctor-reported health conditions, work history, income and living conditions, workplace health conditions, field sanitation, work related industries, and behavior risk assessment. After the survey was administered, the interviewer arranged for the participant to have a physical exam at the local migrant health clinic. The clinical exam included biometrics (height, weigh, blood pressure, temperature, pulse rate, respiratory rate, lab tests (urine dip, hemoglobin, high serum cholesterol, fasting blood sugar, and diagnostic and therapeutic procedures (Pap smear, STDs, PPD/Tuberculosis Skin Test). The

clinic performing the physical examinations had a contract with the federal government for services to the migrant farmworker population in the area and adhered to all matters of client confidentiality.

### *Research Questions*

The following research questions provided a guiding framework for the analysis.

- What is the overall self-reported reproductive health care utilization of female migrant and seasonal famworkers?
- Are predisposing, enabling, and need factors associated with reproductive health care utilization?
- Do migrant and seasonal farmworker women differ in their reproductive health care utilization?

### *Hypotheses*

The following hypotheses were tested in this study:

H1. Predisposing, enabling and need factors are directly associated with reproductive health care utilization for both migrant and seasonal farmworkers.

H2. Migrant and seasonal farmworkers will differ in their reproductive health care utilization.

H3. Predisposing, enabling and need factors increase the odds of reproductive health care utilization as measured by prenatal care, ever having a PAP Smear, ever having a mammogram, pregnancy prevention, and sexually transmitted disease protection.

H4. Migrant and seasonal farmworker women with lower rates of predisposing factors will be less likely to utilize reproductive health care services.

H5. Migrant and seasonal farmworker women with lower rates of enabling factors will be less likely to utilize reproductive health care services.

H6. Migrant and seasonal farmworker women with lower rates of need factors will be less likely to utilize reproductive health care services.

*Measures*

Reproductive Health Care Utilization

Reproductive health care has been defined as "the constellation of methods, techniques, and services that contribute to reproductive health and well-being by preventing and solving reproductive health problems" (WHO, 1998). Reproductive health implies a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity. Reproductive health, therefore, implies that people are able to have a responsible, satisfying and safe sex life and they have the capability to reproduce and the freedom to decide if, when and how often to do so. Implicit in this definition, is the right for women to be informed of and have access to appropriate health care that will enable women to go safely through pregnancy and childbirth and having a best chance of having a healthy baby (WHO, 1994).

For the purposes of the present study, the dependent variable-reproductive health care utilization has been operationalized using data obtained from the self-reported answers to the survey instrument. Specifically, the following questions were used as dependent measures of reproductive health care use:

a. The last time you were expecting a baby, how soon did you go see a doctor or midwife? This variable was originally measured using an ordinal scale where 1=within the first three months, 2=between the first 3-6 months, 3=in the last three months of pregnancy, and 4=at the baby's birth: no prenatal care.

b. Have you ever had a mammogram? This is a dichotomous variable where 1=yes and 2=no.
c. Have you ever had a PAP smear? This is a dichotomous variable where 1=yes and 2=no.
d. When you have sexual relations, do you use anything to protect yourself from diseases? This is a dichotomous variable where 1=yes and 2=no.
e. When you have sexual relations, do you use anything to prevent pregnancy?

Composite Measure of Health Care Utilization

A composite measure of reproductive health care utilization was created by summing all dichotomous variables (including early prenatal care dichotomized as yes/no). This composite measure allowed for a multidimensional analysis examining the impact of the independent measures included in the model on rates of reproductive health care utilization by Latina farmworkers.

Predisposing, Enabling and Need Variables

Predisposing variables are conceptually defined as inclination to utilize services. Predisposing variables are measured as self-reported age, educational level, respondents' agricultural work status (migrant vs. seasonal), and primary language.

Enabling variables are conceptually defined as those influencing the ability to obtain services. Enabling measures included in this study are health insurance, work status, family income, number of years working in MI, and use of local migrant clinic.

Need variables are conceptually defined as medical need and are operationalized as respondent's perceived health status, diagnosed pregnancy diabetes, having an abnormal physical exam, and reports of unmet treatment need. Perceived health status is measured by using a Likert scale where respondents rated their health in general as excellent, good, fair, or poor. Unmet need for medical care is a binary variable based on the woman's perceptions of her need for health services. Having an abnormal physical exam is a clinical variable obtained where a physician has indicated any kind of abnormally events when the participants' exam was conducted. This was a binary variable. Having been diagnosed pregnancy diabetes was a binary variable where participants self-reported if they have been diagnosed with diabetes while pregnant. A woman had perceived unmet need if she answered yes to: "During the last 12 months, have there been times when you wanted to go to a clinic or doctor and couldn't?" Table 2 outlines the distribution of the outcome and independent measures in the study.

Predisposing, Enabling, and Need Factors Composite Measures

Composite measures of predisposing, enabling, and need factors were used in the analyses. These composite measures were created by summing the number of each factor category. Thus, for the predisposing score, a value of one was given to each of the predisposing factors. Each of these categories was coded as one and then added to create a total predisposing score. For example, if a person was a seasonal farmworker, with more than 7$^{th}$ grade education, age

40 or less, married, and able to speak English or both Spanish and English, this participant would have scored 5. The predisposing score ranged from 0- 5.

The same sum technique was used to create the enabling score. Values of 1 were assigned to having health insurance, having a higher income rate (more than $15,000), having a job/being employed at the time, having resided in Michigan for more than 3 years, and having visited the local migrant clinic in the last twelve months. This score ranged from 0-5.

Lastly, the need factors score was created using the sum technique coding at a value of one for the following categories: having unmet treatment needs, perceiving that the health status was poor, having been diagnosed pregnancy diabetes, and having an abnormal physical exam. This score ranged from 0-4.

### *Sample Characteristics*

#### Predisposing Characteristics

The mean age for female farmworkers in the sample is 34.98. Seventy percent of the female subsample was composed by migrant farmworkers ages under 40 years old, the other thirty percent were females over 40 years old. In regards to agricultural work status, fifty nine percent were migrant workers and the remaining forty one percent were seasonal workers. The average educational level was 7$^{th}$ grade and most participants indicated that Spanish was their primary language, as well as the language that they prefer to speak and write in general. Most respondents were married and the number of people in the family

ranged from 1-11 and averaged 4.49 family members. Table 1 displays predisposing characteristics of the sample.

Table 1. Distribution of Predisposing Factors

| Independent Measures | Frequency | Percent |
|---|---|---|
| Age | | |
| Under 40 years old | 123 | 70 |
| 40 years old and over | 53 | 30 |
| Migrant Status | | |
| Migrant | 107 | 59 |
| Seasonal | 76 | 41 |
| Marital Status | | |
| Married | 130 | 80 |
| Other | 50 | 20 |
| Primary Language | | |
| Spanish | 119 | 67 |
| English/Both | 59 | 33 |

Enabling Characteristics

The majority of the female farmworkers had no medical insurance and reported a family income of less than $14,999/year. Most participants were employed in farmwork at the time of the interview and more than half of the female sample reported having worked in Michigan for 5 or more years. When inquired about their use of the local migrant clinic, an overwhelming majority indicated that they have ever been to the clinic. Table 2 portrays enabling characteristics for the sample.

Table 2. Distribution of Enabling Characteristics

| Independent Measures | Frequency | Percent |
|---|---|---|
| Insurance | | |
| Yes | 76 | 43 |
| No | 102 | 57 |
| Income | | |
| Less than $14,999 | 118 | 67 |
| Over $15,000 | 57 | 33 |
| Work Status | | |
| Farmwork | 130 | 72 |
| NonFarmwork/Not Working | 49 | 28 |
| Years Employed in MI | | |
| 1 year or less- 3 years | 49 | 30 |
| 3-5 or more years | 114 | 70 |
| Migrant Clinic | | |
| Yes | 160 | 90 |
| No | 18 | 10 |

Need Characteristics

The majority of the female farmworkers perceived their health status to be good and 25 percent reported that their perceived health status was fair/poor. When asked "Have there been times when you wanted to go to a clinic/doctor and couldn't?", thirty one percent of the respondents said yes while sixty nine percent reported no unmet treatment needs. Approximately half of the migrant and seasonal farmworker women in the sample had an abnormal physical exam

and another 14 percent indicated having been diagnosed with diabetes while pregnant. Table 3 portrays the distribution of health need variables in the study.

Table 3. Distribution of Need Factors

| Independent Measures | Frequency | Percent |
|---|---|---|
| Perceived Health Status | 24 | 14 |
| Excellent | 107 | 61 |
| Good | 45 | 25 |
| Fair/Poor | | |
| Unmet Treatment | | |
| Yes | 52 | 31 |
| No | 117 | 69 |
| Pregnancy Diabetes | | |
| Yes | 22 | 14 |
| No | 139 | 86 |
| Abnormal Physical Exam | | |
| Yes | 69 | 51 |
| No | 67 | 49 |

General Reproductive Health Care Characteristics

Seventy percent of the women reported having had a physical exam at some point in their lives. The majority of the women (92 percent) in the sample reported that they have been pregnant. The average age for first pregnancy was 20.34 years old. The range for age at first pregnancy was 13-35 years old. The average number of pregnancies was 3.85 and average live births was 3.35.

Fourteen percent of the women reported being diagnosed with diabetes while pregnant.

Composite Measures Descriptives

Composite measures of reproductive health care utilization, predisposing, enabling, and need variables were created. Table 4 highlights the descriptives of all scores created for analyses. On average, Latina migrant and seasonal famrworkers in the sample had low reproductive services utilization as well as low-moderate enabling, predisposing and need scores.

Table 4: Descriptives of Predisposing, Enabling, Need and Reproductive Scores

| Score | St. Deviation | Mean |
|---|---|---|
| Predisposing Score (Range 0-5) | 1.06 | 2.80 |
| Enabling Score (Range 0-5) | 1.08 | 2.43 |
| Need Score (Range 0-4) | .80 | .94 |
| Reproductive Score (Range 0-5) | .84 | 2.12 |

*Data Analysis*

Univariate analysis was performed to characterize the sample and to describe the reproductive health care utilization by migrant and seasonal farmworker women. Bivariate analyses were performed to determine the relationship between the independent predisposing, enabling, and health need variables, with utilization of reproductive health care services. Logistic regression models and multiple regression models analyzed the predictive power of predisposing, enabling and health need factors on the dependent variables-reproductive health care utilization.

Thus, hypotheses 1 and 2 examining the relationship between predisposing, enabling, health need, and reproductive health care services were analyzed using Chi-Square analysis. Given the binary nature of the reproductive health care outcomes, the third hypothesis was analyzed using binary logistic regression. Lastly, since a continuous composite measure of reproductive health care utilization as well as continuous predisposing, enabling and health need rates were created, hypotheses 4-6 were analyzed using multivariate regression analyses.

### *Conclusion*

This chapter outlined the specific research methods used in the study. This chapter has included the purpose of the research and related hypotheses, design of the study as well as methods used. The sample was described, data collection techniques and data analysis procedures necessary for completion of the study. The next chapter will delineate the results.

# CHAPTER 4

## Results

### *Introduction*

The main objective of this study was to investigate Latina migrant and seasonal farmworker utilization of reproductive health services. This chapter includes relevant information on data patterns and major findings for each hypothesis.

*Research Question 1.* What is the overall self-reported reproductive health care utilization of female migrant and seasonal farmworkers?

To answer this research question, univariate analysis was performed to describe the general use of reproductive health care services of migrant and seasonal women in the sample. The outcome measures of reproductive health care included ever having a mammogram, ever having a Pap smear, early prenatal care, STD prevention, and pregnancy prevention. When asked "Have you ever had a mammogram?" and "When you have sexual relations, do you use anything to protect yourself from diseases?", the majority of the female farmworkers in the sample responded "No". In regards to ever having a PAP smear most respondents reported that they have had a PAP Smear. When asked "When you have sexual relations, do you use anything to prevent pregnancy?", fifty seven percent of the respondents said "Yes" and 43 percent said "No". In regards to early prenatal care, the majority of the respondents reported having sought prenatal care during the first three months of pregnancy

the last time they were pregnant. Table 4 highlights specific distributions for all reproductive health care outcomes included in the analysis.

Table 5. Distribution of Reproductive Health Care Outcomes

| Reproductive Health Care Outcomes | Frequency | Percent |
|---|---|---|
| Ever had a mammogram | | |
| Yes | 56 | 32 |
| No | 119 | 68 |
| Ever had a PAP Smear | | |
| Yes | 159 | 90 |
| No | 17 | 10 |
| Use protection for STD | | |
| Yes | 37 | 22 |
| No | 131 | 78 |
| Pregnancy Prevention | | |
| Yes | 73 | 43 |
| No | 95 | 57 |
| Early Prenatal Care | | |
| Yes | 140 | 89 |
| No | 17 | 11 |

*Research Question 2. Are predisposing, enabling, and health need factors associated with reproductive health care utilization.*

*Hypothesis 1. Predisposing, enabling, and health need factors are associated with reproductive care utilization outcomes for both migrant and seasonal farmworkers.*

This first hypothesis was tested using Chi-Square analysis. The analysis demonstrated that certain predisposing, enabling, and health need variables are associated with reproductive health services utilization outcomes for both migrant and seasonal farmworkers in the sample. Specifically, the predisposing variable age is associated with mammogram screening and pregnancy prevention. Women who are over 40 years old seem to be getting their mammograms as recommended at age 40. Women less than 40 years old are less likely to use methods for preventing pregnancy. Marital status is associated with STD prevention, migrant and seasonal farmworkers who are married are less likely to utilize STD protection. Lastly, women with more than 7$^{th}$ grade education are more likely to get mammograms. The enabling variables, years employed in the state and having visited the local migrant clinic are associated with increased mammogram screenings. Also, having an income level over the $15,000 increases the likelihood of utilization of PAP smears and STD prevention methods for women in the sample.

In regards to health need variables association with reproductive health care utilization, having no unmet treatment health need is associated with a greater likelihood to obtain PAP smears screenings. Tables 6.1-6.3 portray detailed results for these analyses.

Table 6.1 Chi-Square Results for Predisposing Variables Association with Utilization of Reproductive Care Services

| Independent Measures | Mammogram | | PAP | | STD Prevention | | Prenatal Care | | Pregnancy Prevention | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Predisposing** | Yes | No | Yes | No | Yes | No | Yes | No | Yes | No |
| Age | | * | | | | | | | | * |
| < 40 years old | 25 | 92 | 71 | 62 | 76 | 67 | 69 | 60 | 84 | 60 |
| > 40 years old | 75 | 8 | 28 | 38 | 24 | 33 | 31 | 40 | 16 | 40 |
| Marital Status | | | | | | * | | | | |
| Married | 77 | 71 | 74 | 65 | 56 | 78 | 74 | 73 | 71 | 75 |
| Other | 23 | 29 | 26 | 35 | 44 | 22 | 26 | 27 | 29 | 25 |
| Primary Language | | | | | | | | | | |
| Spanish | 69 | 65 | 67 | 70 | 56 | 68 | 71 | 53 | 62 | 67 |
| English | 7 | 9 | 8 | 12 | 11 | 7 | 10 | 1 | 9 | 7 |
| Both | 23 | 25 | 25 | 18 | 33 | 25 | 19 | 46 | 29 | 26 |
| Educational Level | | * | | | | | | | | |
| Less than 7th | 39 | 23 | 30 | 88 | 25 | 31 | 30 | 33 | 25 | 34 |
| 7th grade or more | 61 | 77 | 70 | 12 | 75 | 69 | 70 | 67 | 75 | 66 |

*Note *= P<.05*

*Table 6.2 Chi-Square Results for Enabling Variables Association with Utilization of Reproductive Care Services*

| Independent Measures | Mammogram | | PAP | | STD Prevention | | Prenatal Care | | Pregnancy Prevention | |
|---|---|---|---|---|---|---|---|---|---|---|
| Enabling | Yes | No | Yes | No | Yes | No | Yes | No | Yes | No |
| Insurance | | | | | | | | | | |
| Yes | 31 | 44 | 46 | 23 | 37 | 42 | 47 | 47 | 43 | 41 |
| No | 59 | 56 | 54 | 77 | 63 | 56 | 53 | 53 | 57 | 59 |
| Income | | | | * | | * | | | | |
| Less than $14,999 | 39 | 33 | 37 | 12 | 21 | 38 | 36 | 27 | 34 | 34 |
| Over $15,000 | 61 | 67 | 63 | 88 | 79 | 62 | 64 | 73 | 66 | 66 |
| Work Status | | | | | | | | | | |
| Farmwork | 71 | 73 | 73 | 71 | 81 | 77 | 70 | 87 | 75 | 80 |
| NonFarmwork/ Not Working | 29 | 27 | 27 | 29 | 19 | 23 | 30 | 13 | 25 | 20 |
| Years Employed in MI | | * | | | | | | | | |
| 1-3 years | 14 | 38 | 28 | 47 | 32 | 30 | 25 | 40 | 27 | 33 |
| 3 years or more | 86 | 62 | 72 | 53 | 68 | 70 | 75 | 60 | 73 | 67 |
| Migrant Clinic | | * | | | | | | | | |
| Yes | 98 | 87 | 92 | 82 | 77 | 85 | 92 | 80 | 83 | 84 |
| No | 2 | 13 | 8 | 18 | 23 | 15 | 8 | 20 | 17 | 16 |

*Note *= P<.05*

Table 6.3 Chi-Square Results for Health Need Variables Association with Utilization of Reproductive Care Services

| Independent Measures | Mammogram | | PAP | | STD Prevention | | Prenatal Care | | Pregnancy Prevention | |
|---|---|---|---|---|---|---|---|---|---|---|
| Health Need | Yes | No | Yes | No | Yes | No | Yes | No | Yes | No |
| Perceived Health | | | | | | | | | | |
| Excellent | 18 | 12 | 13 | 18 | 16 | 13 | 15 | 7 | 14 | 15 |
| Good | 54 | 65 | 62 | 53 | 60 | 64 | 62 | 60 | 61 | 65 |
| Fair/Poor | 28 | 23 | 24 | 29 | 24 | 23 | 23 | 33 | 25 | 20 |
| Unmet Treatment | | | | * | | | | | | |
| Yes | 32 | 27 | 31 | 18 | 18 | 27 | 28 | 50 | 27 | 25 |
| No | 68 | 73 | 69 | 82 | 80 | 73 | 72 | 50 | 73 | 75 |
| Pregnancy Diabetes | | | | | | | | | | |
| Yes | 18 | 11 | 14 | 10 | 19 | 11 | 13 | 20 | 17 | 11 |
| No | 82 | 89 | 86 | 90 | 81 | 89 | 87 | 80 | 83 | 89 |
| Abnormal Physical Exam | | | | | | | | | | |
| Yes | 48 | 50 | 48 | 64 | 39 | 45 | 53 | 64 | 45 | 39 |
| No | 52 | 50 | 52 | 36 | 61 | 55 | 47 | 36 | 55 | 61 |

*Note *= P<.05*

*Hypothesis 2. Migrant and seasonal farmworkers will differ in their utilization of reproductive health care services.*

In order to test the second hypothesis, Chi-Square analyses were conducted. It was expected that migrant farmworkers would have lower of reproductive health care utilization compared to seasonal due to the high rates of mobility and lower rates of social networks within the receiving community.

Results of the Chi-Square analyses demonstrated that seasonal women are more likely to utilize pregnancy prevention and prenatal care. This relationship was statistically significant at P<.05. Migrant farmworkers in the sample were less likely to utilize the same services. Other reproductive health care services such as PAP Smears, mammogram, and STD prevention were not statistically significant. Table 6 highlights specific Chi-Square results.

Table 7. Chi-Square Results for Migrant and Seasonal Farmworker Utilization of Reproductive Health Services

| Reproductive Health Services | Percent Migrant | Percent Seasonal |
|---|---|---|
| Mammogram | | |
| Yes | 57 | 40 |
| No | 43 | 60 |
| PAP Smears | | |
| Yes | 88 | 93 |
| No | 12 | 7 |
| Prenatal Care * | | |
| Yes | 86 | 96 |
| No | 13 | 4 |
| STD Prevention | | |
| Yes | 28 | 26 |
| No | 72 | 74 |
| Pregnancy Prevention * | | |
| Yes | 39 | 55 |
| No | 61 | 45 |

*Note: *=P<.05*

*Hypothesis 3. Predisposing, enabling, and health need factors increase the odds of reproductive health care utilization as measured by prenatal care, ever having a PAP Smear, ever having a mammogram, pregnancy prevention, and sexually transmitted disease protection.*

A total of five logistic regression models were performed with all the binary reproductive health care measures as the dependent variable. Logistic regression is the most reasonable statistical technique given the binary nature of the several reproductive health outcomes. Thus, logistic regression models included both theoretically and statistically significant predisposing, enabling, and health need predictors of reproductive health care utilization as measured by prenatal care, ever having a PAP Smear, ever having a mammogram, pregnancy prevention, and sexually transmitted disease protection.

Due to sample size limitations ($n$=183), the logistic regression models needed to be constrained to a maximum of six predictors per model. Based on the Anderson theoretical framework, logistic regression models were used to analyze the predictive power of several predisposing, enabling, and health need factors separately.

1. Predisposing Factors as Predictors of Reproductive Health Services

The predisposing factors reflect mostly sociodemographic characteristics that increase or decrease the propensity to use reproductive health care services. The predisposing variables assessed in this study were educational attainment, age, migrant status, primary language, and marital status.

When considering the impact of predisposing factors on mammogram screening, the logistic regression analysis demonstrated that two variables: age and migrant status are statistically significant. In specific, women who are less than 40 years old are less likely to get mammograms. Additionally, migrant farmworker women are more likely to report having had a mammogram ever (Table 8).

Based on the results, some predisposing factors were predictive of migrant/seasonal farmworker women's' utilization of mammogram screening. Predisposing factors did not reach levels of statistical significance for PAP screening, prenatal care, and STD prevention. The specific binary logistic results for PAP screening, prenatal care and STD prevention are outlined in Tables A8.1-A8.5. Age 40 was predictive of pregnancy prevention. In this case, farmworker women below age 40 are more likely to utilize pregnancy prevention methods.

2. Enabling Factors as Predictors of Reproductive Health Care

Enabling factors are resources or circumstances that allow a person to act on her inclination to seek reproductive health services. The enabling variables considered were health insurance status, employment status, annual income, number of years the person has worked in Michigan, and reported use of the local migrant clinic.

The logistic regression analysis demonstrated that certain enabling factors influence the utilization of reproductive health care services, specifically mammogram screenings and STD prevention practices (Table 8). Particularly, the number of years residing in Michigan predicts mammogram screening. In this instance, women who have been working in Michigan for less than 3 years are less likely to report having ever had a mammogram. In regards to STD prevention, the logistic regression analysis showed that income levels are predictive of reported use of STD prevention methods. In this case, farmworker women in the higher income categories, reportedly having an approximate household income for the last 12 months higher than $15,000 are more likely to use protection for sexually transmitted diseases (Table 8).

Based on the results, enabling factors were not predictive of migrant farmworker women's' utilization of PAP Smears screening nor prenatal care. Binary logistic outcomes for PAP screening and prenatal care did not reach statistical significance at P<.05. (Tables A8.6-A8.10).

3. Health Need Factors as Predictors of Reproductive Health Care

Based on the results, health need factors were not predictive of migrant farmworker women's utilization of reproductive health services. Binary logistic outcomes for mammogram screening, PAP screening, prenatal care, STD prevention and pregnancy prevention did not reach statistical significance at P<.05. Detailed binary logistic results for all health need logistic regression models are outlined in tables A8.11-A8.15.

Table 8. Predisposing, Enabling and Need Predictors of Utilization of Reproductive Care Services

| | Mammogram | | PAP | | STD Prevention | | Prenatal Care | | Pregnancy Prevention | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Predictors** | B | Sig | B | Sig | B | Sig | B | Sig | B | Sig |
| **Predisposing** | | | | | | | | | | |
| Education | .592 | | .162 | | -.039 | | .056 | | -.366 | |
| Age 40 | -4.017 | * | .462 | | .084 | | .076 | | 1.21 | * |
| Migrant Status | -1.091 | * | -.530 | | -.114 | | -.806 | | -.359 | |
| Language | -.241 | | -.241 | | -.142 | | .630 | | .370 | |
| Marital Status | -.066 | | -.311 | | 1.18 | * | .603 | | -.512 | |
| | | | | | | | | | | |
| **Enabling** | | | | | | | | | | |
| Insurance Status | .090 | | -.977 | | .401 | | -.064 | | .071 | |
| Employment Status | -.178 | | -.637 | | .202 | | .672 | | .679 | |
| Income | -.041 | | -1.361 | | .967 | * | -.427 | | -.466 | |
| Years in MI | -.600 | * | -.267 | | .093 | | -.162 | | -.067 | |
| Migrant Clinic | -20.09 | | -.675 | | -.969 | | -.951 | | -.786 | |
| | | | | | | | | | | |
| **Need** | | | | | | | | | | |
| Pregnancy Diabetes | -.511 | | .121 | | -.283 | | .540 | | .323 | |
| Normal Physical Exam | .106 | | 1.78 | | .086 | | -.706 | | -.683 | |
| Perceived Health Status | .038 | | -.351 | | .439 | | .391 | | .330 | |
| Unmet Treatment | .074 | | -18.59 | | -.139 | | .787 | | -.042 | |

Note *= P<.05

*Hypotheses 4-6. Migrant and seasonal farmworkers with higher rates of predisposing, enabling, and health need factors will be less likely to utilize reproductive health services overall.*

In order to test hypotheses 4-6 outlining the predictive power of rates of predisposing, enabling, and health need factors, three multiple regression models were tested using the composite measure of reproductive health utilization as the outcome. The composite measure is a sum of predisposing, enabling, and health need factors. These scores were tested on a multiple regression model to analyze the extent to which having lower rates of predisposing, enabling, and health need factors impact reproductive health service utilization for both migrant and seasonal farmworkers.

To determine which individual predictors are significantly associated with utilization of reproductive health care controlling for other factors, regression models using forward and backward stepwise techniques were performed. The regression model including predisposing factors of reproductive health care rates did not produce any statistically significant results at $P<.05$ (see Table 9).

The second regression model included enabling factors as predictors of reproductive health care utilization rates (Table 9). The analysis demonstrated that enabling factors predict reproductive health care utilization rates for migrant and seasonal farmworker women (Table A9.1). Specifically, insurance status and having visited the local migrant clinic in the last 12 months predict higher utilization rates of reproductive health services overall. In this case, migrant and

seasonal farmworker women who do not have insurance utilize reproductive health services at a lower rate than those who are insured. On the other hand, the migrant farmworker women who have recently visited the local migrant health clinic are more inclined to use reproductive health services such as PAP smears, mammograms, etc. (see Table A9.2). The third regression model included health need factors as predictors of reproductive health utilization rates. None of the health need variables were statistically significant at P<.05 (See Table A9.3).

An additional model was tested while including predisposing, enabling, and health need factor scores (all entered at once). The model displayed on the table below examined the predictive power of these scores on the utilization of reproductive health services among migrant and seasonal farmworkers. The results were not statistically significant at P<.05. Thus, enabling, predisposing, and health need scores, do not seem to predict health care utilization scores for migrant and seasonal farmworker in the sample (Table A9.4).

Table 9. Regression Outcomes for Predisposing, Enabling, and Need Health Variables as Predictors of Utilization of Reproductive Care Score

| | Beta | P Value |
|---|---|---|
| **Predictors of Reproductive Health Care Scores** | | |
| **Predisposing** | | |
| Education | .349 | .108 |
| Age 40 | .424 | .061 |
| Migrant Status | .143 | .499 |
| Language | -.041 | .849 |
| Marital Status | -.257 | .223 |
| | | |
| **Enabling** | | |
| Insurance Status | -.339 | .028* |
| Employment Status | .225 | .168 |
| Income | .088 | .579 |
| Years in MI | .191 | .408 |
| Migrant Clinic | .568 | .050* |
| | | |
| **Need** | | |
| Pregnancy Diabetes | .115 | .654 |
| Normal Physical Exam | -.035 | .836 |
| Perceived Health Status | .353 | .548 |
| Unmet Treatment | -.028 | .148 |
| | | |
| Predisposing Score | -.028 | .813 |
| Enabling Score | -.002 | .984 |
| Need Score | -.044 | .767 |

Note: *=P<.05

*Conclusion*

This chapter presented the findings for the research hypotheses introduced in Chapter 3. The next chapter will present a discussion of these findings.

# CHAPTER 5

## Discussion

### *Introduction*

The previous chapter provided the major findings for this study. Taking into consideration all of these results, the present chapter will focus on discussing relevant issues as they pertain to the study's limitations, implications, and suggestions for future research.

### *Summary of Findings*

As a group, migrant and seasonal farmworkers comprise one of the most disadvantaged in Michigan and in the nation. Migrant and seasonal farmworkers are overwhelmingly uninsured and monolingual (Spanish-speaking), and suffer from significant health disparities, including reproductive health utilization. Migrant and seasonal farmworkers women have perhaps the most limited access to preventative screenings, family planning, and prenatal care, among other reproductive health services. This study endeavored to describe and analyze factors that impact utilization of reproductive health care services by this subpopulation in a Midwestern state. The study adopted an ecological framework as well as the Anderson model of health care utilization.

Approximately, 90 percent of the women in the sample reported having ever had a PAP Smears and another 89 percent reported seeking early prenatal care. While these numbers are encouraging, there is a serious gap in percentages of women who have had appropriate reproductive health care

utilization as measured in this study. The analyses demonstrated that migrant and seasonal farmworker women in the sample have low to moderate use of the reproductive health care services included in the analyses. Latina migrant and seasonal farmworkers are likely to report not using any methods to protect themselves from sexually transmitted diseases or pregnancy prevention. In addition, both migrant and seasonal farmworker women have low rates of mammogram screenings.

It was also proposed that seasonal and migrant farmworker would differ in their reproductive health services utilization. There is statistical evidence indicating that being a seasonal or a migrant farmworker does impact utilization of reproductive health services. Specifically, seasonal farmworkers in the sample were more likely to use prenatal care and pregnancy prevention at higher rates than migrant women; thus, this finding provides support for *Hypothesis 2*.

The statistical analysis demonstrated a relationship between ever having a mammogram and migrant status. It seems that migrant farmworker women have been able to access mammogram screenings at higher rates than seasonal farmworker women. A plausible explanation in light of the current study might be that migrant farmworker women have been the target of specific programs delineated to reduce health disparities specifically addressing the low rates of breast cancer screening among this subpopulation. While the local migrant clinic in the nearby township serves migrant farmworkers and seasonal farmworkers equally, the Promotoras program -health education program- has made

aggressive attempts to educate migrant women residing in the camps about the importance of cancer screening. Seasonal workers can still receive services and information at the migrant clinic, however they are more limited as far as the information they receive on breast cancer screening.

Based on results obtained from binary logistic regression models, it was demonstrated that age and migrant status are predisposing predictors of having ever had a mammogram. Having worked in the state for more than 3 years is an enabling factor predictive of having ever had a mammogram. In addition, higher income levels predict use of prevention methods for sexually transmitted diseases. These findings provide limited support for hypothesis 3 in that specific predisposing and enabling factors increase the odds of reproductive health care services utilization by migrant and seasonal farmworker women.

The health need factors models were not statistically significant. These results contradict prior findings of studies utilizing the Andersen model indicating that health need is one of the most pressing indicators of health care utilization (Andersen, 1968; 1995). It seems that considered together both predisposing and enabling factors may, in fact be more important and/or stronger predictors of reproductive health care utilization than the need for care in this specific subpopulation. These findings further indicate that cultural and behavioral differences better explain the use of reproductive health care use among migrant and seasonal farmworker women. Thus, for Latina migrant and seasonal

farmworkers in the sample, need for care is not associated with utilization of reproductive health care services.

Enabling factors are also predictive of a woman's reproductive health care utilization score. Both migrant and seasonal women who do not have health insurance utilize reproductive health care services at a lower rate than those with health insurance. On the other hand, women who have not recently visited the local migrant clinic have lower reproductive health utilization scores. These findings provide support for Hypothesis number 5 outlining that migrant and seasonal farmworker women with lower rates of enabling factors will be less likely to utilize reproductive health care services.

The fact that certain predisposing and enabling factors are predictive of Latino Migrant farmworker women reproductive health care utilization rates does suggest that structural factors play a particularly important role in determining these women utilization of services. Predisposing and enabling factors are key in Andersen's behavioral model of health services utilization and should continue to be explored in light of the current findings. Hypotheses number 4 and 6 were not supported by the statistical analysis. See Appendix A for detailed tables summarizing results obtained for binary logistic regression and multiple regression analyses.

Consistent with previous findings in the literature, results in this study have demonstrated that some predisposing (migrant agricultural status and age in the case of mammograms) as well as various enabling variables such as income

level and years working in the state are predictive of utilization of specific reproductive health care services among Latina migrant and seasonal farmworkers. On the other hand, finding that health need variables are not statistically significant for migrant and seasonal farmworker women in the sample, shows that both migrant and seasonal farmworker women have equal deficits when it comes to needs and utilization of reproductive health care services. Prior research applying the Andersen model and the role of need variables on health services utilization has indicated the strength of this association (Andersen & Aday, 1978). Analyzing these results in scope of the Andersen behavioral model of health services utilization it would seem that barriers such as language and income obviously have a stronger impact on farmworker women's use of these services. Health need on the other hand might be a lesser explanatory factor that can be accounted for after the structural barriers are considered. These results further suggest that the circumstances of utilization and relationship with objective indicators of reproductive health care utilization are both complex and diverse and might vary for women from the migrant and seasonal farmworker population.

The reproductive care utilization measures included in this study are considered to be preventive screenings, based on the Andersen model, then the non significant results could be due to utilization of these services influenced primarily by predisposing and enabling factors (Aday & Awe, 1997).

If utilization of these reproductive health services were based primarily on responses to disease and/or disorders, a statistically significant association could have been found.

Another plausible explanation might be that the lack of association of health need with reproductive health care utilization could be due to the low numbers of farmworker women who reported having health needs. Further research is needed to explore whether these findings are consistent across other migrant and seasonal farmworkers women whose reported health need s are higher.

Situating this discussion within the national scope of reproductive health care utilization seems appropriate. When comparing the reproductive health care utilization amongst US women in general, US Latino women and Michigan Latino women, both migrant and seasonal farmworkers fair very low in areas of mammogram screening and STD prevention. In addition, while seasonal farmworkers in the sample are similar to US Latino women in terms of pregnancy prevention utilization, these numbers are still lower than those of US women in general. Both migrant and seasonal farmworkers in the sample seem to have made great strides towards increased utilization of PAP smears screenings as well as prenatal care utilization. These results are reported in full in table B1 located in Appendix B.

*Policy Implications*

This study has important policy implications. At a local level, this study adds to the disparities research agenda by informing on the reproductive health care utilization of migrant and seasonal farmworkers in a specific Midwestern "upstream" location. It has been demonstrated that there are structural components that impact migrant and seasonal farmworker women's and that these factors are still significant even when controlling for the need for care. More importantly, this research helps to document the specific predisposing, enabling, and health need factors that must be considered within the local health care system so that efforts to increase utilization of reproductive health care services among this subpopulation are adapted. The results of this study could further serve to inform the local community so that improvements in the areas of prevention and awareness of reproductive health services are introduced and monitored.

The results indicate that migrant and seasonal farmworker women who have reported health need, do not utilize reproductive health care services. This finding is striking since women who have been diagnosed with pregnancy diabetes, have reported unmet treatment needs, considered their health status to be less than fair and had an abnormal physical exams, would be more prone to seek reproductive health care services.

Adopting an ecological perspective helps us to understand the present findings as well as to suggest policy innovations. There is an important ecological principle that applies in this case, "treating the whole not the part". Thus for reproductive health services to be truly adaptive to the needs and hence reduce reported health disparities of Latina migrant and seasonal farmworkers, it would have to treat this subpopulation's social and physical environment and its relationships with them and thereby the larger system. Government policies need to be put in place that promote a holistic approach to procuring effective health services, including reproductive health services, for this marginalized segment of the U.S. population.

Such policies would need to include community and family interventions that are culturally and theoretically appropriate for Latina migrant and seasonal farmworkers. Programs that do not talk at these women about services, but rather reach out to them with a culturally appropriate message about behaviors that are perceived as both unfamiliar as well as unreasonable to them. One example highlighting the inadequacies of current approaches is that of mainstream campaigns for breast cancer screening focusing on finding the cancer on time and thus preventing death, it has been noted that these types of messages scare Latino women away (Borrayo, 2000). Thus, a better way to address Latinas is through focusing on family centered interventions that contextualize breast cancer screening as a healthy behavior for Latinas and their families, since their culture emphasizes family ties.

Recent work by Torres et. al. (2003) validates and expands on this idea with the conclusion that, "the successful attainment of sexual and reproductive health promotion goals in U.S. Latino communities depends on: the effect of the transcultural and transnational experience in explanatory models of sexuality and human reproduction, the reassessment and redefinition of women's power, the inclusion of men in sexual health programs, the integration of sexual health education in community systems, and the development of education interventions with economic development components." However, these programs should only be temporary solutions. They should play a supplemental role to more extensive efforts to reduce racial and ethnic health disparities in general. Only when issues such as the lack of health insurance among Latinos are addressed, will it be possible to most effectively meet the reproductive health needs to migrant and seasonal farmworker women.

Additional policy implications concern the area of outreach to migrant and seasonal farmworkers. Several federal programs have been put in place to address health problems in this population, however, these programs have in some instances limited their services to migrant farmworkers and not seasonal farmworkers. Reaching both migrant and seasonal farmworker women should be a priority item, particularly in areas of reproductive health care utilization.

Another important finding for policy implementation is that having visited the local migrant clinic is predictive of increased utilization of reproductive health services. Thus, visiting the local migrant clinic enables farmworker women to

utilize reproductive health services at a higher rate. This finding warrants close attention within the context of the migrant healthcare system composed of approximately 400 federally authorized clinic sites that reaches only 12-15 percent of the this population annually (Gwyther & Jenkins, 1998). As few as 15 percent to 20 percent obtain assistance program benefits because of impractical requirements and fear of deportation (Donohoe, 2004). Given these facts, federal programs and initiatives advocating for migrant and seasonal farmworker utilization of reproductive health services need to be furthered while considering the context in which migrant farmworkers operate, their perceptions and variables that impact utilization of reproductive health services including the enabling effects of using local migrant clinics.

Further policy implications include the area of reporting systems on health indicators data. While measuring health disparities has been approached by considering race and ethnicity, occupational status is currently not included in routine reporting systems for health indicators to measure specific farmworker health disparities. Based on the results of this study, migrant and seasonal farmworkers differ on their utilization of reproductive health services. These differences pose a strong public policy implication for outreach based on the agricultural work category of these women. It seems that the promotoras (community health advisors) might be a good approach to continue reaching migrant women because services are brought to them while in the migrant camps.

This is also a culturally appropriate approach to reach underserved seasonal farmworker women, however, based on the fact that seasonal famrworkers settle down in a particular community and most of the times do so with their families, a more appropriate intervention would use the family setting as the ground for imparting education, awareness, and prevention services, thus increasing access to reproductive health services by seasonal farmworker women.

Regardless of the reasons that impacted the non-significance of the health need factors for this subpopulation of migrant farmworkers, the analyses did demonstrate through the application of the behavioral model, that migrant and seasonal farmworker women do no have equitable access to reproductive care services. This is based on Andersen's definition of equitable access as occurring when demographic and health need variables account for most of the explained variance (Andersen, 1995). Inequitable access occurs when social structure, health beliefs and enabling resources determine who gets medical care.

Including agricultural work status as a predisposing variable for reproductive health services utilization is only a small step towards advancing research applying models of health services utilization to underserved and vulnerable groups. Further developments in this research area are needed in order to inform policy makers specifically those in charge of Medicare, Medicaid, and other welfare programs at both federal and state levels refocus their attention on the health needs and utilization of services of migrant and seasonal

farmworker women, a group who is at higher risk for adverse reproductive health outcomes and decreased utilization.

*Limitations*

This study took a particular and relatively selective focus on reproductive health of Latina migrant and seasonal farmworker women. However, the author recognizes that there is room for great value in also carrying out research from a broader perspective; for example drawing out the linkages between Latina migrant and seasonal farmworker general and reproductive health status with their utilization of these services. In addition, while this study focuses on Latinas, it should be acknowledged that many of the issues discussed are not unique to Latinas, but may be relevant to other medically underserved women. Additional research that compares different racial and ethnic groups is important, because such studies are useful for assessing the degree to which disparities in utilization of reproductive health services are being reduced or continue to exist.

In addition, since data were originally collected as a general health needs assessment of migrant and seasonal farmworkers in the state, the researcher was limited as far as the utilization measures included as well as those measures of predisposing, enabling, and health need factors. Moreover, while the original behavioral model of health services utilization has been specifically revised for vulnerable populations (Gelberg, et. al., 2000), important variables such as acculturation, available community resources, health services resources, and satisfaction with care, were not available for analyses.

Future studies examining these variables while adopting the revised behavioral model for vulnerable populations among migrant and seasonal farmworker women are needed. For instance, studies examining the impact of acculturation and the use of health services have been consistent in that low levels of acculturation for Latinos are associated with the underutilization of preventive health services (Suarez, 1994; Kirkman-Liff & Mondragon, 1991; & Wells, et. al, 1989). A study found that after controlling for demographic, socioeconomic and access to health care variables, Latina women of Caribbean origin who were more acculturated had higher odds of receiving a mammogram than less acculturated women (O'Malley et. al., 1999). More research looking at acculturation and reproductive health services utilization among migrant and seasonal farmworkers is needed.

Although the conceptual model used in this study is considered a non-recursive model, sample size limited the ability of conducting a higher order statistical analyses such as structural equation modeling. Using structural equation modeling would provide more powerful analyses by taking into account the modeling of interactions, nonlinearities, correlated independents, measurement error, correlated error terms, multiple latent independents each measured by multiple indicators, and one or more latent dependents also each with multiple indicators (Kline, 1998).

*Future Research*

There is room to continue this line of research in many different realms. One particularly interesting idea is to target mammogram-screening behaviors of migrant and seasonal farmworkers in the state and factors that promote or hinder this utilization rate. Future research could then look into the impact of community health worker approaches on increasing mammogram screening for migrant and seasonal farmworker women. Also, it would be interesting to find out if the health literacy of these women impacts their utilization of reproductive health services such as mammograms and PAP smears.

Health literacy has been defined as "the degree to which individuals have the capacity to obtain, process, and understand basic information and services needed to make appropriate decisions regarding their health" (Ratzan & Parker, 2000). At some point, most individuals will encounter health information they cannot understand. Even well educated people with strong reading and writing skills may have trouble comprehending a medical form or doctor's instructions regarding a drug or procedure.

Research on health literacy has demonstrated that is an important barrier that must be addressed. Given that migrant and seasonal farmworker already confront literacy barriers, the researcher would like to analyze the issue of health literacy in the migrant and seasonal farmworker subpopulation and its impact on reproductive health care utilization.

A study examining functional health literacy in Spanish on cancer screening among Latinas in New York City found that almost half of their sample had difficulty interpreting written materials, even in Spanish (Garbers & Chiasson, 2004). Thus, the authors concluded that programs and service providers need to be aware that the women most in need about information on screening may be more likely to be unable to read any written materials provided to them, regardless of the language or level of simplicity of the materials. Programs and strategies need to be implemented that increase screening prevalence and to minimize the gaps in regular screenings for Latinas with low health literacy.

Another issue for future investigation is the issue of mistrust in health care providers. Medical mistrust has been documented as impacting utilization of health services. More specifically, it has been noted that Latino women tend to report having had numerous negative experiences with health care providers. A study examining breast cancer screening barriers among Latinas found that most women across several Latino subgroups did not perceive doctors as trustworthy gatekeepers of health information (Buki, Borrayo, Feigal, & Carrillo, 2004). Impact of distrust needs to be addressed in relationship to utilization of health care services among migrant and seasonal farmworkers.

The inclusion of the above mentioned variables as predisposing and enabling factors to reproductive health care utilization among migrant and seasonal farmworker women would allow for the use and adaptation of the revised behavioral model of health services utilization for vulnerable populations.

In addition, future research with this specific dataset could look into the impact of reproductive health status (i.e. clinical variables such as having been diagnosed with Chlamydia) on each of the reproductive health care services analyzed. For example, it could be hypothesized that women who have been diagnosed with Chlamydia will use STD prevention at higher rates. Using the Oceana Farmworker Health Needs Assessment for this purpose would enhance the research in this area.

### *Conclusions*

This chapter has provided a discussion of the findings relevant for this study. Overall, this study has significant implications for practice and demonstrates the importance for addressing barriers to reproductive health care utilization by migrant and seasonal farmworker women.

The limited sample size made it impossible to fully test the Andersen model, however, the use of the binary logistic and multiple regression techniques facilitated the analysis of the data. Demonstrating that there are still gaps in reproductive health care utilization by migrant and seasonal farmworkers and in some instances it would make sense to address the specific reproductive health care utilization factors that impact each group separately. Migrant and seasonal famrworkers do have several differentiating factors when it comes to their utilization of reproductive health services. As outlined in this study, these differences might be due to the less availability of social connections for migrant farmworkers who often travel from sending to receiving states and have less

opportunity to get to know what resources are available in each community. These differences pose a strong public policy implication for outreach based on the working/employment category of these women.

This study was too narrow to account for the complexities in the relationship between environmental factors that contribute to utilization of reproductive health services amongst this subpopulation. Despite this, it is an important contribution to the small body of literature on reproductive health services utilization by Latino migrant and seasonal farmworker women because it provides baseline information that is potentially useful when examining factors associated with health disparities in this medically underserved and underprivileged group.

Improving our understanding of Latina migrant and seasonal farmworker utilization of reproductive health services is critical for the development of strategies that will reduce health disparities in this area. Additional research is needed that looks at understanding how protective aspects of the culture can be used to help others. Identification of positive perceptions, facilitators, and behaviors that foster increased utilization of reproductive health care services are crucial in this population.

# APPENDIX A

Table A 8.1 Binary Logistic Outcomes of Mammogram Screening

| Predisposing Factors | Beta | *P* Value |
|---|---|---|
| | | |
| Educational Level | .592 | .053 |
| Age 40 | -4.017 | .000* |
| Migrant Status | -1.091 | .043* |
| Language | -.241 | .404 |
| Marital Status | -.066 | .909 |

**P<.05; -2 Log likelihood= 116.702; R Square= .579*

Table A 8.2 Binary Logistic Outcomes of PAP Screening

| Predisposing Factors | Beta | *P* Value |
|---|---|---|
| Educational Level | .162 | .596 |
| Age 40 | .462 | .409 |
| Migrant Status | -.530 | .363 |
| Language | -.241 | .480 |
| Marital Status | -.311 | .593 |

*-2 Log Likelihood= 102.859; R Square= .031*

Table A 8.3 Binary Logistic Outcomes of Prenatal Care

| Predisposing Factors | Beta | *P* Value |
|---|---|---|
| Educational Level | .056 | .866 |
| Age 40 | .076 | .908 |
| Migrant Status | -.806 | .249 |
| Language | .630 | .054 |
| Marital Status | .603 | .460 |

*-2 Log likelihood= 80.446; R Square= .107*

Table A 8.4 Binary Logistic Outcomes of STD Prevention

| Predisposing Factors | Beta | *P* Value |
|---|---|---|
| Educational Level | -.039 | .862 |
| Age 40 | .084 | .854 |
| Migrant Status | -.114 | .784 |
| Language | -.142 | .547 |
| Marital Status | 1.186 | .005 |

*-2 Log likelihood= 158.904; R Square= .082*

Table A 8.5 Binary Logistic Outcomes of Pregnancy Prevention

| Predisposing Factors | Beta | *P* Value |
|---|---|---|
| Educational Level | -.366 | .053 |
| Age 40 | 1.211 | .004* |
| Migrant Status | -.359 | .311 |
| Language | .370 | .078 |
| Marital Status | -.512 | .220 |

*-2 Log likelihood= 198.558; R Square= .155*

Table A 8.6 Binary Logistic Outcomes of Mammogram Screening

| Enabling Factors | Beta | *P* Value |
|---|---|---|
| | | |
| Insurance Status | .090 | .807 |
| Employment Status | -.178 | .688 |
| Income | -.041 | .914 |
| Years in MI | -.600 | .004* |
| Migrant Clinic | -20.089 | .998 |

**P<.05; -2 Log likelihood= 173.631; R Square= .188*

Table A 8.7 Binary Logistic Outcomes of PAP Screening

| Enabling Factors | Beta | *P* Value |
|---|---|---|
| Insurance Status | -.977 | .110 |
| Employment Status | -.637 | .302 |
| Income | -1.361 | .085 |
| Years in MI | -.267 | .215 |
| Migrant Clinic | -.675 | .371 |

*-2 Log likelihood= 96.713; R Square= .143*

Table A 8.8 Binary Logistic Outcomes of Prenatal Care

| Enabling Factors | Beta | *P* Value |
|---|---|---|
| Insurance Status | -.064 | .908 |
| Employment Status | .672 | .405 |
| Income | -.427 | .494 |
| Years in MI | -.162 | .489 |
| Migrant Clinic | -.951 | .207 |

*-2 Log likelihood= 91.752; R Square= .054*

Table A 8.9 Binary Logistic Outcomes of STD Prevention

| Enabling Factors | Beta | *P* Value |
|---|---|---|
| Insurance Status | .401 | .314 |
| Employment Status | .202 | .677 |
| Income | .967 | .040* |
| Years in MI | .093 | .589 |
| Migrant Clinic | -.969 | .238 |

**=P<.05; -2 Log likelihood= 161.230; R Square= .077*

Table A 8.10 Binary Logistic Outcomes of Pregnancy Prevention

| Enabling Factors | Beta | *P* Value |
|---|---|---|
| Insurance Status | .071 | .833 |
| Employment Status | .679 | .099 |
| Income | -.466 | .189 |
| Years in MI | -.067 | .656 |
| Migrant Clinic | -.786 | .216 |

*-2 Log likelihood= 203.978; R Square= .063*

Table A 8.11 Binary Logistic Outcomes of Mammogram Screening

| Health Need Factors | Beta | *P* Value |
|---|---|---|
| | | |
| Pregnancy Diabetes | -.511 | .392 |
| Normal Physical Exam | .106 | .800 |
| Perceived Health Status | .038 | .909 |
| Unmet Treatment | .074 | .878 |

*-2 Log likelihood= 136.726; R Square= .010*

Table A 8.12 Binary Logistic Outcomes of PAP Screening

| Health Need Factors | Beta | *P* Value |
|---|---|---|
| Pregnancy Diabetes | .121 | .919 |
| Normal Physical Exam | 1.787 | .122 |
| Perceived Health Status | -.351 | .637 |
| Unmet Treatment | -18.592 | .998 |

*-2 Log likelihood= 38.891; R Square= .191*

Table A 8.13 Binary Logistic Outcomes of Prenatal Care

| Health Need Factors | Beta | *P* Value |
|---|---|---|
| Pregnancy Diabetes | .540 | .543 |
| Normal Physical Exam | -.706 | .315 |
| Perceived Health Status | .391 | .459 |
| Unmet Treatment | .787 | .279 |

*-2 Log likelihood= 61.731; R Square= .079*

Table A 8.14 Binary Logistic Outcomes of STD Prevention

| Health Need Factors | Beta | *P* Value |
|---|---|---|
| Pregnancy Diabetes | -.283 | .699 |
| Normal Physical Exam | .086 | .861 |
| Perceived Health Status | .439 | .266 |
| Unmet Treatment | -.139 | .808 |

*-2 Log likelihood= 107.932; R Square= .022*

Table A 8.15 Binary Logistic Outcomes of Pregnancy Prevention

| Health Need Factors | Beta | *P* Value |
|---|---|---|
| Pregnancy Diabetes | .323 | .607 |
| Normal Physical Exam | -.683 | .099 |
| Perceived Health Status | .330 | .320 |
| Unmet Treatment | -.042 | .928 |

*-2 Log likelihood= 137.471; R Square= .047*

Table A 9.1 Regression Model 1. Predisposing factors as predictors of Reproductive Health Care Utilization Rates

| Predictors | Beta | *P* Value |
|---|---|---|
| Educational Level | .349 | .108 |
| Age 40 | .424 | .061 |
| Migrant Status | .143 | .499 |
| Language | -.041 | .849 |
| Marital Status | -.257 | .223 |

*R Square= .100*

Table A 9.2 Regression Model 2. Enabling factors as predictors of Reproductive Health Care Utilization Rates

| Predictors | Beta | *P* Value |
|---|---|---|
| Insurance Status | -.339 | .028* |
| Employment Status | .225 | .168 |
| Income | .088 | .579 |
| Years in MI | .191 | .408 |
| Migrant Clinic | .568 | .050* |
| | | |

*Note *=P<.05; R Square= .006*

Table A 9.3 Regression Model 3. Health Need Factors as predictors of Reproductive Health Care Utilization Rates

| Health Need Factors | Beta | *P* Value |
|---|---|---|
| Pregnancy Diabetes | .115 | .654 |
| Normal Physical Exam | -.035 | .836 |
| Perceived Health Status | .353 | .548 |
| Unmet Treatment | -.028 | .148 |
| | | |

*R Square= .031*

Table A 9.4 Regression Model 4. Predisposing, enabling and health need factors scores as predictors of Reproductive Health Care Utilization Rates

| Predictors | Beta | *P* Value |
|---|---|---|
| Predisposing Score | -.028 | .813 |
| Enabling Score | -.002 | .984 |
| Health Need Score | -.044 | .767 |
| | | |

*R Square= .032*

# APPENDIX B

Table B1. Comparing Reproductive Health Care Utilization Rates for Latina Migrant and Seasonal Farmworkers

| Reproductive Health Care Utilization Measures | US Women Total | US Hispanic/ Latino Women | Michigan Hispanic/ Latino Women | MI FW Migrant Women | MI FW Seasonal Women |
|---|---|---|---|---|---|
| Mammogram | 70% | 66% | 97% | 31% | 33% |
| PAP | 92% | 85% | DNC/DSU | 88% | 93% |
| STD Prevention** | 71% | 53% | DNC | 28% | 26% |
| Pregnancy Prevention** | 71% | 53% | DNC | 39% | 55% |
| Prenatal Care | 83% | 74% | 77% | 86% | 96% |

*Notes: US women total and Hispanic Latino women percentages obtained from Data2010-The Healthy People 2010 Database- June, 2006 Edition (www.wonder.cdc.gov). ** STD and Pregnancy Prevention were reported as a single category in Data2010. DNC/DSU=Data Not Collected/Data does not meet criteria for statistical reliability or data quality. Mammogram Screening MI data obtained from the 2004 Cancer Behavioral Risk Factor Survey. MI migrant and seasonal farmworker data obtained from OFHS survey.*

# APPENDIX C

MICHIGAN STATE
UNIVERSITY

# Revision Application Approval

October 31, 2005

To: Rene ROSENBAUM
131 Natural Resources Building

Re: **IRB # 01-706** Category: EXPEDITED 2-7
**Revision Approval Date:** **October 31, 2005**
**Project Expiration Date:** **April 4, 2006**

Title: STUDYING MIGRANT AND SEASONAL FARM WORKERS

The University Committee on Research Involving Human Subjects (UCRIHS) has completed their review of your project. I am pleased to advise you that **the revision has been approved.**

**This letter notes Omara Rivera-Vazquez as an additional investigator.**

The review by the committee has found that your revision is consistent with the continued protection of the rights and welfare of human subjects, and meets the requirements of MSU's Federal Wide Assurance and the Federal Guidelines (45 CFR 46 and 21 CFR Part 50). The protection of human subjects in research is a partnership between the IRB and the investigators. We look forward to working with you as we both fulfill our responsibilities.

Renewals: UCRIHS approval is valid until the expiration date listed above. If you are continuing your project, you must submit an ***Application for Renewal*** application at least one month before expiration. If the project is completed, please submit an ***Application for Permanent Closure***.

Revisions: UCRIHS must review any changes in the project, prior to initiation of the change. Please submit an ***Application for Revision*** to have your changes reviewed. If changes are made at the time of renewal, please include an ***Application for Revision*** with the renewal application.

Problems: If issues should arise during the conduct of the research, such as unanticipated problems, adverse events, or any problem that may increase the risk to the human subjects, notify UCRIHS promptly. Forms are available to report these issues.

Please use the IRB number listed above on any forms submitted which relate to this project, or on any correspondence with UCRIHS.

Good luck in your research. If we can be of further assistance, please contact us at 517-355-2180 or via email at UCRIHS@msu.edu. Thank you for your cooperation.

Sincerely,

Peter Vasilenko, Ph.D.
UCRIHS Chair

c: Israel CUELLAR
301 Nisbet Bldg

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