5-2005

# Medication mismanagement among elderly in Starr County

Romeo Garcia Jr.
*University of Texas-Pan American*

# NOTE TO USERS

Page(s) not included in the original manuscript and are unavailable from the author or university. The manuscript was scanned as received.

60

This reproduction is the best copy available.

# MEDICATION MISMANAGEMENT AMONGST ELDERLY IN STARR COUNTY

A Thesis

By

ROMEO GARCIA, JR.

Submitted to the Graduate School of the
University of Texas—Pan American
In partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

May 2005

Major Subject: Sociology

# MEDICATION MISMANAGEMENT AMONG ELDERLY IN STARR COUNTY

A Thesis
by
**ROMEO GARCIA, JR.**

Approved as to style and content by:

Dr. Elena Bastida

Dr. Kelly Himmel

Dr. Guanz-Zhen Wang

May 2005

INSTITUTIONAL REVIEW BOARD FOR HUMAN SUBJECTS IN RESEARCH
THE UNIVERSITY OF TEXAS - PAN AMERICAN
*1201 West University Drive • Edinburg, Texas 78541-2999 • (956) 384-5004 Office • Fax (956) 381-2940*

**MEMORANDUM**

**TO:** **Romeo Garcia Jr., Sociology Department**

**FROM:** **Dr. Mark Granberry**
**Chair, Institutional Review Board for Human Subjects in Research**

**DATE:** **April 14, 2004**

**SUBJECT:** **Protocol for "Predicting Medication Mismanagement Among Elders in Starr County" IRB# 304**

The above referenced protocol has been:

_____ Approved (committee review)
__X__ Approved (expedited review)
_____ Conditionally approved (see remarks below)
_____ Tabled for future consideration – re-submit with corrections **(submit 2 copies of your protocol)**
_____ ~~Disapproved (see remarks below)~~

by the Institutional Review Board Federal Wide Assurance Number (FWA 00000805).

As stipulated in the guidelines of the IRB, this protocol will be subject to annual review by the IRB and any deviations from the protocol or change in the title must be resubmitted to the board.

For additional information you can contact the IRB University website at http://www.panam.edu/dept/sponpro/Policies/Policies.html

**AT THE CONCLUSION OF THE STUDY, YOU MUST FILL OUT THE ENCLOSED REPORT FORM**

**cc:** **Dr. Wendy A. Lawrence-Fowler, AVPR.**
**Dr. Elena Bastida**

Federal Assurance Number # FWA 00000805
UTPA IRB# 304
Reviewed by: Dr. Mark Granberry, Chair

# CONTINUING REVIEW FOR INSTITUTIONAL REVIEW BOARD HUMAN SUBJECTS IN RESEARCH

**At the end of one year,** federal regulations require final reports/continuing review reports for all research projects that deal with human subjects. A copy of this report **MUST** be filed with the Institutional Review Board-Human Subjects in Research, at The University of Texas-Pan American, where unless specified by the Board. Our records indicate that your proposal for research dealing with human subjects was reviewed by a member of the Board on _4_/_14_/_04_.

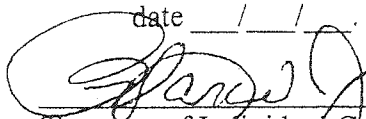
Principal Investigator: Romeo Garcia, Jr.

Title: "Predicting Medication Mismanagement Among Elders in Starr County"
IRB#304

1. Dates of Study 4/14/04 through 4/14/05.
2. If the study was not initiated, please indicate here and return the form.
3. Please check the following items as they may apply to your project during the period following IRB review.

   a. ____ Renewal of protocol/proposal with no changes.
   b. ✓ In regard to human subjects, the research protocol was unchanged from the approved protocol and was completed in a satisfactory manner.
   c. ____ The research protocol was modified during the projects including, for example, changes in the informed consent form or any other modifications to the study. (Any changes to the protocol must be reviewed and approved by the IRB).
   d. ____ The research protocol was changed significantly in regard to human subjects. Please explain on an attached page, or if the research has been completed, please submit copies of the final report sections which describe these changes.
   e. ____ The research is in progress and no changes in protocol have been made regarding human subjects.

4. Indicate the number of subjects proposed _____ actually utilized as of this date ___/___/___.



Signature of Individual Completing This Form

4/4/05
Date

**Please return this form an any attachments to Dr. Mark Granberry, Chair, Institutional Review Board for Human Subjects in Research, Pharmacy Program, HSHW 2.124 – The University of Texas-Pan American.**

## ABSTRACT

Garcia, Romeo Jr., Medication Mismanagement Among Elderly in Starr County. Master of Science (MS), May 2005, 56 pp, 6 tables, 13 references.

Given the current and projected rises in prescription drug use among the elderly in the United States and the current and projected rises in prescription drug costs, this research attempts to examine this national trend within the specific context of poverty and rurality manifested in Starr County, Texas. Starr County offers an ideal naturalistic laboratory for examining demographic predictors for improper medication use in the United States, poverty and rural residence. Hence within this context of poverty and rural location, the following questions are posited for investigation in Starr County. To what extent do high drug costs and low incomes hinder the elderly in following prescription regimens and physician recommendations for obtaining and maintaining optimal health and what strategies do the elderly in Starr County use and implement in order to achieve a balance between adherence to a proper medication regimen necessary to maintain their health and adherence due to poverty?

# DEDICATION

To my

Family and Friends

## ACKNOWLEDGEMENTS

I wish to extend sincere appreciation to Dr. Elena Bastida for her guidance and patience. Without her support, this thesis would not have come to fruition. I also wish to extended sincere appreciation to Marcie de la Cruz for her guidance and help along the way.

I also wish to thank my family and friends for helping with the recruitment of subjects for this project. They helped me when even a sample of convenience was not as convenient as I thought it would be.

## TABLE OF CONTENTS


| | Page |
|---|---|
| ABSTRACT | iii |
| DEDICATION | iv |
| ACKNOWLEDGEMENTS | v |
| TABLE OF CONTENTS | vi |
| LIST OF TABLES | vii |
| CHAPTER 1. INTRODUCTION | 1 |
| CHAPTER 2. METHODS | 21 |
| CHAPTER 3. DESCRIPTIVE STATISTICS | 29 |
| CHAPTER 4. DISCUSSION AND RESULTS | 39 |
| BIBLIOGRAPHY | 55 |
| APPENDIX | 57 |
| APPENDIX A – SURVEY QUESTIONNAIRE | 58 |
| VITA | 67 |

## LIST OF TABLES


| | Page |
|---|---|
| TABLE 1a – Demographic Variables | 30 |
| TABLE 1b – Demographic Variables Continued | 30 |
| TABLE 2 – Activities of Daily Living | 31 |
| TABLE 3 – Reasons for Doctor's Visits | 32 |
| TABLE 4 – Mismanagement Strategy Use | 33 |
| TABLE 5 – Medication Mismanagement Means | 34 |

# CHAPTER I

# INTRODUCTION

The election for president in November 1964 gave Lyndon Johnson, and the Democratic Party, the opportunity to unfurl his Great Society reforms. In 1965, Congress passed legislation that established the Medicare program. The purpose behind this legislation was to create a social insurance program that provided for hospital care and physician services for the elderly. Medicaid, on the other hand, was created as an indigent care insurance program for poor people who met certain requirements under the law. Medicare coverage is available to virtually all the elderly in the United States and helps cover a substantial portion of their medical costs. Persons age 65 and older who are entitled to Social Security benefits are automatically entitled to receive Medicare Part A, hospital care coverage. Persons age 65 and older who receive Medicare Part A can enroll in Medicare Part B which is voluntary coverage for physician and other services (Andersen et al, 2001).

Prescription drugs are critical to effective medical treatment. Technological advancement and the production of new medications have led to better prevention and better management of several diseases and ailments. These advancements contribute to the increased life expectancy of the average person in the United States. Unfortunately, the group of people in the United States who are most in need of prescription drugs for medical treatment, those who are over the age of 65, are also the most likely not to have

sufficient financial resources to cover drug costs. The longer a person lives, the more likely he or she will need to treat an illness or condition with a prescription medication. According to a 1998 Wall Street Journal Poll, 80% of retirees use a prescription drug every day (Andersen et al, 2001). Americans age 65 and older account for over 40% of all prescribed medication spending despite the fact that they represent only 12% of the population (Andersen et al, 2001). The inability of many older Americans to pay for their prescription drugs has been an issue that has been debated heatedly. Prior to the latest wave of discussions that led to the recently passed legislation offering coverage for prescribed medications, there had been many other unsuccessful efforts to formulate a Medicare system that would include prescription drug coverage that would ease the high costs for those over age 65. The long history of this debate finally resulted in the recent passage of the Medicare prescription drug bill in the U.S. Congress.

In general, Medicare will pay the cost of prescription drugs that are prescribed during an inpatient hospitalization period or the cost of prescription drugs that cannot be self-administered by the beneficiary. Initially and until the most recent legislation, Medicare did not cover the cost of prescription drugs that were prescribed at outpatient facilities. In the Fall of 1999, there were 34.2 million non-institutionalized Medicare beneficiaries. Of those, 28% had employer sponsored prescription drug coverage. A Medicare HMO covered 15%. Medicaid covered prescription drugs for 10%. Medigap covered 7%. Public agencies covered another 2%. Although there are many Medicare beneficiaries who have prescription drug coverage through Medicare + Choice plans, Medicare supplemental insurance policies, retiree health insurance, or Medicaid, it is

estimated that 10 million elderly, or approximately 38% of Medicare beneficiaries, in the United States have no prescription drug coverage at all (Kaiser Foundation, 2002).

Approximately 10 million elderly or about 38% of Medicare beneficiaries have no prescription drug coverage. Below, detailed characteristics for the demographics of this population are described more fully. For example, 35% those ranging in age from 65-74 lack prescription drug coverage. Among the 75-84 year olds, 41% lack drug coverage. Finally, among the very old, 85 years of age or older, almost half or 45% lack prescription drug coverage. Ironically, this is also the age group in greatest need of health care (Kaiser Foundation, 2002).

These differences are even more salient when rural/urban characteristics are examined for the same age cohorts. Of those elderly who live in rural areas, 50% do not have prescription drug coverage. Of those who live in urban areas or larger cities, 34% do not have prescription drug coverage (Kaiser Foundation, 2002). It is especially significant to note that the elderly who live in rural areas in general experience lower access to health care simply because of their remoteness. Not only is health care difficult to access for these elderly, but also once outpatient health care is accessed, half of these elderly will not be able to get subsidized prescription drugs.

Likewise, there are income differences among beneficiaries with prescription drug coverage. Thirty nine percent of the elderly with incomes of $10,000 or less a year do not have prescription drug coverage, and 44% of those with incomes between $10,001 and $20,000 do not have prescription drug coverage. For those with incomes between $20,001 and $30,000, 35% do not have prescription drug coverage, and 32% of those with incomes greater than $30,000 do not have prescription drug coverage (Kaiser

Foundation, 2002). Of importance here is that elderly with the lowest income are most likely to lack prescription drug coverage.

Of late there is an alarming growing trend among employers that will affect the elderly in the very near future, this is the rapidly declining number of employers who no longer offer retiree health benefits. To wit, in 1999, the percentage of agencies or firms with 200 or more employees that offered retiree health benefits was 41%. A year later, the percentage of agencies or firms with 200 or more employees that offered retiree health benefits had decreased by 4% to 37%. And by 2001, the percentage of agencies or firms with 200 or more employees that offered retiree health benefits had further lowed to 34% (Kaiser Foundation, 2002). Historically employer retiree health benefits has been a means for elderly to supplement their Medicare benefits for prescription drug coverage; however the declining trend is likely to further the upset the fragile balance in elderly health care.

Another alarming declining trend is the number of Medicare + Choice plans that cover prescription drugs. In 1999, 84% of beneficiaries in Medicare + Choice plans were offered prescription drug coverage. In 2002, 71% of beneficiaries in Medicare + Choice plans were offered prescription drug coverage. Also, in 1999, 66% of Medicare + Choice plans offered drug benefits exceeding $750 in their basic plans. However, in 2002, it was estimated that only 31% of Medicare + Choice plans will offer drug benefits exceeding $750 in their basic plans (Kaiser Foundation, 2002).

The large Kaiser Foundation Report (2002) found that Medicare beneficiaries without prescription drug coverage filled fewer prescriptions per year and faced higher out-of-pocket drug costs in 1998. Of all Medicare beneficiaries, the average number of

prescriptions filled per year by an elderly person without drug coverage was 16. The average number of prescriptions filled per year by an elderly person with drug coverage was 24. This data is more specific in detailing the number of prescriptions filled by elderly people who live in less than 100% of poverty and the number of prescriptions filled by elderly people who have three or more chronic medical conditions. The average number of prescriptions filled by elderly who lived in less than 100% poverty and had no prescription drug coverage was 15 per year. The average number of prescriptions filled by elderly who lived in less than 100% poverty and did have prescription drug coverage was 29 per year. The average number of prescriptions filled by elderly without prescription drug coverage who had three or more chronic medical conditions was 26 in 1998. The average number of prescriptions filled by elderly with prescription drug coverage who had three or more chronic medical conditions was 33. This data shows that a lack of means to purchase prescription drugs prohibits the elderly person from access to drugs and overall health care (Kaiser Foundation, 2002).

Of all Medicare beneficiaries, the average total out-of-pocket prescription drug spending for elderly without drug coverage was $546. The average total out-of-pocket prescription drug spending for elderly with drug coverage was $325. These data, too, are detailed in differences in expenditures for elderly who live in less than 100% of poverty and those elderly who have three or more chronic conditions. The average out-of-pocket drug spending for elderly without prescription drug coverage who lived in less than 100% of poverty was $432. The average out-of-pocket drug spending for elderly with prescription drug coverage who lived in less than 100% of poverty was $258. Also, the average out-of-pocket drug spending per year for elderly without drug coverage who had

three or more chronic medical conditions was $815. The average out-of-pocket drug spending per year for elderly with drug coverage who had three or more chronic medical conditions was $443 (Kaiser Foundation, 2002).

Over the past few years, Medicare beneficiaries' out-of-pocket prescription drug costs have increased. This is evidenced by the data below which indicates the steady growth in out of pocket drug cost for the Medicare population. For example, the average annual out-of-pocket drug cost in 2000 was $813, but by 2001 it had risen to $928, and by 2002 it had plummeted to $1,051 (Kaiser Foundation, 2002).

The projected prescription drug spending among the Medicare population is expected to more than double between 2003 and 2012. In 2003, the Medicare population spent $100 billion on prescription drugs, and by 2006 it is projected that the Medicare population will spend $143 billion on prescription drugs. Estimated projections keep rising such that by 2009, the Medicare population is expected to spend $200 billion on prescription drugs, and by 2012, the Medicare population will spend approximately $278 billion on prescription drugs. In total projections for the period 2003 to 2012 estimate that the Medicare population will spend approximately $1.77 trillion on prescription drugs (Kaiser Foundation, 2002).

Other information released by the Kaiser Foundation for 2001 included results of an eight state survey that detailed the percentage of seniors who did not fill a prescription one or more times due to cost or skipped doses to make a prescription last longer. In general, 14% of elderly surveyed did not fill a prescription one or more times because it was too expensive. However, a full quarter of the elderly surveyed without prescription drug coverage reported not filling a prescription because it was too expensive. Of those

elderly who had prescription drug coverage, 11% did not fill a prescription one or more times because it was too expensive (Kaiser Foundation et al, 2002).

In general, 16% of elderly skipped doses of medicines to make the prescription last longer. However, of those elderly surveyed without prescription drug coverage, 27% reported skipping doses of medicines to make the prescription last longer. Of those elderly surveyed who did have prescription drug coverage, 13% reported they skipped doses of medicine to make the prescription last longer (Kaiser Foundation et al, 2002).

## Geographic Area of Study

Starr County lies at the southern tip of Texas bordering Mexico at the Rio Grande River. It is a part of what is commonly referred to as the Rio Grande Valley. According to the United States Census Bureau, in 2000, Starr County has a population of 53,597. Generally speaking, it is a rural area. Persons 65 years old and over comprise 8.2% of the population. Starr County is predominantly of Hispanic origin: 97.5% of the population claim Hispanic or Latino origin. This makes Starr County not only the county in Texas with the highest percentage of Hispanic people, but also the county nationwide with the largest Hispanic population. Starr County has historically one of the poorest and lowest educated populations in the country. Per capita income in Starr County in 1999 was $7,069. Slightly over half of the population lives below poverty level. Compared to the 75.7% statewide who are high school graduates, only 34.7% of Starr County residents have high school diplomas, and 25% of Texans statewide report a Bachelor's degree, while only 6.9% of Starr County residents indicate a Bachelor's degrees or higher.

## Statement of the Problem

Given the current and projected rises in prescription drug use among the elderly and the current and projected rises in prescription drug costs, as indicated above, this research attempts to examine this national trend within the specific context of poverty and rurality manifested in Starr County. Starr County offers an ideal naturalistic laboratory for examining the already established demographic predictors for improper medication use in the United States, poverty and rural residence. Hence within this context of poverty and rural location, the following questions are posited for investigation in Starr County:

1) To what extent do high drug costs and low incomes hinder the elderly in following prescription regimens and physician recommendations for obtaining and maintaining optimal health?
2) How does this community cope with having to manage and treat illness and ailment without adequate resources?
3) What strategies do the elderly in Starr County use and implement in order to achieve a balance between adherence to a proper medication regimen necessary to maintain their health and adherence due to poverty?
4) Is Starr County representative of the needs of a country that has recently approved changes to Medicare that would include prescription drug coverage?

## Theoretical Framework

The thrust of the research ultimately looks at whether or not a subject will or will not comply with his / her prescription medication regimen. It looks at whether or not the subject will even obtain the medication at the drug store once it has been prescribed. Given the study's overall research questions, the Theory of Reasoned Action as proposed by Icek Ajzen and Martin Fishbein seemed most appropriate to provide the study's theoretical framework (Ajzen et al, 1980). In their book Understanding Attitudes and Predicting Social Behavior Ajzen and Fishbein propose a theoretical rationale for an

understanding of what may or may not prompt individuals to adhere to the recommendations made by their physician (Ajzen et al, 1980).

Briefly stated the theory of reasoned action proposes that people consider the consequences or implications of their actions before they decide to participate or not participate in any given behavior. According to this theory, two sets of factors determine the intention for participation: personal and social. The personal factors are found in the positive or negative assessments that an individual makes with respect to performing a given behavior. These personal factors are called attitude toward the behavior. These individual assessments determine whether or not performing the behavior is good or bad and whether or not the individual is for or against performing the behavior. The social factors that determine intention are perceptions of the social pressures that are placed on individuals to perform or not perform given behaviors. This social factor is called subjective norm.

Applying this theory then to the case of mismanaging prescription drugs, it could be argued that there are two determinants of intention for medication adherence and compliance. The personal factor, the attitude toward the behavior, would look at how the individual values complying with medical recommendations. Does the individual view compliance as good or bad? Is the individual, based on personal evaluation, for or against medication compliance? The social factor, the subjective norm, would look at how much social pressure the individual perceives is placed on him / her to comply with medication treatment (Ajzen et al, 1980).

Attitudes are a function of beliefs. A person who believes that performing a certain behavior will have positive consequences will generally believe that participating

in that behavior is good and will therefore have a favorable attitude towards the behavior. Contrarily, a person who believes that performing a certain behavior will have negative consequences will generally believe that participating in that behavior is bad and will therefore have an unfavorable attitude towards the behavior. Subjective norms are also a function of beliefs. Subjective norms, however, correspond to the person's beliefs that certain groups of people think he/she should participate in the behavior. If a person is motivated to comply with certain perceived group beliefs about a given behavior, then the individual is likely to participate in the behavior. But if the person perceives that this group belief is against performing the behavior, then he /she is likely not to participate due to the social pressure (Ajzen et el, 1980).

A person's willingness to comply with medication treatments is assumed to be determined by his / her intention. These intentions are determined by the person's attitudes toward complying with medication treatment and subjective norms. The subjective norms about medication compliance will determine the amount of social pressure the person will feel when deciding to comply or not comply with medication treatment. Based on general knowledge, it may be assumed that most people's attitude toward medication compliance is favorable. It is well known that if someone is ill, medication treatment can help alleviate symptoms, discomfort, and pain associated with illness. This relief and potential cure that is offered by medication should establish a favorable attitude toward medication compliance. The subjective norm, and the perceived social pressure about medication compliance, should also be favorable. It is speculated here, then that family groups and group entities such as the American Medical Association should have a strong influence over most individuals. The pressure by

family, health care professionals, and the media to comply with medication treatment should support firm belief on the general importance of compliance which should further strengthen the individual's compliance behavior (Ajzen et al, 1980).

Ajzen and Fishbein do not place much emphasis on the possible external factors that may influence intention and behavior. In fact, they give external factors little credit at all. Certainly, there are people who believe adhering to prescribed medication regimens is good, and yet for some reason non-adherence occurs. Moreover, there are people who perceive society as pressuring them to comply with medication treatment who nonetheless don't comply. How is it that these people's intentions and consequent behaviors are explained? It is suggested here that perhaps external factors should not be ignored and set aside that quickly, as seems to be the case with Ajzen and Fishbein. Intention may be influenced by self-assessment and perception, but behavior cannot solely be measured by intention.

## Prescription Use Expenditures and Adherence

In Sambamoorthi et al (2003) study as many as 88% of Medicare beneficiaries reported using at least one prescription drug at some point during the calendar year. Sub-populations can be identified to determine differences in cost and use of prescription drugs. Overall, data from various sources including The Centers for Medicare and Medicaid Services and the Kaiser report indicate that a higher percentage of women, older persons, married persons, individuals with prescription drug coverage, Medicaid coverage, and individuals in poor health status used prescription drugs. In 1997, the average expenditure on prescription drugs was $720. Expenditures tend to be higher for

women, Whites, individuals older than 69 years of age, respondents with prescription drug coverage, and sicker individuals (Sambamoorthi et al, 2003).

Some of the total prescription drug expenditure must come out-of-pocket. As suggested by various studies (Sambamoorthi et al, 2003; Fillenbaum, 1996), certain sub-populations tend to have higher out-of-pocket prescription drug expenditures than others. The average annual amount spent out-of-pocket is $347. Racial minorities spent less money, on average, out-of-pocket for prescription drugs than did Whites. Finally, these studies indicate that those individuals who have prescription drug coverage spent less than individuals without prescription drug coverage, and those with Medicaid benefits spent less out-of-pocket on prescription drugs (Sambamoorthi et al, 2003; Fillenbaum et al, 1996).

Sambamoorthi and co authors (2003) provide data indicate that the proportion of income spent on prescription drugs, the out-of-pocket prescription drug expenditure burden, is 3% on average. Close to 8%, or 2,339,000 older individuals, spend more than 10% of their annual income on prescription drugs. Moreover, their findings suggest that the expenditure burden as a percentage of annual income was greater for women, African-Americans, the widowed, people with no high school education, and residents living in rural areas. As with the total expenditures, the expenditure burden on annual income was lower for people with prescription drug coverage and for people with Medicaid benefits.

Other studies, for example Rogowski et al, 1997)., have looked at drug expenditures by the elderly in comparison to different chronic conditions. They found that among elderly persons with chronic conditions, those who are diagnosed with

diabetes have the highest levels of financial burden placed on their annual income. Elderly diabetics spend an average of 4.1% of their household income on out-of-pocket prescription expenditures. The average amount spent on these prescriptions for the elderly diabetic was $468. The authors found that other chronic conditions that were reported as having high out-of-pocket prescription expenditure burdens were heart failure, angina, and ulcers. Elderly persons with heart failure spend an average of 3.9% of their household income on out-of-pocket prescription expenditures (Rogowski et al, 1997). They further report that the average amount spent on these prescriptions for elderly persons with heart failure was $452 and those with ulcers spend an average of 3.9% of their household income on out-of-pocket prescription expenditures. The average amount spent on these prescriptions for elderly persons with ulcers was $471. Finally, elderly persons with angina spend an average of 3.7% of their household income on out-of-pocket prescription expenditures. The average amount spent on these prescriptions for elderly persons with angina was $533. According to this study, angina is the chronic medical condition that has the highest out-of-pocket drug expenditures. Likewise, diabetes is the chronic medical condition that has the highest percentage of family income spent on out-of-pocket drug expenditures (Rogowski et al, 1997).

It is suggested that the high financial burden of out-of-pocket prescription drug expenditures on some people may lead to non-compliance or non-adherence to prescription regimens. It stands to reason that if the out-of-pocket prescription drug expenditure burden is too high, prescriptions may be overlooked for other consumer items that are deemed more important. Studies of rural elders have shown that up to 29%

of older adults taking prescription medication reported either some or a great deal of difficulty paying for the cost of their prescription medications (Mitchell et al, 2001).

There are many strategies that can be used to help alleviate the cost of prescription drugs. These studies of rural elders indicate that up to 17% of this population will buy part instead of all of a prescription because of lack of financial resources. About 15% of these rural elders will take less medication than is prescribed so that it will last longer. Mitchell et al (2001) report that about 19%, will ask their physicians for samples of their medication because they cannot afford to pay for it themselves. It is important to note that in the above study, 44% of elderly respondents admitted to using at least one medication mismanagement strategy to try to save on cost of prescription drugs. About one-fifth of the sample used three or more strategies. It is clear that a sizeable amount of people have difficulty either obtaining or taking their prescription drugs as indicated (Mitchell et al, 2001).

A similar study by Bazargen et al (1993) showed that up to 12.8% of Black respondents will receive a prescription and not have it filled. In this study, several factors proved statistically significant in determining why a prescription would not be filled. Participants who did not receive Medicaid coverage for prescription drugs were more likely to not fill prescriptions. Those who used prescription medications, while also reporting a higher than average number of over-the-counter medications, were also less likely to fill prescriptions. This finding suggests that people are more likely to take care of acute symptoms that can be alleviated rather quickly with an over-the–counter drug purchase than a chronic condition for which symptoms may not be present. Those individuals with a lower level of internal health locus of control were less likely to fill

prescription medications. Internal health locus of control is viewed as a sense of control that people have over their health. It is generally associated with positive outcomes. It stands to reason, then, that people with lower levels of internal health locus of control are less likely to fill their prescription medications. Similarly those individuals who reported financial problems were also less likely to fill prescriptions. This is a recurring theme throughout as costs of medications seem to be the largest deterrent of purchasing prescription drugs. A final factor that leads to decreased likelihood that prescription drugs will be filled is increased levels of anxiety. This study shows that anxiety, coupled with the illness that is being treated by the prescription drug, will decreases chances for filling prescriptions (Bazargen et al, 1993). Alternatively this final factor, levels of anxiety, is actually attributed to increased levels of compliance and adherence in most other studies (Sharpe et al, 1985).

Other factors may also contribute to medication non-compliance or non-adherence. One study by Maddigan el al (2003) suggests that a patient's mental health status is critical in determining whether or not a patient will comply with prescription regimens. In their study participants who scored low on the Mini-Mental State Exam exhibited impaired cognition. Those participants with impaired cognition tended to make more mistakes with their medication compliance. Skipping doses or taking the wrong medication was common for people who scored low on this exam (Maddigan et al, 2003).

This same study Maddigan el al (2003, used the Medication Complexity Index as a predictor of medication management capacity. It was found that the more complex the medication regimen, the more likely mistakes were to be made by patients. It can be assumed, then, that people whose prescriptions scored high on the Medication

Complexity Index and low on the Mini-Mental State Exam had increased chances of making mistakes with their prescription medications (Maddigan et al, 2003).

Other studies, for example, McGrath (1999), have shown that the physician consultation has a powerful effect on patient compliance and adherence to prescription medication regimens. It is generally assumed in these studies that the more knowledge and information a patient has about his / her condition and the more knowledge and information a patient has about his / her prescribed medications, the more likely the patient is to adhere to physician recommendations. The implication here is that if the quality of communication during the physician consultation improves, the more likely we are to get patients following instructions regarding their prescription drugs. There are differing opinions about how much knowledge and information a patient should have despite the fact that more information has been proven to be better (McGrath, 1999).

When doctors were asked about the time they spend with their patients and the amount of information that was shared, definite patterns emerged. In general, it was discovered that little information about prescription drugs was discussed during the consultation. McGrath (1999) notes that there are several reasons underlying this phenomenon. First, doctors state that due to time constraints, the amount of time any given patient can spend with the physician is minimal. The need to move on to the next patient does not allow the physician to delve into a conversation with the patient about the medications being prescribed and their potential side effects. Generally, physicians felt that discussing the most common or most dangerous side effects was important. However, covering detailed information like that covered in the Physician's Desk

Reference was perceived as too time consuming (McGrath, 1999). For example, McGrath quotes a physician who said:

> Every medication you prescribe has a long list of precautions and warnings, and we obviously don't give the patient all that information because there's just not enough time. I usually just iterate the main problems, such as if I'm prescribing Ibuprofen, I'll warn them that they may have gastric upset; that's the main complication with that medication (McGrath, 1999).

McGrath also notes that psychological costs are also reasons given by physicians for not spending more time discussing prescription medications with patients. Several doctors stated that giving the patient too much detailed information may confuse the patient and in turn might lead to non-compliance. This information might lead the patient to worry unnecessarily and it might lead to the occurrence of psychosomatic symptoms. Both of these situations, it is feared, would lead to increased non-compliance. Doctors also observed that they worried that giving their patients too much information about remote possibilities for side effects would cause their patients to worry about an occurrence that most likely would not occur. This worry could lead to anxiety that, in turn, could lead to the eventual non-compliance of the patient (McGrath, 1999). McGrath again quotes the following physician observations:

> Rare reactions are very uncommon things, and I think that it would cause a lot of anxiety inpatients if you presented them with a list of side effects. They would begin to question the utility of the medicine and only focus on the side effects (McGrath, 1999).

> I have some patients who come in very frequently [and] who are sort of hypochondriacs. They come to the physician for security. If I were to provide more negative information to them about the potential side effects of medicine, that would make their insecurity greater. I would say [that] in family practice, most physicians would say that over half of their patients who see them don't have a physical ailment; they come in because of insecurity or frustration (McGrath, 1999).

Physicians can play a more active role improving medication compliance with their patients assuming that physicians are aware of the high prices of some or most of the medications they prescribe. If such were the case, then when the physician knows that a patient may have difficulty affording an expensive prescription, she can talk to her patients about options available in lower costs medications. For this to happen, however, physicians must understand that medication compliance is better when the patient can afford the medication prescribed.

One study by Glickman et al (1994) sought to examine just that, physicians' knowledge of drug costs. When given several types of medication to guess on price, it was found that in general physicians overestimated the prices of the less expensive drugs and underestimated the prices of the more expensive drugs. Often, the under or overestimation was rather significant. Out of 14 medications, five were underestimated and 9 were overestimated. What is very relevant here is that of the 5 medications that were underestimated, 4 were for the highest priced drugs (Glickman et al, 1994). So the situation arises where doctors are prescribing medications to patients under the assumption that the medications prescribed cost less than they actually do. For example, in this study physicians estimated that Zantac was $52.58. This is an underestimate of over $20. The actual pharmacy price of Zantac was $76.18 (Glickman et al, 1994).

These same physicians were asked by open-ended question how they would respond if one of their patients confided in them that they could not afford a medication that was being prescribed. Seventy three percent indicated that they would try to prescribe a less expensive alternative to the medication originally considered if this were the case. Forty six percent also indicated that they would provide free samples of the

medication prescribed if a patient said he / she could not afford it. The physicians gave several other answers. Some reported they would try to find financial assistance for the patient, while others indicated that they would call the hospital insurance office. Some also noted that they would arrange for Medicare/Medicaid eligibility (Glickman et al, 1994).

Despite the fact that physicians may not be completely aware of the prices of medications they are prescribing, there is still much that physicians can do to help decrease medication costs for any given patient. It is indicated by the previous study that if a patient were to simply talk to his/her doctor about the financial burden, this would help decrease the drug costs in and of itself. Physicians do have knowledge of brand and generic listings for medications. Generic medications cost less than brand name medications. Also, many times, physicians have samples of the medications that they wish to prescribe. Asking for samples, even if it isn't for the entire amount of the prescription, will help in alleviating the costs.

In addition to the open-ended question, the respondents were asked which of several actions they would take in response to a patient's admitting to inability to pay for medication. Eighty-four percent of physicians indicated that they would switch to a less expensive alternative drug. Of these, 76% stated they would provide the patient with free samples. Sixty-one percent of studied physicians observed that they would suggest that the patient comparison-shop to find the pharmacies with the lowest prices. Fifty-nine percent stated they would distinguish for the patient between medications that were necessary and those that were only helpful. Slightly over half stated that they would allow for a generic substitution for the medication when ordinarily they wouldn't. Some

physicians, 41%, stated they would reduce the quantity of the pills prescribed to make the prescription more affordable. The lowest number of respondents, 38%, said that they would recommend a particular pharmacy with low prices. The overwhelming majority of respondents in the above study, 80%, felt that there were valid situations in which it was completely appropriate to change a prescription based on a patient's ability to afford the drug (Glickman et al, 1994).

# CHAPTER II

# METHODS

## Participant Selection Criteria

The participants of this study all live in Starr County, Texas at the time of interview. Because of the overwhelming number of Mexican-Americans in the area, the study is restricted to participants who are self-identified as Mexican-American (or some acceptable variation of the term). The participants of the study are all age 59 or older at time of interview. Because of the nature of the investigation, all participants must have a physician-prescribed medication. The above are the only qualifying criteria for eligibility to participate in the study.

## Study Design

This study takes a mixed methods approach to the investigation of medication mismanagement among elders. A standardized closed-ended questionnaire was administered in explaining mismanagement while concomitantly using qualitative elements for data analysis. The exploratory nature of the study assumes that the phenomenon of medication mismanagement was never before studied in Starr County. Therefore, its primary aim is to discover the potential impact of high drug costs on the residents of Starr County. Overall, the study is descriptive rather than explanatory.

Recruitment efforts to enroll participants in this study heavily relied on sampling by convenience and snowballing techniques. This non-probability sampling technique relies on small numbers of participants potentially known and available to the researcher

(convenience) to locate new participants and so on (snowballing technique) until a satisfactory number of participants is interviewed. Potential participants were contacted informally via telephone or a home visit by the primary investigator. As already noted early participants serve as informants becoming a major source for recruiting the next wave of participants. Voluntary participation was sought with no incentive offered in the form of payment or reimbursement for participation included in this study. After consent was obtained from each participant, the questionnaire was administered through a face-to-face interview.

Due to the small number of participants in the study resulting from time and funding limitations, the research design employs a combination of mixed methods; that is, the investigator relied on a considerable amount of probing when asking questions of major interest to the study. The data resulting from this extensive probing was then analyzed qualitatively. Rather than seeing it as a limitation the incorporation of a mixed methods approach as a major component of the design was constructively used in this study to further the study's aims. The small number of participants allows the primary investigator to expand his ability to take time to talk at length with the participant. During the administering of the closed-ended instrument, the primary investigator is allowed to jot down additional comments in response to the closed-ended questions. The approach of asking closed-ended questions while allowing for elaboration, while partly imposed by financial limitations, proved to be extremely helpful to the research since it broadens the understanding of the use of prescription medications.

Moreover, the mixed approach is already intentionally included as part of the research design in that a qualitative in-depth interview is to be conducted with a

pharmacist who works in the Starr County area was considered a major component of the research design. The pharmacist chosen works for a privately owned pharmacy with less clientele than the larger chain pharmacies in the area. Choosing a pharmacist who works for a smaller pharmacy is intentional as it is presumed that the smaller the number of people the pharmacist works with, the more likely she is to have personal knowledge about the clients she works with. The interview with the pharmacist is to be conducted after data collection and analysis is made. By the time of interview, patterns and themes resulting from both the quantitative and qualitative data analyses will have been determined. These patterns and themes are to be shared with the pharmacist. The pharmacist, via informal and unstructured interview, will be asked to share personal thought, insight, and opinion about the predetermined patterns and themes. It is the intent of the interview with the pharmacist to gain a more three-dimensional perspective on the issues that relate to medication compliance among the elderly in Starr County.

Instrument and Measures

Several independent variables are used in the study as possible predictors of medication mismanagement. Demographic information is obtained to gain an accurate profile of the participant. Although Starr County is a rather homogenous community, as indicated later, interesting variations within such a community were found.

The primary investigator used visual cues and cultural/biological context to determine the sex of the participant. Age is determined by asking the date of birth. The date of birth is then subtracted from the date of interview to determine the exact age of the participant. The participant is then asked where he/she was born. There are only three categories for this question: United States, Mexico, and other.

Next, the participant is asked whether or not he/she lives alone. If the participant does not live alone, the participant is asked with whom he/she lives. A variety of categories are available to qualify this question. The investigator then probes the participant in order to determine the participant's general location in Starr County. There are about four possible areas of residence in Starr County. Participants could live in Rio Grande City, Roma/Los Saenz, La Grulla/La Victoria, or Northern Starr County which would include El Sauz and San Isidro. Given the primary investigator's knowledge of the geographic area, notes would be made of the location using zip codes applicable to each of the areas. Finally, participants are asked if they rent or own their home. Participants are asked to estimate their total income per month from all sources. Once a monthly figure is given, the primary investigator will multiply the amount by 12 to determine an estimated yearly income. The participants are also asked to indicate the sources of their monthly income.

Given the importance of Socio-Economic Status (SES) in the study, several questions about income adequacy are included in the protocol. Three questions with dichotomous yes or no possible responses are asked. The first is "Do you worry about having enough income in the future?" The second is "Do you have trouble making ends meet?" The third is "Do you have enough income for little extras?"

Questions are also asked to determine the participants' current employment status. If the participant is still employed, he/she is asked how many hours a week are being worked presently. If the participant is no longer employed, he/she is asked how many years were spent working on the type of work that was identified as the one that was done for most of his/her life.

To determine health status, activities of daily living are assessed. Participants are asked whether they can perform different activities without help or with some help. Participants are given the option to say they are completely unable to perform the activity. The activities assessed are using the telephone, getting to places out of walking distance, preparing meals, doing housework, taking medicines, and handling money.

To further determine the participants' health status, physical activities of daily life are assessed. Participants are asked whether they can perform different activities without help or with some help. Participants are given the option to say they are completely unable to perform the activity. The physical activities assessed are eating, dressing and undressing, taking care of appearances, walking, getting in and out of bed, taking a shower, getting to the bathroom on time, seeing, and hearing.

The primary investigator also performs a brief assessment of the participants' mental health through the administration of a seven-question index that draws from questions most frequently asked in the literature to determine mental health functioning in general. For example it uses questions from the Center for Epidemiologic Studies Depression Scale. The questions asked are "are you in good spirits most of the time," "do you often feel depressed," "do you often feel lonely," "are you frequently confused," and "do you often worry or feel anxious about the future?" The respondents are asked to answer with yes, no, or not sure. There is one question that asks the participants to self-rate their mental health as good, fair, or poor. A final question asks how the participants would self-rate their mental health compared to 5 years ago.

Questions are asked about acute care visits. Respondents are asked whether or not they have consulted a physician in the past few months for any particular symptoms.

These symptoms are being thirsty all of the time, dizziness, feeling tired all of the time, pain (other than chest), feeling a growth (mole), fever, numbness of the legs or arms, chest pain, feeling a fast pulse of heart rate, cough, blurred vision, and burning sensation during urination. Respondents will either say yes or no to having visited a physician for any of these symptoms.

Questions are asked about chronic care visits. Respondents are asked whether or not they consult with a physician on a regular basis for any chronic medical conditions. The chronic medical conditions asked about are arthritis, breathing problems (such as asthma or emphysema), extremity circulation problems, diabetes, stomach or bowel problems such as ulcers, high blood pressure, heart trouble, cancer, and anxiety or depression. Respondents will either say yes or no to visiting with a physician on a regular basis for any of these chronic conditions.

In line with the studies discussed above on the importance of physician consultation and advice for patient medication compliance, the primary investigator asks questions on this topic. Furthermore, as it is proven that the better the quality of the consultation, the more likely the patient will adhere to physician recommendations, it is important to explore this area. Respondents were asked, "when you visit with your doctor, does he/she discuss with you the medication you should be taking for your condition," "when you visit with your doctor, does he/she discuss with you when you should take your medications," "when you visit with your doctor, does he/she discuss with you the options available in lower cost medications," "when you visit with your doctor, does he/she discuss with you the possible side effects of your prescription medications?" The possible responses for these questions as with most others are

dichotomized into a yes or no answer. Respondents are also asked how far they live from the pharmacy they go to and who takes them there.

In an attempt to find out the types of and quantities of medications that a respondent is prescribed, the primary investigator asks to see all the medications that the participant is presently taking. The primary investigator reviews the medications. Information such as name, dosing regimen, and strength are documented. After the information about the medications is documented, the participant is asked what each of the medications has been prescribed for. The answer is documented whether it is correct or not. Whether the answer is correct or not is also documented. If the participant states he/she does not know what the medication is for, that is documented as well. After all medications have been documented, the participant is asked how he/she pays for the prescription medication. Answers such as cash, Medicaid, Private Insurance, or Veterans Insurance are documented. One final question about medications is asked. The participant is asked whether or not he/she feels it is difficult to pay for the prescription medications. The possible answers for this question are "not difficult at all," "somewhat difficult," and "very difficult."

The dependent variable in the study is a series of questions for which there are either a yes or no answer. The questions are a series of potential mismanagement strategies that the respondent may or may not use. The questions are do you "take less medication to make it last," "go without medicine because of money," "get medicine on trust or credit at the drugstore," "buy part of a prescription instead of it all," "borrow money from someone for medicine," "buy only the most important medicine," "take medicine only when you need it such as when you have pain," "have a family member

pay for some or all of your medication," and "ask your doctor for free samples of medication?" Using even one of these strategies denotes mismanagement of medication.

# CHAPTER III

## DESCRIPTIVE STATISTICS

Frequencies of some key variables were obtained in order to begin analyzing the data compiled of the 33 respondents from Starr County. Basic demographic data is first presented in Tables 1a and 1b. Table 1a indicates that respondents ranged in age from 59 to 83 and that their mean age was 70. 9; their years of education ranged from 2 to 19 with a mean of 8.3 years, of education. The mean income for respondents is $14,247.75. However, 75.8% of the total sample report $13,800.00 or less, and 48.5% of the total sample have incomes of $7008.00 or less. Over half of the respondents, 61.3%, state their major source of yearly income is derived from Social Security or other Social Security supplements. Only 16.1% of respondents state their major source of yearly income is derived from retirement or pensions. Still fewer, 12.9%, state their major source of yearly income is from salary for paid work. The mean number of years worked is 26.7 years. Finally, Table 1b indicates that 66.7% of the respondents are female and most, 81.8%, were born in the United States. Only 18.2% were born in Mexico.

**Table 1a. Demographic Variables**

| | Age | Education | Income | Years Worked |
|---|---|---|---|---|
| Mean | 70.9394 | 8.3030 | 14247.7576 | 26.7308 |
| Mode | 76 | 5 | | 20 |
| Minimum | 59 | 2 | 0 | 1 |
| Maximum | 83 | 19 | 72000 | 50 |

**Table 1b. Demographic Variables Continued**

| Sex of the Respondent | | Place of Birth of Respondent | |
|---|---|---|---|
| Male | 33.3% | United States | 81.8% |
| Female | 66.7% | Mexico | 18.2% |

Most of the respondents, 72.7%, do not live alone; most of them, 66.7%, live with a spouse and/or other family members. The majority of the respondents, 93.9% are from Rio Grande City and surrounding areas. Most of the respondents, 84.8%, live within Rio Grande City limits or very close to city limits. Only 15.2% of the respondents live in ranch communities outside city limits. A majority of the respondents, 72.7%, own the house they live in.

Most of the respondents, 39.4%, are presently retired. Another 21.2% are retired with disability. Of all respondents, 15.2% are either presently working full or part time. Most of the respondents, 46.2%, state that they have spent most of their lives engaged in some type of work that involved physical labor (not farm work), although 20% of the respondents worked as field laborers. When asked if they are worried about having enough income in the future, 56.3% state yes, they are. When asked if they are having

trouble making ends meet, 31.3% state yes, they are. When asked if they have enough income for little extras, 59.4% state yes, they do.

**Table 2. Activities of Daily Living**

| | Activities of Daily Living | Physical Activities of Daily Living |
|---|---|---|
| Mean | 9.1212 | 12.0000 |
| Minimum | 6 | 9 |
| Maximum | 18 | 18 |

Activities of daily living (ADL) were also measured for the respondents as is shown in Table 2. The lowest ADL score is a 6, which corresponds with full access to and participation in daily activities. The highest score is an 18, which corresponds with limited access to and participation in activities of daily living. The mean ADL score for the respondents is 9.12 indicating that participants are relatively involved in activities of daily living. Physical activities of daily living (PADL) were also measured as is shown in Table 2. The lowest PADL score is a 9, which corresponds with maximum ability to engage in physical activities of daily living. The highest PADL score is 18, which corresponds with minimum ability to engage in physical activities of daily living. The mean PADL score for the respondents is 12, which indicates that participants are strongly capable of engaging in the physical activities of daily living.

Another component of the interview asks about doctor visits. The purpose of this portion of the interview is to assess what symptoms are leading the respondents to consult with their physicians. The results are shown in Table 3. When asked if they have consulted with a physician for a variety of symptoms, the most common reason the respondents went to visit a doctor was for having a cough. Almost 40% of the respondents have seen a doctor for having a cough in the past few months. Almost 1/3 of

all respondents went to see a doctor for feeling dizziness, for pain (other than chest), for feeling tired all the time, and for chest pain in the past few months. Over 25% of the respondents saw a doctor in the past few months each for complaints of numbness of the legs or arms and for blurred vision. Fewer respondents, between 12% and 18%, saw a doctor in the past few months for feeling a fast pulse or heart rate, for burning sensation during urination, for being thirsty all the time, and for a fever. The least amount of respondents, fewer than 10%, saw a doctor in the past few months for feeling a growth or mole.

**Table 3. Reasons for Doctor's Visits**

| **Have you visited with a doctor in the past few months for any of the following symptoms?** | | | **Do you routinely visit with a doctor for any of the following conditions?** | | |
|---|---|---|---|---|---|
| | **Yes** | **No** | | **Yes** | **No** |
| **Thirsty all the time?** | **8.2%** | **1.8%** | **Diabetes?** | **2.4%** | **7.6%** |
| **Dizziness?** | **3.3%** | **6.7%** | **Arthritis?** | **5.5%** | **4.5%** |
| **Feeling tired?** | **0.3%** | **9.7%** | **Breathing problems?** | **3.3%** | **6.7%** |
| **Pain (other than chest)?** | **3.3%** | **9.7%** | **Circulation problems?** | **7.3%** | **2.7%** |
| **Feeling a growth (mole)?** | **.1%** | **0.9%** | **Stomach problems?** | **6.4%** | **3.6%** |
| **Fever?** | **5.2%** | **4.8%** | **High blood pressure?** | **2.7%** | **7.3%** |
| **Numbness of arms / legs?** | **7.3%** | **2.7%** | **Heart trouble?** | **5.5%** | **4.5%** |
| **Burning while urinating?** | **5.2%** | **4.8%** | **Cancer?** | **1.2%** | **8.8%** |
| **Chest pain?** | **3.3%** | **6.7%** | **Anxiety / depression?** | **7.3%** | **2.7%** |
| **Fast pulse or heart rate?** | **2.1%** | **7.9%** | | | |
| **Cough?** | **9.4%** | **0.6%** | | | |
| **Blurred Vision?** | **7.3%** | **2.7%** | | | |

As is also indicated in Table 3, respondents were asked about conditions for which they routinely see a doctor. The condition that is most commonly treated, 72.7% of all respondents, is high blood pressure. Heart trouble and arthritis are second-most commonly treated conditions with 45.5% of all respondents reporting visits to doctor. Of all respondents, 42.4% visit a doctor regularly for having diabetes. About 1/3 of all respondents report visiting regularly with a doctor for stomach or bowel problems,

breathing problems, extremity circulation problems, and anxiety or depression. The least amount of respondents, 21.2%, state they visit with a doctor regularly for cancer.

As illustrated in Table 4, nine questions were asked of the respondents in order to formulate the main dependent variable in this study. The nine questions are considered mismanagement strategies and are designed to look at attempts and potential attempts at variation from prescription regimens. The most common mismanagement strategy used by respondents is asking for free samples of the medications being prescribed.

**Table 4. Mismanagement Strategy Use**

| | Yes | No |
|---|---|---|
| **Do you take less medication to make it last?** | **6.1%** | **93.9%** |
| **Do you go without medicine because of money?** | **15.2%** | **84.8%** |
| **Do you get medicine on credit at the drug store?** | **12.1%** | **87.9%** |
| **Do you but part of a prescription instead of it all?** | **9.1%** | **90.9%** |
| **Do you borrow money from someone for medicine** | **9.1%** | **90.9%** |
| **Do you buy only the most important medicine?** | **12.1%** | **87.9%** |
| **Do you take medicine only when you need it?** | **15.2%** | **84.8%** |
| **Do you have a family member pay for your medication?** | **12.1%** | **87.9%** |
| **Do you ask your doctor for free samples of medication?** | **30.3%** | **69.7%** |

Of all respondents, roughly a third, 30.3%, state they ask their doctor for free samples of medication. When asked if respondents go without medication because of money, 15.2% said that they did. Similarly, 15.2% of respondents state that they only take their medicine when they think they need it, such as when they are in pain. Family members are asked to pay for 12.1% of the respondents' medications. What are considered only the most important medications out of a full prescription regimen are sometimes purchased by 12.1% of the respondents. Credit at drug stores is sought by 12.1% of the respondents. Less than 10% of the respondents buy part of a prescription instead of it all or borrow money from someone other than family members to purchase

medications. Only 6.1% of the respondents take less medication than is prescribed to make it last longer.

The dependent variable for this study is collapsed to create an index of the nine previously mentioned variables. The lowest possible score for this mismanagement scale is 9. The highest possible score is 18. The higher the score is, the more the mismanagement that occurs. Of all respondents, 57.6% used no mismanagement strategies. The respondents used no single mismanagement strategy overwhelmingly, but it is important to note that 42.4% of all respondents used at least 1 mismanagement strategy.

**Table 5. Medication Mismanagement Means**

| | | Mean | Standard Deviation |
|---|---|---|---|
| **Sex of the Participant** | | | |
| | **Male** | **10.0909** | **2.0715** |
| | **Female** | **10.2727** | **2.2505** |
| **Place of Birth** | | | |
| | **United States** | **9.8148** | **1.6650** |
| | **Mexico** | **12.0000** | **3.2863** |
| **Level of Education** | | | |
| | **0-8 years** | **10.6842** | **2.6469** |
| | **8-12 years** | **9.7500** | **1.1650** |
| | **>12 years** | **9.3333** | **.8165** |
| **Payment Mix** | | | |
| | **Cash** | **12.0000** | **.0000** |
| | **Medicaid** | **10.0625** | **2.3514** |
| | **Private Insurance** | **10.2500** | **2.2613** |
| | **Veteran's Insurance** | **9.6667** | **1.1547** |
| **Self-Reported Difficulty of Payment** | | | |
| | **Not Difficult** | **9.4400** | **.8206** |
| | **Somewhat Difficult** | **10.5000** | **1.2910** |
| | **Very Difficult** | **14.7500** | **3.2016** |

Using the "means" function on SPSS software, the mean level of medication mismanagement was compared using the varying levels of several nominal and ordinal

variables. This is illustrated in Table 5. When comparing "Sex of the Participant," the mean level of medication mismanagement for males is 10.09. The mean level for females is 10.27. There is a negligible difference between the means of males and females; therefore, it may be inferred that sex of the respondent has no impact on the dependent variable for these respondents.

There was an important difference in means found when looking at the variable "Place of Birth." For those respondents who were born in the United States, the mean level of medication mismanagement is 9.8. For those respondents who were born in Mexico, the mean level jumps to 12. Place of birth, and its apparent consequences, seems to have an impact on medication mismanagement.

"Level of Education" also seems to have an impact on medication mismanagement. An ordinal variable was created out of the education scale. Education level 1 represents those respondents who state they have 0-8 years of formal education. Level 2 represents those respondents who state they have 8-12 years of formal education. Level 3 represents those respondents who state they have more than 12 years of formal education. The mean level of medication mismanagement for those respondents in Level 1, those with the least education, is 10.68. The mean level of medication mismanagement for those respondents in Level 2 is 9.75. The mean level of medication mismanagement for those respondents in Level 3, those with the most education, is 9.33. It appears that higher education levels coincide with lower mean levels of medication mismanagement.

Respondents were asked how they paid for their prescription medications. All responses were categorized into one of four qualifications: cash, Medicaid, private insurance, or veteran's insurance. There were some notable differences in the mean level

of medication mismanagement among the different methods of payment for medication. Those respondents who obtain prescriptions with Medicaid or who use their private insurance have similar levels of medication mismanagement. Medicaid beneficiaries have a mean mismanagement level of 10.06, while those with private insurance have a mean mismanagement level of 10.25. The veterans in the sample have the lowest mean mismanagement level with 9.67. Those who have to pay for their prescription medications with cash have the highest mean level of medication mismanagement, 12.

Perhaps the most reliable indicator of medication mismanagement is self-reported difficulty in paying for prescription medications. Respondents were asked, "Do you find it difficult to pay for your prescription medications?" The potential responses were "No," "Somewhat Difficult," and "Yes." The respondents who stated they did not find it difficult to pay for their prescription medications had a mean level of medication mismanagement of 9.44. The respondents who stated they found it somewhat difficult to pay for their prescription medications had a mean level of medication mismanagement of 10.50. Those respondents who reported difficulty in paying for their prescription medications reported the largest level of medication mismanagement. The mean level for this group is 14.75.

In an effort to establish validity to the small sample size taken from residents of Starr County, comparisons have been drawn from a sub-sample of the Border Epidemiological Study on Aging (BESA) conducted by the Center on Aging and Health at the University of Texas at Pan American in Edinburg, TX. The BESA Wave 1 is a collection of data from over 700 respondents from the Rio Grande Valley. Using the "select cases" option from SPSS software allows the investigator to obtain a subset of

cases from the larger 700. Forty-five cases were selected randomly to use as a measure of comparability to the 33 cases that were obtained from Starr County.

The subset of BESA respondents is 46.7% male. The mean age of the respondents is 61.58 years. This makes for a younger mean age than the participants from Starr County. Over half, 60% of the BESA subset, reports being born in Mexico; the rest of the respondents report being born in the United States. The respondents from Starr County were overwhelmingly born in the United States. Most of the respondents of the BESA subset, 71.4%, own their own homes. This compares favorably with the Starr County data where 72.7% of the respondents own their own homes. The mean years of education for the BESA subset is 6.27, whereas the mean years of education for the Starr County respondents is 8.3. Slightly over 80% of the BESA subset earned less than a high school diploma. This, too, compares favorable with the Starr County respondents where almost 70% earned less than a high school diploma. The mean income for BESA subset respondents is $12.349 while for the Starr County respondents it is $14,247.75. The income levels from both data sets are very similar. The BESA subset finds that 56.8% of its respondents have incomes of $7,920.00 or below. Similarly, 54.5% of Starr County respondents have incomes of $7,200.00 or below.

When comparing the two data sets in order to establish validity for the small number of cases sampled from Starr County, it is important to note that certain key socio-economic factors are very similar between the two data sets. Home ownership, level of education, and income are very similar for both data sets. As this study takes into primary consideration financial means as a determinant of medication mismanagement, it is important to have established the validity of the small sample size by comparing it to a

much larger sample of similar respondents. It is the opinion of this investigator that because of the socio-economic, cultural, and geographic similarities between the samples, the likelihood of having obtained similar results for the dependent variable is good had the questions used for medication compliance had been administered by the BESA Wave 1 questionnaire.

# CHAPTER IV

# DISCUSSION AND RESULTS

During the course of the interview, while the subjects were responding to the questionnaires, valuable information was shared with the interviewer that gave insight to the issue of prescription drugs and their affordability. The interviewer did not anticipate this qualitative component. The information gathered came inadvertently as the respondents simply elaborated on questions that required answers from a multiple-choice schematic. Given the already small number of participants sought, the interviewer chose not to interrupt the elaborations, as the information being relayed seemed to place a three-dimensional face on the typical "yes" or "no" response given immediately beforehand.

Once these additional comments were noted, the researcher continued to probe if found necessary. Recurring themes emerged that supplemented qualitatively the data collected. Two polar extremes were noticed with respect to concern about medication costs that could be categorized into those who have Medicaid coverage and those who have either private pay insurance or no insurance at all. Among those with Medicaid coverage, there seemed to be ambivalence about the number of medications prescribed and cost of medications. For those with private pay insurance or no insurance coverage at all, there seemed a very real fear about costs of medication due to lack of income. Among those who had a difficult time paying for medication, there was a subset of

subjects who elaborated on the phenomenon of traveling to Mexico to obtain their prescription drugs at lower costs.

Roughly half, 48.5%, of the subjects in the study had Medicaid benefits to cover for their prescription drug costs. The other half either had private insurance, 36.4%, veteran's benefits, 9.1%, or no insurance at all, 6.1%. The level of ambivalence towards drug costs and the number of medications being prescribed was overwhelming after interviewing subjects who had Medicaid benefits. It became evident quickly that the sheer number of medications being prescribed for any one subject in the study was astounding. There is no doubt that the older one becomes the more likely he or she is to be prescribed medication. Data analysis suggests that the older one gets, the more medications are prescribed.

The interviewer had obtained the knowledge that Medicaid prescription drug coverage is limited to three prescriptions per month for adults. Since the number of medications prescribed monthly was much greater than three for the average subject, the interviewer assumed difficulty in payment for any medication beyond the three allotments. However, through probing the researcher discovered that most of the subjects with Medicaid benefits had obtained a type of Medicaid that doesn't cap the number of prescription drugs. Although the sample size is relatively small, it was still surprising to see that most of the subjects with Medicaid benefits had qualified for this limitless prescription drug coverage through Medicaid. It is not surprising then that when the nine questions used to construct the dependent variable were asked, overwhelmingly the subjects with Medicaid coverage answered "no" to all nine questions. When the question "Do you find it difficult to pay for your medications?" was asked of the Medicaid

insured, all subjects said they had no difficulty paying for their medications. When the question "When you visit with your doctor, does he/she discuss with you the options available in lower cost medications?" was asked of one Medicaid insured, one subject responded with "What for...the government pays for it all anyway." Although the interviewer did not get the impression that this subject or any other was taking advantage of the system, there did seem to be a lack of global awareness of the impact that prescription drug costs have in this country. Indeed there seem to be a lack of appreciation for the struggle that others endure who are in similar medical situations but without government sponsored insurance. This same subject went on to say, "If I didn't have Medicaid, I wouldn't know what to do." The idea of saving money or cutting costs of prescription drugs was not an issue because it wasn't something that directly impacted the respondent. As the interviewer continued to probe participants on this important aspect of the study, narratives from those who had Medicaid insurance revealed that there was no concern for cutting drug costs and that they were rather uninterested in the national dialogue that speaks of the advantages to be gained from a universal policy that covers prescriptions for the elderly. In fact whether or not prescription coverage was extended to others seemed as something irrelevant to them at the time of receipt of Medicaid benefits.

In sum, for those elderly participants who were receiving the extended Medicaid benefits, then there is no need to worry about the number of medications taken, the cost of the medication, or the cost to the government. The Medicaid insured, fortunately, had no problems obtaining medication and did not need to use mismanagement strategies in

order to follow a prescription drug regimen. Those with private insurance told a different story.

Those subjects with private insurance had a more difficult time paying for their prescription drugs. The mean number of medications taken by the subjects in the sample is 6.25. Six medications monthly can get expensive on limited income and private insurance. One woman who is privately insured stated that she has a difficult time paying for her medications despite the fact that she has private insurance. She states that six medications monthly at a $20 co-payment apiece is a significant amount when compared to her yearly income. The typical privately insured subject who has a $20 co-payment and has to pay for the average six medications monthly would have to pay $1440 yearly to fill all prescriptions. When the average yearly income for the subjects is $14,247, it is evident that a substantial 10% of their income is spent for prescription drugs.

Maria is a 61-year-old married woman who lives in the outskirts of Rio Grande City. She received an eighth-grade education in the United States, and has worked as a migrant field-laborer for most of her life. Later in her working years, she managed to gain part-time employment with a company that has health insurance as an employee benefit. Maria earns a monthly income of $900. The number of medications she takes a month is 10. Multiplying her co-payment by the number of medications she takes, her medication costs are a little under a quarter of her monthly income. This subject uses 8 of the 9 mismanagement strategies in the questionnaire. The only strategy she has not used thus far is getting credit at the drug store. When talking to Maria, she mentioned that the costs of prescription drugs have a huge impact on her financially and emotionally. She states that she realizes the advantages of taking her prescription

medications as prescribed. This woman has been diagnosed with arthritis, diabetes, stomach problems, high blood pressure, and heart problems. She knows that taking her medications is crucial to her health. At the same time, because of a lack of financial resources, she finds herself having to skip doses and go without medication. Maria is well informed about her diagnoses and her medications. She talks to her doctor about side effects and the benefits of medication adherence. Maria's son works as an emergency medical technician, so she is reminded constantly about the importance of following her prescribed medication regimen. Despite her knowledge of illness and medication, Maria cannot bring herself to spend $200 each month for her medications. Maria acknowledges that she wishes she could afford to pay for all of her medications, but at this point in time, it is a financial impossibility for her and her family.

Jose is 67 years old. He has an eighth grade education. He has worked for a large distributing company in Rio Grande City for over 40 years. He earns over $21,000 a year and he presently has health benefits through his employer. Despite the fact he has reached retirement age, Jose still works. Jose presently takes 11 prescription drugs for asthma, circulation problems, diabetes, high blood pressure, and heart problems. Jose only uses one mismanagement strategy, and he is proud of this fact. Jose is proud that he can afford to pay for all 11 of his medications with no problem. Jose admits however, that he asks his doctor for samples when he consults with him.

However, Jose tells me that he is afraid. He tells me that he feels he is getting too old and that some day soon, his company is going to lay him off. Jose has noticed that his tasks at work have gradually decreased and have been reassigned to other coworkers. He says that he doesn't have many responsibilities at work anymore, and this worries

him. He knows, and he assumes his employer knows, that he cannot participate in much of the physical and manual labor he used to be able to perform. Jose states that, although he presently can afford to pay for his prescription medications, he might not be able to for much longer. Unfortunately, Jose's retirement plan does not include the health insurance coverage he presently has. Jose knows that he cannot lose his job, because losing it means he will no longer be able to treat his illnesses. Jose works at this point, not because he wants to, but because he has to. The only reason Jose still works with his company after so many years is because he knows his medications are too important to lose and his health will suffer if he were not to afford them once he is retired or is laid off, as he observes: "I don't know what I'll do if I lose my job." He emphasizes over and over how much he is concerned about the possibility which is very real to him of not being able to continue with his medications were he to be laid off or forced into retirement by his physical problems.

Juan and Maria Guadalupe are married. Juan is a 79-year-old man and Maria Guadalupe is 73. They were both born in Mexico. They live with their daughter in Rio Grande City. Juan spent most of his life working in the fields. Maria Guadalupe spent most of her life working in a factory in Mexico. They both moved to the United States along with their children in search of a better life. Neither of them has more than a 4$^{th}$ grade education. Combined, they have an annual income of $9696.00 that primarily comes from Social Security benefits. Maria Guadalupe is diagnosed with arthritis, breathing problems, extremity circulation problems, diabetes, stomach problems, high blood pressure, heart trouble, cancer, and depression. Juan is diagnosed with arthritis, extremity circulation problems, diabetes, stomach problems, high blood pressure, cancer,

and depression. Maria Guadalupe has six medications on her prescription regimen. Juan has eight. Maria Guadalupe and Juan each have Medicaid benefits, but they are limited to their three slots. Each claims that despite their Medicaid benefits, it is still very difficult to pay for their prescription medications. Maria Guadalupe and Juan both use all but two of the medication mismanagement strategies listed in the questionnaire. Neither of them tries taking less medication than prescribed to make the medication last longer. Neither has tried getting their medication on credit. But both, among all other strategies, go without medication because of an inability to pay, and both have had to borrow from family members to cover the costs of their medications. During the course of the interview, Maria Guadalupe and Juan highlighted the phenomenon of going across the river to Mexico to purchase prescription drugs. Maria Guadalupe and Juan are not alone in using this strategy. It is common knowledge that many prescription drugs are generally less expensive in Mexico, and Maria Guadalupe and Juan use this strategy as a means to make what little money they do have available for prescription drugs go further. Maria Guadalupe states, "I have my daughter take me to Camargo to the pharmacy to buy my medicine sometimes." "When she has a trip to Mexico, and when I have money available, I try to take advantage of the cheaper medication prices in Mexico," continues Maria Guadalupe.

Several of the respondents admitted to using this strategy, purchasing prescription drugs in Mexico, as a means of saving money. Several of the respondents commented that medications in the United States are too expensive and that buying prescription drugs in Mexico was a viable alternative to obtaining their medications here. Even some respondents who have private health insurance mentioned that co-payments often run

higher than full cost of medications in Mexico. This phenomenon was an unexpected mismanagement strategy that was not anticipated by the investigator. This was due, in part, to the strict adherence to the dependent variable questions that had been used by established studies on medication adherence. However, because the researcher relied on a mixed method approach where probing for further elaboration was done in further investigating the dependent variable additional and relevant information was obtained to better understand the phenomenon of interest. In the future, if this research were to be pursued further, using purchasing medications in Mexico as a potential mismanagement strategy will be considered.

**Interview with a Pharmacist**

In an effort to gain a more firm perspective on the medication mismanagement phenomenon, an interview was held with a local pharmacist in Starr County. The pharmacist chosen for interview works for a privately owned pharmacy and has had five years of experience working as a pharmacist. The interview took place after all data collection was completed. The purpose of holding the interview after data collection was complete was to share findings and patterns with the pharmacist and to inquire about any personal insight she may have on those findings and patterns. The pharmacist had strong opinions about the subject matter and shared freely.

First, the investigator asked the pharmacist about her customers and their methods of payment. The pharmacist stated that a vast number of her elderly clients have Medicaid. Many of them have the type of Medicaid that extends prescription drug coverage beyond the normal limit of three. At this point, the pharmacist chose to share

her views on the abuse of the Medicaid entitlement. The pharmacist stated that many of these Medicaid customers don't concern themselves with prescription drug costs and their overall impact. She stated that many of her Medicaid customers obtain prescriptions for medications that would go otherwise unused or would be classified as unneeded by patients who don't have said coverage. She claims that many of these Medicaid customers don't use money-saving strategies that others would use like asking for generic drugs as opposed to brand name or seeking lower-cost brand name drugs. She states that many of her Medicaid customers insist on brand name and even use Medicaid prescription drug slots for low cost medications such as aspirin. She stated that in her opinion (and this is corroborated by the narrative of Medicaid participants with extended coverage), people with a Medicaid entitlement don't assume responsibility for managing prescription drug costs as all costs are incurred by the government. She proceeded by saying that she feels that her elderly customers with Medicaid often insist on their physicians to prescribe medications, even if they are not necessary, simply because of rumored benefit. She stated that clients with Medicaid should be more responsible with their entitlement in an effort to minimize drug costs for all.

The pharmacist was asked if she was aware, or if she knew, of customers who used mismanagement strategies as defined in the dependent variable. The pharmacist said that she was aware of people who don't fill all of their prescriptions, who only take medication when in pain, and who have to borrow money to purchase medications. She admits the situation is unfortunate, but she states that the phenomenon of mismanaging medications due to inability to pay is not as common at her pharmacy as one might think. She said that it is surprising the number of elderly people in Starr County who qualify for

Medicaid with unlimited prescription drug coverage. She states that although there are some elderly people who visit her pharmacy and indicate that they have trouble paying for their medications, for most payment for medication is not a big problem. The investigator asked the pharmacist if credit was available at her pharmacy. Again, the dependent variable identifies asking for credit at a pharmacy as a mismanagement strategy, but the investigator never personally knew of any pharmacy in Starr County who offered credit as an option to its customers. The pharmacist stated that generally, and as store policy, credit is not extended to her customers; however, she does admit to extending credit to those customers who ask her for it and who have proven themselves loyal and long-time patrons.

The pharmacist was asked about her experience, both personally and with physicians, about sharing educational material and speaking with the customer about the medications they are prescribed. The investigator shared research findings about the positive relationship between medication knowledge and medication adherence. The pharmacist was quick to answer that her formal educational training included discouragement of medication education for the customer. Because of her formal training, the pharmacist states she feels the practice is probably similar with physicians. She states that, although the research may prove that the more educated a person is about the medication they are supposed to take the more likely they are to adhere to it, the approach to medication education by her profession is that essentially the less a person knows about the medication they are taking the better. She went on to explain that under normal circumstances, with very limited medication education, there is already a high level of anxiety and paranoia associated with taking medication. She states that many

customers will call and inquire about perceived side effects and secondary symptoms that are presumed to be associated with the medication they are taking. It was taught to her that the more a customer knows about the medication and its potential side effects and secondary symptoms, the more reluctant a person may be to take the medication that has been prescribed. She states that medication fact sheets are available along with every medication purchased. These fact sheets contain an array of information including the full extent of side effects. She hypothesizes, as she was taught, that if she as a pharmacist were to describe each of the potential side effects of any given medication in full detail, some of them extremely rare, to her customers that anxiety levels and paranoia would reach points that might keep a person from taking the medication due to fear. She states that, for the sake of optimizing adherence, it is generally thought better to keep people less informed of all of the minor details of the medication in an effort to keep from fostering fear of medication.

The pharmacist was informed of the fact that many of the respondents admitted to purchasing their prescription drugs in Mexico because of lower costs. The investigator asked the pharmacist what her official stand was on people purchasing drugs in Mexico. The pharmacist states, again by virtue of her formal training, that she must officially discourage purchasing prescription drugs in Mexico. There are many reasons for this she states. Among them is the lack of rigorous testing and guidelines that a medication must go through in the United States before it is put out on the market. She states that although the medication education received in the United States by the pharmacist is minimal, it is non-existent in Mexico. She went on to mention that in the United States, a

pharmacist must dispense the medications that are prescribed to a customer. In Mexico, a pharmacist need not be present when a customer is purchasing prescription drugs.

The pharmacist expressed to the investigator after her official proclamation on purchasing prescription drugs in Mexico that she understands why people go to Mexico to purchase medication. She stated that once a medication has cleared all testing in the United States, there is no reason why it shouldn't be purchased in Mexico. She states that the exact chemical composition of Prozac, for example, is used in the United States as in Mexico. They are identical, and therefore she sees no reason why medications that are identical shouldn't be purchased if available and cheaper in Mexico. The pharmacist admitted to the existence of much greater savings for many medications in Mexico. The pharmacist ended the interview by saying, "Medications in Mexico are cheap...that's why I go there to get my birth control pills...You can't beat it!"

## Discussion

Throughout the course of the development of this study, its implementation, and its reporting, there have been many developments in the attempt to modernize the Medicare entitlement for seniors. As it stands now after the passing of the 2004 legislation, the issue of not having prescription drug coverage as a Medicare recipient ceases to exist, albeit with caution since there are still many loopholes in terms of coverage. There are many stages of implementation involved, but the United States government has decided that this coverage is necessary for seniors, and they have received it at least some immediate respite. Prescription drugs, in general, continue to be a heated issue as it relates to cost. The past United States Presidential debates touched on the need for decreases in drug costs, and a few viable options have been considered and

are presently in debate. One of the options in this debate is the possibility of importing prescription drugs from Canada, as they seem to be much less expensive than the same drugs that are available to Americans from the United States drug companies. All having been said, prescription drugs and their impact on the general public continue to be a focus of the national interest and federal government.

The results of the interviews conducted in Starr County were in some ways surprising and in others not. The study presented here sought to replicate findings from the previously discussed study that indicated that the low-income elderly and those living rural areas were much more likely to mismanage medications than the better educated, higher income and urban elderly. This study reports very similar findings with respect to the dependent variable. In both cases, surprisingly few people used the mismanagement strategies identified in the dependent variable. What was interesting was that many of the people in the studies use at least one of the mismanagement strategies identified. A most unexpected finding was the small number of elderly people in Starr County for whom medications costs were not a concern due to Medicaid with unlimited prescription drug coverage. The pharmacist indicated that this was not surprising to her as she is aware of the qualifying conditions for this type of Medicaid. She states that in Starr County qualifying for this type of Medicaid with unlimited prescription drug coverage is not difficult.

The qualitative data that was derived from the elaboration of the closed-ended questions and the data collected from the in-depth interview with the pharmacists proved to be valuable in establishing relevance and reliability to the quantitative data. Whereas the numbers tell us that people with lower education levels and those from Mexico have

greater incidence of medication mismanagement, qualitative information tells us about the experiences these people had. People with lower education levels and people from Mexico are less likely to have been employed by a company that offers health insurance as a part of a benefits package. These people are more likely to visit a Mexican pharmacy to obtain their prescriptions. Although these people were as likely to have worked as many years as those with higher levels of education, the amount of annual income differs such that payment for medication is not as feasible.

It was hypothesized by the investigator that people with private insurance would have lower medication mismanagement rates than were actually found. However, qualitative data suggest that despite the availability of private insurance, co-payment was a significant contributor to medication mismanagement. Although people with private insurance pay less for prescription drugs than those who have to pay cash in full, co-payments themselves can run high. Despite the lowered costs, the high number of medications that are prescribed still add up in terms of co-payments which can easily represent a substantial percentage of annual income for some of the participants.

It was expected that people with higher educational levels would use less mismanagement strategies than those with lower ones. Education is a good indicator of socio-economic status and the results supported this hypothesis. It was also expected that people who self identified as having a difficult time paying for their medication would use more mismanagement strategies. This hypothesis was also supported by the findings presented here. Hence results presented here for Starr County are similar to the studies discussed in Chapter 1 and which provided the theoretical and methodological framework of the study.

## Conclusion

Starr County is a unique rural community. It differs geographically from other relatively isolated and disadvantaged populations in that it lies by the border of Mexico. The efforts of the United States government to ease the costs of prescription drugs for people ages 65 and over impacts those in Starr County, but differently than in other communities in the United States. As has been discussed, the higher than expected numbers of elderly participants in Starr County who have extended Medicaid benefits presents an interesting predicament. On the one hand these elderly are very low income, as reported in Table 1a; yet the type of extended Medicaid coverage for which they qualify gives them unlimited access to all the prescriptions they need. Thus although rather poor and limited in education, they are not confronted with the dilemma of mismanaging their prescription medications in order to pay for other needed aspects of their lives. For these elderly, the issue of drug costs does not exist as long as they continue to qualify for this coverage. In a very real sense these elderly are categorically excluded from the national policy debates on extending Medicare coverage and reducing the costs of medications. Perhaps as a result of this categorical exclusion they show no interest in the debates that they do not consider affecting their lives. Medicaid beneficiaries must fall below an established income level to qualify for extended benefits. Precisely because those who earn higher than allowed by guidelines is not a typical elderly in Starr County, what would otherwise be a legitimate concern of those with limited incomes, but higher than the qualification baseline, is not a concern to the average Starr County elderly.

For those in Starr County who earn too much (and even for those who don't earn enough, but yet slightly over the maximum to qualify for extended benefits), there are options available to help ease drug costs. Traveling across the border, a mere five to 10 minutes drive from their residence in Starr County, ensures drug savings even better than those available to those with private insurance. The cost of most medications in Mexico is much less expensive than even some co-payments in the United States. For residents in Starr County, Medicare prescription drug coverage that is similar to private insurance co-payments may not have a significant impact on improving adherence to medication regimens. Even the interviewed pharmacist, who earns a decent salary and has a health care benefits package, admitted to buying some of her prescriptions in Mexico at a cost lower than her co-payments.

One finding of the study that was not formally anticipated was the phenomenon of purchasing prescription drugs in Mexico as a means of saving money. If this study were to be pursued in further detail in the future, this one subject could be of further study independent of other components of the study.

## BIBLIOGRAPHY

Andersen, Ronald M., Thomas H. Rice, and Gerald F. Kominski. 2001. *Changing the U.S. Health Care System: Key Issues in Health Services Policy and Management. Second Edition.* San Francisco: Jossey-Bass.

Ajzen, Icek and Martin Fishbein. 1980. *Understanding Attitudes and Predicting Social Behavior.* Upper Saddle River, NJ: Prentice-Hall, Inc.

Bazargan, Mohsen, Ann R. Barbre, and Verneda Hamm. 1993. *"Failure to Have Prescriptions Filled Among Black Elderly."* Journal of Aging and Health. 5: 264-282.

Fillenbaum, Gerda G., Ronnie D. Horner, Joseph T. Hanlon, Lawrence R. Landerman, Deborah V. Dawson, and Harvey J. Cohen. 1996. *"Factors Predicting Change in Prescription and Nonprescription Drug Use in a Community-Residing Black and White Elderly Population."* J. Clin Epidemiol. 49: 587-593.

Glickman, Lillian, Ellen A. Bruce, Francis G. Caro, and Jerry Avorn. 1994. *"Physicians' Knowledge of Drug Costs for the Elderly."* Journal of the American Geriatric Society. 42: 992-996.

Henry J. Kaiser Family Foundation. 2002. *Medicare and Prescription Drugs.* www.kff.org

Henry J. Kaiser Family Foundation, Commonwealth Fund, and Tufts-New England Medical Center. 2002. *Seniors and Prescription Drugs: Findings from a 2001 Survey of Seniors in Eight States.* www.kff.org

Maddigan, Sheri L., Karen B. Farris, Norah Keating, Cheryl A. Wiens, Jeffrey A. Johnson. 2003. *"Predictors of Older Adults' Capacity for Medication Management in a Self-Medication Program: A Retrospective Chart Review."* Journal of Aging and Health. 15: 332-352.

McGrath, John M. 1999. *Physicians' Perspectives on Communicating Prescription Drug Information."* Qualitative Health Research. 9: 731-745.

Mitchell, Jim, Holly F. Mathews, Lisa M. Hunt, Kimberly Hayes Cobb, and Reginald W. Watson. 2001. *"Mismanaging Prescription Medications Among Rural Elders: The Effects of Socioeconomic Status, Health Status, and Medication Profile Indicators."* The Gerontologist. 41: 348-356.

Rogowski, Jeannette, Lee A. Lillard, and Paynard Kington. 1997. *"The Financial Burden of Prescription Drug Use Among Elderly Persons."* The Gerontologist. 37: 475-482.

Sambamoorthi, Usha, Dennis Shea, and Stephen Crystal. 2003. *"Total and Out-of-Pocket Expenditures for Prescription Drugs Among Older Persons."* The Gerontologist. 43: 345-359.

Sharpe, Thomas R., Mickey C. Smith, and Anne R. Barbre. 1985. *"Medicine Use Among The Rural Elderly."* Journal of Health and Social Behavior. 26: 113-127.

# APENDIX

## SURVEY QUESTIONNAIRE

## Socioeconomic Background

A1. Sex of the participant.

1. Male 2. Female

A2. When were you born? (mm/dd/yy) _____

A3. Where were you born?

1. United States 2. Mexico 3. Other (Specify)

A4. What is the highest grade (year) of regular school you completed?

| | |
|---|---|
| 01. 0,1,2,3,4,5,6,7,8 | 05. 16 |
| 02. 9,10,11 | 06. 17,18 |
| 03. 12 | 07. 19 + |
| 04. 13,14,15 | |

A5. Do you live alone? A6. Location _____

00. No 01. Yes Zip code and rural or city

A7. If you do not live alone, whom do you live with?

| | |
|---|---|
| 01. Husband / wife only | |
| 02. Husband / wife and other relatives | |
| 03. Husband / wife and non-related people (friends) | |
| 04. Only with other relatives | |
| 05. Only with other non-related persons (friends) | |
| 06. With relatives and other non-related persons | |
| 07. Other, please specify | |
| 99. No answer | |

A8. Is the place you live at...

01. Owned by you 02. Mortgaged by you (still making payments to own)
03. Rented by you 04. Other
99. No answer

A9. What do you estimate your total income per month from all sources? (Include only your own)

$_____ X 12 = $_____
(month) (year)

A10. What are the sources of your monthly income?

_____

A11. **Income Adequacy**

| | No | Yes |
|---|---|---|
| 1. Do you worry about having enough income in the future? | | |
| 2. Do you have trouble making ends meet? | | |
| 3. Do you have enough income for little extras? | | |

A12. Are you at present...?

| | Yes | No | NA |
|---|---|---|---|
| A. Employed full time | 01 | 00 | 99 |
| B. Employed part time | 01 | 00 | 99 |
| C. Retired | 01 | 00 | 99 |
| D. Retired with disability | 01 | 00 | 99 |
| E. Disabled, but not receiving disability | 01 | 00 | 99 |
| F. Unemployed and looking for work | 01 | 00 | 99 |
| G. Never have worked | 01 | 00 | 99 |
| H. Other (specify) | 01 | 00 | 99 |

A13. What type of work have you done most of your life?_____
A13a. How long did you do this work?_____
A13b. Where did you work?_____

A14. If you still work, on average, how many hours a week do you work?_____

## Health Status

### Activities of Daily Living

B1. Can you use the telephone...
01. Without help, including looking up numbers and dialing.
02. With some help (can answer phone or dial operator in an emergency)
03. Or are you completely unable to use the telephone?
04. Does not have a telephone.
99. No answer.

B2. Can you get to places out of walking distance...
01. Without help (can travel alone on buses, taxis, or drive your own car)
02. With some help (Need someone to help you or go with you when traveling)
03. Are you unable to travel unless emergency arrangements are made for specialized vehicles like an ambulance?
99. No answer.

C4. Can you walk...
01. Without help (except from a cane)
02. With some help from a person or with the use of a walker, or crutches, etc.
03. Are you completely unable to walk?
99. No answer.

C5. Can you get in and out of bed...
01. Without any help or aids of any kind
02. With some help (either from a person or with the aid of some device)
03. Are you totally dependent on someone else to lift you?
99. No answer.

C6. Can you take a bath or shower...
01. Without help
02. With some help (need help getting in and out of the tub, or need special attachments on the tub)
03. Are you completely unable to bathe yourself?
99. No answer.

C7. Do you ever have trouble getting to the bathroom on time?
01. No
02. Sometimes
03. Yes
99. No answer.

C8. Can you see...
01. Without any aids
02. With aids (glasses, contact lenses, magnifying glass, or someone helping you)
03. Are you completely blind?
99. No answer

C9. Can you hear...

01. Without aids
02. With aid (hearing aid, telephone amplifier)
03. Are you completely deaf?
99. No answer.

## D1. Mental Health

| | Yes | Not Sure | No |
|---|---|---|---|
| 1. Are you in good spirits most of the time? | | | |
| 2. Do you often feel depressed? | | | |
| 3. Do you often feel lonely? | | | |
| 4. Are you frequently confused? | | | |
| 5. Do you often feel anxious or worried about the future? | | | |
| 6. Overall, how would you rate your mental health? | Good | Fair | Poor |
| 7. Compared to 5 years ago, how would you rate your mental health? | Better | About the Same | Worse |

## Acute Care Visits

E1. Have you visited a physician in the past few months for any of the following symptoms?

| | No | Yes |
|---|---|---|
| 1. Being thirsty all of the time? | | |
| 2. Dizziness? | | |
| 3. Feeling tired all of the time? | | |
| 4. Pain (other than chest)? | | |
| 5. Feeling a growth (mole)? | | |
| 6. Fever? | | |
| 7. Numbness of the legs or arms? | | |
| 8. Chest pain? | | |
| 9. Feeling a fast pulse or heart rate? | | |
| 10. Cough? | | |
| 11. Blurred vision? | | |
| 12. Burning sensation during urination? | | |

## Chronic Care Visits

F1. Do you go to the doctor on a regular basis for any of the following conditions?

| | No | Yes |
|---|---|---|
| 1. Arthritis | | |
| 2. Breathing Problems (such as asthma or emphysema) | | |
| 3. Extremity Circulation Problems | | |
| 4. Diabetes | | |
| 5. Stomach or bowel problems such as ulcers | | |
| 6. High blood pressure | | |
| 7. Heart trouble | | |
| 8. Cancer | | |
| 9. Anxiety or depression | | |

## Medication Profile

### G1. Physician Consultation

| | No | Yes |
|---|---|---|
| 1. When you visit with your doctor, does he/she discuss with you the medication you should be taking for your condition/s? | | |
| 2. When you visit with your doctor, does he/she discuss with you when you should take your medications? | | |
| 3. When you visit with your doctor, does he/she discuss with you the options available in lower cost medications? | | |
| 4. When you visit with your doctor, does he/she discuss with you the possible side effects of your prescription medications? | | |

### H1. How far do you live from the pharmacy you go to?

_____

H2. Who takes you to the pharmacy?

_____

I. Do you...

| | No | Yes | No Answer | |
|---|---|---|---|---|
| Take less medicine to make it last? | | | | |
| Go without medicine because of money? | | | | |
| Get medicine on trust or credit at the drug store? | | | | |
| Buy part of a prescription instead of it all? | | | | |
| Borrow money from someone for medicine? | | | | |
| Buy only the most important medicine? | | | | |
| Take medicine only when you need it such as when you have pain? | | | | |
| Have a family member pay for some or all of you medication? | | | | |
| Ask your doctor for free samples of medication? | | | | |

# VITA

**Romeo Garcia, Jr.**
**304 W. Fairview Ave.**
**Rio Grande City, TX 78582**
**956-487-2035**

## Education

University of Texas Pan American, Edinburg, TX, 2005. Will graduate in May 2005 with a Master of Science in Sociology. Thesis on medication mismanagement among elderly. Current GPA: 4.0

University of Texas San Antonio, 1997. Bachelor of Arts in Sociology.

## Work Experience

Border Region MHMR, Rio Grande City, TX, 1997-present.
Position: Program Manager
Duties include supervising the daily operation of a psychiatric outpatient clinic, managing programs for children's mental health, adult mental health, and persons with mental retardation.