

1-1-1989

The Prevalence Of Medication Misuse And Abuse Among The Elderly

Constance Rose Muntz

Eastern Illinois University

This research is a product of the graduate program in [Home Economics](#) at Eastern Illinois University. [Find out more](#) about the program.

Recommended Citation

Muntz, Constance Rose, "The Prevalence Of Medication Misuse And Abuse Among The Elderly" (1989). *Masters Theses*. 446.
<http://thekeep.eiu.edu/theses/446>

This Thesis is brought to you for free and open access by the Student Theses & Publications at The Keep. It has been accepted for inclusion in Masters Theses by an authorized administrator of The Keep. For more information, please contact tabruns@eiu.edu.

THESIS REPRODUCTION CERTIFICATE

TO: Graduate Degree Candidates who have written formal theses.

SUBJECT: Permission to reproduce theses.

The University Library is receiving a number of requests from other institutions asking permission to reproduce dissertations for inclusion in their library holdings. Although no copyright laws are involved, we feel that professional courtesy demands that permission be obtained from the author before we allow theses to be copied.

Please sign one of the following statements:

Booth Library of Eastern Illinois University has my permission to lend my thesis to a reputable college or university for the purpose of copying it for inclusion in that institution's library or research holdings.

Aug. 4, 1989

Date

Constance Rose Muntz

Author

I respectfully request Booth Library of Eastern Illinois University not allow my thesis be reproduced because _____

Date

Author

CHAMPAIGN, ILL. 61820

The Prevalence of Medication Misuse and

Abuse Among the Elderly

(TITLE)

BY

Constance Rose Muntz

THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF

M. A. in Gerontology

IN THE GRADUATE SCHOOL, EASTERN ILLINOIS UNIVERSITY
CHARLESTON, ILLINOIS

1989

YEAR

I HEREBY RECOMMEND THIS THESIS BE ACCEPTED AS FULFILLING
THIS PART OF THE GRADUATE DEGREE CITED ABOVE

7-24-89

7-24-89

DATE

7-24-89

7-24-89

DATE

P. Jayne Ojjes

Joyce Crowe

ADVISER

Kathleen Dyl

Joyce Crowe

DEPARTMENT HEAD

ABSTRACT

The purpose of this study was to determine the extent of drug misuse and abuse, among older adults in a northeastern county in Ohio. The objectives of the study were to determine whether older adults misuse and abuse their prescription and nonprescription medications, to determine the forms of misuse and abuse that occur most often, and to determine who is responsible for the misuse and abuse. A total of 102 older adults participated in this study. Each older adult was at least 60 years old and was responsible for taking his/her own medication. These older adults attended one of three nutrition sites located in the county. The data collecting instrument was a 29-item questionnaire developed by the researcher. The questionnaires were distributed at the nutrition sites. Data were analyzed using the Statistical Package for Social Sciences (SPSSx) to identify frequencies and percentages. The incidence of misuse and abuse of medication was very low. The most commonly reported contributing factors were saving leftover medications for future use and insufficient financial resources. Other factors included forgetfulness, taking more than the prescribed amount, and doubling dosages to make up for missed ones. Older adults in this study were primarily responsible for the misuse and abuse that occurred. Only some of the findings in this study were similar to those reported in previous research. More additional studies need to be completed in order to

determine the extent of the problem. Older adults need to be more conscientious of their medication regimen in order to decrease the incidence of misuse and abuse. In addition, geriatric training of physicians and pharmacists may help reduce misuse and abuse of medication.

ACKNOWLEDGEMENTS

I would like to thank my graduate committee including Dr. Joyce Crouse, Dr. Kathy Doyle, and Dr. Jayne Ozier for their time and help with this project. The help of these individuals has proven to be invaluable. They have been very accommodating, and I appreciate this immensely. Also, I would like to thank my family and friends for the support and encouragement they have given me. I couldn't have done it without them. A special thanks to Dr. Crouse who has taught me to have faith in myself, to never be afraid to try something new, and to strive to be the best in what I do.

TABLE OF CONTENTS

	Page
Abstract.....	i
Acknowledgements.....	iii
List of Tables.....	vi
List of Figures.....	vii
 <u>CHAPTER I</u>	
Introduction.....	1
Purpose of Research.....	1
Rationale for Objectives.....	2
Definition of Terms.....	3
Significance of the Problem.....	3
Limitations.....	4
 <u>CHAPTER II</u>	
Review of Related Literature.....	5
Compliance Factors.....	5
Adverse Reactions.....	11
Roles of Physicians and Pharmacists.....	13
Over-the-Counter Medication.....	15
 <u>CHAPTER III</u>	
Methodology.....	18
Selection/Description of Sample.....	18
Description of Data Collecting Instrument.....	18
Procedure for Data Collection.....	19
Data Analysis.....	20

CHAPTER IV

Results and Discussion.....21
Analysis of Objective 1.....29
Analysis of Objective 2.....34
Analysis of Objective 3.....35

CHAPTER V

Summary, Conclusions, and Recommendations.....39
Summary.....39
Conclusions.....39
Recommendations.....43
References.....46
Appendix A.....49
Appendix B.....51

LIST OF TABLES

	Page
Table 1. Characteristics of Female Participants.....	22
Table 2. Characteristics of Male Participants.....	24
Table 3. Number of Health and Health-Related Conditions Reported by Participants.....	26
Table 4. Over-the-Counter Medications Used by Participants.....	27
Table 5. Number of Prescription Medications Ingested by Participants.....	28

LIST OF FIGURES

	Page
Figure 1. Comparison of participants who forgot to take their medication.....	30
Figure 2. Comparison of participants who had insufficient financial resources to purchase medications...	31
Figure 3. Comparison of participants who took more than the prescribed dosage.....	32
Figure 4. Comparison of participants who saved leftover drugs.....	33

CHAPTER I

Introduction

In recent years, the public has become increasingly aware of the incidence of drug abuse in the elderly. Public awareness has tended to be focused on drug abuse among adolescents and young adults as opposed to older adults. The lack of drug abuse awareness concerning the elderly may be partly due to the type of drugs that are abused by different generations. Illegal drugs are most often abused by the younger generations, whereas older generations are more likely to abuse prescription and nonprescription drugs. Another factor affecting awareness of the problem is that the elderly are more isolated and the effects of their drug abuse are not as visible as in those who are more involved in society.

There is some reluctance to consider the issue of drug misuse and abuse among the elderly; however, as the older adult population continues to grow, serious consideration must be given to the problem. Research in this area and information on drug misuse and abuse in this segment of the population is limited and often contradictory (Glantz, 1983).

Purpose of Research

The purpose of this study was to determine the extent of drug misuse and abuse among older adults residing in a northeastern county of Ohio. The objectives of this study

included the following:

1. To determine whether older adults misuse and abuse prescription and nonprescription medications.
2. To determine the forms of misuse and abuse that occur most often.
3. To determine who is responsible for the misuse and abuse.

Rationale for Objectives

A review of literature indicated that there are many forms of drug misuse and abuse. These forms include forgetting to take medication, taking more than the prescribed amount, doubling a dose of medication, and ingesting another individual's medication. Also, factors that influence misuse and abuse were described. These factors include saving leftover drugs for future use and insufficient financial resources. Drug misuse and abuse in the elderly originates from many sources. Drug interactions, low economic status, misunderstanding the medication regimen, visual or hearing problems, and the lack of written instructions all contribute to the problem (Pratt, Simonson, & Lloyd, 1982). Both prescription drugs and nonprescription drugs are misused and abused. Recognition of the effects of over-the-counter medication is important because the elderly tend to self-medicate. Many older adults cannot afford to go to the doctor every time they are ill so they try to treat themselves. Mixing two kinds of medication without a doctor's permission can be

described as drug misuse and abuse.

Doctors may also contribute to drug misuse and abuse among the elderly. The doctor may not monitor the patient's drug use carefully. Multiple drugs may be prescribed that cause adverse reactions. Inability to communicate clearly with patients may lead to a misunderstanding of instructions (Bogaert-Tullis, 1985).

Many factors contribute to drug misuse and abuse among older adults. It is important to identify these factors and provide solutions.

Definition of Terms

Important terms used in this study were defined as follows:

1. Elderly or older adults: Persons 60 years of age or older (Older Americans Act of 1965).
2. Drug abuse, medication misuse, or medication abuse: Any wrong use of medication or a deviation from the instructions given by the physician and/or pharmacist (Raffoul, Cooper, & Love, 1981).
3. Over-the-counter medication: Any medication that can be purchased without a prescription including vitamins.

Significance of the Problem

The elderly is the fastest growing segment of the population in the United States today. Older persons comprise 11.7% of the population and are prescribed 31% of all drugs (Nolan & O'Malley, 1988). The elderly experience

more illnesses, and therefore, are prescribed more medications. This figure is expected to be nearly 50% by the year 2000 (Farley, 1986). At the present time, approximately 75% of the elderly who contact a physician are given a prescription (Gryfe & Gryfe, 1984).

As the population continues to age, drug misuse and abuse will become a major concern of health professionals and gerontologists. Programs need to be developed to increase patients' knowledge about the medications they are taking. The elderly need to know what questions they should ask the doctor or pharmacist when they are given a new prescription. Doctors and pharmacists need to learn more effective communication techniques to use with the elderly in order to reduce the incidence of drug misuse and abuse.

Limitations

A limitation to this study was the size of the sample. The sample was small and, therefore, the results cannot be generalized to the whole elderly population. The sample was also a non-probability and convenience sample selected from senior nutrition sites located in a northeastern county of Ohio. Another limitation was the health of some of the participants. Physical handicaps may have prevented some of the older adults from filling out the questionnaire completely.

CHAPTER II

Review of Related Literature

Research indicates there is a growing concern related to medication misuse and abuse among the elderly. Few clinicians recognized the problem in the 1960's and 1970's. However, now researchers are studying the problem with fervor (Whittington, 1988).

Older adults visit a physician more often than younger people because they are prone to chronic diseases. Seventy percent of the elderly who are age 75 and older receive drugs from their doctor (Lamy, 1986). When used correctly, drug therapy may increase the quality and length of life, however, 25 to 50 percent of older people are not taking their medications correctly (Shimp & Ascione, 1988).

Researchers studied various living arrangements which impact on drug misuse and abuse in the elderly. Eighty-five percent of ambulatory older adults use medication on a regular basis (Bogaert-Tullis, 1985). In reviewing the literature concerning the problem, it is appropriate to note that four categories of research were examined: (1) compliance factors related to medication misuse and abuse, (2) adverse reactions, (3) roles of physicians and pharmacists, and (4) misuse and abuse of over-the-counter medications.

Compliance Factors

Poor compliance related to appropriate use of medication is a problem in patients of all ages.

Nevertheless, the factors that influence noncompliance in the elderly differ from the factors that influence the younger generations (Simonson, 1984, p. 69). While some older adults intentionally misuse and abuse drugs, by and large, most older adults do not intentionally misuse and abuse drugs. Factors involved in misuse and abuse are a decline in mental abilities, visual acuity, and hearing in later life; therefore, the elderly are more likely to confuse and misunderstand instructions (Levy & Glanz, 1981).

Brand, Smith, and Brand's (1977) analysis suggested noncompliance was sometimes the result of insufficient understanding of the physician's instructions and treatment periods described. Ninety-one of the 225 patients interviewed had not complied with at least one of the physician's orders. Of those 91 patients, 15 (eight males and seven females) did not understand the physician's instructions. The patient is more likely to comply with instructions when the physician stresses the importance of appropriate medication practice.

Levy and Glanz (1981) have also linked noncompliance to misunderstanding. In their study, they found that misunderstanding often resulted from a language barrier or deficiency. This deficiency may be due to the fact that English is a second language for many older adults as well as for physicians treating older adults. Noncompliance results because many elderly are isolated and cannot ask

others for help when they do not understand the instructions. Also, they may be too embarrassed to ask the physician or pharmacist a question for fear of showing ignorance. Understanding the medication regimen does not guarantee patient compliance, but poor understanding will prevent even the most willing patient from following instructions.

The researchers also found that noncompliance rose as the number of medications increased. Also, noncompliance increased as the frequency of dosages increased (Brand et al., 1977). In this case, noncompliance due to increased medication may be linked to the patients' forgetting when to take their medication. However, Vener, Krupka, and Climo (1979) reported that 77% of the people in their sample always remembered to take their medications. This study was conducted in Michigan and included 55 men and women. Those who had no difficulty in remembering when to take their medications had utilized special techniques that helped them to remember such as keeping medication on the dining room table to be taken at mealtimes.

Noncompliance sometimes results due to insufficient financial resources. Compared to all other consumer prices since 1981, prescription drug prices have increased two to three times faster (Lipton, 1988). Some elderly fail to have their prescriptions filled because they cannot afford the cost of the drug. About five percent of all

prescriptions prescribed to the elderly remain unfilled (Simonson, 1984, p. 66-67).

Brand et al., (1977) found in their study of 225 individuals that the cost of medication was the most common reason for noncompliance. Thirty-one of the 91 noncompliers were unable to pay for their medications. Older adults who are chronically ill and patients who have a low income are affected the most by the cost of medication. In contrast, a study conducted by Cooper, Love, and Raffoul (1982) showed only two of the 48 noncompliers stated money as the reason for noncompliance. However, the researchers noted that under-response to this question was possible. Older adults who can afford to buy medication spend twice as much money on medication as do younger people (Shimp & Ascione, 1988). Those individuals who can afford to buy medication may follow inappropriate medication procedures. Some older adults often delay getting a prescription filled or may skip a dose to make the medication last longer (Hecht, 1983).

Medication misuse and abuse may also include under- and/or over-use of drugs. Shimp, Ascione, Glazer, and Atwood (1985) interviewed 53 older adults. They found that 49% of the sample interviewed were either under- or over-using prescription medications. Other research indicated that missed dosages may lead to drug misuse and abuse. Dr. Leo Hollister (1977) reported that many patients who miss a few doses of medication will try to compensate by taking all the missed doses at once.

Ellor and Kurtz (1982) found six of the 41 older adults in their study made up a missed dose the next time the medication was to be taken. Twenty-two of the older adults participating in this study admitted skipping the dose completely if they forgot to take the medication at the appropriate time. Excessive consumption can also occur as a result of the patient's thinking "if one dose is good, then two are better." Patients may also take an extra dose if they are unsure of whether they took their medication at the appropriate time. They take another dose just to be safe rather than just waiting until the next time to take the medication (Simonson, 1984, p. 67). Both over- and/or under-consumption of drugs can lead to serious problems.

In contrast, Gebhardt, Governali, and Hart (1978) found that none of the 30 subjects in their study would ever double a dose of medication if an earlier dose was missed. However, when the subjects were asked what steps they would take if their medication did not seem to be relieving their symptoms, 60% said they would discontinue using their medication. This would be a form of noncompliance due to under-use.

Another study showed under-consumption to be common among older adults. Raffoul et al., (1981) studied 67 elderly residents of Fayette County in Kentucky. The participants were questioned about each drug they were currently using. The interviews revealed 36 instances of

drug misuse and abuse. Twenty-six instances were due to under-consumption of medication.

Other factors linked to drug misuse and abuse are ingestion of leftover medication and taking someone else's medication. In a study of 30 older adults, 37% said they would not take a leftover drug, but 60% said they might (Gebhardt et al., 1978). Shimp et al., (1985) concluded from their interviews that 67% of their respondents did not discard unused medication when their physician told them to discontinue a medication. Although they did not say they would use a leftover drug, the chance is greater when the drug is accessible. Taking leftover medication can be dangerous because the chemical properties of a drug can change over a period of time and could react negatively in the body.

Although a large number of adults in the research seemed likely to take leftover medications, only a small percent reported using someone else's medication. A study of 30 older adults suggested ingesting another person's medication is not popular among older adults. Only 13% reported they had used medication that was prescribed for someone else (Gebhardt et al., 1978).

Noncompliance is just one of the ways older adults misuse and abuse their medications. There are many types of misuse and abuse and factors that contribute to this problem. With proper instructions and procedures, older adults can reduce the prevalence of misuse and abuse.

Adverse Reactions

Adverse reactions to drugs occur more frequently and are more severe in the elderly than among younger people. Older adults experience adverse reactions seven times more often than people 20 to 29 years old (Hollister, 1977). Research has indicated there is a change in lean body mass, lipid tissue, metabolism, and excretion with age (Lamy, 1986). These changes determine the amount of the drug stored, used, and excreted. Due to an increase in gastric emptying time in older persons, medicine remains in the stomach longer. Therefore, the gastric acids may degrade the medication leaving a smaller amount to be absorbed. Also, a smaller amount may be absorbed as it passes through the intestine due to a decrease in motility. In addition, the medicine may bind to a particle of food which would prevent it from being absorbed. However, overabsorption of a medication can occur as the result of a long resting time in the intestine (Simonson, 1984, p. 112-113).

Doctors and pharmacists need to be aware of these physical changes and alter the medication dosage accordingly. Drug manufacturers do not usually test products in older adults, so there are no clear-cut guidelines for dosage amounts (Hecht, 1983). Results of one study indicated that 200 of the most common drugs taken by the elderly require a 20% decrease in dosage when given to an older adult (Pratt et al., 1982). Nolan and O'Malley

(1988) reported that 70 to 80% of adverse drug reactions are dose-related.

In their study, Shimp et al., (1985) found that 81% of the 53 individuals interviewed had problems with their prescription medication. In 51% of those experiencing problems with their medication, inappropriate doses had been prescribed by their physician. The researchers were all pharmacists, and they found four or more potential adverse reactions in more than one-half of the 53 patients (Shimp et al., 1986). Physicians and pharmacists have a responsibility to prescribe adequate dosages or they will be contributing to medication misuse and abuse.

Adverse reactions can be influenced by multiple drug therapy. A review of literature has shown the incidence of adverse reactions increases as the number of medication increases (Nolan & O'Malley, 1988). It has been estimated that when six to ten drugs are taken, the individual has a 7.4% chance of having an adverse reaction (Vener et al., 1979). An earlier study conducted in Miami, Florida, supported these findings. In the Miami study, researchers examined the characteristics of drug reactions in 60 elderly patients who were treated at Jackson Memorial Hospital. The researchers found the cause of adverse reactions in 31.9% of the aged was due to mixing two or more substances (Petersen & Thomas, 1975). This percentage was compared to the percentage of all the patients admitted during the same time period. Only 23.5% of the 1128 patients of all ages were

admitted for multiple substance use. Once again, with careful review of the patient's medication regimen, physicians and pharmacists can help prevent adverse reactions.

Roles of Physicians and Pharmacists

Research indicated a contributing factor in drug misuse and abuse was patient use of multiple doctors and pharmacists. A review of literature suggested doctors may contribute to medication misuse and abuse by referring their patients to other doctors. Misuse and abuse can occur with the use of more than one pharmacy. In a study of 67 older adults, the two most significant factors associated with their drug misuse and abuse were the use of two or more pharmacies and having medication prescribed by two or more doctors (Raffoul et al., 1981).

Older adults may become confused when receiving many sets of instructions which can lead to misuse and abuse of their medication. Also, medication prescribed by different physicians can interact to cause adverse reactions. Frequent review of medication for every patient by each doctor is needed in order to prevent or reduce the incidence from occurring.

Gryfe and Gryfe (1984) proposed that label directions should be accompanied by written instructions. A study conducted by Ellor and Kurz (1982) showed 26 of 41 respondents received no information about their medication other than what was printed on the label. Due to the

limited amount of space on the label of a prescription container, instructions are usually typed in small letters and often with medical abbreviations. Older adults with visual problems may experience difficulty in reading the print. This problem is compounded when they do not understand the medical terms. If instructions are written and reviewed with the patient, there is a lower chance of an incorrect medication regimen. Even if an older adult can read the label, problems may still develop. The directions on the label may not be correct. Shimp et al., (1985) found that 22% of the 53 older adults they interviewed did not follow the directions printed on their medication label; their physician had verbally told them to change their medication regimen. However, the physician did not write out a new prescription or alert the pharmacist to make a new label. Serious problems can result if the older adult becomes confused and cannot remember which directions to follow.

Poor medication practice may also result from the failure of the physician and pharmacist to communicate information to the patient. A study recently conducted by the Federal Drug Administration found that 34% of the 835 respondents were uninformed about their medications. These individuals did not receive written instructions and did not ask for any information. The individuals were mostly older adults and were prescribed several drugs. Their attitude

was "if you trust the doctor, then why ask questions" (Farley, 1986).

In a study of 233 pharmacists, inadequate skills or professional knowledge was the most commonly cited problem in the field of geriatrics. Compliance related to communication was the third most frequently cited problem (Pratt et al., 1982). A review of the literature revealed that communication failure was not only due to time constraints and lack of skills but also a reluctance to fully inform the patient of their condition and treatment (Levy & Glantz, 1981). Most medical schools do not have specific programs related to geriatrics, especially to drugs and the elderly. Although doctors may not be very helpful, pharmacists who are well-trained can be helpful. Pharmacists are more accessible than physicians and, therefore, can help older adults with their medication questions.

Over-the-Counter Medication

The primary focus of research has been on the misuse and abuse of prescription drugs; however, over-the-counter medications are also misused and abused. Researchers have estimated that 40% of adults age 60 and older use over-the-counter drugs daily. Over-the-counter medications are sometimes used to treat ailments that could be cured by a non-drug substance. Vitamins, laxatives, antacids, and analgesics are those most commonly used and most commonly abused by older adults. Over-the-counter drugs abused by

the population as a whole are different from those abused by the elderly. O'Brien and Cohen (1984) report that cough syrups, sleeping aids, and appetite depressants were the most frequently abused. In a study of 53 older adults, researchers found 49% reported using a nonprescription drug when a non-drug alternative would have been better (Shimp et al., 1985). A New York study of 30 older adults reported that 67% of the older adults felt that a daily bowel movement was needed and that a laxative should be used to achieve this if necessary. Seventy-seven percent of the same sample felt that older adults should take vitamins (Gebhardt et al., 1978).

A central Michigan study of 55 older adults revealed that 37 of the participants had used vitamins and 25 had used analgesics during the week prior to their interviews (Vener et al., 1979). Another study in Michigan showed that 50% of the sample used over-the-counter analgesics, laxatives, and antacids four to five times a week (Coons, Hendricks & Sheahan, 1988). Also, an extensive study of over-the-counter medication usage revealed that 55% of individuals included in the sample were taking between one and nine self-prescribed drugs. Sixty-seven percent took analgesics, 30% took laxatives, 29% took vitamins, and 26% took antacids (Fincham, 1986).

The frequency of the use of over-the-counter medications is alarming. The use of any medication that has not been prescribed by a physician should be approved by

either physician or a pharmacist since adverse reactions can occur. Many times use of over-the-counter drugs can reduce the expenditures needed for prescription medication.

Summary

Research indicates there are many causes of drug misuse and abuse in the elderly. The four categories of research examined were: (1) compliance factors related to medication misuse and abuse, (2) adverse reactions, (3) roles of physicians and pharmacists, and (4) abuse and misuse of over-the-counter medications. Health professionals as well as older adults have responsibility for appropriate medication regimen. Physicians treating older adults should be aware of the problems and physiological changes that older adults may experience as they age and make modifications to provide the best treatment possible. Pharmacists should be aware of the different kinds of medications prescribed for each individual. This knowledge will help in preventing some types of adverse reactions between medications.

CHAPTER III

Methodology

The purpose of this study was to determine the extent of medication misuse and abuse among older adults residing in a northeastern county in Ohio. The objectives of this study were to determine whether older adults misuse and abuse prescription and nonprescription medications, to determine the forms of misuse and abuse that occur most often, and to determine who is responsible for the abuse.

Selection/Description of Sample

A purposive sample was used with a total of 102 older adults. The sample selected lived in a northeastern county in Ohio. The older adults who participated in the study were individuals who attended one of the three nutrition sites located in this area. Each individual was 60 years of age or older and attended a nutrition site at least once a week.

Description of Data Collecting Instrument

The data collecting instrument used in the study was a 29-item questionnaire developed by the researcher to obtain information related to the objectives of the study. These objectives were to determine whether older adults misuse and abuse their medications, the forms of misuse and abuse that occur most often, and who is responsible for the misuse and abuse. The questionnaire was divided into three sections. The first section included personal data questions. The second section included questions related to medication

information. The third section included questions related to medication practices. Twenty-four of the items included on the questionnaire were closed questions; therefore, options were limited. The remaining five questions were presented in a multiple choice form and participants were instructed to check all answers that applied. Verbal instructions were given to all participants before the questionnaire was administered. The same instructions were given at each site, and a copy of this form can be found in Appendix A. The data collection instrument appears in Appendix B.

Content validity was determined by a panel of experts. A pilot test was conducted at a senior nutrition site located in central Illinois. Fourteen participants responded to the questionnaire used in the pilot study. A brief explanation of medication misuse and abuse and the purpose of this study were presented to the participants. The questionnaires were reviewed prior to distribution of the instrument to the research sample.

Procedure for Data Collection

The researcher administered the surveys at three nutrition sites. At each site, all the participants were invited to participate; however, some declined. Individuals who agreed to participate were given a verbal explanation of the study, as well as instructions for completing the questionnaire. Thirty minutes were allowed for completion of the questionnaire. Then the researcher collected them.

The same procedure was repeated at all three sites. A total of 102 questionnaires was completed. Seventeen questionnaires were answered by the participants at Site A, 53 at Site B, and 32 at Site C.

Data Analysis

Data were analyzed using the Statistical Package for Social Sciences (SPSSx). This method was chosen because it identifies frequencies and percentages for the nominal and ordinal levels of data obtained in this study. A frequency and percentage were obtained for each answer. For those questions with more than one answer, each answer was considered separately during the data analysis.

CHAPTER IV

Results and Discussion

Data were analyzed using frequencies and percentages. The data analysis indicated that most participants in the study engaged in appropriate medication practices. Several respondents did not answer all of the questions; therefore, the analysis cannot be based on 100% response.

Demographic data for the 69 female participants are reported in Table 1. The age of the female participants ranged from the 60-64 category to the over 80 category. The age categories of 75-79 and over 80 were the most frequently reported and received an equal number of responses. The marital status of the female participants included remaining single throughout life, married, divorced, and widowed. Widowhood was the most frequently reported response of the female participants. Living arrangements of these individuals included living alone, with a spouse, with children, or other. Living alone was the most frequently reported. The education level of the female participants ranged from less than high school level to a graduate degree. Obtaining a high school diploma was the most frequently reported level of education. The majority of the women were retired; only three were currently employed. The income level of the female participants ranged from a level of less than \$5,000 to a level of over \$25,000. The most frequently reported yearly income level was \$5,000-\$9,999.

Table 1

Characteristics of Female Participants (N=69)

Characteristics	Frequency	Percentage
Age		
60-64	5	7
65-69	7	10
70-74	17	25
75-79	20	29
over 80	20	29
Marital Status		
Single	1	1
Married	13	19
Divorced	1	1
Widowed	53	78
Living Arrangements		
Alone	50	72
With spouse	12	17
With children	5	7
Other	2	3
Educational Level		
Less than high school level	10	15
Some high school	21	31
High school diploma	31	46
College degree	5	7
Graduate degree	1	1

Occupational Status

Currently employed	3	4
Retired	66	96

Income

Less than \$5,000	17	35
\$5,000-\$9,999	18	37
\$10,000-\$14,999	8	16
\$15,000-\$19,999	4	8
\$20,000-\$24,999	1	2
Over \$25,000	1	2

Personal data of the 33 male participants are shown in Table 2. The ages of the males ranged from the 60-64 category to the over 80 category. The categories of 65-69 and 70-74 were the most frequently reported. The men that participated in this study were either single, married, divorced, or widowed. The most frequent response was married; therefore, living with a spouse was the most frequent response to living arrangements. Other responses included living alone, with children, and other. The educational level of the male participants ranged from less than high school level to obtaining a graduate degree. Receiving a high school diploma was the most frequently reported answer. The majority of the men was retired; however, one man was currently employed. The income level of the men ranged from the category of less than \$5,000 to

the category of over \$25,000. The most frequently reported level of yearly income was \$5,000-\$9,999.

Table 2

Characteristics of Male Participants (N=33)

Characteristics	Frequency	Percentage
Age		
60-64	3	9
65-69	7	21
70-74	7	21
75-79	8	24
over 80	8	24
Marital Status		
Single	3	9
Married	18	55
Divorced	3	9
Widowed	9	27
Living Arrangements		
Alone	10	30
With spouse	18	55
With children	2	6
Other	3	9
Educational Level		
Less than high school level	6	19
Some high school	9	28
High school diploma	11	34

College degree	3	9
Graduate degree	3	9
Occupational Status		
Currently employed	1	3
Retired	29	97
Income		
Less than \$5,000	4	15
\$5,000-\$9,999	10	38
\$10,000-\$14,999	4	15
\$15,000-\$19,999	2	8
\$20,000-\$24,999	4	15
Over \$25,000	2	8

The health status of the respondents was self-reported (Table 3). The participants were asked to check which health conditions and/or diseases from which they suffer. Wearing bifocals was the most frequently reported health-related condition (54%). Only 14% of the respondents reported wearing a hearing aid. Other limiting health-related conditions included using a cane or walker or using a wheelchair. Twelve percent of the respondents used either a cane or a walker, while only 1% used a wheelchair. Arthritis and high blood pressure were the two most frequently reported diseases. Forty-four (43%) of the 102 respondents reported having arthritis, while 41% had high blood pressure.

Cancer, asthma, and kidney disease were the least reported diseases in the population.

Table 3

Number of Health and Health-Related Conditions Reported
by Participants (N=102)

Health Conditions	Frequency	Percentage
Wear bifocals	55	54
Arthritis	44	43
High blood pressure	42	41
Heart disease	18	18
Diabetes	15	15
Wear a hearing aid	14	14
Use a cane or a walker	12	12
Stroke	7	7
Asthma	2	2
Cancer	2	2
Kidney disease	1	1
Use a wheelchair	1	1

As shown in Table 4, the most frequently used over-the-counter medications were vitamins, aspirin, pain relievers, and antacids. Vitamins were taken by 44 (43%) of the 102 respondents. This finding is similar to the finding in a study conducted by Vener et al. (1979). The

researchers in that study found that 37 (67%) of the 55 participants had used vitamins during the week prior to the study. The findings of their study also indicated that 25 (45%) of the 55 participants had used analgesics during the same time. These data are similar to the findings reported in this study. A total of 75 participants used analgesics; 42 used aspirin, and 33 used pain relievers such as Tylenol. A small number of respondents in this study (11%) reported using laxatives. A study conducted in Michigan suggested that 50% of the sample used laxatives, analgesics, and antacids four to five times a week (Coons & Sheahan, 1988). Only 25% of the participants in this study reported using antacids.

Table 4

Over-the-Counter Medication Used by Participants

(N=102)

Over-the-counter		
Medication	Frequency	Percentage
Vitamins	44	43
Aspirin	42	42
Pain relievers	33	32
Antacids	25	25
Cough syrup	18	18
Laxatives	11	11
Antihistamines	6	6

Decongestants	6	6
Other	3	3

The participants in the study reported infrequent use of prescription medication. The number of prescription medications taken by the participants ranged from one to eighteen. A mean of 2.7 prescriptions was taken by the older adults responding to this survey (Table 5). Twenty (32%) of the 62 older adults who responded to this question reported taking one prescription medication. One older adult reported taking 18 medications. Twenty-two of the respondents reported they were currently not taking any prescription medication.

Table 5

Number of Prescription Medications Ingested by
Participants (N=62)

Number of Prescription Medications	Frequency	Percentage
One	20	32
Two	15	24
Three	12	19
Four	9	15
Five	3	5
Six	1	1

Eight	1	1
Eighteen	1	1

Below find discussion that follows each of the research objectives. This discussion includes findings of this study as well as the findings of other studies that were presented in the review of literature. Comparisons and contrasts of the studies will also be presented in this section.

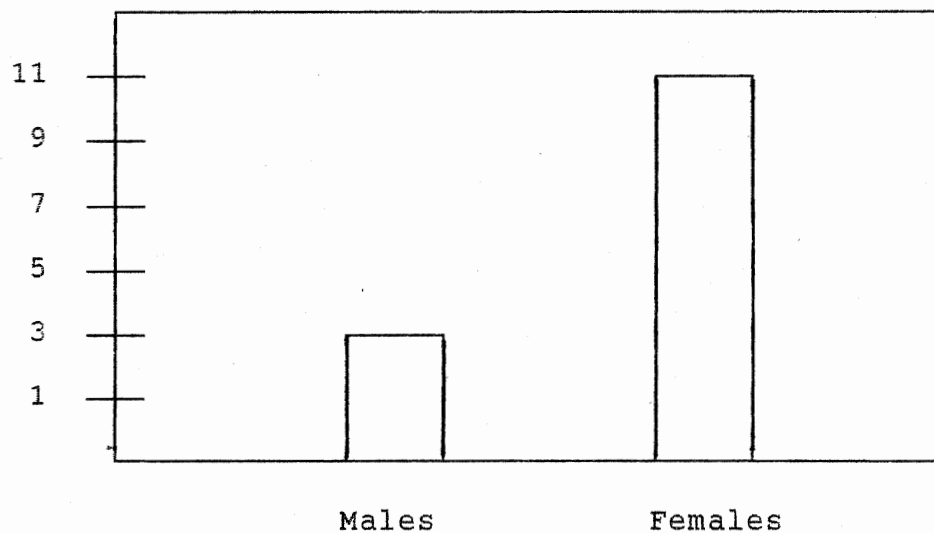
Objective 1: To determine whether older adults misuse and abuse their prescription and nonprescription medication.

Data concerning the misuse and abuse of medication suggest that patient noncompliance was very low among older adults; thus, the incidence of misuse and abuse appeared to be low. Fourteen (3 males and 11 females), or 18%, of the 89 respondents experienced problems in remembering to take their medication as shown in Figure 1. Findings in this study indicated a lower incidence of forgetfulness among older adults as compared to a study in Michigan by Vener et al. (1979). The findings of their study indicated that 33% of the 55 respondents experienced problems in remembering to take medications.

The data in this study also indicated a low occurrence of misuse and abuse due to insufficient financial resources. Eighteen (5 males and 13 females), or 22%, of the 83 respondents lacked sufficient resources to purchase medication at one time or another (Figure 2). A study

conducted in Canada indicated somewhat higher results. Researchers interviewed 225 discharged patients from the Victoria General Hospital. The interviews were conducted six months after discharge, and 31 (34%) of the 91 noncompliers reported insufficient finances to purchase medication (Brand et al., 1977). Perhaps the larger number of women who lack financial resources is due to the fact that women outlive men and usually have a lower income. The difference in the general economic structure between Canada and America must also be considered.

Figure 1. Comparison of participants who forgot to take their medication. (N=14)



An extremely low incidence of over-use of medication was reported by the respondents. Only 1 female respondent (.01%) of the 92 total respondents reported doubling a dose of medication if an earlier dose was missed. Results of a

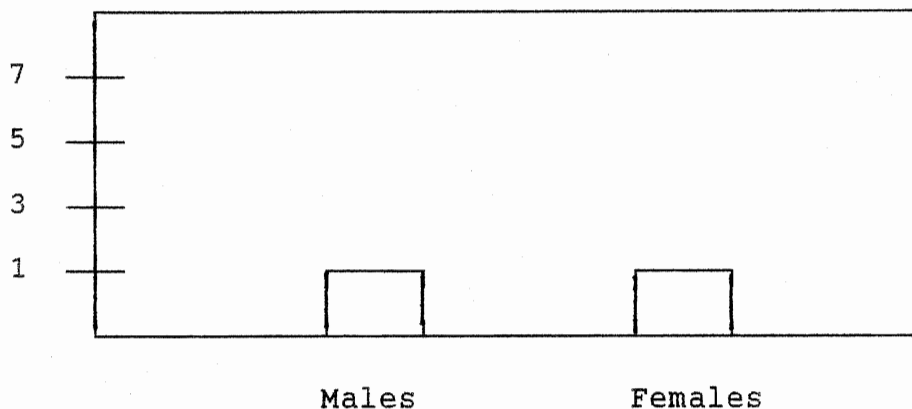
study conducted by Gebhardt et al. (1979) suggested almost identical results. In their study, one (.03%) of the 30 subjects interviewed reported doubling a dose of medication.

Figure 2. Comparison of participants who had insufficient financial resources to purchase medications. (N=18)



Taking more than the prescribed amount of medication, another form of over-use, was not common among those responding to this survey. The practice was reported by only one male and one female, or .02%, of the 90 respondents. A study conducted by Shimp et al. (1985) suggested similar findings. Four (.08%) of the 53 individuals interviewed reported taking more than the prescribed amount of a medication (Figure 3).

Figure 3. Comparison of participants who took more than the prescribed dosage. (N=2)

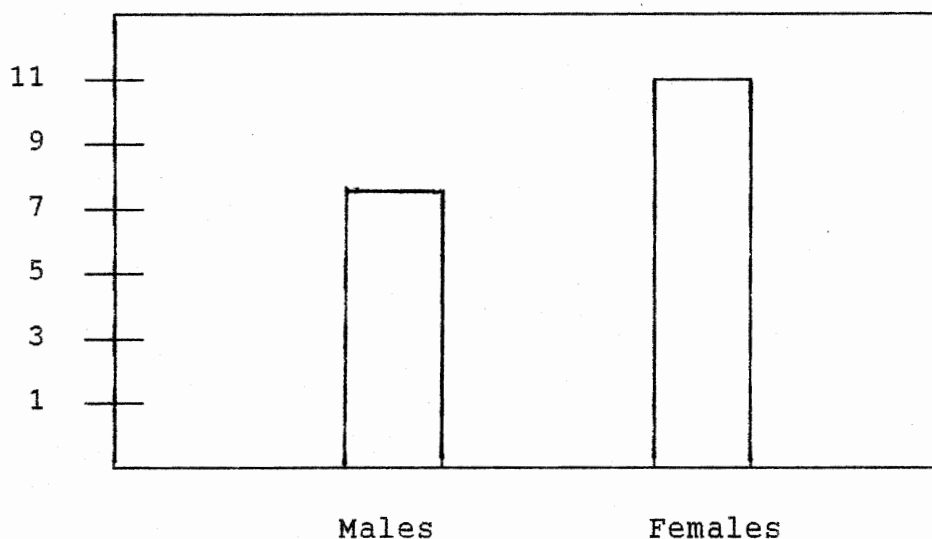


Another factor contributing to medication misuse and abuse is saving leftover and expired drugs for future self-medicating. Although some individuals are instructed by their doctor to keep certain medication on hand for emergencies, others may save medication to take at a later date without a doctor's permission. Nineteen, or 23%, (8 males and 11 females) of the 84 respondents to this question indicated they saved leftover drugs. This finding contradicted results found by Shimp et al. (1985). Their data suggested 66% of the 53 participants saving leftover medication (Figure 4).

Medication misuse and abuse due to the ingestion of someone else's medication was not evident in this study. None of the 89 individuals responding to this question reported using another person's medication. A study

conducted by Gebhardt et al. (1978) reported some incidence of this behavior. Four (13%) of the 30 respondents reported using medication that belonged to someone else. In addition to the low incidence of noncompliance that leads to medication misuse and abuse, only 10 of the respondents in this study reported mixing medications without checking with their doctor first.

Figure 4. Comparison of participants who saved leftover drugs. (N=19)



The number of respondents that misused and abused medication ranged from one to nineteen. Examination of the five categories (forgetting to take medication, insufficient financial resources, taking more than the prescribed amount, saving leftover drugs, and doubling a dose) showed that most of the respondents practiced appropriate medication behaviors.

Objective 2: To determine the forms of misuse and abuse that occur most often.

The most commonly reported factors contributing to misuse and abuse were saving leftover medications and insufficient financial resources. Although saving leftover drugs, in itself, is not misuse or abuse, this practice can promote such behavior. Accessibility to these drugs increases the chance of ingestion. Nineteen (23%) of the 84 respondents indicated they saved their leftover medication. Gebhardt et al. (1978) concluded from their study that 60% of the 30 participants might take leftover medication. Shimp et al. (1985) reported from their interviews that 66% of the 53 respondents did not discard medications.

Eighteen (22%) of the 83 respondents indicated they were unable to pay for medication at one point in time. Similar findings from a study conducted by Brand et al. (1977) support this finding. The participants in that study indicated the cost of medication was the most common factor contributing to misuse and abuse. Thirty-one (34%) of the 91 noncompliers in the study could not afford their medications.

Forgetfulness was the third highest form of misuse and abuse. Fourteen (16%) of the 89 individuals responding to this survey indicated they had at one time or another forgotten to take their medication. Vener et al. (1979) reported from their study conducted in Michigan that 12 (22%) of the 55 respondents had problems remembering to take

their medication.

Two of the respondents in this study indicated they were guilty of taking more than the prescribed amount of a medication. One of the 92 participants admitted doubling a dose of medication to compensate for an earlier missed dose. This finding was similar to the finding of a study conducted by Gebhardt et al. (1978). None of the 30 subjects in that study doubled medication doses. Medication misuse and abuse by ingesting another individual's medication was not practiced by any of the individuals responding to this survey.

The number of participants who misused and abused their medication ranged from one to nineteen. One participant doubled a dose of medication while two individuals took more than the prescribed amount. Fourteen participants were guilty of forgetting to take their medication. The two highest contributing factors were insufficient financial resources and saving leftover drugs. Eighteen and nineteen participants, respectively, were unable to buy the needed medication and saved their leftover drugs.

Objective 3: To determine who is responsible for misuse and abuse.

For the most part, the respondents were responsible for the medication misuse and abuse identified in this study. Forgetfulness and retention of leftover drugs, which can lead to medication misuse, can be attributed to the individual. While retention of some medications is

necessary, such as for headaches and allergies, individuals do not need to save every drug especially if the medication has expired. Insufficient financial resources is also a contributing factor that concerns the individual more than the doctor. Misuse and abuse cannot be attributed to the individual alone because doctors may do little to help their patients acquire the needed funds. Without money, older adults may use their medication sparingly to make it last longer or even refuse to buy their medication. Although the respondents are responsible for taking the prescribed medication at the proper time and in the proper amount, confusion, limited reading ability, and lack of patient education contribute to the problem. The physician and pharmacist also share some of the responsibility. Medication education can help prevent doubling of dosages, taking more than the prescribed amount, and retaining leftover medications. Both physicians and pharmacists are responsible for teaching this information. The prevalence of medication misuse and abuse appears to be low among the respondents. This may be due to the large number of individuals who indicated they received medication information. Sixty-four of the 82 respondents indicated information about the prescribed medication was given by the physician and/or pharmacist. Ten of the 81 respondents suggested their physicians and/or pharmacists did not make sure the instructions were understood, and 15 of the 79 respondents indicated a lack of written instructions.

Although research has indicated communication between older adults and professionals has been a problem, the older adults in this study did not feel the same way. In a study conducted by Brand et al. (1977) similar results were attained. Fifteen of the 91 noncompliers did not understand the physicians instructions. Misunderstanding can be due to a language barrier as indicated by Levy and Glanz (1981). Both patients and medical professionals need to know what questions to ask in order to prescribe the appropriate medications and to receive proper information and instructions.

Respondents to the questionnaires were mainly responsible for the misuse and abuse or the contributing factors that occurred. However, physicians and pharmacists were not given adequate medication education. Overall, the majority of the respondents indicated they were receiving medication education from their physicians and pharmacists and, as a result, were following proper medication practices.

Summary

This study identified the types of misuse and abuse in which respondents engaged, as well as the number of those involved in each type. The findings indicated a low incidence of misuse and abuse of medication among the respondents in this study. Both the respondents and medical professionals were responsible for the misuse and abuse;

however, the respondents had more responsibility for their behavior.

CHAPTER V

Summary, Conclusions, and Recommendations

Summary

The purpose of this study was to determine the extent of drug misuse and abuse among older adults residing in a northeastern county in Ohio. The objectives were (1) to determine whether older adults misuse and abuse their prescription and nonprescription medications, (2) to determine the forms of misuse and abuse that occur most often, and (3) to determine who is responsible for the misuse and abuse.

The study involved 102 participants. Each participant attended one of the three nutrition sites located in a northeastern county in Ohio. The older adults who participated in this study completed a 29-item questionnaire that addressed the objectives of the study. The questionnaires were divided into three sections. They included personal data, medication information, and medication practices. Data were analyzed using the SSPSx to determine the frequency and percentage for each answer.

Conclusions

Data suggest only a small proportion of older adults engage in behaviors that lead to medication misuse and abuse. The five forms of misuse and abuse or factors contributing to misuse and abuse were identified. They included forgetting to take medication, insufficient financial resources, doubling of dosages to compensate for

missing an earlier dose, taking more than the prescribed amount, and taking leftover drugs. Although ingesting someone else's medication is another form of misuse and abuse, this form did not occur among the participants in this study. The most frequent forms of misuse and abuse or contributing factors were insufficient financial resources, saving leftover drugs, and forgetting to take medication. The two less frequent forms were taking more than the prescribed amount of medication and doubling a dose of medicine.

The older adults in this study indicated the use of a relatively low number of prescription medications. The respondents who were taking prescription medication, by and large, indicated they were receiving medication information from their physician and/or pharmacists. Explanations about the medication and verbal and written instructions were provided.

In contrast, other research studies indicated a higher incidence of some forms of misuse and abuse. Medication misuse and abuse due to forgetfulness is an example of contradicting results. Although this study suggested a low rate of misuse and abuse due to forgetting to take medication, another study indicated this type of misuse and abuse to be somewhat higher. The Michigan study reported forgetting to take medication occurred almost twice as often (Vener et al., 1979). Also, Brand et al. (1977) found noncompliance increased as the number of medications

and frequency of dosages increased. The current study indicated a mean of 2.7 prescriptions was used by the participants. The low incidence of forgetfulness may be due to the small number of drugs being taken.

Data also indicated a lower incidence of misuse and abuse due to insufficient financial resources than did studies cited in the review of literature. The Brand et al. (1977) study suggested a 12% higher incidence of misuse and abuse due to financial problems. The current study also indicated a lower amount of misuse and abuse concerning saving leftover medications. Shimp et al. (1985) found that almost three times as many older adults saved their medication. This form of misuse and abuse can be extremely dangerous because inappropriate storage and degradation of medicine can cause adverse reactions to occur when taken at a later date.

Data concerning taking more than the prescribed amount of medicine was similar to data found in a study conducted by Shimp et al. (1985); however, contradicting results have been found in studies concerning another form of over-use. The researcher's findings concerning doubling dosages corresponded almost exactly with those of Gebhardt et al. (1978), but they differed from research conducted by Hollister (1977). He had indicated many patients used this technique to compensate for missed dosages.

As mentioned earlier, the mean number of prescription medications currently being taken by the respondents in this

study is 2.7. The literature review cited in Chapter 2 indicated that the average number of prescription drugs prescribed to older adults varies from study to study. A 1980 study reported an average of 8.4 drugs being taken a month (Hecht, 1983). In contrast, other studies have shown older adults may be prescribed as many as 14 to 18 drugs a year. The low number of prescription medications prescribed for the respondents in this study may indicate some reasons for appropriate medication practices. Taking few medications leaves less room for misuse and abuse. Taking several medications increases the potential for an individual to become confused. Remembering to take a small number of medications may be easier than trying to remember to take a large number of drugs.

Data also indicated most of the respondents received medication education from their physicians and/or pharmacists. This education helps reduce the amount of misuse and abuse. Interestingly though, Pratt et al. (1982) indicated in their study of pharmacists that communication was a problem in the field of geriatrics. Also, a study conducted by Brand et al. (1977) indicated that improper use of medication could be due to insufficient understanding of the physician's instructions.

Overall, most of the respondents indicated they were healthy and did not require many medications. Many of those respondents who did take medication practiced appropriate medication behaviors. As a result, this study suggested the

incidence of medication misuse and abuse is low among older adults. The use of questionnaires may also have been responsible for the low reported abuse. Many of the studies presented in the review of literature used interviews as the data collection method. Four of the seven studies that used interviewing to collect data were in-home interviews. The respondents may feel more comfortable and at ease in their own home and, therefore, may be more honest and open. Also, perhaps talking and verbally asking questions would elicit more honest answers. In addition, perhaps the researcher would be able to see exactly the number and kinds of medication being taken as well as noting the number of different physicians being visited.

The low incidence of misuse and abuse may be due to the fact that the participants in this study were mobile. They are able to go to the doctor and the pharmacy, whereas, elderly who are homebound are not able to do so. They may be more likely to misuse and abuse medication due to their immobility.

Recommendations

This study will hopefully contribute to increased awareness of medication misuse and abuse in the elderly population. Although some of the findings in this study did not indicate as high an incidence of the problem as previous research, more in-depth research is needed on this topic. Research is needed not only to determine whether the problem has actually decreased but, also, to identify more

information about the communication gaps and patient education. Good communication is needed between the patient and medical professionals in order to help reduce the incidence of medication misuse and abuse. Medical schools need to incorporate more geriatric education into their programs to produce professionals who are more knowledgeable about older adults. Communication skills of these individuals need to be improved and effective ways to promote patient education need to be explored. Perhaps having a nurse teach medication education would be helpful. The older adult may feel more comfortable with a nurse and may be less embarrassed to ask questions. A nurse with geriatric training might have more time to spend with the patient than the doctor and might be more cost effective for the patient.

Programs on medication education, not only for the elderly but for everyone, need to be developed and instituted by all physicians and pharmacists. Although, the participants in this study did not receive medication education as a service provided by the nutrition program, some indicated they were receiving this information from their physician and/or pharmacist.

Most of the studies reviewed used personal interviews as the data collection method. Due to time and money constraints, the researcher of this study could not use interviews; however, it would be interesting to see this study replicated using personal interviews and then compare

the results. Perhaps more information and more honest answers would be gained through interviews.

Another area where research is needed is in finding techniques and/or devices that would enable patients to better remember when to take their medication. One study indicated the respondents set their medication containers on the table to remind themselves. This technique may only work if the medication needs to be taken at mealtimes. Since every older adult is different, many techniques are going to be needed in order to meet the needs of everyone.

This area has potential for many studies concerning a variety of related topics. Professionals need to realize how important this information will be in helping older adults maintain a normal, healthy life.

REFERENCES

- Bogaert-Tullis, M. (1985). A resource guide for drug management for older persons. San Francisco: University of California.
- Brand, F. N., Smith, R. T., & Brand, P. A. (1977). Effect of economic barriers to medical care on patients' noncompliance. Public Health Reports, 32, 72-78.
- Coons, S. J., Hendricks, J., & Sheahan, S. L. (1988, Summer). Self-medication with nonprescription drugs. Generations, pp. 22-26.
- Cooper, J. K., Love, D. W., & Raffoul, P. R. (1982). Intentional prescription nonadherence (noncompliance) by the elderly. Journal of the American Geriatrics Society, 30, 329-333.
- Ellor, J. R. & Kurz, D. J. (1982). Misuse and abuse of prescription and nonprescription drugs by the elderly. Nursing Clinics of North America, 17(2), 319-332.
- Farley, D. (1986). Protecting the elderly from medication misuse. FDA Consumer, 20(8), 28-31.
- Fincham, J. E. (1987). Over-the-counter drug use and misuse by the ambulatory elderly: A review of literature. Journal of Geriatric Drug Therapy, 1(2), 3-21.
- Gebhardt, M. W., Governali, J. F., & Hart, E. J. (1978). Drug-related behavior, knowledge, and misconceptions among a selected group of senior citizens. Journal of Drug Education, 8, 85-92.

- Glantz, M. D. (1983). Drugs and the elderly adult: An overview. In M. D. Glantz, D. M. Petersen, & F. J. Whittington (Eds.), Drugs and the Elderly Adult (pp. 1-3). Rockville, MD: National Institute on Drug Abuse.
- Gryfe, C. I. & Gryfe, B. M. (1984). Drug therapy of the aged: The problems of compliance and the roles of physicians and pharmacists. Journal of the American Geriatrics Society, 32, 301-307.
- Hecht, A. (1983). Medicine and the elderly. FDA Consumer, 17(7), 20-22.
- Hollister, L. E. (1986). Prescribing drugs for the elderly. Geriatrics, 32(8), 71-73.
- Lamy, P. P. (1986). The elderly and drug interactions. Journal of the American Geriatrics Society, 34, 586-592.
- Levy, M. R. & Glanz, K. (1981). Drug misuse among the elderly: An educational challenge for health professionals. Journal of Drug Education, 11, 61-71.
- Lipton, H. L. (1988, Summer). A prescription for change. Generations, pp. 74-79.
- Nolan, L. & O'Malley, K. (1988). Prescribing for the elderly. Journal of the American Geriatrics Society, 36, 142-149.
- O'Brien, R. & Cohen, S. (1984). The encyclopedia of drug abuse. New York: Green Springs. Petersen, D. M. & Thomas, C. W. (1975). Acute drug reactions among the elderly. Journal of Gerontology, 30, 552-556.

- Pratt, C. C., Simonson, W., & Lloyd, S. (1982).
Pharmacists' perceptions of major difficulties in
geriatric pharmacy practice. The Gerontologist, 22(3),
288-292.
- Raffoul, P. R., Cooper, J. K., & Love, D. W. (1981). Drug
misuse in older people. The Gerontologist, 21(2),
146-150.
- Shimp, L. A. & Ascione, F. J. (1988, Summer). Causes of
medication misuse and error. Generations, pp. 17-21.
- Shimp, L. A., Ascione, F. J., Glazer, H. M., & Atwood, B. F.
Potential medication-related problems in
noninstitutionalized elderly. Drug Intelligence and
Clinical Pharmacy, 19, 766-771.
- Simonson, W. (1984). Medications and the elderly.
Rockville, MD: Aspen Systems Corporation.
- Vener, A. M., Krupka, L. R., & Climo, J. J. (1979). Drug
usage and health characteristics in noninstitutionalized
retired persons. Journal of the American Geriatrics
Society, 27, 83-90.
- Whittington, F. J. (1988, Summer). Making it better:
Drinking and drugging in old age. Generations, pp. 5-7.

Appendix A
Instructions

Good Morning! My name is Connie Muntz and I am a graduate student at Eastern Illinois University in Charleston, Illinois. I am currently working on my Master's degree in Gerontology, which is the study of aging.

You have been selected to participate in this survey because you attend one of the three nutrition sites located in this northeastern county of Ohio. The questionnaire will take approximately 30 minutes to complete and all answers will remain confidential. The results will be reported as a group response, not as individual responses.

In answering the questionnaire, please answer the questions by placing an X in the correct space or writing the requested information on the line provided. When you reach the question concerning occupational status, if you are retired, please write in your previous occupation.

The results will be available after May 15, 1989. If you would like a copy, please call (216) 483-3551 and leave your name and address and the results will be mailed to you.

Please complete the questionnaire and hand it to me when you are finished. If you have any questions, please raise your hand and I will come help you. Thank you for your time and information.

Appendix B
Questionnaire

Please complete the following questionnaire to the best of your ability. Place an X in the appropriate space or write in the requested information. Thank you!

PERSONAL DATA

Sex:

Male Female

Age:

60-64 65-69 70-74 75-79
 over 80

Marital Status:

Single (Never Married) Married Divorced
 Widowed Separated

Living Arrangements:

Alone With spouse With children
 Other - Please specify: _____

Educational Level:

Less than high school level Some high school
 High school diploma College degree
 Graduate degree Doctorate

Occupational Status:

Currently employed Retired

Occupation: _____

Income:

Less than \$5,000 \$5,000 - \$9,999
 \$10,000 - \$14,999 \$15,000 - \$19,999
 \$20,000 - \$24,999 Over \$25,000

Health Status:

High blood pressure Heart disease
 Arthritis Kidney disease
 Cancer Diabetes
 Asthma Stroke
 Wear bifocals Wear a hearing aid
 Use a cane or walker Use a wheelchair

Have you ever used tobacco products? Yes No

If YES, check which ones:

Cigarettes Cigars Chewing tobacco
 Snuff Pipes

Do you currently use tobacco products? Yes No

MEDICATION INFORMATION

Are you currently taking any prescription medication?

Yes No If YES, how many?

Currently, how many doctors do you visit?

Where do you have your prescriptions filled?

At a local pharmacy
 Through a mail order catalog
 At the doctor's office

Which of these medications have you used in the past or currently use?

Antacids
(Ex.- Tums, Mylanta, Maalox)

Aspirin

Laxatives
(Ex.- Ex-Lax, Metamucil)

Cough Syrup

Pain Relievers
(Ex.- Tylenol, Advil, Nuprin)

Vitamins

Decongestants
(Ex.- Dristan, Sine-aid)

Antihistamines
(Ex.- Benadryl, Sudafed)

Other-- Please specify: _____

Have you ever taken any other medications with medicine prescribed by your doctor without checking with the doctor first? Yes No

MEDICATION PRACTICES

Currently, do you use alcohol? Yes No

Have you ever consumed alcohol while taking an over-the-counter drug or prescription medication? Yes No

Do you realize that mixing alcohol with medication, whether over-the-counter or prescription, can be dangerous?
 Yes No

If you miss a dose of medicine, do you take a double dose the next time? Yes No

Have you ever taken more than the prescribed amount of a drug? Yes No

Do you ever have problems remembering when to take each medication? Yes No

Have you ever taken someone else's medication that has been prescribed for them by a doctor? Yes No

When do you discontinue using a drug?

When the prescription runs out

When the physician tells you to

When you feel better even though there still may be medicine left in the container

Do you throw away leftover drugs? Yes No

Have you ever lacked the finances to buy medication?

Yes No

Does your doctor and/or pharmacist give you information about the medication that has been prescribed?

Yes No

Does your doctor and/or pharmacist make sure that you understand the instructions? Yes No

Does your doctor and/or pharmacist write down the instructions for you? Yes No

Once again, I would like to thank you for taking time to help me by filling out this questionnaire. I really appreciate your help. Thank you!